PROJECT

Drummond Institution – Building 3
Curtain wall repairs

2025, Boul. Jean-de-Brébeuf, Drummondville, Quebec, J2B 7Z6

CLIENT| Correctional Service of Canada
400 FordyceRoad, Cowansville, Quebec, J2K 3N7

SPECIFICATIONS – ARCHITECTURE

Architect's project #: 20-300

Date: 2022-05-27
Issue : Issued for bids

artesa
ARCHITECTES CONCEPTEURS

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PART 1 - GENERAL

.1.1 Seals

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Éric Jutras, Artesa inc. Architect			

END OF SECTION

ARCHITECTURE QUOTE

END OF SECTION

PART 1 - GENERAL

.1.1 SECTION CONTENT

.1 Designation and description of the work;

.2 Type of contract;

.3 Schedule of execution of the work;

.4 Order of execution of the work;

.5 Use of the premises by the Contractor;

.6 Occupation of the premises by the Client;

.7 Master's frameworks;

.8 Existing utilities;

.9 Required documents.

.1.2 RELATED REQUIREMENTS

.1 All sections of Division 01

.1.3 WORK COVERED BY CONTRACTUAL DOCUMENTS

.1 The work covered by this contract includes the replacement of the steel curtain wall, the doors that are part of it, as well as the leveling of the surfaces following the work.

.1.4 TYPE OF CONTRACT

.1 The work must be the subject of a single contract, at a lump sum price.

.2 The relations and responsibilities between Contractor and the subcontractors appointed by the representative of the contracting authority must comply with the terms of the contract. In addition, designated subcontractors must:

.1 provide the Contractor with the security for the subcontracted work and the related payment guarantees where the Contractor is required to provide such security to the representative of the contracting authority;

.2 Obtain and maintain liability insurance to protect the Contractor against possible claims, at least up to the minimum liability insurance coverages that the Contractor is required to provide to the owner's representative.

.1.5 ORDER OF EXECUTION OF THE WORK

.1 Carry out the work in stages, so that the Client can use the premises intermittently during the work.

.2 Coordinate the schedule of progress of the work according to the occupation of the premises by the Client during the construction work.

.3 The work will take place over 28 weeks following the award of the **contract.** All work must be carried out within these weeks for a maximum period of 6 weeks continuously, including correction of deficiencies and cleaning.

.4 Maintain access for emergency egress purposes; also provide for fire extinguishers as needed.

.5 The contractor will have to plan the preparation of shop drawings and orders for materials with significant manufacturing and delivery times in its schedule, in order to meet the dates of the deliverables described above.

.6 All work must be coordinated between the client and the contractor to determine the work schedule according to the availability of the premises.

.7 The kick-off meeting will take place the week following the contract award (following the reception of the letter of intent), in order to allow the contractor to prepare the shop drawings, material orders and prepare the mobilization plan and detailed schedule. See other professionals' specifications for additional details.

.8 Noisy work:

.1 The contractor must refer to the town bylaws regarding noise pollution.

.2 The client must be noticed in writing 48 hours in advance of any noisy work to be carried out during the period of occupation. The client must approve the of noisy work schedule before the contractor begins it.

.9 Provide, for approval, a schedule for carrying out the work no later than 5 days following the award of the contract.

.10 The schedule must be updated at no additional cost, presented in the form of a horizontal bar histogram (GANTT) with the complete scheduling of construction activities, and start and end dates.

.1 It should include the dates of submission of shop drawings, data sheets and samples. Indicate the revision period, the date of resubmission, the floating margin and the due date to be respected for the manufacture of the elements.

.2 Provide the start and end dates of each of the main activities.

.3 Take the necessary steps to ensure that the deadline is met.

.4 Send a copy of the first calendar and the revised copies to the site office, subcontractors and other interested parties.

.11 Ask recipients to report to the Contractor, within 10 days, any problems that may result from the proposed execution program in the schedule.

.1.6 USE OF THE PREMISES BY THE CONTRACTOR

.1 The use of the premises is restricted to the areas necessary for the execution of the work and access in order to allow:

.1 the occupation of the premises by the Contracting Authority;

.1 The precise area of the work will be freed up for the duration of the work.

.2 Coordinate the use of the premises according to the instructions of the representative of the client.

.3 Find the additional work or storage areas necessary to perform the work under this contract and pay the cost.

.4 Repair or replace, as directed by the consultant, for the purpose of connecting to or harmonizing with the existing work or an adjacent structure, those parts of the existing work that have been modified during the construction work.

.5 Once the work has been completed, the existing work must be in a state equivalent to, or better than the condition it presented before the start of the work.

.6 Mobilization is permitted on the building grounds in the specified area. The perimeter of the mobilization zone must be secured at all times and access to the mobilization zone must be protected at all times. The mobilization area must be presented in advance by the contractor and approved by the representative of the contracting authority.

.7 The Contractor must employ a superintendent whose presence is continuously mandatory on the site throughout its duration, as well as foremen and guards in sufficient numbers.

.1.7 OCCUPATION OF THE PREMISES BY THE CLIENT

.1 The Contracting Authority shall occupy the premises for the duration of the construction work and shall continue its normal activities during this period.

.2 Collaborate with the Client's representative in the establishment of the work schedule, so as to reduce conflicts and facilitate the use of the premises by the latter.

.3 The work area must be sealed at all times to avoid dust contamination during work in other spaces. The Contractor must obtain approval of its dust containment method by the contracting authority and the architect before starting the demolition work.

.4 Before the start of the work and mobilization, the contractor must provide a photographic survey to the client. Photos must be taken in the work area and in the areas adjacent to the work area (plus or minus 15 meters). Any contamination of the premises outside the work area or any defect in the work area or in the adjacent area must be corrected to the complete satisfaction of the customer, all at the expense of the contractor. The contractor must include in his survey the return grills and diffusers.

.1.8 MODIFICATIONS, ADDITIONS OR REPAIRS TO THE EXISTING BUILDING

.1 Carry out the work with as little harm as possible to the occupants and the normal use of the premises. Make the necessary arrangements with the representative of the client to facilitate the execution of the work.

.1.9 EXISTING UTILITY SERVICES

.1 Before interrupting utility services, inform the owner representative and utilities concerned, and obtain the necessary authorizations.

.2 Construct barriers in accordance with section 01 56 00 - Temporary access and protection works.

.1.10 REQUIRED DOCUMENTS

.1 Keep on site a copy of each of the following documents.

.1 Contractual drawings.

.2 Specifications

.3 Addenda.

.4 Reviewed shopdrawings.

.5 List of un-reviewed shop drawings.

.6 Change orders.

.7 Other changes to the contract.

.8 On-site testing reports.

.9 Copy of the approved schedule.

.10 Health and safety plan and other safety-related documents.

.11 Other documents as indicated.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

.1 Not applicable.

PART 3 - ENFORCEMENT

.3.1 NOT APPLICABLE

.1 Not applicable.

END OF SECTION

GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Workshop drawings and data sheets;

.2 Certificates and minutes.

.3 Material Safety Data Sheets for each hazardous material.

.1.2 RELATED REQUIREMENTS

.1 Section 01 11 00 - Summary of Work;

.2 Section 01 45 00 - Quality Control;

.3 Section 01 78 00 - Documents/Items to be submitted upon completion of the work.

.1.3 ADMINISTRATIVE PROCEDURES

.1 As soon as possible and in a predetermined order in order not to delay the execution of the work, submit the required documents and samples to the professionals for review. A delay in this respect shall not constitute a sufficient reason for obtaining an extension of the time limit for carrying out the work and no such request shall be accepted.

.2 Do not undertake work for which documentation and samples are required until the examination of all submitted exhibits is completely completed.

.3 The characteristics indicated on shop drawings, data sheets and samples of products and structures must be expressed in metric units (SI).

.4 Where elements are not produced or manufactured in metric units (SI) or characteristics are not given in metric units (SI), converted values may be accepted.

.5 Review documents and samples before handing them over to professionals. Through this due diligence, the Contractor confirms that the requirements applicable to the Work have been or will be determined and verified, and that each of the documents and samples submitted has been reviewed and found to comply with the requirements of the Work and the Contract Documents. Documents and samples that are not stamped, signed, dated and identified in connection with the particulier project will be returned without being examined and will be considered rejected.

.6 Notify the professional in writing, at the time of filing the documents and samples, of the deviations they present from the requirements of the Contractual Documents, and explain the reasons.

.1 It is the sole responsibility of the Contractor to demonstrate the equivalence between its proposal and the requirements of the contractual documents.

.7 Ensure the accuracy of the measurements taken on site in relation to adjacent work affected by the work.

.8 The fact that the documents and samples submitted are examined by the representative of the client does not in any way relieve the Contractor of its responsibility to transmit complete and accurate documents.

.9 The fact that the documents and samples submitted are examined by the professional does not in any way relieve the Contractor of its responsibility to transmit documents that comply with the requirements of the Contractual Documents.

.10 Keep on site a verified sample of each document submitted.

.1.4 WORKSHOP DRAWINGS AND DATA SHEETS

.1 The term "shop drawings" means the drawings, diagrams, illustrations, tables, performance or performance graphs, pamphlets and other documentation that the Contractor must provide to show in detail a part of the work concerned.

.2 Drawings must bear the seal and signature of a competent engineer recognized or holding a license to practice in Quebec, Canada.

.3 Shop drawings must indicate the materials to be used and the methods of construction, fastening or anchoring to be used, and must contain the assembly diagrams, details of the connections, the relevant explanatory notes and any other information necessary for the execution of the work. Where works or components are connected or connected to other works or components, indicate on the drawings that the requirements have been coordinated, regardless of the section under which the adjacent works or elements will be supplied and installed. Make references to the quote and preliminary design drawings.

.4 Allow 7 days for the professional to review each batch of documents submitted.

.5 Changes made to the atelier drawings by the professional are not supposed to vary the contractual price. If this is the case, however, notify the professional in writing before undertaking the work.

.6 Make changes to the shop drawings that are requested by the professional in accordance with the requirements of the Contractual Documents. When resubmitting drawings, notify the professional in writing of any changes that have been made in addition to those required.

.7 Submitted documents must be accompanied by a letter of transmittal in 2 copies containing the following information:

.1 the date;

.2 the designation and number of the project;

.3 the name and address of the contractor;

.4 the designation of each drawing, technical sheet and sample and the number submitted;

.5 The number of the quotation section and the Article to which it relates;

.6 any other relevant data.

.8 Documents submitted must bear or indicate the following:

.1 the date of preparation and the dates of revision;

.2 the designation and number of the project;

.3 the names and addresses of the following persons:

.1 the subcontractor;

.2 the supplier;

.3 the manufacturer;

.4 the Contractor's stamp, signed by the Contractor's authorized representative, certifying that the documents submitted are approved, that the measures taken on site have been verified and that the whole complies with the requirements of the Contractual Documents;

.5 the relevant details of the portions of work concerned:

.1 materials and manufacturing details;

.2 the layout or configuration, with dimensions, including those taken on site, as well as clearances and clearances;

.3 details regarding mounting or adjustment;

.4 characteristics such as power, flow or capacity;

.5 performance characteristics ;

.6 reference standards;

.7 the operational mass;

.8 wiring diagrams;

.9 single-threaded schemes and schematic schemes;

.10 links to adjacent works.

.9 Distribute copies of shop drawings and data sheets once the professional has completed the verification.

.10 Submit one (1) electronic copy in PDF format or two (2) hard copies for any documents larger than 11" x 17" of the workshop drawings prescribed in the technical sections of the quote and selon the reasonable requirements of the professional.

.11 If no shop drawing is required due to the use of a standard manufacturing product, submit one (1) electronic copies of the technical data sheets or manufacturer's documentation prescribed in the technical sections of the specification and required by the professional.

.12 Submit one (1) electronic copies of the test reports prescribed in the technical sections of the specification and required by the professional.

.1 The report signed by the official representative of the testing laboratory must attest that materials, products or systems identical to those proposed for the work have been tested in accordance with the prescribed requirements.

.13 Submit one (1) electronic copies of the certificates prescribed in the technical sections of the specification and required by the professional.

.1 The documents, printed on official correspondence paper of the manufacturer and signed by a representative of the latter, must certify that the products, materials, materials and systems supplied comply with the requirements of the quotation.

.2 Certificates must bear a date after the award of the contract and indicate the designation of the project.

.14 Delete information that does not apply to workers.

.15 In addition to current information, provide any additional details that apply to the work.

.16 When the shop drawings have been verified by the professional and no errors or omissions have been detected or only minor corrections have been made, the documents are returned to the contractor by the professional, and the shaping and installation work can then be undertaken. If the shop drawings are rejected, the annotated copy(s) shall be returned and the corrected shop drawings shall be resubmitted in accordance with the above indications before the shaping and installation work can be undertaken.

.17 The Contractor is responsible for issuing copies, in sufficient quantity and for distributing the shop drawings and technical data sheets once the Professional has completed the verification. In addition, the Contractor is responsible for keeping the copies necessary for the assembly of the end-of-project manuals.

.1.5 SAMPLES

.1 Submit two (2) product samples for review, as required by the technical sections of the specification. Label samples with their origin, intended destination, project name and number.

.2 Ship the samples prepaid to the professional's office.

.3 Notify the professional in writing, at the time of submission of product samples, of the deviations they present from the requirements of the Contractual Documents.

.4 Where the colour, pattern or texture is prescribed, submit the full range of samples necessary.

.5 Changes made to the samples by the professional are not intended to vary the contract price. If this is the case, however, notify the professional in writing before undertaking the work.

.6 Make the samples such changes as may be requested by the professional while respecting the requirements of the Contractual Documents.

.7 The samples examined and approved will become the reference standard against which the quality of the materials and the quality of the finished and installed works will be evaluated.

.1.6 CERTIFICATES AND MINUTES

.1 Submit the documents required by the health and safety commission to the relevant work immediately after the contract is awarded.

.2 Submit copies of insurance policies immediately after contract award.

PRODUCT

.2.1 NOT APPLICABLE

.1 Not applicable.

EXECUTION

.3.1 NOT APPLICABLE

.1 Not applicable.

END OF SECTION

1. GENERAL INFORMATION

1.1. PURPOSE

1.1.1. To ensure that the work and institutional activities are carried out smoothly with no undue delays, and that institutional security is maintained at all times.

1.2. DEFINITIONS

1.2.1. « CSC » Correctional Service Canada.

~~1.2.2.~~ « Warden » Warden of the institution.

~~1.2.3.~~ « Departmental representative » Any employee who is mandated to intervene, carry out supervision, ensure coordination and/or supervision of the work.

~~1.2.4.~~ « Work enclosure » Area where, as indicated on the project plans, the contractor is authorized to work. This can be isolated from the perimeter of the institution.

~~1.2.5.~~ « Perimeter » Area of the establishment surrounded by fences or walls preventing the movement of inmates.

1.2.6. « Prohibited items » :

a) Intoxicants, including alcohol, drugs and narcotics;

b) A weapon or a component thereof, ammunition, or anything that is designed to kill, injure or disable a person or that can be assembled or modified for such purposes, possessed without prior authorization;

c) An explosive or a bomb, or a component thereof;

d) An amount of money exceeding the regulatory limit;

NOTE: Consult the *Corrections and Conditional Release Regulations* (SOR/92-620): $50 limit in a minimum-security institution, $25 limit in a medium-security institution, maximum-security institution, or multi-level security institution.

e) Any other item possessed without prior authorization that could jeopardize the security of the penitentiary or the safety of persons;

f) Tobacco products and associated products (including, but not limited to, cigarettes, electronic cigarettes, cigars, tobacco, chewing tobacco, cigarette-making machines, matches and lighters) are authorized items if used outside.

1.2.7. **«** Commercial vehicle » Vehicle intended for the transportation of material, equipment or tools necessary for the work.

1.3. PRELIMINARY MEASURES

1.3.1. Prior to starting the work, the Contractor must communicate with the Departmental representative to:

a) Discuss the nature and the scope of the work associated with the project;

b) Establish mutually-acceptable security measures, in accordance with this directive and the specific needs of the institution.

1.3.2. The Contractor must:

a) Be sure to inform their employees of the security requirements;

b) Work with institutional staff to ensure that their employees comply with the security requirements.

1.4. CONTRACTOR'S EMPLOYEES

1.4.1. According to the Warden's preference, the Contractor must be aware that no employee will be admitted access to the institution without valid security clearance and have a recent photo identification card, such as a provincial driver's licence.

~~1.4.2.~~ An individual will be refused entry to institutional premises if there is reason to believe that they pose a security risk.

~~1.4.3.~~ Individuals will be immediately removed from institutional premises if:

~~c)~~ They appear to be under the influence of alcohol, drugs or narcotics;

~~d)~~ They behave in an abnormal or disorderly manner;

~~e)~~ They are in possession of prohibited items.

~~1.4.4.~~ Before accessing the institution any individual may be required to fill out a form or to answer questions concerning their immediate health state. When requested by the Warden, the individual's body temperature may be checked. Following these verifications, CSC might chose to refuse access to any individual.

1.5. SHIPMENTS

1.5.1. All shipments of material, equipment or tools for the work must be addressed to the Contractor to clearly distinguish them from shipments for the institution. The Contractor must ensure that his employees are on site to receive deliveries, as CSC staff will **not** accept deliveries of materials, equipment or tools intended for the Contractor.

1.6. COMMUNICATION DEVICES

1.6.1. Cellular or digital cordless phones (including, but not limited to, text messaging devices, pagers, BlackBerry, and telephones used as two-way radios), laptop computers and tablets are permitted. Even when permitted, they are not to be used by offenders.

1.6.2. The Warden approve the use of two-way radios.

1.7. TOOLS AND EQUIPMENT

1.7.1. The Contractor must keep a comprehensive list of the tools and equipment used during the work. This list must be kept up-to-date throughout the work and be submitted for inspection when necessary.

1.7.2. The Contractor's Employees must never leave tools unattended, particularly mechanical tools, files, saw blades, hacksaws, wire, rope, ladders and any item used for lifting (jacks, cylinders, etc.).

1.7.3. The Contractor's Employees must store tools and equipment in a secure, authorized location.

1.7.4. The Contractor's Employees must lock all toolboxes after use and keep the keys with them at all times. They must also lock scaffolding that is not being used; once erected, scaffolding must be secured to the satisfaction of the Departmental representative.

1.7.5. The Contractor's Employees must notify the Departmental representative immediately if any tools or equipment have been lost or are unaccounted for.

NOTE: Controlled items are managed differently from one institution to another and must be verified with the specific institution.

1.7.6. If propane or natural gas is used as a heat source for the work, the institution requires that a member of its personnel supervise the work site outside of regular working hours.

NOTE: This is a concern if the work site is located near inmates' living units. A fire could put human lives in danger. Check the institution's policy.

1.8. KEYS

1.8.1. The Departmental representative who escorts the Contractor's Employees must obtain the keys in order to open doors according to the Contractor's needs. The Contractor must inform his employees that only the Departmental representatives escorting them are authorized to use the keys.

1.9. PRESCRIPTION MEDICATION

1.9.1. If the Contractor employs individuals who must take prescription medication during the work day, these employees must obtain authorization from the Warden to bring one (1) day's dosage into the institution.

1.10. RESTRICTIONS ON TOBACCO USE

1.10.1. Neither Contractors nor the Contractor's Employees are permitted to smoke inside correctional institutions.

1.10.2. All individuals who violate this policy will be asked to stop smoking or to throw out all unauthorized tobacco products immediately. Individuals who continue to violate this policy will be asked to leave the institution.

1.10.3. Smoking will only be permitted outside.

1.11. PROHIBITED ITEMS

1.11.1. Firearms, ammunition, explosives, alcohol, drugs and narcotics are prohibited on institutional premises.

1.11.2. The Warden must be notified immediately if anyone is found in possession of prohibited items on the work site.

1.11.3. The Contractor must be vigilant in monitoring their employees as well as the employees of their Subcontractors. Individuals found in possession of prohibited items may be expelled. If the violation is serious, the company in question may be expelled from the institution for the duration of the work.

1.12. CONTACT WITH OFFENDERS

1.12.1. It is prohibited to enter into contact with offenders, speak to them, give them anything or accept anything from them without specific authorization. Anyone who violates this order will be expelled from the site and have their security clearance revoked.

1.12.2. It is prohibited to photograph offenders or CSC employees. It is also prohibited to photograph sectors of the institution when such photography is not required for the execution of the present contract.

2. PRODUCTS

2.1. NO OBJECT

3. EXECUTION

3.1. ACCESS TO THE INSTITUTION

3.1.1. Neither the Contractor’s Employees nor commercial vehicles may be admitted to the institution’s premises outside normal working hours without the express authorization of the Departmental representative.

3.1.2. The work week at the facility is Monday to Friday, generally 8:00 a.m. to 4 p.m. Hours of work vary from institution to institution. They should be checked with the institution concerned.

3.2. DAILY WORK PROGRAM

3.2.1. The contractor must send a daily work program to the departmental representative in the form of an email one day in advancte and before noon, so that he can coordinate the work with the operations and

security of the institution as well as with other work in progress and schedule the security escorts required for surveillance. The contractor must notify the departmental representative as soon as possible if there are any changes to the day's schedule, eg: interruption or need for extension of work, etc.

3.3. VEHICLE TRAFFIC

NOTE: Hours vary from one institution to the next. They should be verified with the institution concerned.

3.3.1. The Contractor must provide the Departmental representative forty-eight (48) hours' notice of the arrival of heavy equipment.

3.3.2. Entry will be refused to all vehicles carrying materials that the Warden believes pose a risk to institutional security.

3.4. CIRCULATION OF THE CONTRACTOR'S EMPLOYEES ON INSTITUTIONAL PREMISES

3.4.1. Subject to proper institutional security, the Warden will give the Contractor and the Contractor's Employees as much freedom of movement and autonomy as possible.

3.4.2. The previous paragraph notwithstanding, the Warden may:

a) Prohibit access to sections of the institution;

b) Require that the Contractor's Employees be accompanied by CSC security personnel or the departemental representative inside the building;

3.5. UNINSTALLED EQUIPMENTS AND ACCESSORIES

3.5.1. Return all uninstalled devices, devices, equipment, accessories or hardware to the Departmental Representative to ensure that they are disposed of or kept in a safe place for later reuse. If authorized by the departmental representative, dispose of it responsibly.

3.6. MONITORING AND INSPECTION

3.6.1. CSC security personnel will monitor and inspect the Contractor's Employees activities as well as related movement traffic to ensure that established security standards are being followed.

3.6.2. At the start and throughout the duration of the work, CSC staff will convey to the Contractor's Employees the necessity of monitoring and inspections.

3.7. WORK STOPPAGE

3.7.1. At any time, the Warden may ask the Contractor, the Contractor's Employees, or Subcontractors not to enter the work site or to leave immediately if a security incident is in progress in the institution. The Contractor's Employees must note the name of the CSC employee

issuing the request as well as the time and comply with the order as soon as possible.

3.7.2. Once notified, the Contractor must inform the Departmental representative of work stoppage without delay.

3.8. WORK COMPLETION

3.8.1. Unless otherwise indicated in the contract, once the project is completed or the facilities handed back to the CSC, the Contractor must remove all materials, tools and equipment from the institution, as well as perform a final clean-up of the site.

END OF SECTION 01 35 13

Partie 1 General

GENERAL NOTE: in this section the term “site” includes all the facilities located at the site where the work is taking place (construction site, buildings, access, infrastructure, parkings, bays, etc.).

1.1 REFERENCES

.1 Province of Québec

.1 Loi sur la santé et la sécurité du travail L.R.Q., c. S-2.1 (Act respecting occupational health and safety).

.2 Code de sécurité pour les travaux de construction L.R.Q., c. S-2.1, r.4 (Safety code for the construction industry).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Submit to Departmental representative, and the CNESST the site-specific prevention program, as outlined in the article “GENERAL REQUIREMENTS”, at least 10 days prior to the start of work.

.3 Departmental representative will review Contractor’s site-specific prevention program and provide comments to Contractor within 10 days after receipt of the document. Revise plan as appropriate and resubmit to Departmental representative within 5 days after receipt of comments from Departmental representative. Departmental representative reserves the right not to authorize the start of work on the construction site as long as the content of the prevention program is not satisfactory. The Contactor shall then update his prevention program and resubmit it to the Departmental representative if the scope of work changes or if the working methods of the Contractor differ from his initial plans or for any other applicable new condition.

.4 Departmental representative’s review of Contractor’s site-specific prevention program should not be construed as approval of the program and does not reduce the Contractor’s overall responsibility for construction Health and Safety during the work.

.5 Submit copies of Contractor’s authorized representative’s construction site health and safety inspection reports to Departmental representative, [determine frequency, but at least once a week].

.6 Submit to Departmental representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by Federal, Provincial and Territorial health and safety inspectors.

.7 Submit to Departmental representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.

The investigation report shall contain at least the following:

1. date, time and place of accident;
2. name of sub-contractor involved in the accident;
3. number of persons involved and condition of wounded;
4. witness identification;
5. detailed description of tasks performed at the time of the accident;
6. equipment being used to accomplish the tasks performed at the time of the accident;
7. corrective measures taken immediately after the accident;
8. causes of the accident;
9. preventive measures that have been put in place to prevent a similar accident.

.8 Submit to Departmental representative WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittals. Contractor must also keep one copy of these documents on the construction site.

.9 Medical Surveillance: where prescribed by legislation, regulation or prevention program, submit certification of medical surveillance for construction site personnel prior to commencement of Work, and submit additional certifications for any new construction site personnel to Departmental representative.

.10 Submit to Departmental representative an on-site Emergency Response Plan at the same time as the prevention program. The Emergency Response plan must contain the elements listed in the article “GENERAL REQUIREMENTS” of this section.

.11 Submit to Departmental representative copies of all training certificates required for the application of the prevention program, in particular (if applicable) for the following:

.1 first aid in the workplace and cardiopulmonary resuscitation;
.2 work likely to release asbestos dust (mandatory for all work where asbestos is present);
.3 work in confined spaces (mandatory for all work in confined spaces);
.4 lockout-tagout procedures (mandatory for all work requiring lockout);
.5 safely operating forklift trucks (mandatory for all forklift usage);
.6 safely operating elevating work platforms (mandatory for the use of all elevating platforms);
.7 any other requirement of Regulations or the safety program.

In addition, the certifications of the *Cours de santé et sécurité générale pour les chantiers de construction* (General Health and Safety Training for Construction Sites) shall be available on demand on the construction site.

.12 Engineer's plans and certificates of compliance: Contractor must submit to the Departmental representative and to the *Commission des normes, de l'équité, de la santé et de la sécurité du travail* (CNESST) a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry) or by any other legislation or regulation or by any other clause in the specifications or in the contract. The Contractor must also submit a certificate of conformity signed by an engineer once the facility for which these plans were prepared has been completed and before a person uses the facility. A copy of these documents must be available on site at all times.

1.3 FILING OF NOTICE OF CONSTRUCTION SITE OPENING

.1 Notice of construction site opening shall be submitted to the CNESST before work begins. A copy of such notice and acknowledgment of receipt from the CNESST shall be submitted to Departmental representative.

At the completion of all the work, a notice of construction site closing shall be submitted to the CNESST, with a copy to Departmental representative.

.2 The Contractor shall assume the role of being the Principal Contractor in the limits of the construction site and elsewhere where he must execute work within the framework of this project. The Contractor shall recognize the responsibility of being the Principal Contractor of the project and identify himself as such in the notice of the construction site opening he provides to the CNESST.

.3 The Contractor shall accept to divide and identify the construction site adequately in order to define time and space at all times throughout the course of the project.

1.4 HAZARD ASSESSMENT

.1 The contractor must perform construction site specific safety hazard assessment related to project.

1.5 MEETINGS

.1 Schedule and administer Health and Safety meeting with Departmental representative prior to commencement of Work.

.2 Contractor's representative with decision power must attend any meetings at which construction site safety and health issues are to be discussed.

.3 If it is anticipated that there will be 25 workers or more on the construction site at any given time, the Contractor shall set up a worksite committee and hold meetings as required by the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4) (Safety

code for the construction industry). A copy of the minutes of the meetings of the committee shall be provided to the Departmental representative no later than 5 days after the committee meeting.

1.6 REGULATORY REQUIREMENTS

.1 Comply with all legislation, regulations and standards applicable to the construction site and its related activities.

.2 Comply with specified standards and regulations to ensure safe operations on a site containing hazardous or toxic materials.

.3 Always use the most recent version of the standards specified in the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry), notwithstanding the date indicated in that *Code.*

1.7 COMPLIANCE REQUIREMENTS

.1 Comply with the *Loi sur la santé et la sécurité du travail* (L.R.Q., c. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4.) (Safety code for the construction industry) in addition to respecting all the requirements of this specification manual.

1.8 RESPONSIBILITIES

.1 The Contractor must acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the *Loi sur la santé et la sécurité du travail* (L.R.Q., ch. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry).

.2 The Contractor must be responsible for health and safety of persons on construction site, safety of property on construction site and for the protection of persons adjacent to construction site and the environment to the extent that they may be affected by conduct of the work.

.3 No matter the size or location of the construction site, the Contractor must clearly define the limits of the construction site by physical means and respect all specific regulation requirements applicable in this regard. The means chosen to define the limits of the construction site must be submitted to the Departmental representative.

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

1.9 WORK PERFORMED BY EXTERNAL CONTRACTORS

.1 On this construction site, it is anticipated that work will be performed by an external contractor that has not been hired by the Contractor:

.2 The Contractor must take the necessary steps to protect the health and safety of external contractors that have no contractual link with the Contractor but have been mandated by the Departmental representative to perform certain work. In return, these external contractors are obligated to submit to the authority of the Contractor (Principal Contractor). A subordination agreement must be signed by the Contractor and by each external contractor to this effect and submitted to the Departmental representative prior to the start of the work of each contractor (see the wording in the article HEALTH AND SAFETY SUBORDINATION AGREEMENT)

1.10 GENERAL REQUIREMENTS

.1 Before undertaking the work, prepare a site-specific prevention program based on the hazards identified according to the article “HAZARD ASSESSMENT” and the article “RISKS INHERENT TO THE WORKSITE” in this section. Apply this program in its totality from the start of the project until demobilization of all personnel from the construction site. The prevention program shall take into consideration the specific characteristics of the project and cover all the work to be executed on the construction site.

The safety program must include at least the following:

.1 company safety and health policy;

.2 description of the stages of the work;

.3 total costs, schedule and projected workforce curves;

.4 flow chart of safety and health responsibilities;

.5 physical and material layout of the construction site;

.6 risk assessment for each stage of the work, including preventive measures and the procedures for applying them;

.7 identification of the preventive measures relative to the specific risks inherent to the worksite indicated in the article “RISKS INHERENT TO THE WORKSITE”;

.8 identification of preventive measures for health and safety of employees and / or public works site as indicated in the article “SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC”;

.9 training requirements;

.10 procedures in case of accident/injury;

.11 written commitment from all parties to comply with the safety program;

.12 construction site inspection cheklist based on the preventive measures;

.13 emergency response plan which shall contain at least the following:

.1 construction site evacuation procedures;

.2 identification of resources (police, firefighters, ambulance services, etc.);

.3 identification of persons in charge of the construction site;

.4 identification of the first-aid attendants;

.5 communication organizational chart (including the person responsible for the site and the Departmental representative);

.6 training required for those responsible for applying the plan;

.7 any other information needed, in the light of the construction site's characteristics.

If available the Departmental representative will provide the evacuation procedures to the Contractor who shall then coordinate the construction site procedure with that of the site and submit it to the Departmental representative.

.2 Departmental representative may respond in writing, where deficiencies or concerns are noted in the prevention program and may request resubmission with correction of deficiencies or concerns.

.3 In addition to the prevention program, during the course of the work the Contractor shall elaborate and submit to the Departmental representative specific written procedures for any work having a high risk factor of accident (for example: demolition procedures, specific installation procedures, hoisting plan, procedures for entering a confined space, procedures for interrupting electric power, etc.) or at the request of the Departmental representative.

.4 The Contractor shall plan and organize work so as to eliminate the danger at source or ensure collective protection, thereby minimizing the use of personal protective equipment.

.5 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.

.6 All mechanical equipment (for example, but not limited to: hoisting devices for persons or materials, excavators, concrete pumps, concrete saws) shall be inspected before delivery to the construction site. Before using any mechanical equipment, the Contractor shall obtain a certificate of compliance signed by a qualified mechanic dated less than a week prior to the arrival of each piece of equipment on the construction site; the certificate shall remain on the construction site and transmitted to the Departmental representative on demand.

.7 Ensure all inspections (daily, periodic, annual, etc.) for the hoisting devices for persons or materials required by the current standards are carried out and be able to provide a copy of the inspection certificates to the Departmental representative on demand.

.8 The Departmental representative can at all times, if he suspects a malfunction or the risk of an accident, order the immediate stop of any piece of equipment and require an inspection by a specialist of his choice.

.9 The Departmental representative must be consulted for the location of storing gas cylinders and tanks on the construction site.

1.11 RISKS INHERENT TO THE WORKSITE

.1 In addition to the risks related to the tasks to be carried out, personnel responsible for the execution of the work on the construction site will be exposed to the following risks, inherent to the area where the work will be executed..

At the worksite there is in particular the presence of the following:

.1 materials containing asbestos;
.2 materials containing lead;
.3 moulds;
.4 other dangerous materials (specify);
.5 confined spaces;
.6 overhead power lines;
.7 underground services (electric, gas, vapour, water system, etc.);
.8 laboratories;
.9 trees and landscaping to preserve and protect;
.10 potentially unstable ground;
.11 barbed wire fences;
.12 body of water close by;
.13 [other to specify];
.14 [other to specify];
.15 [other to specify].

The Contractor shall process to a risk assessment of the site to validate this information and see if other risks are present on the site. He must include in its prevention program all risks that have been identified.

1.12 SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC

.1 The worksite is occupied by employees and/or the public during the following times indicated in section 01 11 00. The Contractor shall consider the following specific requirements for the protection of employees and / or the public:

These requirements must be included in the Contractor's site-specific safety plan as well as any other measures provided by the Contractor to protect the health and safety of employees and / or the public on the site.

1.13 UNFORESEEN HAZARDS

.1 Whenever a source of danger not defined in the specifications or identified in the preliminary construction site inspection arises as a result of or in the course of the work, the Contractor must immediately suspend work, notify the person responsible for health and safety on the construction site, take appropriate temporary measures to protect the workers and the public and notify Departmental representative, both verbally and in writing. Then the Contractor must do the necessary modifications to the prevention program or apply the security measures required in order to resume work.

1.14 PERSON IN CHARGE OF HEALTH AND SAFETY

.1 If the construction site meets the requirements of article 2.5.3 of the *Code the sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry), the Contractor needs to hire a competent person authorized as a safety officer and appoint this person full time from the beginning of the work. This person's tasks shall solely be dedicated to the management of health and safety on the construction site. This safety officer must have the following qualifications:

.1 have a safety officer certificate issued by the CNESST;

.2 have site-related working experience of at least 2 years specific to the activities associated with the present project;

.3 have working knowledge of occupational health and safety regulations in the workplace;

.4 be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter the construction site to perform work;

.5 be responsible for implementing, enforcing in detail and monitoring site-specific Contractor's Health and prevention program;

.6 be on construction site at all times during execution of work;

.7 inspect the work and ensure compliance with all regulatory requirements and those indicated in the contract documents or the site-specific prevention program.

.8 Keep a daily log of actions taken and submitting a copy to Departmental representative each week.

The safety officer's certificate shall be submitted to the Departmental representative before the start of the work.

.2 When the hiring of a safety officer is not required or if this person is hired by the Departmental representative, the Contractor shall designate a competent person to supervise and take responsibility for health and safety, no matter the size of the construction site or how many workers are present at the workplace. This person shall be on construction site at all times and be able to take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the construction site and likely to be affected by any of the work. The Contractor shall submit the name of this person to the Departmental representative before the start of work.

1.15 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on construction site in accordance with Acts and Regulations of the Province, and in consultation with Departmental representative.

.2 At a minimum, the following information and documents must be posted in a location readily accessible to all workers:

.1 notice of construction site opening;
.2 identification of principal Contractor;
.3 company OSH policy;
.4 site-specific prevention program;
.5 emergency plan;
.6 minutes of worksite committee meetings;
.7 names of worksite committee representatives;
.8 names of the first-aid attendants;
.9 action reports and correction notices issued by the CNESST.

1.16 INSPECTION OF THE CONSTRUCTION SITE AND CORRECTION OF NON-COMPLIANCES

.1 Inspect the construction site and complete the construction site inspection checklist and submit it to the Departmental representative in accordance with the article “ACTION AND INFORMATIONAL SUBMITTALS” in this section.

.2 Immediately take all necessary measures to correct any situations deemed non-compliant during the inspections mentioned in the previous paragraph or noticed by the authorities having jurisdiction or the Departmental representative or his agent.

.3 Submit to Departmental representative written confirmation of all measures taken to correct the situation in case of non-compliance in matters pertaining to health and safety.

.4 The Contractor shall give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order cessation 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

construction site workers and environmental protection take precedence over cost and scheduling considerations.

.5 The Departmental representative or his agent may order cessation of work if the Contractor does not make the corrections needed to conditions deemed non-compliant in matters pertaining to health and safety. Without limiting the scope of the preceding articles, the Departmental representative may order cessation of work if, in his view, there is any hazard or threat to the safety or health of construction site personnel or the public or to the environment.

1.17 PREVENTION OF VIOLENCE

.1 Health and safety management of Public Works and Government Services Canada construction sites includeS the implementation of measures designed to protect the psychological health of all persons who access the construction site where the work is taking place. Consequently, in addition to physical violence, verbal abuse, intimidation and harassment are not tolerated on the construction site. Any person who demonstrates such actions or behaviors will receive a warning and/or could be definitely expelled from the construction site by the Departmental representative.

1.18 POWDER ACTUATED DEVICE

.1 Use powder actuated devices only after receipt of written permission from Departmental representative.

.2 Any person using an explosive actuated tool shall hold a training certificate and meet all requirements of Section 7 of the *Code the sécurité pour les travaux de construction* (S- 2.1, r. 4). (Safety code for the construction industry)

.3 Any other explosive-actuated device shall be used in accordance with the manufacturer's directions and applicable standards and regulations.

1.19 USE OF PUBLIC ROADS

.1 Where it is necessary to encroach on a public road for operational reasons or to ensure the security of the workers, the occupants or the public (for example: the use of scaffolding, cranes, excavation work, etc.), the Contractor shall obtain at his own expense any authorizations and permits required by the competent authority.

.2 The Contractor shall install at his own expense any signage, barricades or other devices needed to ensure the safety and security of the public and the Contractor's own facilities.

1.20 LOCKOUT-TAGOUT

.1 For all work on electrically or otherwise energized equipment, the Contractor shall draw up and implement a general lockout-tagout procedure and submit it to the Departmental representative.

.2 Supervisors and all workers concerned by work requiring lockout-tagout must have received training on lockout-tagout procedures by a recognized organization; Contractor shall submit training certificates to the Departmental representative.

.3 Before starting the lockout-tagout procedure of a piece of equipment on an occupied site, Contractor must coordinate his work with the representative of the site if the interruption of the power sources can have an impact on the operations of the site or on its occupants.

.4 Contractor must designate a qualified person as responsible for the lockout-tagout and must make sure that that person prepares a lockout-tagout data sheet for each piece of equipment involved. The lockout-tagout data sheet must be submitted to the Departmental representative at least 48 hours before the beginning of the work. The Departmental representative will review the data sheet with the representative of the site if the work takes place in an existing building. The data sheets for lockout-tagout must contain at least the following information:

.1 description of work to carry out;

.2 identification, description and location of the circuit and/or ~~piece of~~ equipment to lockout-tagout;

.3 identification of energy sources that feeds the ~~piece of~~ equipment;

.4 identification of each cutout point;

.5 sequence of lockout-tagout and the release of residual energy as well as the sequence of unlocking;

.6 list of material needed for the lockout-tagout;

.7 method of verification of zero energy implementation;

.8 name and signature of the person who prepared the data sheet.

When required by the Departmental representative, Contractor must record all this information on the site's representative form.

.5 At the time of lockout-tagout, the person responsible must date the data sheet and ensure that each worker involved in the work on the circuit/~~piece of~~ equipment to lockout-tagout puts his name on the data sheet and signs it.

1.21 ELECTRICAL WORK

.1 Contractor shall ensure that all electrical work is executed by qualified employees in accordance with the provincial regulation respecting vocational training and qualification.

.2 Contractor shall respect all requirements of standard CSA Z462 *Workplace Electrical Safety Standard*.

.3 No repairs or alterations shall be carried out on any live equipment except where complete disconnection of the equipment is not feasible.

.4 Contractor shall respect all requirements prescribed in paragraph “LOCKOUT-TAGOUT” in this section.

.5 Contractor shall advise in writing the Departmental representative of all the work that cannot be done with de-energized equipment and obtain his authorization. Contractor shall demonstrate to the Departmental representative that it is impossible to do the work with de-energized equipment and provide all the information necessary to request and obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimeter, protective equipment, etc.) before the beginning of the work, excluding for the exceptions indicated in standard CSA Z462 Workplace electrical safety.

.6 The energized electrical work permit on must contain at least the following elements:

- description of the circuit and equipment and its location;
- justification for having to do the work in an energized condition;
- description of safe work practices to apply;
- results of the shock hazard analysis;
- limit of the protective perimeter against electric shocks;
- results of the arc flash hazard analysis;
- description of the arc flash protection boundary;
- description of the personal protective equipment required;
- description of the means to limit access to unqualified persons;
- proof that an information session has been carried out;
- approval signature of the energized electrical work (by a person in authority or by the owner).

.7 If for the operational requirements of the occupants of the site the representative of the site requires that the Contractor performs work in an energized condition, the Contractor shall obtain all the information required to request and obtain obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective

perimeter, protective equipment, etc.) and have it signed by the representative of the site assigned by the Departmental representative before the beginning of the work.

1.22 ASBESTOS EXPOSURE

It is not anticipated that the work covered by the present specifications involves the manipulation of materials containing asbestos; however, if the Contractor or the Departmental representative or his agent discover materials which are susceptible of containing asbestos, the Contractor must immediately stop the work and advise the Departmental representative. If more investigation demonstrates that the materials do contain asbestos, the Contractor shall comply with the following requirements.

Prior to starting any work likely to emit asbestos dust, the Contractor must:

1. Provide a written procedure for the work, identifying the risk level of the work (low, moderate, high), as defined in section 3.23 of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry). This procedure must take into account all the requirements of that section 3.23.

2. Submit certificates that demonstrate that all workers involved in the work have received training on asbestos hazards and on the procedure required in the preceding paragraph.

3. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.23 FUNGAL CONTAMINATION

It is not anticipated that the work covered by the present specifications involves the manipulation of materials contaminated by mould; however, if the Contractor or the Departmental representative or his agent discover materials which are susceptible of being contaminated by mould, the Contractor must immediately stop the work and advise the Departmental representative. If more investigation demonstrates that the materials do contain mould, the Contractor shall comply with the following requirements.

Prior to starting any work where workers are likely to be in contact with materials contaminated by mould, the Contractor must:

1. Provide a written procedure for the work which respects all the requirements of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document "*Mould Guidelines for the Canadian Construction Industry*" published by the Canadian Construction Association (http://www.cca-acc.com/documents/electronic/cca82/cca82.pdf).

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.24 EXPOSURE TO SILICA

For any interior or exterior work generating silica, the Contractor must respect the following requirements, in addition to those in the *Code de sécurité pour les travaux de construction* S-2.1, r.4 (Safety code for the construction industry).

1. Work in wet environment or use tools with the inflow of water in order to reduce dustiness, if not, collect dust at the source and retain it with a high-efficiency filters not to propagate dust in the environment.

2. Clean surfaces and tools with water, never with compressed air.

3. Sand and pickle surfaces by using an abrasive containing less than 1% of silica (also called amorphous silica).

4. Install shields or other containment device to prevent silica dust from migrating toward other workers or the public.

5. Wear individual respiratory and ocular protection equipment during all the operations that could generate silica dust in accordance with the requirements of the *Code de sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the construction industry).

6. Wear coveralls to prevent contamination outside the construction site.

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

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

1.25 SANDBLASTING

Prior to starting any sandblasting work, the Contractor must:

1. Provide a written procedure of the work that meets the requirements of section *3.20.*of the *Code de sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the Construction Industry).

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

3. All sanding and sandblasting work shall be done by using an abrasive containing less than 1% of silica.

1.26 EXPOSURE TO ANIMAL'S FECAL DROPPINGS

Prior to all work where workers are likely to come in contact with materials contaminated by animal's fecal droppings, the Contractor must:

1. Provide a written procedure for the work which respects all the requirements of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document "*Des fientes de pigeons dans votre lieu de travail: méfiez-vous"* (Pigeon droppings in your workplace: Beware" published by the CNESST (http://www.csst.qc.ca/publications/100/Documents/DC100_1331_1web2.pdf)

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.27 RESPIRATORORY PROTECTION

1. Contractor must ensure that all workers who must wear a respirator as part of their duties have received training for that purpose as well as fit testing of their respirator, in accordance with CSA Standard Z94.4 *Selection, use and care of respirators.* Submit the certificates of the fit testingS to the Departmental representative on demand.

1.28 FALL PROTECTION

1. Plan and organize work so as to eliminate the risk of fall at the 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.

2. Every person using an elevating platform (scissors, telescopic mast, articulated mast, rotative mast, etc.) must have a training regarding this equipment.

3. The use of a safety harness is mandatory for all elevating platforms with telescopic, articulate or rotative mast.

4. Define the limits of the danger zone around each elevating platform.

5. All openings in a floor or roof must be surrounded by a guardrail or provided with a cover fixed to the floor able to withstand the loads to which it could be exposed, regardless of the size of the opening and the height of the fall it represents.

6. Everyone who works within two metres from a fall hazard of three metres or more must use a safety harness in accordance with the requirements of the regulation, unless there is a guardrail or another device offering an equivalent safety.

7. Despite the requirements of the regulation, the Departmental representative may require the installation of a guardrail or the use of a safety harness for specific situations presenting a risk of fall less than three metres.

1.29 SCAFFOLDINGS

In addition to the requirements of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), the Contractor who uses scaffolding**S** must respect the following requirements:

Foundation

1. Scaffolding**S** shall be installed on a solid foundation so that it does not slip or rock.
2. Contractors wishing to install scaffolding**S** on a roof, overhang, canopy or awning shall submit their calculations and loads, as well as plans signed and sealed by an engineer to the Departmental representative and obtain his authorization before beginning installation.

Assembly, bracing and mooring

1. All scaffolding**S** shall be assembled, braced and moored in accordance with the manufacturer's instructions and the provisions of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry).
2. Where a situation requires the removal of part of the scaffolding**S** (e.g., crosspieces), the Contractor shall submit to the Departmental representative 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**S** where the span between two supports is greater than three metres, the Contractor shall provide the Departmental representative an assembly plan signed and sealed by an engineer.

Protection against falls during assembly

1. Workers exposed to the risk of falling more than three metres shall be protected against falls at all times during assembly.

Platforms

1. Scaffolding platforms shall be designed and installed in accordance with the provisions of the *Code de sécurité pour les travaux de construction* (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 *Code de sécurité pour les travaux de construction* (Safety code for the construction industry)
3. Scaffolding**S** of four sections (or six metres) high or more shall have a full platform covering the entire surface between the putlogs every three metres high or fraction thereof, and the components of that platform shall not be moved at any time to create an intermediate landing.

Guardrails

1. A guardrail shall be installed on every landing.
2. Cross braces shall not be considered as guardrails.
3. If the platforms are not covering the entire surface between the putlogs, the guardrail must be installed just above the edge of the platform so that there is no empty horizontal space between the platform and the guardrail.
4. Where scaffolding**S** has four sections (or six metres) high or more and full platforms are required, the guardrails shall be installed on each landing at the start of work and shall remain in place until the work is completed.

Access

1. The Contractor shall ensure that access to the scaffolding**S** does not compromise worker safety.
2. Where the platforms of the scaffolding**S** 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 *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), stairs shall be installed on all scaffolding**S** that have six or more rows of uprights or is six sections (or nine metres) high or higher.

Protection of the public and occupants

1. When scaffolding**S** are installed in a zone accessible to the public, the Contractor shall take the necessary measures to prevent the public from having access to them and, if applicable, to the work or storage area located in the vicinity of these scaffolding.
2. Contractor must install covered walkways, nets or other similar devices to protect workers, the public and the occupants against falling objects. The means of protection must be approved by the Departmental representative.

Engineering plans

1. In addition to those required by the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), the Departmental representative reserves the right to require engineering plans for other types or configurations of scaffolding**S**.
2. A plan signed and sealed by an engineer is required for all scaffolding**S** that will be covered with a canvas, a tarpaulin or any other material that has wind resistance.
3. A certificate of conformity signed by an engineer is required in all cases where an engineering plan is required ~~for the installation~~ and this, before anybody uses the facility. A copy of these documents must be available on the construction site at all times.

1.30 LIFTING LOADS WITH CRANE OR BOOM TRUCK

1. Unless specified otherwise, the Contractor must prepare a hoisting plan and submit it to the Departmental representative for all lifting operations done with a crane or a boom truck at least 5 days before these lifting operations begin. The hoisting plan must contain at a minimum the information listed at the end of this article.

2. The hoisting plan must be signed and sealed by an engineer for the following lifting operations:
   a. lifting of concrete panels;
   b. lifting mechanical/electrical equipment on a roof or on the floor of a building;
   c. lifting of loads encroaching on the public road;
   d. lifting large dimension**S** or very heavy loads;
   e. all other lifting operation, in accordance with the requirements of the Departmental representative.

3. In addition to the above requirements, the Contractor must plan the hoisting operations in a way as to avoid that the loads pass over the occupied zones on the site. When there is no alternative, the hoisting plan must absolutely be signed and sealed by an engineer and must guarantee the security of the occupants in that zone; the plan must also be approved by the Departmental representative. The Departmental representative can, if he deems necessary, require that the work be done at night or on weekends.

4. Upon the beginning of the work on the construction site, the Contractor must submit the list of the hoisting plans anticipated for the whole project to the Departmental representative. That list shall be updated as needed if changes occur during the work.

5. In addition to the mechanical service inspection certificate, the annual inspection certificate and the crane logbook must be aboard all cranes and boom truck cabs.

6. The entire lifting area shall be marked off to prevent the entry of non-authorized persons.

7. The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed and scrapped.

8. Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.

MINIMUM CONTENT OF HOISTING PLAN

- Sketch indicating at a minimum, the location of the crane, the surrounding facilities, the zone covered by the hoisting operations, the pedestrian's pathways and vehicular routes, the security perimeter, etc.
- Weight of loads
- Dimension**S** of loads
- List of hoisting devices and weight of each
- Total weight lifted
- Maximum height of obstacles to clear
- Height of loads lifting relative to the surface of the roof (in the case of loads to be placed on roofs)
- Use of guide cables
- Type of crane used
- Crane capacity
- Boom length
- Boom angle
- Crane's radius of action
- Deployment of stabilizers
- Percentage usage of the crane's capacity
- Verification confirmation of hoisting equipment
- Identification of the crane operator and the person responsible for the hoisting operations with date and signatures

1.31 HOT WORK

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

1. Before the beginning of each shift of work and for each sector, the Contractor must obtain a "Hot Work Permit" emitted by the person responsible for the site.

2. 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.

3. The Contractor must appoint an individual to do continuous monitoring of the fire risks for a period of one (1) hour after the end of the shift of hot work. This individual shall sign the section for this purpose on the permit and give it to the person in charge of the construction site after the one-hour period.

4. When the hot work is done in areas where there is combustible materials or where the walls, ceilings or floors are made of or covered with combustible materials, a final inspection of the work area must be scheduled four (4) hours after the work has finished. Unless specified otherwise by the Departmental representative, the Contractor must assign a person to carry out this monitoring.

Welding and cutting

In addition to the requirements prescribed in the preceding paragraphs, the Contractor must respect the following requirements:

1. Welding and cutting work must be carried out in accordance with the requirements of the *Code de Sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the construction industry) and CSA standard W117.2, Safety in Cutting, Welding and Allied Processes.
2. Air extraction system with filters must be used for all welding and cutting work performed inside.
3. Stop all activities producing flammable or combustible gas, vapours or dust in the vicinity of the welding or cutting work.
4. Store all compressed gas cylinder on a fireproof fabric and make sure that the room is well ventilated.
5. 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 inthe article 3.13.4 of the *Code de sécurité pour les travaux de construction, S-2, r. 6* (Safety code for the construction industry)

6. Store the cylinders far from all heat sources.
7. Not to store the cylinders close to the staircases, exits, corridors and elevators.
8. Do not put acetylene in contact with metals such as silver, mercury, copper and alloys of brass having more than 65% copper, to avoid the risk of an explosive reaction.
9. Check that welding equipment with electric arc has the necessary tension and are grounded.
10. Ensure that the conducting wires of the electric welding equipment are not damaged.
11. Place the welding equipment on a flat ground away from the bad weather.
12. Install fireproof canvas when the welding work is done in a superposition and where there is the risk of falling sparks.
13. Move away or protect the combustible materials which are closer than 15 metres from the welding work.
14. Prohibition to weld or cut any closed container.
15. Do not perform any cutting, welding or work with a naked flame on a container, a tank, a pipe or other container containing a flammable or explosive substance unless:
    a. they have been cleaned and air samples indicating that work can be done without danger has been taken; and
    b. provisions to ensure the safety of the workers have been made.

1.32 STEEL STRUCTURE ERECTION OR DISMANTLING WORK

.1 In addition to respecting section 3.24 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

.2 Contractor must submit the following documents to the Departmental representative before the beginning of steel structure erection work:

- .1 erecting procedures in accordance with article 3.24.10 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry);
- .2 rescue procedures for the release of a worker suspended in a safety harness within a maximum of 15 minutes; procedures must be adapted to the construction site and in accordance with article 3.24.4 of that same code; the procedure must be accompanied by a written confirmation that it has been tested;
- .3 statement from an engineer that the anchor rods have been installed in accordance with the anchoring plan as required by the article 3.24.12 of that same code;
- .4 hoisting procedures in cases where the lifting is done in one of the ways described in the article 3.24.15 of that same code;
- .5 name of the individual identified as rescuer and his rescue training certificate;
- .6 name of the individual identified as first-aid attendant and his first-aid training certificate.

.3 The Contractor must make sure that the following documents are available for consultation on construction site at all times:

- .1 Steel structure manufacturer’s erection plan in accordance with the requirements of article 3.24.9 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry);
- .2 Column anchor rodS’s anchoring plan in accordance with the requirements of article 3.24.11 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry).

1.33 INTERIOR USE OF INTERNAL COMBUSTION ENGINES

1. In addition to respecting article 3.10.17 of the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

2. The use of a gas-powered equipment inside a building is prohibited even if the building is provided with openings.
3. The use of other equipment powered by an internal combustion engine inside a building must be submitted to the approval of the Departmental representative.
4. For the use of any piece of equipment powered by an internal combustion engine inside a building, even if the building is provided with openings, the Contractor must install a ventilation system able to maintain the concentrations of toxic gases below the regulatory values. The stale air shall be exhausted outside the building.
    a. Before using equipment powered by an internal combustion engine, the Contractor must plan and write the following:
    b. number of fans to install;
    c. power of the fans;
    d. location of the fans;
    e. dimensions of the openings that will be open during the work.
5. During the operation of equipment with internal combustion engine, the Contractor must measure the concentrations of carbon monoxide and nitrogen oxides in the work area and at the breathing area of the workers; the concentration levels measured must be recorded in a register every 30 minutes that must be available for consultation.
6. If work is in an occupied building, the Contractor must also measure the concentrations of carbon monoxide and nitrogen oxides in the rooms next to the work area and the concentration levels measured must be recorded in a register every 30 minutes.
7. If the carbon monoxide or nitrogen oxides detector alarm goes off during the work, the Contractor must stop the work and take the corrective measures required before resuming the work.
8. A portable fire extinguisher must be available at all times in the work area during the use of equipment with internal combustion engines.
9. The equipment must be maintained at a safe distance from all combustible material.
10. The storage of fuel for any equipment with internal combustion engine is prohibited inside a building.

1.34 TEMPORARY HEATING

1. In addition to respecting section 3.11 of the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

2. A portable fire extinguisher must be available at all times near the heating units, no matter what type of heating is used.
3. The heating units must always be used in accordance with the manufacturer's specifications.
4. If applicable, the canvas or tarpaulins used next to the heating units must be solidly fixed so as not to be projected on the heaters, on the pipes connected to the heaters or on any other heat source.
5. The gas cylinders must be installed in a way that they are protected from vehicule and other equipment traffic.
6. For the use of heating units other than electric, the Contractor must install a carbon monoxide detector in the work area, next to the heating units and/or the workers, throughout the course of the heating period. The Contractor must immediately apply the corrective measures required to the heating units if the detector's alarm goes off.
7. The Contractor must ensure a minimum surveillance of the heating units outside the hours of work (nights and weekends). He must submit a surveillance plan to the Departmental representative before the use of the heating units.

1.35 WORK NEAR OVERHEAD POWER LINES

.1 When there is an overhead power line in the work zone and that the Contractor chooses to apply paragraph b) of article 5.2.2 of the *Code de sécurité pour les travaux de construction* (2.1, r.4) (Safety code for the Construction Industry), a copy of the agreement with the electrical power company and a copy of the work process, required in the article 5.2.2 b), must be submitted to the Departmental representative before the beginning of the work in relation to these documents.

1.36 DIVING OPERATIONS

In accepting this contract, the Contractor agrees to satisfy the following requirements:

1. Compliance with all the requirements of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety), more precisely section XXVI. I, entitled *Travail effectué en plongée* (Underwater Work). Compliance, furthermore, with the latest editions of standards CAN/CSA *Z275.2 – Occupational Safety code for Diving Operations*, CAN/CSA Z275.1 – *Hyperbaric Chambers* and CAN/CSA Z275.4 – *Competency Standard for Diving Operations*. In the event of conflict between these requirements, the most stringent requirement shall apply.

2. In addition to the above, in cases where construction work is involved, compliance with the *Code de sécurité pour les travaux de construction (S-2.1, r.4)* (Safety code for the Construction Industry).

3. Before starting the work, submit to the Departmental representative the following documents, as per the *Règlement sur la santé et la sécurité au travail* (S-2.1, r.13) *(*Regulation respecting occupational health and safety)*:*
    a. the professional diving training certificate of each member of the dive team OR a document recognizing the skills of those persons in accordance with the *Competency Standard for Diving Operations*, CAN/CSA Z275.4-02, as per section 312.8 of the Regulation;
    b. the workplace first-aid training certificate of each member of the dive team;
    c. the medical certificate of each member of the dive team;
    d. for each dive included in this contract, a dive plan containing the following information, in addition to that required under the *Règlement sur la santé et la sécurité au travail* (Regulation respecting occupational health and safety):
        i. the thermal protection to be used;
        ii. the repetitive dive factor;
        iii. the no-decompression limit;
        iv. the circumstances in which the dive must be terminated;
        v. the procedures to be followed to ensure that machinery, equipment or devices that could create a hazard have been locked out;
        vi. the decompression table to be used, as required;
    e. notification confirming that a system for communicating with the *Service d'assistance médicale pour les urgences en plongée* (Medical assistance service for diving emergency) is available at the diving station at all times.

4. The Contractor shall take into account the following specific characteristics of the worksite, and adapt its dive plan accordingly:

5. Where the dive takes place at one of the following locations, provide the Departmental representative confirmation that the authorities concerned have been notified:
    a. upstream or downstream from a hydraulic structure or submerged water line;
    b. in marine waterways;
    c. in port facilities.

6. If the dive station is more than 2 metres above the water, provide the Departmental representative:
    a. a drawing of the equipment used to transport the worker through the air-water interface, if a device other than a stage is used for that purpose;
    b. a drawing of the device used to hoist the stage or other device, unless that device is a crane or boom truck.

7. If the dive is carried out from a vessel, provide the Departmental representative the following documents:

    a. proof of qualification of the vessel operator;
    b. the vessel's certificate of compliance from Transport Canada.

8. Before starting the work, carry out an underwater rescue simulation at the site, as required under section 312.31 of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety).

9. On a daily basis, complete and provide to the Departmental representative a checklist confirming the presence and condition of the equipment required at the dive site as per the dive plan.

10. Ensure that all other documents required under section XXVI of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety) are available at the construction site at all times (diving logbook, diver's logbook, etc.).

1.37 HEALTH AND SAFETY SUBORDINATION AGREEMENT

Project: _____ Address: _____

EXTERNAL CONTRACTOR

I hereby agree to submit to the authority of (name of the Principal Contractor's business) _____, which is the Principal Contractor for the project indicated above during the entire duration of our work on the construction site. Accordingly, I confirm that I have reviewed the Principal Contractor's prevention program, and I agree to:

- inform my employees of the content of the Principal Contractor's prevention program and ensure that its content are complied with at all times;
- apply the prevention program that is specific to the activities that we carry out under this project;
- inform the Principal Contractor of my actions or dealings on the construction site and obtain the Principal Contractor's agreement before the start of work; and
- follow the health and safety directives provided by the representative of the Principal Contractor on the construction site and, depending on requirements, attend training sessions and health and safety meetings organized by the representative of the Principal Contractor.

Name of representative: _____

Name of business: _____

Description of work to be done on the construction site: _____

Approximate dates of work (start-end): _____

Signature: _____ Date: _____

PRINCIPAL CONTRACTOR

I hereby agree to allow the business (name of external contractor) _____ to perform the work under this project indicated above and, as Principal Contractor, to take the necessary steps to protect the health and safety of workers on the construction site. Should the Contractor repeatedly refuse or fail to comply with my directives, I agree to inform PWGSC's Departmental representative of this and to provide documentary evidence of my actions or dealings with the Contractor.

Name of representative: _____

Name of the Principal Contractor's business: _____

Signature: _____ Date: _____

Submit a completed and signed copy to PWGSC's Departmental representative

GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Inspections and testing, administrative and operational requirements;

.2 Tests and dosage formulas;

.3 Work mock-up;

.4 Factory testing;

.5 Adjustment and balancing of devices and systems.

.1.2 RELATED REQUIREMENTS

.1 Section 01 33 00 - Documents and samples to be submitted;

.2 Section 01 78 00 - Documents to be submitted upon completion

.1.3 INSPECTION

.1 Consultants must have access to the work. If part of the work or works is carried out outside the site, access to that place must also be ensured for the duration of the work.

.2 In the event that works are to be subjected to special inspections, approvals or tests ordered by the professional or required under local regulations for the site, make a request within a reasonable time.

.3 If the Contractor has covered or has allowed the work to be covered before it has been inspected, or subject to the approval or special testing, he must uncover the work in question, see to the execution of the inspections or tests required to the satisfaction of the competent authorities, and then return the work to its original condition.

.4 The owner representative and consultant may order the inspection of any part of the work whose conformity with the Contractual Documents is in doubt. If, after examination, the work in question is found to be non-compliant with the requirements of the Contractual Documents, the Contractor must take the necessary measures to bring the work into conformity with the specified requirements, and assume the costs of inspection and repair.

.1.4 REJECTED WORKS OR WORKS

.1 Remove defective elements deemed not to conform to the Contractual Documents and rejected, either because they have not been executed according to the rules of the art, or because they have been made

with defective materials or products, even if they have already been integrated into the work. Replace or redo the elements in question according to the requirements of the Contractual Documents.

.2 If necessary, repair without delay the works of other contractors that have been damaged during the above-mentioned repair or replacement work.

.3 If, in the opinion of the consultant, it is not appropriate to repair the defective works or works found not to conform to the Contractual Documents, the Client shall deduct from the contract the difference in value between the work carried out and the value of the work done following the Contractual Documents, the amount of this difference being determined by the consultant.

PRODUCT

.2.1 NOT APPLICABLE

EXECUTION

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Water supply;

.2 Power supply;

.3 Ventilation and heating;

.4 Telecommunications;

.5 Fire protection.

.1.2 RELATED REQUIREMENTS

.1 Section 01 52 00 - Site Installation;

.2 Section 56 00 - Temporary Access and Protective Works;

.3 Section 01 61 00 - General requirements for products

.1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with section 01 33 00 - Documents and samples to be submitted.

.1.4 INSTALLATION AND REMOVAL OF EQUIPMENT

.1 Provide the necessary means of use of temporary utilities to enable the work to be carried out as soon as possible.

.2 Disassemble the equipment and evacuate it from the site when it is no longer needed.

.1.5 WATER SUPPLY

.1 The client’s representative will ensure the continuous supply of drinking water necessary for the execution of the work.

.2 Make the necessary arrangements to connect the network to that of the utility company concerned, and assume all costs of installation, maintenance and disconnection.

.1.6 HEATING AND VENTILATION

.1 Provide temporary heaters required for the period of construction, operate and maintain them, and supply the necessary fuel.

.2 Provide appropriate climate control (heating and ventilation) in enclosed spaces for the following purposes

.1 Promote the progress of the Work;

.2 Protect work and products from moisture and cold;

.3 prevent condensation from forming on surfaces;

.4 provide appropriate ambient temperatures and humidity levels for storage, installation and curing of materials

.5 Meet the requirements of workplace safety regulations.

.3 Where work is in progress, maintain temperature at least [10] degrees Celsius.

.4 Ventilation

.1 Prevent accumulation of dust, fumes, gases and fogging in areas that remain occupied during construction.

.2 Provide local exhaust ventilation to prevent the accumulation of substances in the environment that may be hazardous to the health of occupants.

.3 Ensure that flue gases are vented in a safe manner and to a location where they will not present a health hazard to persons.

.4 Provide ventilation to storage areas for hazardous or volatile materials.

.5 Provide ventilation for temporary sanitary facilities.

.6 Operate ventilation and exhaust equipment for a period of time after completion of the work to completely remove from the environment any contaminants that may have been generated during the various construction activities.

.5 The building's permanent heating system shall not be operated when the building is ready to be put into service. In this case, assume full responsibility for any damage that may be caused.

.6 Carefully monitor the operation of the heating and ventilation equipment at all times, ensuring that the following requirements are met

.1 Comply with all applicable codes and standards.

.2 Practice safe methods.

.3 Prevent waste.

.4 Vent flue gases from direct-fired appliances to the outdoors.

.7 Assume full responsibility for damage to the Work due to improper heating or protective conditions maintained during the work.

.1.7 POWER SUPPLY AND LIGHTING

.1 the contractor must provide a portable generator for the temporary power supply necessary for the temporary lighting and operation of mechanical tools during work. No connection to the existing electricity system can be made.

.2 The contractor will assume the costs associated with the supply of electrical power necessary for the lighting and operation of the mechanical tools during the work.

.1.8 FIRE PROTECTION

.1 Provide and maintain fire protection equipment required by the relevant insurance companies and applicable codes and regulations.

.2 It is forbidden to burn scrap materials and construction waste on the construction site.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 3 - ENFORCEMENT

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Construction help;

.2 Offices and storage;

.3 Parking areas;

.4 Construction site signage.

.1.2 RELATED REQUIREMENTS

.1 Section 01 51 00 - Temporary utilities;

.2 Section 01 56 00 - Temporary access and protection works.

.1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with section 01 33 00 - Documents and samples to be submitted.

.1.4 INSTALLATION AND REMOVAL OF EQUIPMENT

.1 Prepare a site plan indicating the proposed location and dimensions of the area to be fenced and used by the Contractor, the number of construction trailers required, access routes to the fenced area and details of the installation of the fence.

.2 Indicate the areas that need to be paved with gravel to prevent mud soil.

.3 Indicate any additional areas or transit zones.

.4 Provide, set up or arrange the site facilities necessary to allow the execution of the work as soon as possible.

.5 Disassemble the equipment and evacuate it from the site when it is no longer needed.

.1.5 ON-SITE STORAGE/ELIGIBLE LOADS

.1 Ensure that the work is carried out within the limits indicated in the Contractual Documents. Do not unreasonably clutter the premises with materials and materials.

.2 Do not overload or overload any part of the work so as not to compromise its integrity.

.3 The waste container must be located at least 5m from the building in the area provided for this purpose in the plans in accordance with SST standards or otherwise indicated in the contractual documents.

.1.6 PARKING AND ACCESS TO THE CONSTRUCTION SITE

.1 It will be allowed to park on the site and in the zones indicated in the mobilization plans in coordination with the representative of the client.

.2 Develop suitable access routes to the site and ensure its maintenance.

.3 Clean runways and taxiways if construction equipment has been used.

.1.7 SECURITY MEASURES

.1 See the client's safety document section 01 35 13.

.1.8 OFFICES

.1 Provide a ventilated office, heated to a temperature of 22 degrees Celsius, equipped with lighting fixtures ensuring an illumination level of 750 lux and of sufficient dimensions to allow the holding of site meetings, and provide a table for spreading drawings.

.1 Keep the premises clean.

.2 Provide a complete and identified first aid kit and store it in an easily accessible location.

.1.9 STORAGE OF MATERIALS, MATERIALS AND TOOLS

.1 Provide lockable, weatherproof containers for the storage of materials, materials and tools, and keep them clean and in good order.

.2 Evacuate all materials and tools from the site between each shift.

.1.10 SANITATION

.1 Provide sanitary facilities for workers in accordance with relevant ordinances and regulations.

.1.11 PROTECTIONAND MAINTENANCE OF TRAFFIC

.1 If necessary, provide access roads and temporary detour lanes to maintain traffic.

.2 Maintain and protect traffic on the roads concerned during construction work, unless specifically stated otherwise by the client’s representative.

.3 Provide for the protection and diversion of traffic, including the services of supervisors and flaggers, the installation of barricades, the installation of lighting devices around and in front of equipment and the work area, the installation and maintenance of warning signs, danger signs and appropriate direction signs.

.4 The Contractor's rolling stock used for the transport of materials entering or leaving the construction site must cause the least possible harm to road traffic.

.5 Ensure that existing lanes and permitted load limits on them are adequate. The Contractor is obliged to repair the roads damaged as a result of the construction work.

.1.12 CLEANING

.1 Evacuate debris, waste and packaging materials from the construction site on a daily basis.

.2 Remove dust and mud from pavements.

.3 Store materials recovered during demolition work.

.4 Do not store new materials or disassembled materials to be reused on the construction site.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 2 - ENFORCEMENT

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Shelters, enclosures and weather protection; protective screens;

.2 Traffic control devices;

.3 Access roads for emergency vehicles.

.1.2 RELATED REQUIREMENTS

.1 Section 01 51 00 - Temporary utilities;

.2 Section 01 52 00 - Construction facilities.

.1.3 REFERENCE STANDARDS

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB 1.189-[00], Printing paint, exterior, with alkyd resins, for wood.

.2 CanadianStandards Association (CSA CSAGroup)

.1 CSA-O121-[FM1978(C2003)], Douglas fir plywood.

.1.4 INSTALLATION AND REMOVAL OF EQUIPMENT

.1 Provide, install or arrange the temporary access and protection works necessary to allow the completion of the works as soon as possible.

.2 Disassemble the equipment and evacuate it from the site when it is no longer needed.

.1.5 DUST SCREENS

.1 Provide dust screens or partitions to close spaces where dust-collecting activities are carried out to protect workers, the public and the surfaces or finished areas of the structure.

.1.6 ACCESS ROADS TO THE CONSTRUCTION SITE

.1 Develop the access paths, ramps and pedestrian crossings necessary to access the site.

.1.7 ROAD TRAFFIC

.1 Retain the services of competent signal person and provide the signal devices and rockets, barriers, lights and luminaires necessary for the execution of the work and the protection of the public.

.1.8 ACCESS ROADS FOREMERGENCY VEHICLES

.1 Ensure access to the site for emergency vehicles and provide sufficient height clearances.

.1.9 PROTECTION OF NEIGHBOURING PUBLIC AND PRIVATE PROPERTY

.1 Protect nearby public and private property against any damage which may result from the execution of the works.

.2 If applicable, assume full responsibility for the damage caused.

.1.10 PROTECTION OF FINISHED BUILDING SURFACES

.1 Throughout the period of execution of the work, protect the equipment as well as the completely or partially finished surfaces of the work.

.2 Provide the necessary screens, tarps and barriers.

.3 Three (3) days before the installation of the protection elements, confirm with the professional the location of each and the installation schedule.

.4 Assume full responsibility for damage to works due to lack of protection or inadequate protection.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 3 EXECUTION

.3.1 NOT APPLICABLE

END OFTHE SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Quality, availability, storage, handling, protection and transport of products.

.2 Manufacturer's instructions.

.3 Installation, coordination and fasteners.

.4 Existing utility networks.

.5 Reference standards and codes.

.1.2 RELATED REQUIREMENTS

.1 Section 01 73 03 - Cutting, adjustment and repair.

.1.3 REFERENCE STANDARDS

.1 References to relevant standards can be made in any section of the specifications. Comply with the standards indicated above, in whole or in part, according to the requirements of the specifications.

.1 If no specific date or edition is mentioned or if the specified date has expired, comply with the most recent standards in force at the time of submission of the submission.

.2 In the event that there is any doubt as to the conformity of certain products or systems with the relevant standards, the professional reserves the right to verify this by testing.

.3 If the products or systems comply with the Contractual Documents, the costs incurred by these tests will be paid by the owner, otherwise they will have to be paid by the contractor.

.4 Carry out the work in accordance with the Quebec Construction Code – Chapter 1, Building, and National Building Code of Canada 2010 (amended) including the amendments and any other provincial or local code that applies including the amendments, at the time of submission of the bid. In the event of any discrepancy or contradiction, the strictest requirements shall prevail.

.1.4 QUALITY

.1 The products, materials, materials, appliances and parts used for the execution of the work must be new, in perfect condition and of the best quality for the purposes for which they are intended. If necessary, provide proof of the nature, origin and quality of the products supplied.

.2 Products found defective before the completion of the work will be rejected, regardless of the conclusions of previous inspections. Inspections are not intended to relieve the Contractor of its responsibilities, but

simply to reduce the risk of omission or error. The contractor shall ensure the removal and replacement of defective products at its own expenses, and shall be responsible for any delays and costs arising therefrom.

.3 In the event of a dispute as to the quality or suitability of the products, only the professional may decide the matter on the basis of the requirements of the Contractual Documents.

.4 Unless otherwise specified in the specifications, ensure consistency by ensuring that materials or elements of the same type come from the same manufacturer.

.5 Labels, trademarks and permanent nameplates prominently displayed on the products used are not acceptable unless they give an operating instruction or are placed on equipment installed in the premises of mechanical or electrical installations.

.1.5 PRODUCT AVAILIBILITY

.1 Immediately after signing the contract, be informed of the requirements relating to the delivery of the products and anticipate any delays. If delays in the delivery of the products are foreseeable, notify the professional so that measures can be taken to replace them with equivalent products or to make the necessary corrections, sufficiently in advance so as not to delay the work.

.2 If the professional has not been notified of the foreseeable delivery delays at the beginning of the work, and if it seems likely that the execution of the work will be delayed, the professional reserves the right to replace the planned products with other comparable products that can be delivered more quickly, without the contract price being increased.

.1.6 STORAGE, HANDLING AND PROTECTION OF PRODUCTS

.1 Handle and store products without damaging, altering or soiling them, and following the manufacturer's instructions, if applicable.

.2 Store grouped or batch products in their original packaging; leave the packaging, label and manufacturer's seal intact. Do not unpack or untie products before incorporating them into the work.

.3 Products that can be damaged by the weather must be kept under a weatherproof enclosure.

.4 Hydraulic mixtures should not be placed directly on the floor or on a concrete floor, nor be in contact with the walls.

.5 Sand intended to be incorporated into mortars and grouts must remain dry and clean. Store it on wooden platforms and cover it with waterproof tarps in bad weather.

.6 Place the timber and materials in sheets, panels on rigid, flat supports so that they do not rest directly on the ground. Give a low slope to promote the flow of condensation water.

.7 Store and mix paint products in a heated and well-ventilated room. Every day, remove oily rags and other flammable waste from the workplace. Take all necessary precautions to avoid the risk of spontaneous combustion.

.8 Replace damaged products at no additional cost, to the satisfaction of the professional.

.9 Repair to the satisfaction of the professional the finished surfaces in the factory that have been damaged. Use, for retouching, products identical to those used for the original finish. It is forbidden to apply a finishing or retouching product on the nameplates.

.1.7 TRANSPORT

.1 Pay the deliverly costs of the products required for the execution of the work.

.2 The delivery costs of the products supplied by the Client will be paide by the owner. Ensure the unloading, handling and storage of these products.

.1.8 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise specified in the specifications, install the products according to the manufacturer's written instructions. Do not comply with the information on the labels and containers supplied with the products. Obtain a copy of the manufacturer's written instructions directly.

.2 Notify the professional in writing of any discrepancies between the requirements of the specifications and the manufacturer's instructions, so that he can take appropriate action.

.3 If the manufacturer's instructions have not been followed, the professional may demand, without the contractual price being increased, the removal and resintallation of the products that have been installed incorrectly.

.1.9 QUALITY OF EXECUTION OF THE WORK

.1 The work must be of the best possible quality, and the work must be carried out by tradesmen, qualified in their respective disciplines. Notify the professional if the work to be performed is such that it is unlikely to achieve the expected results.

.2 Do not hire persons who are unqualified or do not have the capacity or knowledge to carry out the work entrusted to them. The architect reserves the right to prohibit access to the site by any person deemed incompetent or negligent.

.3 Only the architect can settle disputes concerning the quality of execution of the work and the skills of the workforce, and his decision is irrevocable.

.1.10 COORDINATION

.1 Ensure that the workers collaborate with each other in the realization of the work. Exercise close and constant supervision of their work.

.2 It is the Contractor's responsibility to ensure the coordination of the work and the installation of crossings, sleeves and accessories.

.1.11 ITEMS TO BE CONCEALED

.1 Unless otherwise noted, conceal pipes, conduits and electrical cables in floors, walls and ceilings of rooms and finished areas.

.2 Before concealing any elements, inform the professional of any abnormal situation. Do the installation according to the professional's instructions.

.1.12 RECLAMATION

.1 Refer to section 01 73 00 - Execution of work.

.2 Perform the restoration work required to repair or replace parts or elements of the work found to be defective or unacceptable. Coordinate the work to be carried out on the affected contiguous structures, as required.

.3 Rehabilitation work must be carried out by specialists familiar with the materials and materials used; the work must be carried out in such a way that no part of the work is damaged or is likely to be damaged.

.1.13 LOCATION OF EQUIPMENT

.1 The location indicated for appliances, power outlets and other electrical or mechanical equipment should be considered approximate.

.2 Inform the professional of any problem that may be caused by the choice of the location of a device and proceed with the installation according to his instructions.

.1.14 FASTENERS - GENERAL

.1 Unless otherwise specified, provide metal accessories and fasteners with the same texture, colour and finish as the element to be suitable for use.

.2 Avoid any electrolytic action between metals or materials of a different nature.

.3 Unless stainless steel or other fasteners are prescribed in the relevant section of the specification, use corrosion-proof fasteners and anchorages of hot-dip galvanized steel to subject the outer structures.

.4 It is important to determine the spacing of anchorages taking into account limit loads and shear strength in order to ensure a permanent free anchorage. Dowels made of wood or any other organic matter are not accepted.

.5 Use as few visible fasteners as possible; space them evenly and place them carefully.

.6 Fasteners that could cause the crumbling or cracking of the element in which they are anchored will be rejected.

.1.15 FASTENERS - MATERIALS

.1 Use fasteners of standard commercial shapes and dimensions, made of suitable material, having a finish suitable for the intended use.

.2 Unless otherwise stated, use sturdy fasteners, of semi-fine quality, with hexagonal head. Use stainless steel parts of grade 304 in the case of outdoor installations.

.3 The bolt rods must not exceed the top of the nuts by a length greater than their diameter.

.4 Use regular washers on devices and equipment and sheet metal lock washers with soft trim where there are vibrations. To secure appliances and materials on stainless steel elements, use resilient washers.

.1.16 PROTECTION OF WORKS IN PROGRESS

.1 Do not overload any part of the building. Unless otherwise specified, obtain the written permission of the professional before cutting, drilling or passing a sleeve through a structural element.

.1.17 EXISTING UTILITY NETWORKS

.1 In the case of connections to existing networks, carry them out at times set by the competent local authorities and shall interfere as little as possible with the progress of the works.

.2 Protect, move or maintain utility pipes that are functional. If pipes are discovered during the work, close them in a manner approved by the responsible authorities, identify the filling points and record them.

.1.18 MATERIAL COMPATIBILITY

.1 It is essential that the components of the assemblies and the contiguous materials are compatible with each other. Provide the Architect with a written statement certifying that the materials and components of the assemblies are compatible.

.2 It is the responsibility of each of the stakeholders in the respective sections to ensure compatibility between their products and assemblies and the products and assemblies of the other sections.

.3 Notify the professional in writing of the incompatibility of certain materials and systems in relation to theirs so that the professional can make the required changes.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 3 - ENFORCEMENT

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Requirements and restrictions for cutting and repairing work.

.1.2 RELATED REQUIREMENTS

.1 Section 01 11 00 - Summary of Work.

.2 Section 01 33 00 - Documents and samples to be submitted.

.3 The relevant specifications technical sections, related to the cutting and repairing of the work concerned. It is important to notify the other trades concerned in advance.

.1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FORAPPROVAL/RMATION INFO

.1 Submit the required documents and samples in accordance with section 01 33 00 - Documents and samples to be submitted.

.2 Submit a written request before proceeding with any cutting and work repair that may have repercussions on the following:

.1 the structural integrity of any element of the work;

.2 the integrity of elements exposed to weather or waterproof elements;

.3 the effectiveness, maintenance or safety of functional elements;

.4 the aesthetic qualities of the apparent elements;

.5 the work of the owner or another contractor.

.3 The application must specify or include the following:

.1 the project's name;

.2 the location and description of the affected items;

.3 a statement explaining why it is necessary to carry out the cutting and repair work requested;

.4 a description of the proposed work and the products that will be used;

.5 alternatives to cutting and repairing work;

.6 the impact of the cutting and repair work on the work carried out by the owner or by another contractor;

.7 the written permission of the contractor concerned;

.8 the date and time the work will be performed.

.1.4 MATERIALS

.1 Materials for carrying out an identical installation.

.2 Any changes to materials must be the subject of a request for substitution in accordance with section 01 33 00 - Documents and samples to be submitted.

.1.5 PREPARATION OF WORK

.1 Inspect the site to examine existing conditions and identify elements that may be damaged or displaced during cutting and patching work.

.2 After exposing the elements, inspect them for any conditions that may affect the execution of the work.

.3 Starting the cutting and repairing work means that the existing conditions have been accepted.

.4 Provide and install supports to ensure the structural integrity of adjacent elements. Provide devices and consider methods to protect the other elements of the structure from damage.

.5 Provide protection for surfaces that may be exposed to the weather as a result of the demolition; keep excavations free of water.

.1.6 EXECUTION OF THE WORK

.1 Carry out the cutting, adjustment and repair work necessary for the realization of the work.

.2 Adjust the different elements together so that they integrate well with the rest of the work.

.3 Uncover the work in such a way as to allow the work to be carried out which, for one reason or another, should have been carried out at another time.

.4 Remove or replace defective or non-compliant items.

.5 Provide openings in the non-load-bearing elements to pass the mechanical and electrical installations.

.6 Use methods which will not damage the other elements of the work and which will make it possible to obtain surfaces suitable for patching and finishing work.

.7 Retain the services of the initial installer for the cutting and resurfacing of waterproofed elements, elements exposed to the weather as well as exposed surfaces.

.8 Cut rigid materials with a masonry saw or drill. Without prior authorization, it is forbidden to use pneumatic or percussion tools on masonry structures.

.9 Restore the work with new products, in accordance with the requirements of the Contractual Documents.

.10 Adjust the structure tightly around pipes, sleeves, air ducts and electrical conduits as well as other through elements.

.11 Unless otherwise specified, conceal pipes, air conduits and wiring in the walls, ceilings and floors of rooms and finished areas.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 3 - ENFORCEMENT

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Cleaning to be carried out during the execution of the work.

.2 Final cleaning.

.1.2 RELATED REQUIREMENTS

.1 Section 01 73 00 - Execution of work;

.2 Section 01 77 00 - Completion of work.

.1.3 CLEANLINESS OF THE CONSTRUCTION SITE

.1 Keep the site clean and free from any accumulation of debris and scrap materials, other than those generated by the Owner or other contractors.

.2 Evacuate debris and scrap materials from the site on a daily basis, at predetermined times, or dispose of them according to the professional's instructions. Scrap materials must not be burned on the site, unless this method of disposal is authorized by the professional.

.3 Make the necessary arrangements and obtain permits from the competent authorities for the disposal of debris and scrap materials.

.4 Provide containers on the construction site for the disposal of debris and scrap materials.

.1 All containers must be paid for and disposed of by the Contractor.

.5 Provide and use separate and identified containers for recycling.

.6 Dispose of debris and scrap materials off the job site and lay them in waste containers at the end of each work period.

.7 Clean interior surfaces before finishing work begins and keep these areas free of dust and other impurities during the work.

.8 Store volatile waste in closed metal containers and dispose of it at the end of each working period.

.9 Ensure good ventilation of the premises during the use of volatile or toxic substances. However, it is forbidden to use the building's ventilation system for this purpose.

.10 Use only the cleaning products recommended by the manufacturer of the surface to be cleaned, and use them according to the recommendations of the manufacturer of the products in question.

.11 Establish the cleaning schedule so that dust, debris and other raised dirt do not fall back on freshly painted wet surfaces and contaminate building systems.

.1.4 FINAL CLEANING

.1 Upon substantial completion of the work, remove surplus materials, tools, equipment and construction materials no longer required to carry out the rest of the work.

.2 Remove debris and scrap materials, except those generated by other contractors, and leave the premises clean and ready to occupy.

.3 Before the final inspection, remove excess materials, tools, equipment and construction materials.

.4 Remove debris and scrap materials, other than those generated by the Owner or other contractors.

.5 Evacuate waste materials from the site at predetermined hours or dispose of them according to the professional's instructions. Scrap materials must not be burned on the site, unless this method of disposal is authorized by a professional.

.6 Take the necessary measures and obtain permits from the competent authorities for the disposal of debris and scrap materials.

.7 Clean and polish glazing, mirrors, hardware, wall tiles, chrome or enamel surfaces, laminate surfaces, stainless steel or enamel-porcelain elements as well as mechanical and electrical appliances. Replace any broken, scratched or damaged glazing.

.8 Remove dust, stains, marks and scratches from decorative structures, mechanical and electrical appliances, furniture, walls, doors, windows and floors.

.9 Clean reflectors, diffusers and other lighting surfaces.

.1 Protect all deflectors of suspended luminaires to prevent them from being dusted.

.10 Dust the interior surfaces of the building and vacuum it, not forgetting to clean behind the gates, louvres, registers and insect screens.

.11 Wax, soap, seal or treat floor coverings appropriately according to the manufacturer's instructions.

.12 Examine finishes, accessories and materials to ensure that they meet the prescribed requirements for performance and quality of work.

.13 Sweep and clean sidewalks, steps and other outdoor surfaces; sweep or rake the rest of the field.

.14 Remove dirt and other elements that disturb the exterior surfaces.

.15 Clean and sweep roofs, gutters, sunken courtyards and window wells.

.16 Sweep and clean hard-coated surfaces.

.17 Thoroughly clean materials and appliances, and clean or replace filters in mechanical systems.

.18 Clean roofs, downspouts and drains.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 3 - ENFORCEMENT

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Administrative procedures prior to the preliminary and final inspections of the works.

.1.2 RELATED REQUIREMENTS

.1 Section 01 78 00 - Documents/Items to be submitted upon completion of the work.

.1.3 ADMINISTRATIVE PROCEDURES

.1 Procedure for acceptance of works

.1 Inspection performed by the Contractor: The Contractor must inspect the work, identify defects and failures and make the necessary repairs to ensure that everything complies with the requirements of the Contractual Documents.

.1 Notify professionals in writing once the Contractor inspection is complete, and submit a document attesting that the corrections have been made.

.2 Then submit a request for the work to be inspected by professionals.

.2 Inspection carried out by professionals

.1 The professionals will carry out with the Contractor an inspection of the work in order to identify defects and failures.

.2 The Contractor must make the requested corrections.

.3 Completion of tasks: submit a document certifying that the tasks indicated below have been completed.

.1 Deficiencies and defects identified during inspections have been corrected.

.2 The devices, equipment and systems have been tested, tuned and balanced, and are fully operational.

.3 The necessary training in the operation of the apparatus, equipment and systems has been given to the Owner's staff.

.4 The work is completed and ready for final inspection.

.4 Final inspection

.1 When all the tasks mentioned above have been completed, submit a request for the work to be submitted to the final inspection, which will be carried out jointly by the representative of the client, the professionals and the Contractor.

.2 If the work is considered incomplete by the representative of the contracting authority and/or the professionals, complete the elements that have not been carried out and submit a new request for inspection.

.5 Declaration of substantial completion: Where the owner's representative and the professionals consider that the deficiencies and defects have been corrected and the contractual requirements appear to be largely met, submit a request for the production of a certificate of substantial completion of the work.

.6 Beginning of the guarantee period and the period of exercise of the right of hold back: The date of acceptance by the Owner of the declaration of substantial completion of the works submitted shall be the date of the beginning of the period of exercise of the right of hold back and the guarantee period, unless otherwise prescribed by the regulations relating to the right of hold back in force at the place of the works.

.7 Final payment

.1 Where the representative of the Owner and the professionals consider that the deficiencies and defects have been corrected and that the contractual requirements have been fully met, submit a request for final payment.

.2 If the work is considered incomplete by the Owner’s representative and by the professionals, complete the elements that have not been carried out and submit a new request for inspection.

.8 Payment of the retainage: After the issuance of the certificate of substantial completion of the work, submit a request for payment of the retainage in accordance with the provisions of the contractual agreement.

.1.4 FINAL CLEANING

.1 Perform cleaning work in accordance with section 01 74 00 - Cleaning.

.1 Evacuate surplus materials, waste, tools and equipment from the construction site.

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PAEXÉCUTION

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 CONTENTS OF THE SECTION

.1 Project file, samples and quotes.

.2 Hardware and devices.

.3 Technical data sheets, materials, finishing materials and products, and related information.

.4 Operations and maintenance manuals.

.5 Replacement materials/materials, special tools and spare parts.

.6 Guarantees and warrantees.

.1.2 RELATED REQUIREMENTS

.1 Section 01 45 00 - Quality Control;

.2 Section 01 77 00 - Completion of work.

.1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with section 01 33 00 - Documents and samples to be submitted.

.2 Instructions must be prepared by competent persons with the knowledge of the operation and maintenance of the products described.

.3 The submitted copies will be returned after the final inspection of the works, commented by Architect and other professionnals.

.4 If necessary, review the content of documents before resubmitting them.

.5 Two (2) weeks before substantial completion of the work, submit to the architect one (1) digital copy and one (1) paper copy of the operations and maintenance manuals, in English.

.6 Replacement materials and materials, special tools and spare parts supplied must be of the same quality of manufacture as the products used for the execution of the work.

.7 Upon request, provide documentation confirming the type, source of supply and quality of the products supplied.

.8 Defective products will be rejected, even if they have previously been inspected, and they will have to be replaced at no additional cost. Assume the cost of transporting these products.

.1.4 PRESENTATION

.1 Present the data in the form of an instruction manual.

.2 Use rigid vinyl bindings with three (3) D-rings, 219 mm x 279 mm loose leaf, with back and sleeves.

.3 When multiple bindings are required, group the data in a logical order.

.1 Indicate the contents of the bindings on the side of each.

.4 On the cover page of each binding, the document designation, i.e. "Project File", typed or printed, the project designation and the table of contents must be indicated.

.5 Organize the content in logical order of the operations, according to the numbers of the sections of the quote and the order in which they appear in the table of contents.

.6 Provide, for each product and system, a tabbed separator on which the product description and the list of the main equipment parts must be typed.

.7 The text must consist of printed data provided by the manufacturer or typed data.

.8 Provide the drawings with a reinforced and perforated tab.

.1 Insert them into the binding and fold the large drawings according to the format of the text pages.

.1.5 CONTENTS OF THE PROJECT FOLDER

.1 Table of contents for each volume: indicate the designation of the project;

.1 the date of filing of documents;

.2 the name, address and telephone number of the professionals and the contractor and the names of their representatives;

.3 a list of products and systems, indexed according to the contents of the volume.

.2 For each product or system, indicate the following:

.1 the name, address and telephone number of subcontractors and suppliers, as well as local distributors of equipment and spare parts.

.3 Data sheets: mark each sheet to clearly identify specific products and parts as well as installation data; delete any irrelevant information.

.4 Drawings: drawings are used to complete the data sheets and to illustrate the relationship between the different elements of the equipment and systems; they include the control and principle schemes.

.5 Typed text: as needed, to complete the data sheets.

.1 Give instructions in a logical order for each intervention, incorporating the manufacturer's instructions prescribed in section [01 45 00 - Quality control].

.6 In addition to drawings, data sheets and maintenance manuals, each volume must contain:

.1 CCQ certificate indicating that all expenses have been paid;

.2 CNESST certificate indicating that all expenses related to the project have been paid;

.3 Confirmation of closure of the CNESST file;

.4 Final receipts from all subcontractors.

.1.6 DOCUMENTS AND SAMPLES TO BE ESSED IN THE PROJECT FILE

.1 In addition to the documents mentioned in the General Conditions, keep on the site, for the benefit of the representative of the client and the professionals, a copy or a set of the following documents:

.1 contractual drawings;

.2 quote;

.3 addenda;

.4 change orders and other amendments to the contract;

.5 revised shopdrawings, data sheets and samples;

.6 records of on-site testing;

.7 inspection certificates;

.8 certificates issued by manufacturers;

.9 approved and updated work schedules;

.10 additional drawings issued.

.2 Store documents and samples from the project file in the site office, separately from the work execution documents.

.3 Label the documents and classify them according to the list of section numbers indicated in the table of contents of the specifications.

.4 Keep project file documents clean, dry and legible.

.1 Do not use them as work execution documents.

.5 The client's representative and consultants must have access to the documents and documentsin the project file for inspection purposes.

.1.7 LOGGING DATA TO THE PROJECT FOLDER

.1 Record information on a set of opaque drawings and in a copy of the project file.

.2 Record information using felt-tipped markers with a different colour for each major system.

.3 Record information as the work progresses.

.1 Do not conceal works until the required information has been recorded.

.4 Contract drawings and shop drawings: indicate each piece of data in such a way as to show the works as they are, including the following.

.1 The measured depth of the foundation elements relative to the level of the first finished floor.

.2 The location, measured in the horizontal and vertical planes, of utility pipes and underground accessories in relation to permanent surface developments.

.3 The location of utility pipes and interior fittings, measured in relation to visible and accessible building elements.

.4 On-site changes to the dimensions and details of the structures.

.5 Changes made as a result of change orders.

.6 Details not included in the original contractual documents.

.7 Reference standards for shop drawings and related modifications.

.5 Specification: Enter each data to describe the works as they are, including the following.

.1 The name of the manufacturer, the trademark and the catalogue number of each product actually installed, and in particular optional and replacement elements.

.2 Changes that are subject to addenda or change orders.

.6 Other documents: keep manufacturers' certificates, inspection certificates, records of on-site testing prescribed in each of the technical sections of the specification.

.7 If applicable, provide the digital photos to be added to the project’s file.

.1.8 MATERIALS AND SYSTEMS

.1 For each piece of material and for each system, give a description of the whole and its constituent parts.

.1 Indicate technical data and test results with graphics; please also give the complete list and the commercial number of parts which can be replaced.

.2 Provide lists of supply circuits (distribution panels), with indication of electrical characteristics, control circuits and telecommunications circuits.

.3 Provide color coded wiring diagrams of installed hardware.

.4 Methods of operation: indicate the instructions and sequences for start-up, running-in and normal operation, as well as the following instructions:

.1 instructions for regulation, command, shutdown, decommissioning and emergency maneuvering.

.2 summer and winter operating instructions and any other special instruction.

.5 Maintenance: Provide instructions for routine maintenance and fault finding, as well as instructions for disassembling, repairing and reassembly, aligning, adjusting, balancing and checking elements and networks.

.6 Provide maintenance and lubrication schedules and a list of lubricants required.

.7 Provide written instructions from the manufacturer regarding the operation and maintenance of the components.

.8 Provide descriptions of the sequence of operations prepared by the various manufacturers of control/control apparatus and devices.

.9 Provide the original manufacturer's parts list as well as illustrations, drawings and assembly diagrams necessary for maintenance.

.10 Provide a list of spare parts from the original manufacturer with current prices and recommended quantities to keep in stock.

.11 Provide the test and balancing reports prescribed in sections 01 45 00 - Quality Control.

.12 Additional requirements: according to the requirements of the various technical sections of the quote.

.1.9 MATERIALS AND FINISHING PRODUCTS

.1 Building materials, finishing products and other products to be applied: provide the data sheets and indicate the catalogue number, dimensions, composition and colour and colour designations of the products and materials.

.2 Provide instructions regarding cleaning agents and methods as well as recommended cleaning and maintenance schedules and indicate precautions to be taken against harmful methods and harmful products.

.3 Water repellents and weather-exposed products: provide the manufacturer's recommendations for cleaning agents and methods as well as recommended cleaning and maintenance schedules, and indicatepre-caution against harmful methods and harmful products.

.4 Additional requirements: according to the requirements of the various technical sections of the quote.

.1.10 MAINTENANCE MATERIALS/MATERIALS

.1 Spare parts

.1 Provide spare parts according to the quantities prescribed in the various technical sections of the quotation.

.2 The spare parts supplied must come from the same manufacturer and be of the same quality as the elements incorporated into the work.

.3 Deliver and store the return's parts at the place indicated by the representative of the contracting authority.

.4 Receive and list all parts.

.1 Submit the inventory list to the client's representative

.2 Insert the approved list in the maintenance manual.

.5 Keep a receipt of all delivered parts and submit it before final payment.

.2 Materials/Replacement Materials

.1 Provide alternative materials and materials in the quantities indicated in the various technical sections of the specs.

.2 Replacement materials and materials must come from the same manufacturer and be of the same quality as the materials and materials incorporated into the work.

.3 Deliver and store replacement materials/materials at the location indicated by the owner's representative.

.4 Receive and list replacement materials and materials.

.1 Submit the inventory list to the representative of the client.

.2 Insert the approved list in the maintenance manual.

.5 Keep a receipt for all materials and materials delivered and submit it before final payment.

.1.11 TRANSPORTATION, STORAGE AND HANDLING

.1 Store spare parts, replacement materials and materials as well as special tools to prevent damage or deterioration.

.2 Store spare parts, materials and replacement materials in their original packaging kept in good condition and bearing the manufacturer's seal and label intact.

.3 Store elements likely to be damaged by the weather in weatherproof enclosures.

.4 Store paint and products that may freeze in a heated and ventilated room.

.5 Evacuate damaged or deteriorated items or products, replace them with new ones at no additional cost, and submit them to professionals for review

PART 2 - PRODUCT

.2.1 NOT APPLICABLE

PART 3 - ENFORCEMENT

.3.1 NOT APPLICABLE

END OF SECTION

PART 1 - GENERAL

.1.1 SUMMARY

.1 This section includes:

.1 The methods and procedures to be followed for the total or partial demolition of structures or structures with the exception of contaminated materials.

.1.2 RELATED REQUIREMENTS

.1 Section 01 33 00 - Documents and samples to be submitted.

.1.3 DEFINITIONS

.1 Demolition: a method of rapid disposal of a structure or work, with prior removal of hazardous materials from it.

.1 The term "demolish" used in the documents does not necessarily imply destruction, but rather implies, without being limited to, dismantling, dismantling, stripping, removing, deconstructing or removing; and may require necessary precautions to accommodate new elements or assemblies;

.2 The expression "repair" or ‘’patch’’ means to refurbish the surface. This action involves, if necessary: scraping, leveling, applying a similar coating to adjacent surfaces, painting the patched surface in the same color as adjacent surfaces. The contractor, when repairing or patching the existing surfaces, must paint the entire surfaces to the nearest edge.

.2 Hazardous materials: hazardous substances, goods and products that may include, but are not limited to, asbestos, lead, PCBs, CFCs, HCFCs, poisons, corrosive agents, flammable materials, ammunition, explosives, radioactive substances or any other materials that, when misused, may have an adverse impact on human health or well-being, or on the environment.

.1.4 ADMINISTRATIVE PROCEDURES

.1 Coordination: Coordinate the requirements of this article with the Owner’s representative, without however excluding the following:

.1 Except for materials intended, according to the guidelines, to be reused, recovered or reinstalled or materials which, unless otherwise specified, must remain the property of the Owner, the demolition materials will become the property of the Contractor and will be removed from the project site.

.1.5 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Documents/samples to be submitted: Provide the following documents/samples before start of work under this section:

.1 Submit the required shop drawings in accordance with section 01 33 00 - Documents and samples to be submitted.

.2 When requested by the competent authorities or the professional, submit drawings of the installation and bracing of load-bearing walls or other walls before undertaking the demolition work. These drawings must bear the seal and signature of a competent engineer recognized in the province of Quebec, and they must illustrate the proposed method of work.

.1.6 CONDITIONS FOR IMPLEMENTATION

.1 If a material resembling sprayed or troweled asbestos or other materials designated and listed as dangerous is discovered during the performance of the work, suspend the work, take appropriate precautions, and notify the professional immediately.

.2 Notify the Owner's Representative before obstructing access to the building or interrupting services.

.1.7 EXISTING CONDITIONS

.1 Hazardous materials: Hazardous materials are not expected to be discovered during the work.

PART 2 - PRODUCT

.2.1 Not applicable

EXECUTION

.3.1 EXAMINATION

.1 Check the existing conditions and coordinate with the requirements indicated in order to validate the elements that need to be demolished.

.2 The Architect does not guarantee that the existing conditions and the conditions indicated in the project file are the same.

.3 Draw up an inventory of the items to be removed and recovered as well as their condition.

.3.2 PREPARATORY WORK

.1 Protection of structures in place

.1 Take the necessary measures to prevent the displacement, settlement or other damage of structures, utility pipes, landscaping works and parts of the building to be preserved. Shoe and brace structures as required.

.2 Limit as much as possible the dust and noise produced by the work, as well as the inconvenience caused to the occupants of the premises.

.3 Protect the building's mechanical and electrical appliances, systems and installations as well as utility pipes.

.4 Provide dust screens, tarps, guardrails, support elements and other necessary protective devices.

.2 Demolition/removal work

.1 Refer to demolition requirements and drawings to find out which materials and materials need to be recovered for reuse.

.2 Remove the elements of the existing building to allow the realization of the new construction.

.3 Trim the edges of the partially demolished components of the building according to the tolerances specified by the Architect in order to facilitate the installation of the new elements.

.4 At the end of each working day, ensure that the structure is safe and stable.

.5 Protect at all times against the exterior elements the interior surfaces of the parts that will not be demolished.

.6 Carry out demolition work in such a way as to raise as little dust as possible. Keep materials wet according to the architect's instructions.

.3 Unless otherwise specified, dispose of materials and materials in accordance with the requirements of the competent authorities.

.3.3 REHABILITATION AND REPAIR OF THE CONSTRUCTION SITE

.1 Ensure a gradual transition from existing surfaces to new adjacent surfaces.

.2 General: Repair without delay the damage caused to the adjacent construction by demolition operations.

.3 Resurface existing surfaces that need to be repaired in such a way as to prepare them for a new material.

.4 Restore exposed finishing coatings from patched areas and extend restoration to adjacent construction to remove traces of patching and repair.

.3.4 CLEANING

.1 Cleaning during work: perform the cleaning work in accordance with section 01 74 00 - Cleaning.

.1 Leave the premises clean at the end of each working day.

.2 Final cleaning: remove surplus materials, waste, tools and equipment from the site in accordance with section 01 74 00 - Cleaning.

.3 Refer to demolition requirements and drawings to find out which materials need to be recovered for reuse.

END OF SECTION

PART 1 - GENERAL

.1.1 SCOPE OF WORK

.1 Patching of trenches and cracks;

.2 Resurfacing of concrete structures;

.3 Localized leveling of floors;

.4 Removal of old finishes and leveling for preparation for the new finish.

.1.2 CONTENTS OF THE SECTION

.1 Establish the statement of restoration and waterproofing of concrete structures according to section 01 11 00 – Summary of work

.1 Break all deteriorated, peeled and delaminated concrete, defective recovery joints and repairs carried out on voids, cracks and profiles of the outer surface.

.2 Sealing of the external joints at the meeting of the door, and the window frame with the concrete structure, the openings for the ducts and the penetrations.

.1.3 ADMINISTRATIVE REQUIREMENTS

.1 Site Visit: Arrange a site tour with the Architect to review the implementation conditions.

.1.4 RELATED REQUIREMENTS

.1 Section 01 33 00 - Documents and samples to be submitted.

.2 Section 02 41 17 - Demolition work.

.3 Section 09 67 23 - Epoxy resin flooring.

.1.5 REFERENCE STANDARDS

.1 International ASTHMA (ASTM)

.1 ASTM C109/C109M, Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. (50-mm) Cube Specimens)

.2 ASTM C496/C496M Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens

.3 ASTM C882/C882M Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear

.4 ASTM C1202, Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

.5 ASTM D570, Standard Test Method for Water Absorption of Plastics

.6 ASTM D638, Standard Test Method for Tensile Properties of Plastics

.7 ASTM D648, Standard Test Method for Deflection

.8 ASTM D695, Standard Test Method for Compressive

.9 ASTM D732 Standard Test Method for Shear Strength of Plastics by Punch Tool

.10 ASTM D790, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

.2 Canadian General Standards Board (CGSB)

.1 CSA A23.2, Concrete: Constituents and Work Execution/Test Procedures and Standard Practices for Concrete

.1.6 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with section 01 33 00 - Documents and samples to be submitted

.1.7 DOCUMENTS/ITEMS TO BE SUBMITTED

.1 Provide documents/items in accordance with section 01 78 00 – Documents/Items to be submitted upon completion of the work.

.1.8 QUALITYASSURANCE

.1 Manufacturer's instructions: submit the application instructions provided by the manufacturer, including any indication of specific methods of handling, cleaning.

.1.9 WASTE MANAGEMENT AND DISPOSAL

.1 Designate cleaning area to limit the consumption of clean water and the volume of runoff.

.2 Ensure that empty containers are sealed and stored in a safe place and out of the reach of children for disposal.

.3 Take the necessary steps to prevent plasticizing agents, water reducers or air protractors used in concrete from contaminating waterways and drinking water supplies. Where appropriate, collect these liquid deposits or solidify them with a non-combustible inert material, taking all appropriate safety

measures. Dispose of all waste in accordance with the requirements of applicable local, provincial, and national regulations.

.4 Choose the least damaging cleaning method that will nevertheless achieve the best possible results.

.1.10 EXISTING CONDITIONS

.1 Examine existing conditions and surfaces to be restored.

.2 Apply base coatings and exterior finishing coatings in dry weather and when short-term weather forecasts are suitable for application and cure in accordance with the manufacturer's recommendations.

.3 Maintain moisture content, constant temperature and ventilation within the limits prescribed by the manufacturers.

PART 1 - PRODUCT

.2.1 MATERIAL COMPATIBILITY

.1 It is essential that repair products and contiguous materials are compatible with each other. Provide the Architect with a written statement certifying that the two are compatible.

.2.2 MATERIALS

.1 The contractor must validate the compatibility of the various products with each other. Please refer to the manufacturers' requirements.

.2 General: All floor repair products must come from the same manufacturer.

.3 Liaison agent for surface preparation:

.1 Epoxy-based, high modulus and high strength.

.2 Acceptable product: Sikadur 32 Hi-Mod, from Sika or approved equivalent.

.4 Repair mortar and levelling of concrete for repairs:

.1 Cement-based, polymer-modified, with migratory corrosion inhibitor.

.2 Acceptable product: SikaTop 122 PLUS, from Sika or approved equivalent.

PART 3 - ENFORCEMENT

.3.1 INSPECTION

.1 Obtain the approval of the architect before the start of the work.

.2 Notify the architect, who will take the necessary measures, in the event that the preparatory work reveals conditions that may affect the structural integrity or proper functioning of the building.

.3.2 PREPARATION OF SURFACES

.1 Remove old finishes, crumbly concrete, impurities, oil, grease, dust and other defective materials that interfere with adhesion.

.2 Break all deteriorated concrete, repairs made in the past and which have been delaminated, existing delamination and defective recovery joints in order to expose healthy concrete.

.3 Clean surfaces after removal of old finishes and obsolete built-in parts.

.4 Coat the surfaces of a bonding agent according to the manufacturer's instructions.

.3.3 MIXING

.1 Patching compound:

.1 Mix the components according to the manufacturer's written instructions.

.2 Apply the mixture immediately.

.3 Discard the rest of the mixture immediately; do not reuse the mixture.

.2 Basic coating:

.1 Apply the base coat according to the manufacturer's written instructions.

.3.4 SURFACE REPAIRS

.1 Reconstruct the surface profile after preparing the surface, as described above, and fill with a patching compound and a bonding agent.

.2 Implement the patching products according to the manufacturer's written instructions.

.3 Mix the patching compound so as to obtain the texture of a paste and apply it with a brush to the moistened concrete of the area to be patched.

.4 Using a brush, apply a layer of mixture to the existing concrete in the area to be patched before filling the cavity with a thick layer of patching compound with a trowel.

.5 Apply and level the patching compound no later than five to ten minutes after adding the spoiling water.

.6 Apply the mixture in successive layers from 12 mm to 25 mm thick.

.1 Apply a bonding layer, refresh it with water, then apply a second layer 15 to 20 minutes later.

.7 Patch trenches, holes and cracks.

.8 Levelf the surfaces to be repaired so that at the meetings of existing finishing materials, the same level is obtained between the two.

.9 Finish with a steel trowel.

.10 Tolerance: 1/1000.

.11 Wash the surface with a sponge. Refresh the patch by moistening it if it becomes warm and takes on a pale gray color. Keep the patching product moistened for 30 to 45 minutes after clogging the cavity.

.12 Protect the work of other trades and/or other prepared surfaces against splashes of patching products.

.3.5 CLEANING

.1 Perform the cleaning of work in progress in accordance with [01 74 00 - Cleaning].

.2 Leave the premises clean at the end of each working day.

.3 Dispose of and dispose of waste in accordance with the requirements of local provincial/territorial and federal regulations.

.4 Final cleaning: remove surplus materials, waste, tools and equipment from the job site in accordance with section 01 74 00 - Cleaning.

.3.6 PROTECTION OF COMPLETED WORK

.1 Protect adjacent finished surfaces from damage that may be caused by work in progress.

END OF SECTION

GENERAL

.1.1 SCOPE OF WORK

.1 Preparatory work and methods of implementation associated with masonry materials.

.2 Masonry of concrete elements.

.3 Connection to other structures: repair of the masonry elements around the new openings and patching of the segments of the openings that are to be closed.

.4 Dust control.

.1.2 RELATED REQUIREMENTS

.1 Section 03 01 37 - Concrete Restoration

.2 Section 04 05 13 – Masonry mortar and grout

.1.3 REFERENCE STANDARDS

.1 CSA Group

.1 CAN/CSA-SERIES A165-14, CSA Standards for Concrete Masonry Elements (contains A165.1, A165.2 and A165.3)

.2 CAN/CSA-A179-F14, Mortar and grout for large masonry

.3 CAN/CSA-A371-F14, Building Masonry

.1.4 CALCULATION CRITERIA

.1 Carry out masonry work and non-load-bearing masonry to meet the reinforcement requirements prescribed by the National Building Code and CSA S304.1, CAN/CSA A165-F04, and the requirements of the structural engineer.

.1.5 ADMINISTRATIVE PROCEDURES

.1 Preliminary meeting: one (1) week prior to the commencement of the work covered by this section, hold a meeting at which the following will be considered.

.1 The needs of the work, including the requirements for the samples of the work.

.2 The state of the support(s).

.3 The proposed products, techniques and methods of implementation.

.4 Coordination of work with work carried out under related sections.

.5 Masonry cutting techniques and tools and protective measures that workers must take to protect themselves from dust during work.

.1.6 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with section 01 33 00 -Documents/Samples to be submitted.

.2 Certificates: submit documents provided by the manufacturer, certifying that products, materials and equipment comply with prescribed requirements.

.3 Test reports and evaluation reports

.1 Submit test reports in accordance with section 01 45 00 – Quality Control.

.2 Test reports shall certify that the masonry elements and mortar ingredients meet the requirements for physical characteristics and performance criteria.

.3 In addition to the data specified in the CSA and ASTM standards referenced, submit data regarding the initial rate of water absorption (suction) of the masonry.

.4 Manufacturer's Instructions: Submit the manufacturer's instructions for installation, including storage and handling of materials and equipment, safety and cleaning.

.1.7 DOCUMENTS/ELEMENTS TO BE SUBMITTED UPON COMPLETION OF THE WORK

.1 Submit the manufacturer's instructions for the care, cleaning and maintenance of the glazed masonry elements and attach them to the manual referred to in section 01 78 00 - Documents/Items to be submitted upon completion of the work.

.1.8 TRANSPORT, STORAGE ANDMANUTEN TION

.1 Transport, store and handle materials and equipment in accordance with section 01 61 00 - General Product Requirements and written manufacturer's instructions].

.2 Delivery and acceptance: deliver materials and materials to the construction site in their original packaging, which must bear a label indicating the name and address of the manufacturer.

.3 Storage and handling

.1 Store materials and equipment dry, in a clean, dry and well-ventilated area, in accordance with the manufacturer's recommendations.

.2 Keep materials dry until the time of implementation, except when it is prescribed that the elements must be wet.

.3 Replace damaged materials and equipment with new materials and equipment.

.1.9 CONDITIONS FOR IMPLEMENTATION

.1 Ambient conditions: only assemble and implement elements when the temperature is above 5 degrees Celsius.

.2 Work carried out in hot or cold weather: according to the requirement of CAN/CSA-A371.

.3 Implementation in cold weather

.1 According to the requirements of CAN/CSA-A371 and the requirements indicated below.

.1 Keep the mortar at a temperature between 5 and 50 degrees Celsius, until the mixture is used or stabilized.

.2 Maintain masonry and its materials at a temperature between 5 and 50 degrees Celsius and protect the premises from wind chill.

.3 Maintain the masonry at a temperature above freezing point for at least seven (7) days after mortar is installed.

.4 Preheat in enclosures, up to a temperature above 10 degrees Celsius, unheated wall sections at least 72 hours before the installation of the masonry.

.2 Implementation in hot weather

.1 As long as the masonry structures are not finished or protected by flashings or any other permanent construction, keep them dry with waterproof tarps that do not stain, which will be extended beyond the top and sides of the structures for a sufficient distance to protect them from rain from the wind.

.1.10 GUARANTEE

.1 In the case of the work covered by this section, 04 05 00 - Masonry - General requirements concerning the results of the work, the warranty period of 12 months is extended to 24 months.

PRODUCT

.2.1 CONCRETE MASONRY

.1 Standard concrete masonry elements: complies with CAN3-A165 M Series (CAN3-A165.1)

.1 Category: H/15/A/O

.2 Nominal modular dimensions of 100mm, 150mm, 200mm wide X 200mm high X 400mm length.

.3 Special shaped blocks:

.1 Use "corner" blocks with a united face for exposed angles.

.2 Use special blocks for lintels and beams. Special concrete masonry elements: conform to ACNOR CAN3-A165.1.M appropriate category and approved to give the required fire resistance at the locations indicated in the drawings according to the thicknesses indicated. Where the required degree of fire resistance requires the supply of masonry elements approved by ULCs, provide only elements approved for this purpose according to the degree of fire resistance required; also provide a certificate attesting to compliance with this requirement.

.3 Mortar and Grout: refer to Section 04 05 13

.4 Reinforcements and connecting elements

.1 Refer to the structural engineer's documents and follow the engineer's recommendations, instructions, and requirements at all times.

.2 Rebars: grade 400, fluted, compliant with CSA A371 and CAN/CSA G30.18-M.

.3 Wire mesh: of the lattice type, conforming to CSA A371 and CSA G30.3 standards.

.4 Connecting elements: compliant with CSA A370 and CSA S304.1 standards.

.5 Protection against corrosion: unless otherwise specified in the documents, in accordance with CSA S304.1 and CSA A370.

.1 Hot-dip galvanized steel.

.6 Horizontal reinforcements:

.1 Reinforcements of lattice type, widths and sizes adapted to the thickness of the partitions per the calculations and recommendations of the manufacturer, installed at a maximum of 400 mm vertical spacing. In the case of load-bearing walls, install the reinforcement according to the indications in the structural documents.

.7 Provide the corner trusses in the shape of "T" required at the intersections of walls and partitions, of the same quality as the continuous reinforcements.

.8 Masonry connecting elements:

.1 Connecting elements of the side ends of walls or block partitions:

.1 Hot-dip galvanized steel straps with triangular links 4,8 mm in diameter, of dimensions appropriate to the structure, installed at a maximum of 400 mm o.c., so that they coincide with the horizontal reinforcement. Install at least two fasteners per strap.

.9 Shaping:

.1 Shape reinforcements in accordance with the requirements of CAN/CSA-A23.1-M and the Manual of Recommended Standards, published by the Institut d'acier d'armature du Québec.

.2 Shape the link elements according to CSA A370.

.3 Weld rebar in accordance with the requirements of CSA W186.

.4 Refer to the structural engineer's documents and follow the engineer's recommendations, instructions, and requirements at all times.

.2.2 MASONRY CLADDING

.1 Bloc architectural :

.1 CSA A82-06 Category EG, ASTM C216 Category SW.

.2 Architectural block type 1 reference product or equivalent approved by the architect:

.1 Company: Shouldice

.2 Series: Architectural Split Face Block

.3 Colour: Aberdeen

.4 Format : 90 x 190 x 390 mm

.5 Colour mortar: King Cream 1-1-6 see section 04 05 12 Masonry mortar and grout

.2.3 MASONRY ACCESSORY

.1 Joints :

.1 Elastomeric sealant, in accordance with ASTM D2240, of prescribed dimensions and shapes.

.2 Silicone sealant, in accordance with CAN/CGSB-19.13. Dow Dowsil sealant as a reference product. Color to match the mortar joints at the choice of the architect.

.3 Circular profile joint bottom made of closed-cell polyethylene foam. The product should be oversized by 30% to 50%.

.2 Sealants: complies with section 07 92 10 - Sealing of seals.

.3 Neoprene foam strip, of required dimensions. Compression thickness of at least 30%, such as "Éthafoam 205-R" from "Givesco inc. " or approved equivalent.

.4 Adhesive for overlapping joints: according to the recommendations of the manufacturer of masonry flashings.

.5 Compartmentalization material: galvanized steel metal sheet 0.5 mm (cal. 25) thick.

.6 Tapcon fixing screws for anchors in concrete or concrete block 6 mm in diameter x 30 mm in length in stainless steel.

.7 Fastening screws of type "Kwik-con II" for anchors in the existing brick of 6mm diameter x 83mm length in stainless steel.

.8 Evacuation/weep holes:

.1 Weep holes equipped with polypropylene fiber filters: cell type, 10MM thick, height and length adapted to the requirements of the work. Installation immediately on the intramural flashings, above the openings, structural lintels, and at the base of the walls. Length of rods suitable for recessed in joints so that they can be adjusted according to alignment defects. Install the anchorages at a maximum of 16' horizontally and 24"vertically.

.2 Color similar to mortar

.3 Acceptable Products: DA 1006 "CellVent" from Blok-Lok/Hohman & Barnard.

.9 Thruwall flashing :

.1 Thruwall flashing: self-adhesive sheet, strip of elastomeric bitumen membrane laminated to a crossed polyethylene film having the following physical properties:

.2 Colour: yellow;

.3 Thickness: 1.0 mm;

.4 Minimum application temperature: - 4°C;

.5 Elongation at break (ASTM D412 matrix C): 200% minimum;

.6 Fracture resistance of the membrane (ASTM D412 matrix C): 3.4 Mpa minimum;

.7 Breaking strength of the film (ASTM D882): 39.5 Mpa minimum;

.8 Low temperature flexibility (CGSB 37-GP-56M): -30°C;

.9 Water vapour permeance (ASTM E96, Method B): 1.6 ng/Pa m^2 s (0.03 perms);

.10 Acceptable product: Blueskin TWF from Bakor.

.11 Glue and sealant according to the requirements and recommendations of the manufacturer/manufacturer. Acceptable product: Bakor Polybitum 570-05.

.12 Mortar net/anti-sealing device:

.1 Anti-sealing device: high density woven polyethylene@ 90%. Installation behind the weep holes.

.2 Produit acceptable : Mortar Trap de Hohman & Barnard inc ou Mortar Net de Mortar Net Solution.

.2.4 MASONRY REINFORCEMENTS, CRAMPONS AND ANCHORS

.1 Materials:

.2 Standards:

.1 Unless otherwise specified, reinforcements and masonry ties shall comply with CSA S304.1-04 and CAN/CSA-A370-04.

.2 Corrosion protection: according to CSA S304.1-04, hot immersion galvanizing, with 460 g/m² zinc plating according to CSA-S304-F04 and CSA-A370.

.2 Reinforcing steel: Canadian-made billet steel groove bars, compliant with CSA G30.12-M1977, grade 400 MPa. Provide single-piece bars with the required lengths and bends.

.3 Armature wire: ladder, lattice, compliant with CSA-A371 and CSA G30.14 standards.

.4 Attachment wire: smooth wire made of annealed black steel, with a diameter greater than or equal to 16 gauge (U.S. Steel Wire Gage).

.5 Metal studs and anchors: compliant with CSA-A370 and CSA-S304 standards.

.6 Horizontal frame: triangulated diagonally in galvanized steel wire 4.76 mm and 50 mm less than the width of the wall.

.7 Horizontal frame for single-walled walls:

.1 Reference Product: "Diagonale #120" from "Senneco Inc." or approved equivalent.

.8 Corrosion protection: according to CSA-S304, stainless steel according to CSA-S304 and CSA-A370.

.9 Adjustable anchors for brick masonry: Double adjustable anchor, made of stainless steel 14 gauge, double baseboard of 3/16 '' with vertical peg section:

.1 Reference product: "P-273 series" from "Metal Pointech" or approved equivalent.

.10 Adjustable anchors for stone elements, thermal anchor for stainless steel adjustable nut stone, with EPDM washer as thermal break:

.1 Reference product: "Thermal 2-Seal Wing Nut" from "Hohmann & Barnard Inc." or approved equivalent.

.11 Adjustable anchor attachment: stainless steel TAPCON type screws, 114 mm x depth required for minimum penetration of 50 mm, according to the manufacturer's recommendations.

.12 Gypsum fixation on the studs: self-taping screws.

.3 Shaping:

.1 Reinforcements must be shaped in accordance with the requirements of CAN/CSA-A23.1 and the recommended standards published by the Institut d'acier d'armature du Québec.

.2 Studs and anchors must be shaped in accordance with CSA-A370.

.3 The location of the joints between the reinforcements, other than those depicted on the installation drawings, must be approved by the Architect.

.4 Subject to the approval of the architect and engineer, reinforcements must be welded in accordance with the requirements of CSA W186.

.5 Before being shipped, reinforcements, crampons and anchors must be clearly marked according to the drawings.

.2.5 CLEANING PRODUCTS

.1 For mineral salt stains: Product 960 from DIEDRICH TECHNOLOGIES or equivalent approved by the architect.

.2 For rust stains: Product 940 or 960 from DIEDRICH TECHNOLOGIES or equivalent approved by the architect.

.3 For bitumen or tar stains: ASPIRSOLV product from DIEDRICH TECHNOLOGIES or equivalent approved by the architect.

.4 For black spots (carbon): 707X or 808 products from DIEDRICH TECHNOLOGIES and neutralisant 707N from DIEDRICH TECHNOLOGIES or equivalent approved by the architect.

.5 For paint stains: Product 505 from DIEDRICH TECHNOLOGIES or equivalent approved by the architect.

.6 For cleaning efflorescence: EF-FORTLESS from EaCom or equivalent approved by th earchitect.

.7 Submit data sheets for approval. The subcontractor will be required to clearly demonstrate the equivalence of the products.

.8 A sample of the work must be carried out on site and an inspection for approval will be carried out by the architect 14 days after the sample. The contractor must have the approval of the architect before performing the complete cleaning.

.2.6 SOURCE OF MATERIAL SUPPLY

.1 Materials from the same source of supply must be used for all work.

EXECUTION

.3.1 INSTALLERS

.1 Competent and experienced masons will carry out the installation work and assembly of the masonry works.

.3.2 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with the manufacturer's written requirements, recommendations and specifications, including technical bulletins and installation instructions specified in product catalogues and on packaging, as well as indications in data sheets.

.3.3 EXAMINATION

.1 Examine the condition of surfaces, supports and structures intended to receive masonry.

.2 Examine the openings intended to accommodate the masonry elements; check their dimensions, their location. Ensure that they are plumb, square, ready to receive the works provided for in this section.

.3 Verification of conditions

.1 Check the following.

.1 Before proceeding with the masonry installation, ensure that the condition of the supports previously erected under other sections or contracts are acceptable and allow the work to be carried out in accordance with the manufacturer's instructions.

.2 Ensure that existing conditions are acceptable and allow the work to be carried out.

.3 Ensure that the elements to be recessed are in the right places and ready to be incorporated into the masonry.

.2 The fact of starting the work means that the condition of the supports has been deemed satisfactory.

.3.4 PREPARATION WORK

.1 Surface preparation: prepare surfaces in accordance with the manufacturer's written recommendations.

.2 Determine the lines, levels and type of seat, and take the necessary means to respect them.

.3 Protect against damage and deterioration the works located in the vicinity of the works carried out under this section.

.3.5 GENERAL

.1 Unless otherwise specified, perform masonry work in accordance with CAN/CSA-A371.

.2 Carry out plumb, level and alignment masonry structures, making vertical joints that are well aligned and respecting the construction tolerances defined in the CAN/CSA-A371 standard.

.3 Arrange the rows of masonry elements according to the prescribed apparatus and in such a way as to obtain seats of appropriate height and to maintain the continuity of the apparatus above and below the bays, cutting a minimum number of elements.

.4 The application of mortar and grouting by the bag method (in the pocket) are strictly prohibited.

.5 When laying the masonry cladding, temporarily place behind the elements a J-curved sheet to prevent mortar from falling into the cavity. Gently lift this sheet at regular intervals and remove the mortar that has accumulated on it before putting it back in place.

.6 Refer to the documents of the structural engineer and follow the recommendations, instructions, and requirements of the engineer at all times.

.7 Use mechanized systems (vacuum cleaner) of recovery at the source when using tools that generate dust and include but are not limited to sawing works. Dust should be contained in leak-proof containers.

.3.6 IMPLEMENTATION

.1 Laying concrete masonry elements

.1 Device:

.1 In running bond, staggered joints (according to indications in the drawings or au estimate)

.2 In Checkerboard the joints aligned. (According to the indications in the drawings or the estimate)

.2 Seat height: 400mm for a row of blocks and a mortar joint.

.2 Grouting

.1 When concave joints (grooved) are prescribed, allow the mortar to harden enough to remove excess water, no more, and then re-iron with a round joint to make smooth, aligned, well-packed and evenly concave joints.

.2 Make flush joints (tucked at the base) in the case of all wall joints concealed or intended to be covered with a coating, tile, insulating material or any other similar material, with the exception of paint or a thin film finishing product of the same type.

.3 Waist

.1 Trim masonry elements where switches, power outlets or other recessed or recessed elements need to be installed.

.2 Make clean cuts, well squared and free of uneven edges.

.4 Embedding

.1 Recess the elements to be incorporated into masonry works.

.2 Prevent recessed elements from moving during construction. As the work progresses, frequently check the plumbness, alignment and position of these elements.

.3 Brace the door frame so that they remain plumb. Fill the spaces separating the masonry from the studs with mortar.

.5 Mooring bricks

.1 Except in cold weather, wet the bricks whose initial absorption rate exceeds 1 g/min per area of 1000 $mm^{2;}$ wet these bricks until a uniform degree of saturation is obtained, from three (3) to 24 hours before installation, and do not lay them until their faces are dry.

.2 After an interruption of work, moisten the top of the brick walls requiring wetting.

.6 Support elements

.1 Where elements filled with poured concrete instead of solid elements must be used, place 25 MPa concrete in accordance with section 03 30 00 - Poured concrete.

.2 Where grout-filled elements should be used instead of solid elements, use GROUT that complies with CAN/CSA-A179.

.3 Lay construction paper under voids to be filled with concrete; place the construction paper 25 mm away from the face of the elements.

.7 Masonry Movement

.1 Leave a space of 10 mm under the support angles.

.2 Leave a space of 20 mm between the framing elements and the top of the bulkheads and 40 mm above the fences and non-load-bearing walls; do not insert wedges.

.3 Construct masonry structures in such a way as to integrate stabilizers and predict, before the installation of the latter, the vertical movement of the masonry.

.8 Free steel lintels (reported)

.1 Install free steel lintels above the bays; center them in relation to the width of the latter.

.9 Control joints:

.1 Unless otherwise specified, no continuous reinforcement shall pass through a control joint.

.2 Interrupt the masonry elements on either side of the control joints, at the places indicated in the drawings, or at every 13m.

.3 Insert the seal backer rod and apply a sealant in accordance with section 07 92 10 – Sealing of the seals, continuously, in the control joint.

.10 Fractionation joints:

.1 Manufacture continuous fractionation joints, where ad as directed on drawings.

.11 Motion joints:

.1 Manufacture continuous motion joints, where and as directed on drawings.

.12 Compartmentalization of facades:

.1 Compartmentalization materials: galvanized steel metal sheets.

.2 Install shutter elements to compartmentalize each of the facades of the building and the compartmentalization blades near the corners according to the indications in the drawings.

.13 Connection to other structures

.1 Cut the openings in the existing structures according to the indications.

.2 Any opening made in the walls as well as the method to be used at the junctions of the masonry elements designated to be preserved must be approved by the Architect.

.3 Proceed to the removal of masonry elements. Use manual removal methods. Have the Architect approve the use of mechanical tools before undertaking the removal work.

.4 Carefully dismantle, clean and store masonry elements that will be reused. Chipped, cracked or otherwise damaged masonry elements should not be reused.

.5 Patch the segments of the openings that are to be closed.

.6 Restore the existing structures to good quality using materials corresponding to those used for the construction of the latter.

.7 It is forbidden to carry out the curettage of the joints to be restored using a grinder.

.14 Through wall flashing :

.1 Integrate the flashing into the masonry, in accordance with CSA-A371.

.1 Install flashings under the first seat resting on the foundation walls or floor slab, on supporting corners and on steel angles placed above the bays. Also install flashings under seats with exhaust nozzles and at other indicated locations. Install flashing through the wall so as to direct the accumulated moisture into the air space behind the brick or stone.

.2 Install flashings on the outer wall from the outside to the inside, fold them and raise them against the lining wall to a height of not more than 150 mm (6"); also comply with the following requirements.

.1 In the case of a masonry lining partition, drown the flashings to a depth of 25 mm (1") in the joints.

.2 In the case of a concrete lining partition, insert the flashings into engravings.

.3 In the case of a wood-framed lining partition, staple the flashings to the wall under the cladding paper.

.4 In the case of a plasterboard lining partition, glue the flashings to the wall using an adhesive recommended by the manufacturer.

.5 Overlap the joints over a width of 150 mm (6"), and seal them with an adhesif.

.3 At the lintels, sills and ends of the walls, shape the flashings (beads/heels) so as to prevent water from flowing horizontally beyond the ends of the lintels.

.15 Evacuation weep holes:

.1 Provide weep holes at the base of cavity walls.

.2 Install weep holes in the masonry every 610 mm (24") c/c maximum, horizontally in the first row above the solid-wall flashing, for each vertical section of the wall as well as in any place indicated on the drawings (window heads, etc.). Make sure the mortar does not obstruct these openings.

.16 Exposed masonry works:

.1 Remove chipped, cracked or otherwise damaged elements from exposed works in accordance with section 82.1 ofCSA No. A-165 and replace them with elements in good condition.

.17 Reinforcements, crampons and masonry anchors:

.1 Lintels reinforcement and masonry beams:

.2 Reinforce lintels and masonry beams as directed.

.3 Place reinforcements and grout in accordance with the requirements of CSA-S304.1, CSA-A371 and CSA-A179.

.4 Grout injection:

.1 Inject grout into the masonry in accordance with CSA-S304.1, CSA-A371 and CSA-A179 and as directed.

.2 Fill the cells of the concrete block units where the anchors are installed. Drown the anchors securely with grout to obtain maximum resistance against loads.

.5 Installation of the horizontal frame:

.1 Set up the horizontal frame at both ends.

.2 Overlap the reinforcement mesh of at least 305 mm (12").

.6 Installation of anchors:

.1 Attach masonry veneers to the support in accordance with the National Building Code (NBC), CSA-S304.1 and CSA-A371, and as directed.

.2 Provide and insert anchorages at the junction of structural elements and other surfaces.

.3 Arrange masonry anchors no more than 600 mm (24") vertically and not more than 400 mm (16") horizontally. Place them less than 305 mm (12") from the openings and not more than 305 mm (12") on either side of the control joints. Install fasteners up to 305 mm (12") from the ends of unsupported veneer (ex: top of the wall near the crown flashing of a parapet).

.4 For stone elements, in addition to the distances mentioned above, install at least 2 anchors per stone, except for jamb blocks less than 300mm wide a single anchor can be installed at the top of the stone.

.5 Mechanically attach the anchors to the faces, leaving the necessary clearance for the adjustment of the metal wire to be inserted into the joints of the masonry elements.

.6 Anchors must not be bent in the field, unless specifically indicated in this regard or with the express authorization of the Professional.

.7 When benting on the spot is allowed, proceed without heat input, slowly applying uniform pressure.

.8 Replace split or cracked anchors.

.9 Patch the cut or damaged ends of the galvanized anchors with a compatible finishing product to ensure the continuity of their protective coating.

.7 Control joints:

.1 Unless otherwise specified, no continuous reinforcement shall pass through a control joint.

.2 Interrupt the masonry elements on either side of the control joints, at the places indicated in the drawings.

.3 Insert the backer rod and apply a sealant in accordance with section 07 92 10 – Sealing of the seals, continuously, in the control seal.

.8 Bent carried ou ton site:

.1 Crampons and anchors must not be bent in the field, unless specifically indicated in this regard or with the express authorization of the Professional.

.2 Where on-site bent is permitted, proceed without the addition of heat, slowly applying uniform pressure.

.3 Replace rebar, studs and split or cracked anchors.

.9 Performing on-site repairs:

.1 Retouch the cut or damaged ends of galvanized or epoxy coated reinforcements, studs and anchors with a compatible finishing product to ensure the continuity of their protective coating.

.10 Sealer:

.1 Remove and scrape the existing sealant and place the new sealant on the joint background to the openings (at full length on the affected side) located in a stone or brick working area, whether replacement or repointing.

.2 Sealants: complies with section 07 92 10 – Sealing.

.11 Surface spinning and other protruding elements:

.1 Remove and reinstall the protective mesh, as requested in the drawings. The contractor must consider that he will have to replace a certain proportion of the anchors at the time of re-installation.

.2 Remove nails, rattles and other obsolete anchors protruding or inserted into brick and stone.

.3 Dismantle and temporarily support the surface wiring illustrated in the drawings so as to allow the proper execution of the work. Reinstall all wires after work is complete.

.3.7 DISPOSITION AND GRIP

.1 Lay the masonry elements with complete vertical and horizontal joints, well joined to the other structures.

.2 Filling of the corners of the joints and excessive filling of the mortar joints are not permitted.

.3 Fully join intersections and external corners.

.4 Do not adjust the bricks after they have been laid. If it is necessary to reposition certain bricks, remove them, clean them and re-lay them using a new mortar.

.3.8 IMPLEMENTATION TOLERANCES

.1 The tolerances set out in the notes to CAN/CSA-A371 apply.

.3.9 COLD WEATHER MASONRY

.1 Air temperature from 0 to 4 degrees C (32 to 39 degrees F): Protect masonry from rain and snow for at least 24 hours. Heat the mixing water and sand to a temperature of at least 20 degrees C (68 degrees F) and not more than 70 degrees C (158 degrees F).

.2 Air temperature -4 to 0 degrees C (25 to 32 degrees F): Cover the masonry for at least 24 hours after completing any portions of the work. Heat the mixing water and sand to a temperature of at least 20 degrees C (68 degrees F) and not more than 70 degrees C (158 degrees F).

.3 Air temperature from -7 to -4 degrees C (19 to 25 degrees F): Provide heat on both sides of the wall and use windbreaks when the wind exceeds 25 km/h (15.5 m/h). Cover the masonry with an insulating blanket for at least 24 hours after completing each portion of the work. Heat the water and mixing sand to a temperature of at least 20 degrees C (68 degrees F) and not more than 70 degrees C (158 degrees F). Use windbreakers when the wind exceeds 25 km/h (15.5 m/h).

.4 Air temperature of -7º C and below (19º F and below): Heat water and mixing sand to a temperature of at least 20 degrees C (68 degrees F) and not more than 70 degrees C (158 degrees F). Enclosures and auxiliary heating must be provided to maintain the air temperature above 0º C. The temperature of the masonry element should not be lower than 7º C. The temperature of the masonry must be maintained above 0º C for 48 hours by means of an enclosure and auxiliary heating.

.3.10 MASONRY IN HOT WEATHER

.1 When the air temperature is 38 degrees C (100 degrees F) or higher or 32 degrees C (90 degrees F) with winds exceeding 13 km/h (8 m/h): soak the clay bricks in advance. Limit the extent of the mortar bed to 1 220 mm (48") in length. Ensure that the bricks are laid in less than a minute after extending the mortar. Use the mortar in less than an hour and a half after mixing it.

.3.11 WASHING MASONRY

.1 Carry out the work and interventions on the brick and stone according to the indication on the drawings.

.2 Before starting the cleaning of the brick and stone, identify in the presence of the project manager and the professional the potential waterways to the interior. Take the necessary steps to avoid any infiltration.

.3 Any work generating dust such as hollowing out the joints must be done with a device equipped with a suction system at the source.

.4 Carry out the restoration work of the stone according to the indications in the drawings. The surfaces to be repaired must first have been adequately prepared according to the manufacturer's recommendations. This work must be carried out by qualified personnel whose experience can be demonstrated.

.5 Recover, clean and store (protect from waste) the brick and stone to be reinstalled.

.6 Remove and reinstall all stones required to replace those indicated in the drawings.

.7 Take precautions and protective measures (wetting surfaces) during masonry cleaning methods so as not to damage architectural elements and adjacent surfaces.

.8 Carry out at the beginning of the construction site a cleaning sample of the brick and stone to establish the color of the mortar.

.9 Work muck-up:

.1 The contractor for this work must prepare a muck-up on the site with a surface area of 1 square meter for each type of cleaning listed below, for approval by the architect before proceeding with the cleaning work.

.10 Method et alternate products:

.1 If the intended methods and products do not produce a satisfactory performance, the contractor for this work shall submit and test acceptable methods and/or alternatives.

.2 The use of metal filament brushes is prohibited for masonry cleaning.

.3 Most of the cleaning will be done by installing water sprinklers in the upper part of the walls. Ensure the tightness of the openings. Pressurized jets must not damage the brick.

.4 For mineral salt stains: Dry brush surfaces and collect residues, then wet surfaces and apply the appropriate cleaning product. Brush surfaces and rinse with a water jet.

.5 For rust stains: Wet the surfaces and apply the appropriate cleaning product. Brush surfaces and rinse with a water jet.

.6 For bitumen or tar stains: Scrape the bitumen or tar and apply the appropriate cleaning product and rinse with a water jet.

.7 For black spots (carbon): Wet surfaces and apply the appropriate cleaning product. Rinse with a water jet and apply the appropriate neutralizer.

.8 For paint stains: use suitable cleaning product.

.3.12 PROTECTION

.1 Protect masonry work in accordance with CSA A371.

.2 Use straw, sand, sawdust or plastic sheets spread on the floor, under the wall under construction. Protect the base of the walls from splashes of rain, mud and mortar. Turn the scaffolding boards to the side at the end of the day to prevent rain from splashing mortar and dirt directly against the completed masonry. When turning the scaffolding boards, place them at an angle so as to prevent dirt from splashing on the wall.

.3 Wall cover.

.4 During erection, cover the top of the wall with a waterproof membrane at the end of each day or at the end of the work.

.5 Partially cover a completed wall when work is in progress.

.6 Extend the protective cover to at least 610 mm (24") on both sides and secure it in place.

.7 Cover the masonry under the windows until the windows and sills are installed.

.8 Caulk the rupture joints under the supporting angles as soon as possible to avoid the entry of moisture.

.9 Protective nets.

.10 During erection, install staggered protective nets to retain excess mortar and prevent it from sealing the gaps.

.3.13 CLEANING

.1 Cleaning during work: perform the cleaning work in accordance with section 01 74 00 - Cleaning.

.1 Leave the premises clean at the end of each working day.

.2 Once the work is complete, clean up the site to remove accumulated dirt and debris from the construction work and the environment.

.3 Once the work is complete, remove surplus materials, scrap materials, tools and safety barriers from the site.

.4 Final cleaning

.1 Once the work is complete, clean up the site to remove accumulated dirt and debris from the construction work and the environment.

.2 Masonry of uncoated fired clay bricks: clean a 10 m² wall surface designated by the architect, according to the following specifications, and leave on hold for one week. After the mortar has been taken and treated, if no harmful effects have occurred, protect the windows, sills, doors, trim and other elements, then clean the brick masonry as follows:

.1 Remove large lumps of mortar with a wooden pallet, without damaging the surface of the structure. Saturate the masonry with clean water and rinse to remove dirt and loose mortar.

.2 Using a hard bristle brush, rub the surfaces with a solution consisting of 25 mL of trisodium phosphate and 25 mL of household detergent in1L of clean water, then rinse immediately with large water using a garden hose. Any other trademark product recommended by the brick manufacturer may also be used, in accordance with the brick manufacturer's instructions.

.3 Repeat cleaning as often as necessary to remove mortar smudge and other stains.

.4 For masonry structures that are difficult to clean, use an acidic solution according to the methods described in technical manual number 20, a publication linked by the Brick Industry Association.

.5 Once the work is complete, remove surplus materials, scrap materials, tools and safety barriers from the site.

.3.14 PROTECTION OF FINISHED WORKS

.1 Protect masonry work in accordance with CSA A371.

.2 Protect masonry works from marks, mortar smudges and other damage. Use protective tarps that do not stain.

.3 Moisture protection

.1 As long as the masonry structures are not finished or protected by flashings or any other permanent construction, keep them dry by means of waterproof tarps which do not stain, and shall be extended beyond the top and sides of the works for a sufficient distance to protect these work from rain pushed by the wind.

.2 At the end of each working day, cover partially or completely finished structures that are not protected by an enclosure or shelter with securely secured waterproof tarps.

.3 Protect structures in such a way as to maintain the ambient temperature recommended in Article 1.10, CONDITIONS OF IMPLEMENTATION.

END OF SECTION

GENERAL

.1.1 SCOPE OF WORK

.1 The work covered by this section includes the supply of all materials, labour, tools, scaffolds, equipment and services required for the installation of mortars and grout required for the execution of the masonry work according to all applicable requirements set out in the contract documents, as well as elements not specifically described in the drawings, but necessary to complete the construction of the works.

.2 The work includes, without being limited to:

.1 Masonry work of architectural blocks.

.2 Concrete masonry work.

.3 The work must comply with the relevant requirements of the current building code.

.4 Mortars and grouts for rmasonry work in accordance with CSA A179-04.

.1.2 RELATED REQUIREMENTS

.1 Section 04 05 10 - Masonry work.

.2 Section 04 22 00 - Masonry of concrete elements.

.3 Section 07 62 00 - Sheet metal flashings and accessories.

.4 Section 07 92 10 - Sealing of joints.

.1.3 REFERENCE STANDARDS

.1 CSA Group

.1 CSA A23.1/A23.2-14, Concrete - Constituents and Work Execution/Standard Tests and Practices for Concrete.

.2 CAN/CSA-A179-F14, Mortar and grout for large masonry.

.3 CAN/CSA-A371-F14, Building Masonry.

.4 CAN/CSA-A3000-F13, Compendium of Binding Materials (Contains A3001, A3002, A3003, A3004 and A3005).

.2 International Masonry Industry All-Weather Council (IMIAC)

.1 Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

.3 ASTM Norms :

.1 C207 (2011) Standard Specification for Hydrated Lime for Masonry Purposes.

.2 C270 Standard Specification for Mortar for Unit Masonry.

.3 C979 Standard Specification for Pigments for Integrally Colored Concrete.

.4 Documents of the Institut de la Maçonnerie du Québec (IMQ):

.1 Masonry work for buildings.

.2 Bulletins techniques No 7-8R.

.3 Bulletin technique No 15r.

.5 Documents from the Institut de la Maçonnerie du Québec (IMQ):

.1 Solution constructive No 68.

.1.4 DEFINITIONS

.1 Repointing: hollowing out existing joints, filling voids and finishing masonry joints.

.2 Joint shaping: finishing of masonry joints to give them their final shape.

.3 Repair: the assembly of the various parts of a cracked or fractured masonry element by means of adhesives.

.4 Consolidation: reinforcement of masonry elements to prevent their deterioration (ex: sparrows).

.1.5 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with section 01 33 00 - Documents/Samples to be submitted.

.2 Data sheets

.1 Submit the required data sheets and manufacturer's documentation for masonry mortar and grout. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.

.3 Samples

.1 Samples: submit the required samples in accordance with the requirements of section 04 05 00 - Masonry – General information concerning the results of the work as well as those indicated below.

.1 Submit two (2) samples of each mortar, 100 mm x 100 mm.

.4 Submit installation instructions provided by the manufacturer.

.1.6 QUALITY ASSURANCE

.1 Test Reports: Submit certified test reports, including sand particle size tests in accordance with CAN/CSA-A179, that indicate compliance with physical characteristics and performance criteria, in accordance with section 04 05 00 - Masonry - General Requirements for Work Results.

.2 Certificates: submit documents signed by the manufacturer certifying that the products, materials and equipment meet the requirements for physical characteristics and performance criteria.

.1.7 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with section 01 61 00 - General Product Requirements and the manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials and materials to the job site in their original packaging, which must bear a label indicating the name and address of the manufacturer.

.3 Storage and handling

.1 Store materials and equipment dry, in a clean, dry and well-ventilated area, in accordance with the manufacturer's recommendations.

.2 Store masonry mortar and grout to protect their packaging from marks, scratches and scratches.

.3 Replace damaged materials and equipment with new materials and equipment.

.1.8 CONDITIONS FOR IMPLEMENTATION

.1 Ambient conditions: maintain the materials and the atmosphere at the temperatures indicated below.

.1 At least 10 degrees Celsius before and during the work as well as for a period of 48 hours after the completion of the work.

.2 Not more than 32 degrees Celsius before and during the work as well as for a period of 48 hours after the completion of the work.

.2 Work performed in hot or cold weather: according to CAN/CSA-A371 and the document entitled "Recommended Practices and Guide Specifications for Cold Weather Masonry Construction" published by IMIAC.

.1 Implementation in cold weather:

.1 When the daytime temperature is -4°C to 0°C:

.1 The mortar must have a minimum temperature of 4 °C and a maximum temperature of 50 °C.

.2 Between -7 °C and -4 °C:

.1 The mortar must have a minimum temperature of 4 °C and a maximum temperature of 50 °C.

.2 Heat must be provided on both sides of the walls under construction.

.3 Shelters must be used when the wind speed exceeds 25 km/h.

.3 -7 °C and below:

.1 The mortar must have a minimum temperature of 4 °C and a maximum temperature of 50 °C.

.2 Enclosures and auxiliary heating shall be provided to maintain the air temperature above 0 °C.

.2 Minimum element temperature:

.1 The temperature of the element at the time of installation should not be below 4 °C.

.3 Implementation in hot weather:

.1 Cover the structure with a waterproof tarp to prevent the work from drying too quickly. Make sure to use a tarp that does not stain.

.4 Unless otherwise specified by the architect, never wet the masonry units.

.1.9 PROTECTIVE MEASURES

.1 Masonry works must be wrapped with waterproof tarps that do not stain. The tarps must cover the walls by extending 600 mm from each side to protect them from rain pushed by the wind, as long as the work is not finished.

.2 Using non-staining tarps or polyethylene, protect finished structures from mortar splashes.

.3 Protect windows, doors, doors and sills from splashing or other damage.

.1.10 WASTE MANAGEMENT AND DISPOSAL

.1 Evacuate all packaging materials from the site and transport them to appropriate recycling facilities.

.2 Collect and sort scraps made of paper, plastic, polystyrene and corrugated cardboard and place them in the appropriate bins for recycling.

PRODUCT

.2.1 MATERIALS

.1 Materials of the same brand and aggregates from the same source of supply must be used for all work.

.2 Cement

.1 Portland cement: complies with CAN/CSA-A3000, type GU - normal or general purpose hydraulic cement (type 10).

.3 Aggregates: from a single source of supply.

.1 Fine aggregates: compliant with CAN/CSA-A179.

.4 Water: clean, drinkable and free of harmful substances such as oils, acids, salts and organic matter.

.5 Lime

.1 Hydrated lime: complies with CAN/CSA-A179, type S.

.6 It is strictly forbidden to use any type of adjuvant aimed at modifying the setting times, maneuverability or any other property of the plastic or hardened mortar.

.2.2 COLORING AGENTS

.1 Use colouring agents in quantities not exceeding 10 % of the cement content by mass, or coloured masonry cement, to obtain coloured mortar corresponding to the approved sample. Colouring agents must be approved before use. Incorporate them in accordance with the manufacturer's recommendations.

.2.3 MORTARS

.1 For the mortar colour of exterior masonry cladding, see section 04 05 00, in relation to the type of cladding.

.2 For each type of mortar, Portland cement, lime, sand and dyes are premixed in the factory and then kneaded with the water on site according to the manufacturer's instructions.

.3 Mortar for new exterior masonry structures, above ground level

.1 Mortar used in the case of load-bearing walls: type N, prepared according to dosage-oriented prescriptions.

.1 Reference product: King 2-1-9 KING mortar or approved equivalent.

.2 Mortar used in the case of non-load-bearing walls: type N, prepared according to dosage-oriented prescriptions.

.3 Reference product: KING1-1-6 mortar from "King" or approved equivalent.

.4 Mortar for new interior masonry structures

.1 Mortar used in the case of load-bearing walls: type S, prepared according to dosage-oriented prescriptions.

.1 Reference product: KING Blocks mortar or KING 2-1-9 mor tier from "King" or approved equivalent.

.2 Mortar used in the case of non-load-bearing walls: type N, prepared according to dosage-oriented prescriptions.

.1 Reference product: KING 1-1-6 mortar from "King" or approved equivalent.

.2.4 MIXING OF MORTAR

.1 Use premixed, pre-colored and prepackaged mortar in the factory under controlled conditions. The accuracy of the dosage must be of the order of 1 %.

.2 Mix the ingredients used in the mortar in accordance with CAN/CSA-A179, in quantities necessary for immediate use.

.3 Moisten the sand evenly immediately before mixing the constituents.

.4 Add the pigments according to the manufacturer's instructions. Ensure uniformity of mixing and colouring.

.5 Do not use anti-freezing compounds, including calcium chloride or other chloride-based compounds.

.6 Do not add an air trainer in the mortar mixture.

.7 Use a mixer that complies with CAN/CSA-A179.

.8 Hydrate the grouting mortar beforehand by first mixing the dry ingredients and then adding just enough water to obtain a wet mass that is difficult to handle, which retains its shape when made into a ball. Let stand for one (1) hour but not more than two (2) hours, then mix again, adding enough water to obtain a mortar of consistency suitable for grouting.

.9 Re-wet the mortar only two (2) hours after mixing in case of loss of water by evaporation.

.10 Use mortar within two (2) hours of mixing when the temperature is 32 degrees Celsius, or within two and a half hours (2 1/2) if it is below 10 degrees Celsius.

.2.5 GROUT

.1 The use of a mortar as a grout is strictly prohibited.

.2 For each type of grout, the raw materials are mixed in the factory and then mixed with the water on site according to the manufacturer's instructions.

.3 Grouts must comply with Table 7 of CSAA-179.

.4 Grouts must be expansive types.

.5 Grout: compressive strength of at least 15 MPa at 28 days. The maximum size of the aggregates and the sagging of the material must comply with CAN/CSA-A179.

.1 Reference product: E-15 neck of "King" or approved equivalent.

.2.6 GROUT MIXING

.1 Perform the mixing of the premixed delivered grout in accordance with CSA A23.1/A23.2.

.2 Mix the constituents of the fine grain grout in quantities necessary for immediate use in accordance with CAN/CSA-A179.

.3 Add the adjuvants according to the manufacturer's instructions and mix perfectly.

.4 Do not use adjuvants based on calcium chloride or other chlorides.

EXECUTION

.3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with the manufacturer's written requirements, recommendations, and specifications, including technical bulletins and installation instructions specified in product catalogues and on packaging, as well as indications in data sheets.

.3.2 INSPECTION

.1 Verification of conditions: Before proceeding with the installation of the masonry, ensure that the condition of the surfaces/supports previously built under other sections or contracts is acceptable and allows the work to be carried out in accordance with the manufacturer's written instructions.

.3.3 PREPARE WORK

.1 Apply a bonding agent to existing concrete surfaces.

.2 Seal clean outs. Brace masonry structures before injecting grout under pressure.

.3.4 CONDITIONS FOR CONSTRUCTION

.1 Unless otherwise specified, use mortar and masonry grout in accordance with CSA A179.

.2 Always use a clean mixer for each type of mortar and color.

.3 Outdoor temperature of 10°C or less (but not less than 5°C):

.1 Store cement and sand for immediate use in heated enclosures and let these materials reach a temperature of at least 10 °C (the same as that of the ambient air of the enclosure).

.2 Heat the water to a temperature of at least 20 °C and not more than 30 °C:

.1 When using the mortar, its temperature should be at least 15 °C and not more than 30 °C.

.2 Do not mix cement with water, aggregate or water-aggregate mixture with a temperature above 30 °C.

.4 The requirements for the protection of structures are prescribed in section 04 05 10 – General requirements for the results of the work.

.5 Have the enclosures and methods of protection approved by the Architect.

.3.5 IMPLEMENTATION

.1 Unless otherwise specified, use masonry mortar and grout in accordance with CAN/CSA-A179 and CAN3-A371-M84.

.2 Finish and compact the joints using a grouting tool to force the mortar into the joint, so that it adheres well to the surfaces.

.3 Unless otherwise indicated, finish the joints in such a way as to imitate as much as possible the existing joints.

.4 Use an appropriate and approved grouting tool to make compacted and smooth joints.

.5 Use a pressure-setting gun to make the thin joints.

.3.6 MIXING

.1 Grouting mortars can be kneaded in an ordinary blade mixer. Only mixers with electric motors are eligible; those equipped with hydrocarbon engines are not allowed because of the emissions they emit.

.2 Clean the mixing boards and mechanical mixers between each batch.

.3 The prepared mortar must have less strength than the masonry elements it must connect.

.4 Designate a person who will be assigned to the mixing of the mortar for the duration of the work. If another person had to be called in during the work, all mixing operations has to be stopped until the new worker had been trained and the mixture had been tested.

.3.7 MORTAR INSTALLATION

.1 Use the mortar according to the manufacturer's instructions.

.2 Install mortar in accordance with CAN/CSA-A179.

.3 Remove excess mortar from spaces where grout is to be applied.

.4 Joints :

.1 Unless otherwise specified by the architect, the joints must be 10 mm thick.

.2 The joints should be smoothed to obtain a concave profile.

.3.8 CURE

.1 Ripening, if required, must be done according to the recommended requirements of the manufacturer of the product used.

.3.9 GROUT INSTALLATION

.1 Apply the grout according to the manufacturer's instructions.

.2 Apply grout in accordance with CAN/CSA-A179.

.3 Fill the grout into the cavities of masonry structures so as to eliminate all voids.

.4 Do not apply the grout in layers more than 400 mm thick without consolidating the mass by shaking it with a rod.

.5 Avoid moving rebar when placing the grout.

.3.10 TIME TO SET UP MORTAR AND GROUT

.1 Mortar:

.1 The mortar must be placed less than 1.5 hours after mixing, if the ambient temperature is equal to or greater than 25 °C, and less than 2.5 hours after mixing if the temperature is below 25 °C.

.2 Grout:

.1 For expansive grouts, the grout must be put in place no later than 20 minutes after mixing. For regular grouts, the installation must be done less than 1.5 hours after mixing.

.3.11 REMIXING

.1 Within the criteria for setting up the mortar and grout, re-release is allowed to restore the necessary workability.

.3.12 COLOR UNIFORMITY

.1 In order to ensure the uniformity of the colour of the mortar, the contractor must:

.1 Use the same supplier for all mortars and grouts.

.2 Ensure that the amount of water present in the mortar joints when smoothing the joints is always the same.

.3 Always use a clean mixer.

.3.13 CLEANING

.1 Cleaning during work: carry out cleaning work in accordance with section 01 74 00 - Cleaning.

.1 Leave the premises clean at the end of each working day.

.2 Remove slumps and mortar splashes using a clean sponge and water.

.3 Once the work is complete, remove the excess mortar with a wooden pallet. Once the mortar has sufficiently hardened, the contractor must:

.1 Starting from the bottom, hydrate the wall with clear water.

.2 Starting from the top, rub the wall with soapy water and a brush with nylon bristles.

.3 Unless otherwise indicated by the architect, the use of acid, in any form, is prohibited.

.4 Clean the masonry with a brush with soft bristles made of natural fibres and water at low pressure.

.5 Carry out other cleaning work once the mortar has been taken and well hardened, a period of 30 days is often sufficient. Use only clear water and stiff natural hairbrushes to perform these jobs.

.6 Do not use acid, even diluted.

.7 Once the implementation work is complete, remove surplus materials, scrap materials and tools from the site.

.8 Final cleaning: remove surplus materials, waste, tools and equipment from the construction site in accordance with section 01 74 00 - Cleaning.

.3.14 PROTECTION OF WORKS

.1 At the end of each working day, cover partially or completely finished structures which are not protected by a shelter or enclosure with impermeable tarps. Anchor the tarps in place.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

.1 Wood materials for opening frames;

1.2 CONTENTS OF THE SECTION

.1 Wooden elements for:
- .1 The framework of the partitions.
- .2 Frame openings

.2 The nailing and fastening wooden elements required for:
- .1 The works prescribed in the other sections.
- .2 Equipment provided and installed by others.
- .3 Temporary protection and closure.

.3 Wood treatment.

1.3 RELATED SECTIONS

- .1 All sections of the general requirements.
- .2 Section 07 2710 10 –Air-de-tanchéité system
- .3 Section 07 52 00 – Modified bitumen membrane roof;
- .4 Section 07 62 00 – Sheet metal flashings and accessories.

1.4 REFERENCES

.1 American National Standards Institute (ANSI):
- .1 ANSI A208.1-1999, Particleboard, Mat Formed Wood.

.2 American Society for Testing and Materials (ASTM):
- .1 ASTM A 653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealled) by the Hot-Dip Process.
- .2 ASTM D 1761-00, Standard Test Methods for Mechanical Fasteners in Wood.

.3 Canadian General Standards Board (CGSB):
- .1 CAN/CGSB-11.3-M87, Hard Fiberboard.
- .2 CAN/CGSB-51.32-M77, Coating membrane, permeable to water vapor.
- .3 CAN/CGSB-71.26-M88, Adhesive for bonding plywood to the timber frame of the floors.

.4 Canadian Standards Association (CSA):
- .1 CSA A123.2-M1979 (R1999), Asphalt Coated Roofing Sheets.
- .2 CAN/CSA-A247-M86, Insulating Fiberboard.
- .3 CSA B111-1974, Wire Nails, Spikes and Staples.

.4 CAN/CSA-G164-FM92, Hot-dip galvanizing of irregularly shaped objects.
.5 CSA O112 Series-M1977, CSA Standards for Wood Adhesives.
.6 CSA O121-M1978, Douglas fir plywood.
.7 CAN/CSA-O141-F91, Softwood Cut Wood.
.8 CSA O151-M1978, Canadian softwood plywood.
.9 CSA O153-M1980, Poplar plywood.
.10 CAN/CSA-O325.0-F92 (C1988), Intermediate Construction Coatings.
.11 CAN3-O437 Series-F93, Standards for Oriented Particleboard and Large Particleboard.
.12 CSA 01222 – Glulam timber framing.

.5 National Sawmill Classification Commission (NLGA).

.6 Classification Rules for Canadian Softwood Lumber, 2000.

.7 Truss Plate Institute of Canada, Truss Design and Procedures for Light Metal Connected Wood Trusses.

1.5 QUALITY ASSURANCE

.1 Wood Marking: a classification printed label from an organization recognized by the Accreditation Council of the Canadian Softwood Lumber Standards Commission.

.2 Marking of plywood board, particleboard and oriented particleboard (OPP) and wood-derived composite board: according to the relevant CSA and ANSI standards.

1.6 SHOPDRAWINGS

.1 Submit the required shop drawings in accordance with section 01 33 00 – Documents and samples to be submitted.

.2 Drawings should show construction and assembly details, profiles, fasteners and other related details.
.1 Scales: The scale must be adequate to the proper understanding of the drawing.

1.7 PRODUCT SAMPLES

.1 Submit the required samples in accordance with section 01 33 00 – Documents and samples to be submitted.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Sort wood waste and place it in designated areas according to the following categories for recycling: solid wood/softwood/hardwood, treated, painted or contaminated wood.

.2 Sort wood waste and place it in areas designated according to the following categories, for reuse in ongoing work.

.3 Set aside damaged wood and scrap cut wood to size, in anticipation of other approved uses (ex: bracing elements, holds, small structural elements, spacers). Store these reusable wood scraps separately, in an easily accessible location from the cutting station and the work area.

.4 Sort metal, plastic, wood and corrugated packaging and place it in designated locations for recycling.

.5 Do not burn scrap on the construction site.

.6 Fold the metal strapping strips, flatten them and place them in designated areas for recycling.

PART 2 - PRODUCE

2.1 TIMBER

.1 Cut wood: unless otherwise specified, softwood with an S4S finish (bleached on 4 sides), with a moisture content not exceeding 19% (R-SEC), and complying with the following standards and rules:

- .1 CAN/CSA-O141.
- .2 NLGA, Classification Rules for Canadian Softwood Lumber.
- .3 CAN/CSA-Z809 or FSC or SFI certified wood panels.

.2 Furs, wedges, nail strips, nailing bottoms, false frames, cant strips, curbs, nailing strips for roof edges and slats:

- .1 No more elements: unless otherwise stated, S4S.
- .2 Species: pine, NLGA category "#2" or higher for items treated with a preservative.
- .3 Boards: "standard" category or higher.
- .4 Sample wood: classification "light (clear)", category "standard" or higher.
- .5 Poles and square pieces of wood: "standard" or higher category.

2.2 PANELS

.1 Plywood board, oriented particleboard (OPP) and wood-derived composite board: compliant with CAN/CSA-O325.0.

.2 Douglas fir plywood (Douglas fir): complies with CSA O121, "construction" classification, "standard" category.

.3 Canadian softwood plywood: compliant with CSA O151, "construction" classification, "standard" category.

.4 Poplar plywood: compliant with CSA O153, "construction" classification, "standard" category.

.5 Poplar plywood: compliant with CSA O153, "construction" classification, "fireproof" category.

- .1 Pressure-impregnated plywood with particular chemicals that improve fire resistance.
- .2 It must bear the label of an accredited testing agency, such as Underwriters' Laboratories of Canada.

.6 Press-clumped wood particleboard for interior finishing: COMPLIES WITH ANSI 208.1.

2.3 ACCESSORIES

.1 Sealing strip: closed cell polyethylene foam 4.7 mm thick, 5 1/2" 140 mm wide.
- .1 Acceptable products: cel-R-ROSE from Owens Corning.

.2 Sealants: refer to section 07 92 10 - Sealants.

.3 Glue for flooring supports: complies with CGSB-71.26, in cartridges.

.4 All-purpose glue: complies with CSA O112 series standards.

.5 Nails, cramps and jumpers: compliant with CSA B111.

.6 Bolts: of steel, with nuts and washers, with a diameter of 12.5 mm unless otherwise indicated.

.7 Patented fastening devices: rocker bolts, expandable pads with bottom pull, screws with lead or inorganic fiber sockets, recommended by the manufacturer.

.8 Joist calipers: made of steel sheet at least 1 mm thick, with galvanized coating of designation ZF001, refer to the documents of the structural engineer.

.9 Washers: flat caps at least 25 mm in diameter and 0.4 mm thick, made of sheet metal, shaped in such a way as to prevent their bulging. Deformed washers (convex or concave) are not acceptable.

.10 H-clips for roof coverings: of a thickness suitable for that of the panels, in extruded 6063-T6 aluminum alloy and approved by the Professional.

.11 Fasteners and tape for cladding panels: types recommended by manufacturers.

.12 Sealing complex of interior assemblies: polyethylene, compliant with CAN/CGSB-51.34, type 2.

.13 Chemical anchors: a two-component epoxy resin system of viscosity appropriate to the structure and the loads involved, combined with a galvanized steel fastener.
- .1 Acceptable product:
  - .1 For use in Hilti HIT HY150 solid concrete.
  - .2 For use in Hilti HIT HY20 hollow masonry.

2.4 FASTENING ENDS

.1 Galvanized metal: according to the CAN/CSA-G164 standard, for exterior structures, interior structures in very humid environments and structures made of pressurized and fireproof wood.

.2 Nails, plugs and jumpers: compliant with CSA B111.

.3 Bolts: 12.5 mm in diameter, unless otherwise stated, with nuts and washers.

.4 Stainless steel: according to ASTM A167.

.5 Patented fasteners: rocker bolts, expandable pads with bottom pulls, screws with lead or inorganic fiber sockets or explosive cartridge fasteners, recommended by the manufacturer.

2.5 WOOD TREATMENT

.1 Preservation products:

.1 Preservatives must be relatively safe for structures that will come into contact with humans or horticultural products.

.2 They must be produced with a low VOC content.

.3 Preservatives containing pentachlorophenol (PCP) and creosote are not acceptable.

.4 Factory-applied products: chemical type, compliant with CSA O80 series standards, under pressure, dried after treatment.

.5 Preservation product applied on the surface: water-repellent type, colored.

.2 Preservation treatment by ultra-high temperature process:

.1 Acceptable treatment: Wood Endures from PCI Industries.

.3 Treat the following materials in the factory with a preservative:

.1 Wooden framing elements for roofs.

.2 Chanlattes, nailing bottoms for roof edges, curbs, nailing rods and slats for roof decks.

.3 Plywood panels for roofs.

.4 Furs, wedges, nail strips, nailing strips, false frames, borders and slats in contact with masonry or concrete.

PART 3 - EXECUTION

3.1 EXAMINATION

.1 Verification of conditions: Before proceeding with the installation of the carpentry, ensure that the condition of the surfaces/supports previously implemented under other sections or contracts is acceptable and allows the work to be carried out in accordance with the manufacturer's written instructions.

.1 Make a visual inspection of the surfaces/supports in the presence of the Professional.

.2 Immediately inform the Professional of any unacceptable conditions detected.

.3 Begin installation work only after correcting unacceptable conditions and receiving written approval from the Professional.

3.2 WORK PREPARATION

.1 Store wood and wood products.

.2 Wood treatment products patched on site:

.1 Compliance: Perform the work in accordance with AWPA M4 and the changes set out in the CSA O80 series standards, under the heading Additional Requirements to AWPA M2.

.2 Remove from any chemical deposit the treated wood parts on which a finishing product will be applied.

.3 Brush retouch by applying a generous amount of preservatives to surfaces that have been sawn, erected or pierced on site.

.3 Apply a preservative to the wooden elements before installing them.

.4 Apply the preservative by immersion or with a brush. Coat surfaces to saturation and allow the product to soak for at least three minutes in the case of solid wood parts and for one minute in the case of plywood panels.

.5 Before installing the elements, apply the preservative generously with a brush to all surfaces exposed by cuts, dressings and piercings made on site.

.6 Process the items listed.

3.3 INSTALLATION

.1 Install the square and plumb elements, according to the prescribed alignments, levels and height dimensions.

.2 Make the continuous elements from the longest possible parts.

.3 Install false frames, nail strips and trims around the bays to support frames and other structures.

.4 Carefully choose the structural elements that will be left exposed. Install cut wood elements and panels in such a way as to conceal classification markings and traces of deterioration or remove these markings and traces from visible surfaces by sanding.

.5 Install wall cladding panels according to the manufacturer's written instructions.

.6 Install furs and wedges necessary to remove from the wall and support cabinets, wall and ceiling finishing elements, cladding, curbs, soffits, siding, mounting panels for electrical equipment and other structures, as required.

.7 Install the required cant strips, roof edge nail bottoms, nail rods, curbs and other wooden supports, and secure them with galvanized fasteners.

.8 Install the joists as indicated.

.9 Do not work with particleboard without taking the necessary precautions. Use dust collectors and wear a high-quality breathing apparatus for cutting or sanding wood panels.

.10 Lay a sealant bed under the lower rails of the partitions resting on floor slabs and under the lower rails of the exterior walls.

3.4 ASSEMBLY

.1 Assemble, anchor, fix, attach and brace the elements in such a way as to ensure their necessary strength and rigidity.

.2 If necessary, mill the holes so that the bolt heads do not protrude.

.3 For flexible coating materials, use nailing discs, according to the instructions of the material manufacturer.

3.5 CLEANING

.1 Cleaning during work: perform the cleaning work in accordance with section 01 74 00 - Cleaning.

.2 Leave the premises clean at the end of each working day.

.3 Final cleaning: remove surplus materials, waste, tools and equipment from the site in accordance with section 01 74 00 - Cleaning.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

.1 The work covered by this Section includes the supply of all materials, labor, tools, equipment and services required for the installation of the elements associated with the main air and water vapor sealing elements and assemblies in accordance with all applicable requirements set out in the contract documents, as well as elements not specifically described in the drawings, but necessary to complete the construction of the works.

.2 The work must comply with the relevant requirements of the current building code.

1.2 RELATED SECTIONS

.1 All sections of the general requirements.
.2 Section 06 10 10 – Carpentry;
.3 Section 07 62 00 – Sheet metal flashings and accessories;
.4 Section 07 92 10 - Sealing of seals.
.5 Section 08 11 14 – Metal doors and frames.

1.3 REFERENCES

.1 Canadian Construction Documents Committee:
  .1 CCDC 2 - Fixed-price contract.

.2 Canadian General Standards Board (CGSB):
  .1 CAN/CGSB-19.13M-M87, Single-component sealant, elastomer, chemically polymerized.
  .2 CAN/CGSB-19.18M-M87, Single-component, silicone-based, solvent evaporative polymerization sealant.
  .3 CAN/CGSB-19.24M-M90, Multi-component sealant, chemically polymerized.
  .4 CGSB-19-GP-14M-76, Single-component butyl-polyisobutylene-based sealant with solvent evaporative polymerization.

.3 Part 5 of the National Building Code of Canada, Separation of Different Environments.

.4 Sealant and Waterproofer's Institute - Sealant and Caulking Guide Specification.

1.4 SHOPDRAWINGS AND DOCUMENTS TO BE SUBMITTED

.1 Submit shopdrawings in accordance with the requirements of section 01 33 00 - Documents and samples to be submitted.

.2 Submit the required data sheets in accordance with the requirements of section 01 33 00 - Documents and samples to be submitted.

.3 Submit the manufacturer's instructions in accordance with the requirements of section 01 33 00 - Documents and samples to be submitted.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Equipment and materials shall be transported, stored and handled in accordance with the requirements of section 01 61 00 - General Product Requirements and written instructions from manufacturers.

.2 Store materials in a dry place, away from the weather, and so that they are not in contact with the ground.

.3 Remove from the storage area only the amount of material that will be used on the same day.

.4 Store materials according to written instructions from manufacturers.

.5 Avoid accidental spills. If necessary, notify the architect and proceed with the cleaning.

.6 In the event of accidental spills, clean soiled surfaces and return them to their original condition.

1.6 QUALITY ASSURANCE

.1 The work must be carried out according to the requirements set out in the Sealant and Caulking Guide Specification, of the Sealant and Waterproofer's Institute, for materials and their implementation.

.2 The work must be performed according to the requirements set out in the National Air Barrier Association's Professional Contractor Quality Assurance Program and those for materials and their implementation.

.3 The work must be performed according to the requirements set out in the Professional Contractor Quality Assurance Program of the Canadian Urethane Foam Contractor's Association and those for materials and their implementation.

.4 Keep a copy of the documents on site.

1.7 1.8 QUALIFICATIONS

.1 Applicator: The implementation of materials must be carried out by a company specializing in the execution of the work provided for in this section, with at least 3 years of experience in the installation of air and water vapor sealing systems, and be approved by the manufacturer of the materials.

.2 Applicator: The materials must be implemented by a company accredited by the National Air Barrier Association, the Canadian Urethane Foam Contractor's Association or another certifying body, which must maintain its accreditation for the duration of the work.

1.8 SAMPLES OF THE WORK

.1 Construct a sample of the structure in accordance with the requirements of the estimate.

.2 The sample may be part of the finished work.

.3 Wait 48 hours before starting the work, in order to allow the Architect to inspect the sample of the work.

1.9 PRE-INSTALLATION MEETING

.1 Call a meeting one week before the commencement of the work provided for in this Division.

1.10 CONDITIONS FOR IMPLEMENTATION

.1 It is forbidden to use solvent evaporative polymerization sealants or adhesive materials emitting vapors, in closed places without ventilation.

.2 Confined spaces must be ventilated.

.3 Maintain temperature and humidity at the levels recommended by the manufacturers of the materials, before, during and after their implementation.

1.11 WORK SCHEDULING

.1 Coincide the installation of airtight and water vapor sealing materials with that of related materials and sealing devices.

1.12 GUARANTEE

.1 For the work covered by this section, the warranty period is five (5) years.

PART 2 - PRODUCE

1.1 SEALS

.1 Self-adhesive air/vapor barrier sealing membrane around the openings (overlapof 200mm),to changes in materials or connections between different assemblies and according to the indications in the drawings, consisting of a rubberized bitumen compound SBS laminated to a crossed polyethylene film having the following physical properties:

- .1 Color: blue;
- .2 Thickness: 1.0 mm;
- .3 Minimum application temperature: ± 5°C;
- .4 Elongation at break (modified ASTM D412): 200% minimum;
- .5 Membrane resistance to breakage (modified ASTM D412): 3.4 Mpa minimum;
- .6 Breaking film strength (modified ASTM D412): 40% Mpa minimum;
- .7 Low temperature flexibility (CGSB 37-GP-56M): -30°C;
- .8 Water vapor permeance (ASTM E96): 2.8 ng/Pa m^2 s (0.05 perms);
- .9 Air permeability at 75 Pa (ASTM E283-91): 0.0005 1/s m2;
- .10 Air permeability after the test at 3000 Pa (ASTM E 331-89): no change.
- .11 Reference product: Membrane *"Blueskin SA" or "Blueskin SA LT" from "Henry Canada (Bakor)"* or equivalent approved according to the installation conditions.

.2 Self-adhesive membrane for through wall flashing, at the base of the openings (overlap of 200mm),to changes of materials or connections between different assemblies and according to the indications in the drawings, consisting of a rubberized bitumen compound SBS laminated entirely to a film of crossed polyethylene. Having the following physical properties:

- .1 Color: yellow;
- .2 Thickness: 1.0 mm;

.3 Minimum application temperature: - 4°C;
.4 Elongation at break (modified ASTM D412): 200% minimum;
.5 Membrane resistance to breakage (modified ASTM D412): 3.4 Mpa minimum;
.6 Breaking strength of the film (modified ASTM D412): 39.5 Mpa minimum;
.7 Low temperature flexibility (CGSB 37-GP-56M): -30°C;
.8 Water vapor permeance (ASTM E96): 1,6 ng/Pa m^2 s (0.03 perms);
.9 Watertightness (CGSB 37.58-M86)
.10 Reference product: *"Blueskin TWF"* membrane *from "Henry Canada (Bakor)"* or equivalent approved according to the installation conditions.

.3 Primer: according to the manufacturer's recommendations.

.4 Sealants: compliant with section 07 92 10 – Sealing of seals.

PART 3 - EXECUTION

1.1 INSPECTION

.1 Ensure that the surfaces are ready to receive the work prescribed in this section, and that the conditions of implementation are adequate.

.2 Ensure that all surfaces are clean, dry, healthy, plain, continuous and comply with the manufacturer's requirements.

.3 Notify the architect in writing of any unsatisfactory conditions.

.4 It is forbidden to start work before the anomalies have been corrected. The fact that the Contractor begins the work means that the Contractor accepts the condition of the work.

1.2 PREPARATORY WORK

.1 Remove loose or foreign materials that may compromise the adhesion of materials.

.2 Ensure that all substrates are free of oil and excessive dust accumulations; masonry joints must be outcropping; open joints must be filled; there must be no large voids, peeled areas or sharp protrusions on concrete surfaces.

.3 Ensure that there is no moisture on the surface of the substrate before applying the self-adhesive membrane and primer.

.4 Metal surfaces must be free of sharp edges and burrs.

.5 According to the manufacturer's instructions, prepare the surface of the substrate that are to receive the adhesives and sealants.

.6 The commencement of work by the Contractor signifies the implicit acceptance of the support surfaces and the conditions under which they are located.

.7 Seal concrete surfaces with large voids or flaked areas and open mortar joints to form a uniform surface. Seal large cracks with a strip of connecting membranes covering surfaces adjacent to cracks of at least 75 mm on each side. Place a connecting membrane tape on the joints of the undersized panels.

1.3 INSTALLATION

.1 Install materials according to manufacturers' instructions.

.2 Install the air protection and self-adhesive membranes at the joints of the panels.

.3 Install a self-adhesive membrane around the openings by overlapping the vapor barrier.

.4 Make all masonry flashings with a self-adhesive membrane.

.5 All junctions of different materials must be covered with a self-adhesive membrane.

.6 At the places of the expansion joints or control joints, leave a loop in the membrane or according to the details in the plans.

.7 Primer:

.1 On surfaces to be covered with self-adhesive connecting membrane or for through wall flashing, apply the roller primer at the rate recommended by the manufacturer; allow to dry ±30 minutes before the membrane is placed.

1.4 PROTECTION OF THE WORK

.1 Protect the finished structure in accordance with the manufacturers' recommendations.

.2 Take the necessary precautions to prevent contiguous works from damaging the work carried out under this section.

.3 Protect the finished structure against the weather.

1.5 CLEANING

.1 Once the work described in this section has been carried out, any surplus materials, tools, installations and equipment as well as debris must be removed from the site so as to leave the site both inside the building and on the ground outside, clean and in order, to the complete satisfaction of the Architect.

END OF SECTION

PART 1 - GENERAL

1.1 CONTENTS OF THE SECTION

.1 Flashings, drips and sheet metal accessories.

1.2 RELATED SECTIONS

.1 All sections of the general requirements.
.2 Section 06 10 10 - Carpentry.
.3 Section 07 27 10 – Air barrier systems.
.4 Section 07 52 00 – Modified bitumen membrane covers
.5 Section 07 92 10 - Sealing of seals.

1.3 REFERENCES

.1 The Aluminum Association Inc. (AA) :
.1 Aluminum Sheet Metal Work in Building Construction-2000.
.2 AA DAF45-97, Designation System for Aluminum Finishes.

.2 American Society for Testing and Materials (ASTM International) :
.1 ASTM A 167-99, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
.2 ASTM A 240/A240M-02, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
.3 ASTM A 591/A591M-98, Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications.
.4 ASTM A 606-01, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
.5 ASTM A 653/A653M-01a, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
.6 ASTM A 792/A792M-02, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
.7 ASTM B 32-00, Standard Specification for Solder Metal.
.8 ASTM B 370-98, Standard Specification for Copper Sheet and Strip for Building Construction.
.9 ASTM D 523-89(1999), Standard Test Method for Specular Gloss.
.10 ASTM D 822-01, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

.3 Canadian Roofing Contractors Association (CERA):
.1 Quotation, covers 1997.

.4 Canadian General Standards Board (CGSB):
.1 CAN/CGSB-37.5-M89, Fluxed Bitumen Plastic Sealant.
.2 CAN/CGSB-51.32-M77, Coating membrane, permeable to water vapour.
.3 CAN/CGSB-93.1-M85, Pre-finalized Aluminum Alloy Sheet, for Residential Buildings.

.5 Canadian Standards Association (CSA International):

.1 CSA A123.3-F98, Organic roof felt impregnated with bitumen core.
.2 CSA-A440-00/A440.1-00 – A440-00, Windows/Special Publication A440.1-00, User Selection Guide to CSA Standard A440-00. Windows. (Windows/CAN/CSA A440-M90 User Guide, Windows.)
.3 CSA B111-1974(R1998), Wire Nails, Spikes and Staples.

1.4 DOCUMENTS AND SAMPLES TO BE SUBMITTED

.1 Submit samples, data sheets and shop drawings in accordance with section 01 33 00 - Documents and samples to be submitted.

.2 Samples:
.1 A 50 mm x 50 mm sample of each color, finish and type of sheet.

.3 The data sheets for pre-finished sheets, fasteners shall cover the following:
.1 The characteristics of the product;
.2 Performance criteria;
.3 Constraints.

1.5 SKILLS

.1 Installer: a company specializing in the execution of the work covered by this section, approved by the manufacturer.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Evacuate all packaging materials from the site and transport them to appropriate recycling facilities.

.2 Collect and sort paper, plastic, polystyrene, corrugated cardboard packaging and place it in the appropriate dumpsters placed on site for recycling.

.3 Place substances that meet the definition of toxic or hazardous waste in designated containers.

.4 Ensure that empty containers are sealed and stored properly, out of the reach of children, for disposal.

.5 Transport unused metal elements to a metal recycling facility approved by the Architect.

.6 Transport unused sealants to an approved hazardous materials collection site approved by the Architect.

.7 It is prohibited to discharge unused sealants into sewers, on the ground or in any other place where it could pose a risk to health or the environment.

.8 Fold the metal strapping strips, flatten them and place them in designated areas for recycling.

1.7 GUARANTEE

.1 Provide a written and signed document, issued in the name of the client, certifying that the pre-finished sheets are guaranteed against any defect in flaking, discoloration and corrosion, for a

period of 5 years.

.2 Provide a written and signed warranty certificate issued in the name of the Owner certifying that the sheet metal work will remain in place and will be free of any sealing defect and guaranteed by the roofing contractor for a period of 2 years.

PART 2 - PRODUCT

2.1 MATERIALS

.1 Steel sheets: compliant with ASTM A 653/A653M (last revised). The core shall be composed of grade A steel, having a minimum yield limit of 230 MPa and admitting a maximum stress of 144 MPa. This steel core is coated on each side with a layer of hot zinc, according to the designation Z-275 (G-90), meeting the ASTM A924/A924M standard (last revision), having the following characteristics:
- .1 Category: F1S;
- .2 Specular gloss: 30 units, with a tolerance of 5 units more or less according to ASTM D523;
- .3 Thickness of the bare metal: according to the thickness mentioned and indicated in the drawings;
- .4 Resistance to accelerated weather exposure: chalming degree 8, discolouration of not more than 5 units and erosion of less than 20%, according to ASTM D822, under the following test conditions;
  - .1 Duration of exposure to bad weather of 2500 hours.
  - .2 Duration of exposure to humidity of 5000 hours.
- .5 Finish: pre-treatment with zinc phosphate and pigments of ceramic composition;
- .6 Paint finish: factory coated with a topcoat fluoropolymeric resin system containing at least 70% polyvinyidene resin (Kynar 500 or Hylar 5000);
- .7 Color: at the choice of the Architect;
- .8 Reference product: Vicwest, color as existing or indicated in the plans, in the standard range of the manufacturer. Submit a sample for approval by the architect.

2.2 ACCESSORIES

.1 Protective coating: bituminous paint.

.2 Plastic sealant: complies with CAN/CGSB 37.5.

.3 Sealants:
- .1 Sealant based on SBS-modified bitumen, fibres, minerals and solvent. Formulated with a high polymer content to withstand creep at high temperatures and to be easily applied at low temperatures.
  - .1 Density at 20 °C: 1.12 kg/l.
  - .2 Color: Black.
  - .3 Application temperature: -10 to 35 °C.
  - .4 Solids content: 83%.

.4 Sealant based on SBS-modified bitumen, fibres, minerals and solvent. Formulated with a high polymer content to withstand creep at high temperatures and to be easily applied at low temperatures.

.1 Density at 20 oC: 1.22 kg/l.
.2 Color: Aluminum.
.3 Application temperature: -10 to 35 oC.
.4 Solids content: 85%.

.5 Primary for sealant: type recommended by the manufacturer.

.6 Other sealants: refer to section 07 92 10 – Sealing for sealants and caulking products.

.7 Fixing tabs: of the same material and of the same quenching as the sheet used, at least 50 mm wide and 0.7 mm thick identical to that of the sheet to be fixed.

.8 Fastening devices:
.1 In the same material as the sheet used, in accordance with CSA B111, flat-head and ringed rod roofing nails, of length and thickness suitable for metal flashings.
.2 Aluminum screws are not acceptable.

.9 Washers: made of the same material as the sheet used, 1 mm thick (calibre 20), with rubber linings.

.10 Soft solder: according to ASTM B32 and the recommendations of the sheet metal manufacturer.

.11 Stripping flux: rosin, dilute hydrochloric acid or other end-use product compatible with the materials to be welded.

.12 Paint for retouching: according to the recommendations of the manufacturer of the pre-finalized sheet.

2.3 SHAPING

.1 Metal flashings and other sheet metal elements must be shaped in accordance with the technical data of the Association des entrepreneurs en revêtements métalliques du Québec (AERMQ).

.2 Fold the sheets to the bending press. Shaping, shaping and welding should be done as much as possible on the bench using the appropriate tools.

.3 Particular attention will be paid to the shaping of sheets with a permanent finish.

.4 Parts must be shaped into lengths of not more than 2 400 mm. It is important to provide, at the joints, the necessary play for the expansion of the elements. Apply a silicone sealant embedded in the joint between the lengths.

.5 The exposed edges shall be folded down 12 mm on their underside. The angles must be assembled with a tab and sealed with a sealant.

.6 The elements must be shaped squarely, levelly and precisely, according to the dimensions intended, so that they are free from deformations or other defects likely to alter their appearance or effectiveness.

.7 Metal surfaces to be drowned in concrete or mortar must be coated with a protective coating.

2.4 METAL FLASHINGS AND BENDS

.1 Flashings, crowns and roof edges must be shaped according to the prescribed profiles, with pre-finished steel sheet, thickness according to the material and use described below:
- .1 Pre-painted galvanized steel:
  - .1 Head and jamb of the openings: Cal. 20 (1.006 mm)
  - .2 Window base, walls, doors, curtain wall (less than 900 mm from the floor): Cal. 14 (1,994 mm)
  - .3 Staple strip: Cal. 20 (1.006 mm)
  - .4 Inner folding: Cal. 16 (1.613 mm)

2.5 ENGRAVING STRIPS AND COUNTER-FLASHINGS

.1 Strips of engraving to be recessed or to be laid from an outcrop intended to receive flashings or metal counter-flashings must be shaped with sheet identical to the sheet of flashings and be incorporated into concrete articles in accordance with the indications.

.2 The elements must have ovalized fixing holes and be secured by means of steel/plastic washer fasteners. The faces and ends of the elements must be covered with plastic tape.

.3 All visible fasteners must be tamper-proof screws of the TORX type and under approval by the architecture.

2.6 COLOURS

.1 Unless otherwise specified, the color of each flashing or sheet metal for each location will match the adjacent materials from the manufacturers' standard colors and approved by the Architect.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Compliance: set up sheet metal structures according to the relevant current standards.

.2 Conceal the fasteners, except in places where the Architect has agreed that they be left visible.

.3 Install flashings and other sheets, ensuring that there is no contact and/or corrosive reaction between different metals. Install a separator tape between two metals of a different nature.

.4 Lay an underlay before installing the sheet metal elements. Secure it well and execute 100 mm overlapping joints.

.5 Equip with counter-flashings the bituminous flashings made at the meeting points of the roof and low walls, mounting frames or other vertical surfaces. Make simple stapling joints and subject them well to the hanging strips, according to the indications.

.6 Close the end gaskets and seal them with a sealant.

.7 Install plumb and level strips of engraving laid outcrop. Caulk the upper part of the engraving strips with a sealant.

.8 Fold the upper end of the flashings by at least 25 mm into the recessed engraving strips or into the mortar joints. Securely wedge the flashings in the joints and fix them with mechanical fasteners.

.9 Insert the metal flashings into the engraving strips so as to form a tight seal.

.10 With a sealant, caulk the flashings in the engraving strips.

.11 At the connections of a roof with a piece of masonry, hollow out a joint to a depth of 25 mm (1") and insert the flashing, fix it and seal it with a caulking product.

.12 Vents, pipes and other ducts shall be equipped with flashings, counter-flashing chaperones, sleeves and other appropriate accessories to ensure perfect sealing.

3.2 CLEANING

.1 Perform cleaning work in accordance with section 01 74 00 - Cleaning.

.2 Once the implementation work and performance monitoring are complete, remove surplus materials and materials, waste, tools and equipment from the site.

.3 Leave the work area clean and free of grease, stains and finger marks.

END OF SECTION

PART 1 - - GENERAL

1.1 Summary of work

.1 Contents of the section:

.1 Sealants and caulking products.

1.2 Documents/samples to be submitted

.1 Submit the required data sheets in accordance with section 01 33 00 - Documents and samples to be submitted.

.2 The manufacturer's data sheets shall cover the following:

.1 caulking products;
.2 primaries;
.3 sealants (all types), including their compatibility with each other.

.3 If necessary, for harmonization with adjacent materials, submit dried samples of sealants that must be left visible for each proposed color.

.4 Submit manufacturer's instructions in accordance with section 01 33 00 - Documents and samples to be submitted.

.1 The instructions must relate to each of the products offered.

1.3 Waste management and disposal

.1 Evacuate all packaging materials from the site and transport them to appropriate recycling facilities.

.2 Place substances that meet the definition of toxic or hazardous waste in designated containers.

.3 Handle and dispose of hazardous materials in accordance with the Canadian Environmental Protection Act, the Transportation of Dangerous Goods Act, and regional and municipal regulations.

.4 It is prohibited to discharge unused sealants into sewers, streams, lakes, soil or any other place where it could pose a risk to health or the environment.

.5 Transport unused sealants to an approved hazardous materials collection site.

.6 Empty plastic containers of sealants are not recyclable. Do not mix them with plastic elements intended for recycling.

.7 Fold the metal strapping strips, flatten them and place them in designated areas for recycling.

1.4 Conditions for implementation

.1 Environment:

.1 Do not proceed with the use of sealants under the following conditions:

.1 when the ambient temperature and the temperature of the substrate are outside the limits established by the manufacturer of the products or when they are below 5 degrees Celsius.

.2 when the substrate is wet.

.2 Width of the joints:

.1 Do not use sealants when the width of the seals is less than that established by the manufacturer of the product for the applications indicated or less than 6 mm.

.3 Substrate:

.1 Do not proceed with the use of sealants until the substrate has been cleared of all contaminants likely to prevent the adhesion of the products.

1.5 Environmental requirements

.1 Meet the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding the use, handling, storage and disposal of hazardous materials, as well as the labelling and provision of material safety data sheets recognized by the federal government.

.2 Comply with the manufacturer's recommendations concerning the temperatures, relative humidity level and moisture content of the substrate suitable for the use and drying of sealants, as well as special guidelines for their use.

.3 Ensure that the building's ventilation system operates at maximum air intake and exhaust flows during the installation of sealants and caulking. Ventilate work areas according to Architect instructions, using approved portable blowing and exhaust fans.

1.6 Guarantee

.1 Provide a written and signed document, issued on behalf of the Owner, certifying that the work carried out will be free of defects, including loss of adhesion or cohesion, cracking, crumbling, fusion, disintegration, removal, dripping or soiling of adjacent surfaces, for a period of 5 years from the date of issue of the certificate of completion of the work.

PART 2 - - PRODUCTS

2.1 Sealants - general

.1 The sealants for each location must come from a single type and manufacturer.

.2 In the case of sealants to be used with a primer, use a primer recommended by the manufacturer.

2.2 Sealants – description

*The color of the products chosen must match the material on which it is affixed.

.1 Type 1: Two- or three-component polyurethane-based sealant that complies with CAN/CGSB-19.24.

.1 Acceptable product: Dymeric 240 from Tremco, Sikaflex 2c NS/SL from Sika, or equivalent.

.2 Type 2 and 2A: single-component, polyurethane-based sealant, compliant with CAN/CGSB-19.13

.1 Acceptable product type 2: Dymonic from Tremco, Sikaflex 1a from Sika, or equivalent.

.2 Acceptable product type 2A: Sikaflex 15LM from Sika, or equivalent

.3 Type 3: two-component sealant, polysulfide-based, non-sagging, compliant with ASTM C920 or CAN/CGSB-19.13,

.1 Acceptable product: THC 900 from Tremco, Sikaflex 1c SL from Sika or equivalent.

.4 Type 4: Single-component acrylic-based sealant that complies with CAN/CGSB-19-GP-5M.

.1 Acceptable product: Tremflex 834 from Tremco.

.5 Sealant for fire walls: 1 acrylic-based component, compliant with ASTM E-814.

.1 Reference product: Fyre-Caulk from Tremco

.6 Type 5: Mold-resistant sealant

.1 Acceptable product: Tremco Tremsil 200, Dow Corning 786 or equivalent.

.7 Type 6: sealant for sound insulation.

.1 Acceptable product: Acoustic sealant from Tremco.

.8 Type 7: Single-component silicone-based sealant conforming to CAN/CGSB-19.13

.1 Acceptable product: Proglaze from Tremco.

2.3 Preformed, compressible and non-compressible joint bottoms

.1 The backer rod must be suitable for the appropriate sealants and be of the type recommended by the manufacturer.

.2 Foam elements of polyethylene, urethane, neoprene or vinyl.

.1 Filling bags in honeycomb or extruded cellular foam.

.2 Elements that are 30 to 50% oversized.

.3 Elements made of neoprene or rubber-butyl.

.1 Round and full rods, with a Shore A hardness of 70.

.4 Foam elements of high density.

.1 Elements made of extruded cellular PVC foam, extruded cellular polyethylene foam, with a Shore A hardness of 20 and a tensile strength of 140 to 200 kPa, extruded polyolefin foam, with a density of 32 kg/m^{3,} or neoprene, of dimensions recommended by the manufacturer.

.5 Anti-solidarity ribbon.

.1 Polyethylene tape that does not adhere to the sealant.

2.4 Sealants - locations

.1 Perimeter of interior frames, according to indications and details: type 4 product

.2 Acoustic seals, inside: product of type 6.

2.5 Cleaning products for joints

.1 Non-corrosive and non-messy cleaning products, compatible with the materials constituting the seals and with the sealants, and recommended by the manufacturer of the seals.

.2 Primary: according to the manufacturer's instructions.

PART 3 - - EXECUTION

3.1 Protection of structures

.1 Protect works installed by third parties against dirt or any other form of contamination.

3.2 Surface preparation

.1 Check the dimensions of the joints to be made and the condition of the surfaces in order to obtain an adequate width-depth ratio for the installation of the backer rods and sealants.

.2 Remove the surfaces of the joints of any unwanted material, including dust, rust, oil, grease and other foreign bodies that may affect the quality of the work.

.3 Do not apply sealants to the surfaces of joints that have been treated with a filler, hardening product, water repellent or any other type of coating unless prior testing has confirmed the compatibility of these materials. Remove coatings that already cover surfaces, if necessary.

.4 Ensure that the surfaces of the joints are well dried out and that they are not frozen.

.5 Prepare surfaces according to the manufacturer's instructions.

3.3 Preparation of existing surfaces

.1 Remove each sealant application to their full depth.

.2 Grind, concrete block masonry, brick masonry, precast concrete, concrete and other hard surfaces with a diamond grinding wheel to remove traces of sealant and contaminant.

.3 Do not modify the profile of the joints unless you notify the Architect and only if the width/depth ratios cannot be respected.

3.4 Application of the primer

.1 Before applying the primer and sealant, hide adjacent surfaces as needed to avoid dirt.

.2 Apply the primer to the side surfaces of the seals immediately before using the sealant, in accordance with the manufacturer's instructions.

3.5 Installation of the backer rod

.1 Place anti-solidarization tape in the required places, according to the manufacturer's instructions.

.2 Compressing it by about 30%, place the backer rode according to the depth and the desired joint profile.

3.6 Dosing

.1 Dose the components in strict accordance with the instructions of the manufacturer of the sealant.

3.7 Installation

.1 Application of the sealant:

.1 Install the sealant in accordance with the manufacturer's written instructions.

.2 In order to make clean joints, if necessary, place the masking tape on the edge of the surfaces to be joined.

.3 Apply the sealant forming a continuous cord.

.4 Apply the sealant with a gun with an appropriately sized nose.

.5 The supply pressure must be strong enough to allow the filling of the voids and the perfect sealing of the joints.

.6 Make the seals in such a way as to form a continuous sealing cord free of edges, folds, sagging, air voids and coated dirt.

.7 Before a skin forms on the joints, shape the exposed surfaces to give them a slightly concave profile.

.8 Remove excess sealants as the work progresses and at the end of the work.

.2 Drying:

.1 Ensure the drying and curing of sealants in accordance with the manufacturer's instructions for these products.

.2 Do not cover seals made with sealants until they are dry.

.3 Cleaning:

.1 Clean adjacent surfaces immediately and leave structures clean and in perfect condition.

.2 As the work progresses, remove excess and slumps from sealants using recommended cleaning products.

.3 Remove the masking tape at the end of the initial period of taking the sealant.

.4 Ensure that the sealants installed are free of skin formation, poor adhesion and that they do not contain defects likely to affect the quality of the work.

END OF SECTION

PART 1 - GENERAL

1.1 Scope of work

.1 The work covered by this section includes the supply of all materials, labour, tools, equipment and services required for the installation of metal doors and frames (frames) according to all applicable requirements set out in the contract documents, as well as elements not specifically described in the drawings, but necessary to complete the construction of the works.

.2 The work must comply with the relevant requirements of the current building code.

1.2 Related sections

.1 All sections of the general requirements.
.2 Section 06 10 10 – Carpentry
.3 Section 07 27 10 – Air barrier system
.4 Section 07 92 10 – Sealing of seals
.5 Section 08 80 00 – Glazing
.6 Section 09 91 23 - Peinturage.

1.3 References

.1 ANSI NAAMM/HMMA 863-04 Guide Specifications For Detention Security Hollow Metal Doors & Frames

.2 American Society for Testing and Materials (ASTM International).
  .1 ASTM A 653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  .2 ASTM B 29-92(1997), Specification for Refined Lead.
  .3 ASTM B 749-97, Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
  .4 ASTM F1592-12, Standard Test Methods for Detention Hollow Metal Vision Systems

.3 Canadian General Standards Board (CGSB).
  .1 CAN/CGSB-1.181-99, Zinc-rich coating, prepared organic.
  .2 CGSB 41-GP-19Ma-84, Rigid vinyl profiles for windows and doors.
  .3 CAN/CGSB-B2.5-M88, Insulated Steel Doors.

.4 Canadian Standards Association (CSA International).
  .1 G40.20/G40.21-98, General Requirements for Rolled Structural Steel.
  .2 CSA W59-FM1989 (C2001), Welded steel construction (arc welding).

.5 Canadian Steel Door Manufacturers Association (CSDMA).
  .1 CSDMA, Specifications for Commercial Steel Doors and Frames, 1990.
  .2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 1990.

.6 National Fire Protection Association (NFPA).
  .1 NFPA 80-99, Standard for Fire Doors and Fire Windows.
  .2 NFPA 252-1990, Standard Methods of Fire Tests of Door Assemblies.

.7 Underwriters' Laboratories of Canada (ULC).

.1 CAN4-S104-80 (C1985), Standard Method for Testing the Fire Behaviour of Doors.
.2 CAN4-S105M-M85 (C1992), Standard Specification for Fire Door Frames Meeting the Performance Requirements of CAN4-S104.

.8 CAN/ULC-S701-01, Standard for Polystyrene Thermal Insulation, Panels and Piping Coatings.

.9 CAN/ULC-S702-97, Standard for Thermal Insulation of Mineral Fibres for Buildings.

.10 CAN/ULC-S704-01, Urethane and isocyanurate thermal insulation, coated panels.

1.4 Calculation criteria

.1 Frames installed in exterior walls must be designed in such a way that the elements (of doors and frames) can expand and contract freely when their surface is subjected to temperatures ranging from -35 °C to 35 °C.

.2 The maximum deflection of the closing elements of steel bays under a wind overload of 1.2 kPa shall not exceed 1/175 of the span.

1.5 Shop drawings

.1 Submit the required shop drawings in accordance with section 01 33 00 - Documents and samples to be submitted.

.2 The shopdrawings must indicate each type of door proposed, the nature of the materials used, the thickness of the bare metal, the mortise assemblies, the reinforcement parts, the location of the anchorages and visible fasteners, the openings intended to receive the glazing and the louvers, the arrangement of the hardware articles, the maneuvering mechanisms, the required sets, electrical connections and degree of fire resistance, as well as finishing coatings.

.3 Shop drawings must indicate each type of frame proposed, the nature of the materials used, the thickness of the bare metal, the reinforcement parts, the parcloses, the location of anchors and visible fasteners and the types of finishing coatings.

.4 Shop drawings must include a nomenclature of doors with marks and numbers corresponding to those used on the drawings and on the list of doors.

1.6 Regulators' Requirements

.1 Doors and frames with a degree of fire resistance: certified by an organization accredited by the Standards Council of Canada, according to the requirements of CAN4-S104M and NFPA 252 for the ratings and degrees of fire resistance prescribed or indicated, and bearing the label of the organization in question.

.2 Approved fire frames must be provided for openings to be closed by elements with a degree of fire resistance, according to the list or nomenclature established. Products must be tested in accordance with CAN4-S104, ASTM E 152 or NFPA 252, be certified by a nationally recognized body and providing a factory inspection service, and be manufactured as detailed in the follow-up procedures and factory inspection manuals published by the certification body and provided to individual manufacturers.

1.7 Waste management and disposal

.1 Evacuate all packaging materials from the site and transport them to appropriate recycling facilities.

.2 Place all paper, plastic, polystyrene and corrugated packaging materials in appropriate bins for recycling.

.3 Transport unused paint products and sealants to an approved hazardous materials collection site.

.4 It is prohibited to discharge unused paint products and sealants into sewers, streams, lakes, floors or any other place where it could pose a risk to health or the environment.

.5 Route unused metal elements to an approved metal recycling facility.

.6 Transport unused wood materials to an approved recycling facility.

.7 Damaged or broken windows are not recyclable; they must be separated from materials and materials intended for recycling.

1.8 Service sheet

.1 Provide instructions for the proper operation and maintenance of door hardware parts and attach to the operations and maintenance manual, as per section 01 33 00 - Documents and Samples to Submit.

1.9 Guarantee

.1 Include a warranty against defects in materials and workmanship, including any loss of seal for a period of 5 years.

.2 Include a 10-year warranty for the finish.

PART 2 - PRODUCE

2.1 Materials

.1 Steel sheet:
- .1 Hot-dip galvanized steel sheet: ASTM A653 M compliant, with ZF75 zinc plating (A25); minimum thickness of bare metal according to the CSDFMA standard, Table 1 – Thickness for Component Parts.

.2 Reinforcement parts: steel compliant with CAN/CSA-G40.21, grade 44W, with ZF75 zinc plating according to ASTM A 653M.

2.2 Steel doors (ANSI NAAMM/HMMA 863-04, ASTM F1450-14)

- .1 Doors and frames must have a minimum free opening (no element of the door frame or hardware must interfere with the opening) of 810 mm x 2,100 mm, unless otherwise specified.
- .2 Door with a thickness of 50 mm with welded longitudinal edges;
- .3 Thickness of the bare metal, walls of the exterior doors: made of a 2 mm steel sheet (cal.

14) on both sides.

.4 Metal thickness of the continuous inner reinforcements at the top and bottom: 1.6 mm (cal. 16);

.5 The reinforcements, at the top and bottom of the door, must be reversed for a flush finish;

.6 Metal thickness of the additional inner reinforcements for hinges: 3.5 mm (cal. 10), reinforced by means of an angular bend allowing intensive use.

.7 The walls of the doors must be assembled vertically on each other on the sides by a joint with welding grinded and smoothed by sanding and with a steel reinforcement of 3.5 mm (cal. 10).

.8 Core isolated from a rigid panel of modified polyisocyanurate with closed cells.

.9 Lock reinforcements, striker and lock must be made of steel 2.7 mm thick. To be coordinated with the existing hardware store to be installed.

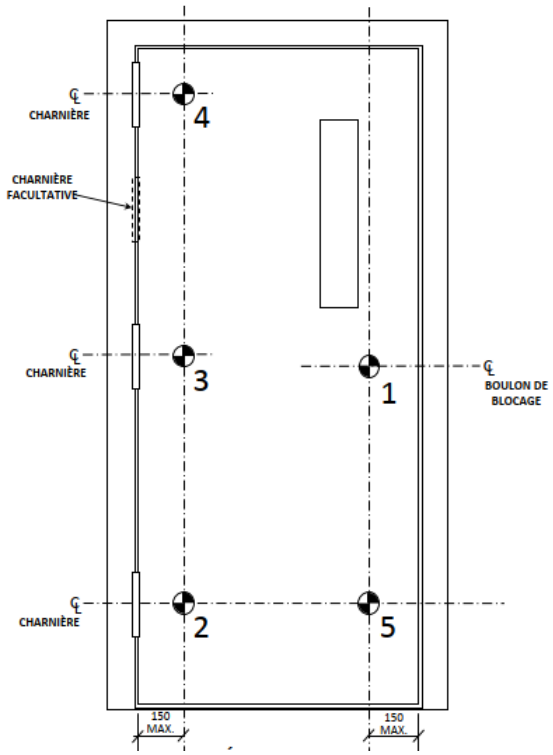
.10 Steel "U" reinforcements with a thickness of 3.5mm over the entire perimeter of the door welded to the sheets with surfaces of 5 mm. No visible joints (stapled joints are not allowed). The openings will be reinforced by a frame of resistance equivalent to the construction of the whole.

.11 Doors must be equipped with integrated weatherstripping and aluminum sills with thermal breakage

.12 Parcloses must be steel angles that are at least 4.24 mm (0.167 in.) thick or massive bars with a minimum commitment of 25 mm. The parcloses must be removable on the attack side. They must be secured by safety screws with a diameter of at least 9,6 mm and spaced 150 mm apart. The end screws must be 50 mm from each

.13 DOORS and PD1 frames shall be manufactured in accordance with NAAMM/HMMA 863-04.De addition, the test reports shall be submitted to an independent testing laboratory certifying that the following minimum performance criteria of a standard door used for holding purposes, 860 mm x 2 100 mm. Doors certified to ASTM F1450–056 are acceptable. The following tests apply to doors with minor differences in bending.

- .1 Static load: Place a 4,000 kg load in the center, which will rest at the quarter-span on the door. The maximum deflect arrow shall not exceed 30 mm. The permanent deformation shall not exceed 10 mm once the load has been removed.
- .2 Boom test: Concentrate a load of 2,645 kg on an unsupported corner of the door. The latter must not give in. The boom shall not exceed 50 mm.
- .3 Impact test: The door is mounted on a frame, as in a normal cell installation. The gate is subjected to a series of impact loads of 271 joules following a target scheme drawn by aram. The blows are delivered to the pushed side of the door7. The number of impacts for doors is:
  - i. 200 impacts on the bolt or striker (target 1)
  - ii. 75 impacts on hinges (targets 2, 3 and 4)
  - iii. 100 impacts on corner panels (target 5)
  - iv. Door impact resistance diagram:



.4 The door shall still be in working order after the test.

.2 Stapled gasket doors: adhesive/fire-resistant sealant, based on polychloroprene with embedded resin filler, of high viscosity.

2.3 Steel frames (ANSI NAAMM/HMMA 863-04, ASTM F1450-14)

.1 Frames of thickness such as the door: 2 mm (cal. 14) without thermal breakage, with welded joints and all the required reinforcements.

.1 Fill frames with low expansion spray insulation.

.2 Frames must be cut, reinforced, drilled and tapped as needed to accommodate mortised and templated hardware parts including the necessary electronic equipment and to be coordinated with existing hardware parts to be installed.

.3 The parcloses must be of solid steel of 25 mm x 25 mm welded over a length of 25 mm every 200 mm maximum of the inner side. The parcloses must be welded on top of each other at the ends.

.4 Mortises must be protected by means of the steel mortise cover;

.5 Single-leaf door frames shall befitted with 3 shock absorbers and two-leaf door frames with two shock absorbers installed on the upper crossbeam.

.6 No manufacturer's identification plates shall be placed on the frames and panels.

.7 Fasteners must be concealed, unless otherwise specified. Any visible fastener must be tamper-proof of the TORX type.

.8 The frames must be retouched with primary paint where the zinc coating has been damaged during manufacture.

2.4 Adhesives

.1 Honeycomb cores and steel elements: heat-resistant contact adhesive, valuable, based on

neoprene rubber (polychloroprene) with incorporated resin filler, of low viscosity.

.2 Polystyrene and polyurethane cores: heat-resistant contact adhesive, based on epoxy resins, of low viscosity.

2.5 Paint

.1 Steel doors and frames must have a factory-applied primer layer and be painted at the job site in accordance with section 09 91 23 – Painting. Bise cutters should not be coated with paint. Finished surfaces must be free of scratches or other imperfections.

.2 Anti-rust retouch paint conforms to CAN/CGSB-1.181.

2.6 Accessories

.1 Door shock absorbers: single-studded, made of neoprene rubber.

.2 Exterior and interior horizontal closure profiles (upper part) (lower part): made of galvanized steel.

.3 The parcloses must be made from shaped profiles at least 25 mm high; they must be well adjusted, be abutted at the corners and be fixed to the frame elements by means of welding and torx-type milled oval head sheet screws.

.4 Metal filling sealant: according to the manufacturer's specifications.

.5 Fire approval labels: fixed by means of metal rivets.

.6 Sealant: Refer to section 07 92 10 – Sealing of seals.

.7 Glazing: Refer to section 08 80 50 – Glazing.

.8 Provide for the installation of glazing, according to the indications, and provide the parcloses described.

.1 Glazing must be retained by means of parcloses previously described for use with glazing tape and putty.

.9 Material for filling frames, empty spaces between exterior frames and elements of exterior walls: foamed insulation in place with low swelling.

2.7 Anchoring of buildings

.1 Appropriate devices for attaching frames to walls and floors must be provided and installed.

.2 Wall anchorage devices shall be placed immediately above or below each hinge reinforcement on the hinge side pillar, and directly opposite on the beat upright.

.3 Pillars with a leaf height equal to or less than 1520 mm (5'-0") shall be fitted with 2 anchorages; an additional anchorage shall be provided for each segment or portion of a segment of an additional 760 mm (30").

.4 Anchorages that will be recessed in bay frames made before the installation of the door frames must be placed at 150 mm (6") from the top and bottom of each pillar, and then at 660 mm (26") of centre distance at most.

.5 Frames should be securely anchored to the walls and filled with low-expansion insulation.

.6 Torx-type fasteners and safe fasteners are required for all apparent fasteners.

2.8 Welded frames

.1 Welds must be performed in accordance with CSA W59.

.2 The elements of the frames must be assembled precisely, mechanically or tabbed, and then be securely welded to each other, the weld being deposited on the inner wall of the profiles.

.3 The end joints between the elements of the mullions, transom sleepers, central sleepers and sills and supports must be precisely counter profiled.

.4 Welded joints and corners should be grinded until a flat surface is obtained, lined with metal filler putty, and then sanded until a smooth and uniform finish is achieved.

.5 The anchorages to the floor shall be securely secured inside each of the pillars.

.6 Two temporary spacers must be welded to each of the frames to keep them straight during transport.

2.9 Door Manufacturing - General

.1 Doors must be flat, swinging and have an opening allowing the installation of glazing or louvers, as indicated.

.2 Exterior steel doors must be of the insulated core type.

.3 The longitudinal edges of the doors must be mechanically stapled and welded. The longitudinal joint shall be grinded until a flat surface is obtained.

.4 Doors must be of special construction, proven and/or designed to be part of a fully functionable assembly comprising a door, frame, seals and hardware, in accordance with the requirements of ASTM E 330.

.5 Doors should be cut, reinforced and tapped as needed to accommodate mortised and templated hardware parts as well as the necessary electronic equipment.

.6 Openings with a diameter of 12.7 mm (1/2' ') or more must be drilled at the factory, except those intended to accommodate the mounting bolts and through bolts, which must be drilled on site, at the time of installation of the hardware parts.

.7 Doors should be reinforced where hardware parts need to be projected. The exterior doors must be fitted with a steel flush closing profile at the top. Interior doors must be fitted with a recessed, dot-welded inverted profile at the top and bottom.

.8 Doors should be retouched with primary paint where the zinc coating has been damaged during manufacture.

.9 No manufacturer identification plate should be placed on the doors.

PART 3 - EXECUTION

3.1 Installation - General

.1 Install doors and frames in accordance with the CSDMA installation guide.

3.2 Installation of frames

.1 Install the plumb, square, level and level elements at the appropriate height.

.2 Attach anchors to adjacent building elements.

.3 Firmly hold the frames in position using bracing until they are installed. Place temporary wooden spacers horizontally at thirds of the opening to keep the width of the frames constant. Install a vertical stand under the upper cross member, in the center of the bay when the width of the latter is greater than 1200 mm (48"). Remove wooden spacers once the frames are in place.

.4 Leave the necessary bending games to prevent the loads exerted by the frame from being transmitted to the frames.

.5 Caulk the perimeter of the frames between them and the adjacent elements.

.6 Ensure continuity of the airtightness system and vapor barrier.

.7 Ensure thermal sealing around the outer frames. Fill the empty spaces between the outer frames and the elements of the exterior walls with a double application of foamed insulation in place at low swelling, in accordance with the requirements of section 07 21 19 – Polyurethane foam insulation, applied by spray.

.8 Fill the empty spaces between the interior frames and the elements of the interior walls and partitions with insulation of the type made of mineral fibers, mattresses and mats, in accordance with the requirements of sections 04 05 12 – Mortar and grout for masonry, 07 21 16 – Insulation in mattresses and mats.

3.3 Installation of doors

.1 Install doors and hardware using the templates provided, in accordance with the manufacturer's instructions and the requirements of section 08 71 10 – Door hardware.

.2 Provide a uniform spacing between the doors and studs of the frame and between the doors and the finished floor and threshold, as follows:
- .1 Hinge side space: 1.0 mm (3/64") maximum.
- .2 Space on the lock side and lintel: 1.5 mm (1/16") maximum.
- .3 Space between 2 double doors: 4.5 mm (3/16") maximum.
- .4 Space between above finished floor and under doors: 13 mm (1/2") maximum.

.3 Adjust moving parts so that doors work flexibly.

3.4 Performing edits

.1 Retouch surfaces that were damaged during installation with primary paint.

.2 Cover the apparent surface of the frame anchors as well as surfaces showing imperfections in metal filling putty, then sand until a smooth and uniform finish is achieved.

3.5 Cleaning

.1 Clean adjacent surfaces and finishes.

END OF SECTION

PART 1 - - GENERAL

1.1 Summary of work

.1 Section content:

.1 Glazing in doors and windows

1.2

.1 ASTM International

.1 ASTM D2240-05, Standard Test Method for Rubber Property - Durometer Hardness.

.2 ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

.3 ASTM F1233-08, Standard Test Method for Security Glazing Materials and Systems.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.

.2 CAN/CGSB-12.2-M91, Clear flat glass.

.3 CAN/CGSB-12.3-M91, Float glass, flat and clear.

.4 CAN/CGSB-12.4-M91, Athermane glass.

.5 CAN/CGSB-12.8-97, Insulating Glazing.

.6 CAN/CGSB-12.12-M90, Plastic Safety Glazing Panels.

.3 Glass Association of North American (GANA)

.1 GANA Glazing Manual - 2008.

.2 GANA Laminated Glazing Reference Manual - 2009.

1.3 Shopdrawings

.1 Submit the required shopdrawings in accordance with the requirements of section 01 33 00 - Documents and samples to be submitted.

.2 Indicate on the drawings:

.1 All types of glass, including materials and dimensions.

1.4 Other documents to be submitted

.1 Data sheets:

.1 Submit the required data sheets in accordance with the requirements of section 01 33 00 - Documents and samples to be submitted.

.2 Indicate the elements used and their physical properties.

1.5 Documents/items to be submitted upon completion of the work

.1 Provide the required maintenance sheets, including cleaning instructions, and attach them to the manual referred to in section 01 78 00 - Documents/Items to be submitted upon completion of the work.

1.6 Quality Assurance

.1 Perform the work in accordance with the guidelines set out in the Glazing Manual published by document published by the Canadian Insulating Glass Manufacturers Association (IGMAC).la FGMA

.2 Perform tests and analysis of glass and glazing in accordance with the requirements of section 01 45 00 - Quality control.

.3 Glass and glazing must be inspected at the factory.

1.7 Transportation, storage and handling

.1 Equipment and materials shall be transported, stored and handled in accordance with the requirements of section 01 61 00 - General Product Requirements.

.2 Equipment and materials must be transported and stored in accordance with the manufacturer's written instructions.

1.8 Waste management and disposal

.1 Rather than transporting metal waste to a landfill, transport it to the nearest recycling facility.

.2 Transport materials that can be reused to the nearest building material recovery facility.

.3 Send caulking and sealing materials that have not been used to a special waste collection site.

.4 Evacuate all packaging materials from the site and transport them to appropriate recycling facilities.

.5 Place all corrugated, polystyrene and/or plastic packaging materials in appropriate dumpsters installed on site for recycling, in accordance with the waste management program in effect on the site.

1.9 Samples and documents to be submitted

.1 Cut sheets

.1 Submit the required data sheets and the manufacturer's specifications and documentation for the products in accordance with section 01 33 00 – Documents and samples to be submitted.

.2 Shopdrawings

.1 Submit the required shop drawings in accordance with section 01 33 00 – Documents and samples to be submitted.

1.10 Guarantee

.1 Provide a written and signed document, issued on behalf of the Client, certifying that the work in this section must be guaranteed for a period of ten (10) years.

PART 2 - - PRODUCTS

2.1 Generality

.1 The thicknesses and weights of the glass will comply with the manufacturer's recommendations for the dimensions and use envisaged.

.2 All specifications given for sealed glass and for simple (flat) glass are minimum and should never be below the NBC minima.

.3 It is the responsibility of the glass supplier to calculate the required glass thickness and provide a glass whose thickness will meet all applicable standards depending on the intended use.

.4 Labels must remain until the Architect approves. Any defective glass should be replaced immediately.

2.2 Flat glass

.1 Float glass: according to CAN/CGSB-12.3-M91, glass quality with glazing, 12 mm (1/2") thick or according to the indications in the documents.

.2 Window glass: according to CAN/CGSB-12.2-M91, quality A, (1/4") thick. 6 mm

.3 Safety glass: Tempered according to CAN/CGSB-12.1-M90, transparent 13 mm (1/2") thick or as indicated in the documents.

- .1 Drenched
- .2 Category: B, floated.
- .3 Class: A.
- .4 With edge treatment.

.4 Polycarbonate safety glazing

- .1 Monolithic polycarbonate panel, 12.7 mm thick.
- .2 Violation Level I, according to ASTM F1233.

2.3 Sealed insulating glazing

.1 Sealed units must be manufactured by an IGMA member manufacturer in good standing. At the request of the architect, the manufacturer will produce the tests and approval number of the spacer and the sealants prescribed in the estimate.

.2 Safe insulating glazing: according to CAN/CGSB-12.8, double glazed, 25 mm (1") thick overall.

.1 Glass:
  .1 Exterior glass: 6 mm tempered glass according to CAN/CGSB-12.1.
  .2 Interior glass: 12.7 mm polycarbonate safety glass effection level I according to ASTM F1233.
.2 Minimum air space thickness: 6 mm (1/4") between the inner glass and the outer glass, with insulating spacer in polycarbonate type Rmax, black color, reinforced with steel with a thermal conductivity of 0.19 W / m²K.
.3 Coating applied to glass: Low-E low-emissivity film in position #3 "LoE^2-272 from Cardinal CG" or "Clear Comfort Ti-AC36 from AGC" or "Prel-E from Prelco" or approved equivalent.
.4 Inert gas space: argon.

2.4 Accessories

.1 Wedges: in EPDM, Shore A hardness 80 to 90 measured by durometer according to the standard ASTM D2240, suitable for mounting glass panels as well as the weight and dimensions of the glass panel.

.2 Peripheral wedges: neoprene, Shore A hardness 50 to 60 measured by durometer according to ASTM D2240, self-adhesive on one side, 75 mm (3") in length on half the height of the parcloses on the thickness appropriate to the glazing put in place.

.3 Self-adhesive strip for glazing:
  .1 Premoulded butyl compound, Shore A hardness 10 to 15 measured by durometer according to ASTM D2240, wound on non-stick coated paper, 3 mm x 10 mm.
  .2 Polyvinyl chloride foam with closed cells, 3 mm (1/8") thick, wound on non-stick coated paper, coated with adhesive on both sides, with a maximum water absorption capacity by volume of 2%, which can admit a compression of 25%, ensuring airtightness and steam tightness.

.4 Glazier clamps: of the common type recommended by the manufacturer.

.5 Extruded seals with locking tabs: according to ASTM C452.

PART 3 - - EXECUTION

3.1 Manufacturer's instructions

.1 Conformity: Comply with the manufacturer's written requirements, recommendations and specifications, including technical bulletins and installation instructions specified in product catalogues and on packaging cartons, as well as indications in data sheets.

3.2 Inspection

.1 Isure that the openings for the glazing are properly sized and that they meet the permissible tolerances.

.2 Insure that the surfaces of the foliage and other recesses are clean and free of obstruction, and that they are ready for glazing.

3.3 Preparatory work

.1 Clean contact surfaces with a solvent and dry with a cloth.

.2 Seal foliage and other porous recesses with a primer paint or a print product compatible with the substrate.

.3 Apply a primer/print coat paint to surfaces that need to be covered with a sealant.

3.4 Exterior installation – mixed mounting (adhesive strip/sealant)

.1 Perform the work in accordance with the specifications contained in the FGMA Glazing Manual, the specifications of the Canadian Insulating Glass Manufacturers' Association and the specifications contained in the Standards Manual of the Laminators Safety Glass Association, for glazing mounting methods.

.2 Cut the adhesive strips to the appropriate length and place them against the permanent glazing bead, 6 mm (1/4") below the line of vision. Seal the corners by closing the strips and covering them with sealant.

.3 Shape a sealant bead at the base of the glazing, at the meeting point of the permanent glazing beds and the frame, so as to achieve a continuous air and water vapour seal between the frame and the glass around the entire perimeter of the glazing.

.4 Place the setting shims at intervals corresponding to one quarter of the width of the glazing, so that the end wedges are not more than 150 mm (6") from the corners of the glazing.

.5 Place the glazing on the setting wedges and press it against the adhesive strips and the sealant bead shaped at the base of the glazing, exerting sufficient pressure to obtain perfect contact of the surfaces around the perimeter of the glazing.

.6 Arrange the removable parcloses, with peripheral wedges between the latter and the glazing, 6 mm (1/4") below the line of vision. Place the adhesive strips on the glazing so that they are 16 mm (5/8") below the line of vision.

.7 Fill the space between the glazing and the glazing bead with sealant to a depth equal to the leaf socket, but up to a maximum of 9 mm (3/8") below the line of vision.

.8 Shape a sealant bead of uniform sealing at the top of the glazing, along the free space between the latter and the glazing beads, and flush with the line of vision. Smooth the surface of the sealing bead with a cloth or appropriate tool.

3.8 Protection of finished works

.1Once the installation is complete, marked the glazing with an "X" with a removable plastic paste or tape.

3.9 Cleaning

.1 Once the installation is complete, clean up the site to remove accumulated dirt and debris from construction and the environment.

.2 Remove all traces of primer and fingerprints, caulking and sealing product.

.3 Remove sealant and any glazing material from finished surfaces.

.4 Remove all labels once the work is complete.

.5 Clean glazing and mirrors with a non-abrasive product in accordance with the manufacturer's instructions.

.6 Once the installation work is completed, remove surplus materials, scrap materials, tools and safety barriers from the site.

END OF SECTION

PART 1 - GENERAL

1.1 Summary of work

.1 Contents of the section

.1 Epoxy flooring, for the interior.

.2 Related sections:

.1 Section 03 01 37 – Concrete Restoration

1.2 Documents and samples to be submitted

.1 Provide manufacturer's instructions when the work requires special handling, installation and cleaning methods.

.2 The contractor must provide a 1m x 1m sample to the customer, for approval of finishes, color and texture. The architect is not responsible for the final chosen systems. The systems presented in the specification were determined to the best of knowledge and from the known information of the project.

1.3 Data sheets

.1 Submit the required data sheets in accordance with section 01330 - Documents and samples to be submitted.

1.4 Samples

.1 Send a letter from the manufacturer attesting that the installer is still an "approved applicator" and fully trained in the specified material installation.

.2 Submit the required samples in accordance with section 01 33 00 - Documents and samples to be submitted.

.3 Submit the required WHMIS Material Safety Data Sheets. Material Safety Data Sheets for coatings for high-filling gloss coating systems must comply with the requirements of Health Canada and Human Resources Development Canada - Labour. The VOC content of the products must be specified.

1.5 Documents/items to be submitted upon completion of the work

.1 Provide instructions for the maintenance of floor coverings and incorporate them into the maintenance manual referred to in section 01 78 00 Documents/Items to be submitted upon completion of the work.

1.6 Quality assurance/competences

.1 The applicator: The work associated with this section must be carried out by a company with a minimum of five years of experience in the application of a floor covering of this type. The installer must be an "approved applicator" of the material manufacturer.

.2 Before starting the application, arrange an on-site meeting with the Contractor, the material manufacturer and the consultant assigned to the project. Discuss the scope of the project, application methods, details, inspect substrates, test them and study environmental conditions.

.3 Before the start of the work, alternative installation procedures and recommendations must be submitted in writing and approved by the Architect.

.4 Perform a random check at various locations, to confirm the thickness of the flooring system once matured. Fill the verified areas to make them flush with the thickness of the rest of the slab.

1.7 Transportation, storage and handling

.1 Equipment and materials shall be transported, stored and handled in accordance with the requirements of section 01 61 00 - General Product Requirements.

.2 Materials must be delivered to the job site in unopened containers, bear the name of the manufacturer, the product and indicate the colour. The applicator should take note of the batch numbers of all materials used and keep them as needed for reference

.3 Store materials indoors, in their original, undamaged packaging, in a dry place and at a temperature ranging from 16C to 30C (60F to 85F).

1.8 Waste management

.1 Evacuate all packaging materials from the site and transport them to appropriate recycling facilities.

.2 Collect and sort paper, plastic, corrugated cardboard packaging and place it in the appropriate dumpsters placed on site for recycling in accordance with the waste management plan.

.3 Route unused coatings to an approved hazardous materials collection site.

.4 It is prohibited to discharge unused coatings into sewers, streams, lakes, soil or any other place where it could pose a risk to health or the environment.

1.9 Conditions for implementation

.1 Security:

.1 The use, handling, storage and disposal of hazardous materials must be carried out in accordance with WHMIS requirements.

.2 Ensure that no open flame heaters are used.

.3 Ask occupants to wait before reintegrating the treated areas until the products used no longer emit odors or volatile compounds.

.4 Provide adequate breathing protection apparatus to people exposed to the effects of applied products.

.2 Ventilation :

.1 Ensure continuous ventilation during and after the work. Operate the ventilation system 24 hours a day during the work. Also ensure continuous ventilation for a period of 7 days after the completion of the work.

.3 Temperature:

.1 Maintain an ambient temperature of 20° C (68° F) during installation, for 48 hours before or after, or until the product is cured.

.2 At the time of application, ensure that the minimum substrate temperature is kept above 10° C (50° F) and always maintains it 3° C (5.5° F) above the dew point.

1.10 Guarantee

.1 Provide a written and signed document, issued in the name of the Client, certifying the epoxy resin floor coverings against any delamination, crumbling, discoloration and cracks, with the exception of defects due to the failure of the support, for a period of 3 years from the date of issue of the substantial completion certificate.

1.11 Additional materials/material

.1 Provide the additional equipment and materials required in accordance with section 01 78 00 - Documents/Items to be submitted upon completion of the work.

.2 Provide an additional quantity of materials corresponding to at least 5% of the gross surface area of each type and colour of epoxy resin flooring required for the work and store them at the indicated location.

.3 The additional equipment and materials supplied must come from the same production batch as those used.

.4 Clearly identify each container of the material, also indicating the color and texture.

.5 Deliver the additional equipment to the Client upon completion of the work covered by this section.

PART 2 - - PRODUCTS

2.1 Acceptable manufacturer

.1 Sika Canada inc., Pointe-Claire, QC 1-800-933-7452.

.2 At the request of the consultant assigned to the project, a technical representative from Sika Canada Inc. will be available within a three days' notice to provide advice during the installation of the flooring system, to ensure that the applicator complies with the manufacturer's installation recommendations.

2.2 Materials

.1 Non-slip floor of fine texture with smooth finish:

.1 Materials: Sikafloor morritex braodcast system – total system thickness 3 mm

.2 Diamand sandblasting to remove all existing finish, clean surfaces, prepare surfaces to achieve A CSP 3-5

.3 Repair cracks with a Sika Duochem 8107

.4 Apply a primer coat of sikafloor 261 to a thickness of 8mils

.5 Apply a layer of sikafloor 261 to a thickness of 45mils saturated with fine silica aggregate (50 mesh)

.6 Apply a layer of sikafloor 261 to a thickness of 1/-20 mils

.2 The texture must be approved on site by sampling.

.3 Color such as RAL stone grey.

.2 Cove baseboards:

.1 100 mm high cove baseboard of the same finish as the floor

.2 When the partition is not concrete block or concrete, install a concrete panel strip 100 mm high or as indicated X 13 mm thick, beveled at the top, as indicated on the drawing.

.3 Additional materials:

.1 Fill all joints, hollows, cracks and any other roughness of the surface with additional materials recommended by the manufacturer of the specified product.

2.3 Dosage

.1 Coating dosing formulas must be in accordance with the manufacturer's written instructions.

PART 3 - - EXECUTION

3.1 Inspection

.1 Ensure that the elements that need to pass through the flooring are put in place before the floor is applied.

.2 Ensure that the maximum moisture content of the substrate does not exceed 3%.

.3 Check that the support is not alkaline before applying the flooring.

3.2 Preparation work

.1 Prior to the commencement of the work discussed in this section, the applicator must inspect all concrete surfaces, test them and immediately notify the project consultant and the manufacturer in writing of any conditions deemed unsatisfactory that could jeopardize the successful installation of the flooring.

.2 Remove all materials and debris from the floor to return to the original concrete slab. If leveling is required, scarify the slab with mechanical preparation CSP 6-9 before laying the self-leveling.

.3 Once the surface preparation is complete and before applying the coating, do the following tests to ensure that the concrete is adequate.

.4 Determine if the texture of the concrete surface corresponds to I.C.R.I. CSP 3-5.

.5 Evaluate the tensile strength of concrete prior to application, in accordance with ASTM C1583. The tensile strength must be at least 1.5 MPa (210 ps.w.).

.6 Determine if there is water vapour transmission in concrete, in accordance with ASTM D4263. There should be no visible traces of moisture on a plastic sheet after 16 to 24 hours. If there is indeed moisture, establish the quantity by an anhydrous calcium chloride test, in accordance with ASTM F1869. The maximum acceptable moisture content shall be 3 lbs per 1,000 ft2.

.7 Assess the moisture content on the surface using an impedance moisture meter designed for concrete in accordance with ASTM E1907. Acceptable test results shall be 4% or less depending on weight.

.8 Before application, establish the dew point of the surface to be covered. The contractor should ensure that the dew point is followed during application and initial ripening. The surface should always be maintained at 3°C (5.5° F) at least above the dew point during application and curing.

3.3 Implementation

.1 The concrete surface should be dry, clean and solid. Remove all traces of dust, milt, grease, oil, dirt, ripening or impregnating agents, wax, foreign substances, coatings and disaggregated materials from the surface, by appropriate mechanical means, shot blasting, sandblasting or any other method recommended by the manufacturer. Surface texture CSP 3-5 of I.C.R.I.

.2 Eliminate all splashes or other conditions that may affect the installation of the flooring.

.3 Cover contiguous surfaces, fixtures and equipment with protective canvas or other appropriate means to prevent damage attributable to spraying, spilling or any other damage that may occur during the work.

.4 Prepare the slab by means of a Blastrac

.5 Remove any splashes or other conditions that may affect the installation of the flooring.

.6 Cover contiguous surfaces, fixtures and equipment with protective sheets or other appropriate means to prevent damage attributable to spraying, spilling or any other damage that may occur during the work.

.7 Fill with epoxy stabilized cracks, control joints, marks, hollows or roughnesses of concrete; use Sika Duochem 8107 or Sikadur 43 Patch Pak, manufactured by Sika Canada Inc.®

.8 Unstable cracks and expansion joints must be extended in the flooring system and filled with a flexible product; use one of the following products: Sikaflex® 2c NS EZ Mix, Sikaflex® 2c SL or Sikaflex® Self-Leveling Sealant, manufactured by Sika Canada Inc.

3.4 Application flooring epoxy

.1 Floors - Primer Layer: Apply Sikafloor®-261 as a uniform primer layer using a brush, roller or scraper without forming puddles.

.2 Coating layer: When the primer is no longer sticky, apply the wear layer using a scraper or roller and make several passes to obtain a uniform covering. If the time between applications exceeds 48 hours at 22°C (71°F), sand the surface and wipe with a clean, solvent-soaked cloth.

.3 Top coat: Once the primer coat is no longer sticky, apply the top coat. If the time between applications exceeds 48 hours at 22°C (71°F), scratch the surface and wipe with a clean cloth moistened with solvent.

.4 Please refer to the Product Data Sheet for more information.

.5 During application, check the e.f.m. of the material in accordance with ASTM D4414 to measure the thickness of the wet film using notched gauges.

.6 The work, once completed, should match the approved samples, have a uniform thickness, luster, color and texture. The finished surface must be free from defects that may affect the appearance and performance of the product.

.7 Ensure adequate protection until the flooring is completely cured.

3.5 Cleaning

.1 Remove ribbons and overlays that have been used to protect adjacent surfaces.

.2 Remove excess materials and construction debris and dispose of them in accordance with local regulations. Leave the construction site clean.

3.6 Protection

.1 Protect the finished floor, once completed, if necessary, by appropriate means, from damage that may be caused by the passage of trades.

.2 Avoid contact of the structure with water during curing, for about 24 hours at 20°C (68°F).

.3 Protect the soil once finished from chemicals until fully cured, for about 7 days at 20°C (68°F).

END OF SECTION

PART 1 - GENERAL

1.1 Summary of work

.1 This section includes, but is not limited to, all materials, products and methods associated with the application of paint coating on interiors on the construction site, including on-site painting of previously coated surfaces.

.2 The work included in this contract includes, without being limited to:

.1 Painting of walls, frames, doors, ceilings, heaters, bulletin boards, ramps, handrails, stringer, riser, fixed plywood furniture or other surfaces or equipment mentioned in the plans.

.3 The list of included works defined in the preceding article and the table of finishes are intended only to define in a general way the scope and nature of the work to be carried out, and should not be interpreted as quantitative lists or tables.

1.2 References

.1 Canadian General Standards Board (CGSB).

.2 Canadian Painting Contractors' Association (CPCA):

.1 Painting Specifications Manual 199.

.3 Canadian Standards Association (CSA):

.1 CSA Z760-94, Life Cycle Assessment.

.4 Environmental Choice Program (ECP):

.1 ECP-67-95, Recycled aqueous suspension coatings.
.2 ECP-76-98, Coatings.

.5 International Organization for Standardization (ISO):

.1 ISO 14040/14041-1997, Environmental management - Life cycle assessment.

.6 National Fire Code of Canada 1995.

.7 Steel Structures Painting Council (SSPC) :

.1 Systems and Specifications Manual 1989.

1.3 Documents/samples to be submitted

.1 Data sheets:

.1 Submit the technical data sheets and instructions required for each type of paint or coating used in the realization of the coating.
.2 Submit the required data sheets for the application or use of paint thinner.
.3 Not all of the painting systems listed in this section necessarily apply to the entire project. The contractor must submit the paint system data sheets that apply to this project only.

1.4 Maintenance

.1 Materials and alternatives:

.1 Provide alternative materials and products from the same production batches as those used. Cover them with protective packaging, properly marked with the appropriate labels.

.2 Quantity: Provide 2% of each color and type of paint. Mark paint containers by associating each color and type of product used with the accepted paint coating nomenclature, further specifying the colors selected for the different products.

1.5 Transportation, storage and handling

.1 Storage and protection:

.1 Provide a safe storage area, well dry and maintained at a controlled temperature, and maintain it properly.
.2 Store materials and products away from heat sources.
.3 Store materials and products in a well-ventilated area with a temperature between 7 degrees Celsius and 30 degrees Celsius.

.2 The storage temperature of heat-sensitive products must never be lower than the minimum temperature recommended by the manufacturer.

.3 Keep areas used for storage, cleaning and surface preparation clean and in order. Once the work is complete, return these areas to their original state of cleanliness.

.4 Remove from the storage area only those quantities of products that will be implemented on the same day.

1.6 Conditions for implementation

.1 Ventilation and lighting:

.1 Coordinate the use of the existing ventilation system and, if necessary, make the necessary arrangements for its operation during and after the execution of the work.
.2 Provide the required lighting equipment and maintain an illumination level of at least 323 lux on the surfaces to be painted.

.2 Ambient temperature, relative humidity and moisture content of the substrate: Unless prior written authorization has been obtained from the manufacturer of the coating product used, do not carry out the painting work under the conditions listed below:

.1 Ambient air and substrate temperatures are below 10 degrees Celsius.
.2 The temperature of the substrate is greater than 32 degrees Celsius, unless the formula of the paint to be used is designed for application at high temperatures.
.3 Ambient air and substrate temperatures are not within the range recommended by the paint manufacturer.
.4 The relative humidity is greater than 85% or the dew point corresponds to a difference of more than 3 degrees Celsius between the air temperature and that of the substrate. The paint product should not be applied if the difference between the dew point and the ambient temperature or that of the substrate is greater than 3 degrees Celsius. The relative humidity must therefore be determined using a sling psychrometer before the start of installation.
.5 The ambient conditions during the drying or cross-linking of the product or the applied coating shall comply with the specified ranges until the new coating used can withstand the

current climatic conditions.

.3 If required, test plaster, concrete and masonry surfaces to determine their alkalinity.

.4 Condition of the surfaces and conditions of implementation:

.1 Apply the paint product only in areas where the quality of the finished surfaces will not be affected by dust suspended in the ambient air during construction work or by dust blown by the wind or by the ventilation system.

.2 Apply paints and coatings to properly prepared surfaces with a moisture content within the specified range.

.3 Apply paint when the previous coat is dry or sufficiently hardened.

.5 Additional requirements for applying paint to interior surfaces

.1 Apply paint products when the temperature at the work site can be maintained within the limits recommended by the manufacturer of the products used.

PART 2 - PRODUCE

2.1 Materials/Materials

.1 All products forming the chosen paint system must come from the same manufacturer. Use paint products from M,.F., Sico, Bétonel or another manufacturer without a C.O.V., approved by the architect. (for references, the products mentioned are those of M.F.)

.2 Applications for equivalence must be approved by the architect.

.3 Water-based coating products must be manufactured and transported in such a way that all stages of the process, including the disposal of waste generated during the work, comply with the requirements of relevant legislation, orders and regulations, including, in the case of facilities located in Canada, the Fisheries Act and the Canadian Environmental Protection Act (CEPA).

.4 Water-based coating products must not contain aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or any of their compounds.

.5 Water-based coating products, new or recycled, must have a flash point of 61.0 degrees Celsius or higher.

.6 All washrooms, as well as all maintenance room must be painted using a water-based compound epoxy paint 1

.1 Reference product : Pitt Glaze from PPG (Dulux)

2.2 Colors

.1 See indications on interior elevations.

.2 The colors will be chosen from the full range of colors and hues offered by the manufacturers.

.3 If particular products are offered in a limited range of colors, the colors of the products actually used will be selected from this limited range.

.4 In three-layer paint systems, the second coat should be a slightly lighter shade than the top coat to make it easier to visually locate each coat.

2.3 Mixing and coloring

.1 Perform the coloring of coating products before they are transported to the construction site.

.2 A certain amount of thinner can, if necessary, be added to the paint, in accordance with the manufacturer's recommendations. Kerosene or any similar organic solvent should not be used to dilute paints with water.

.3 Dilute the paint to be applied to the spray gun according to the manufacturer's instructions.

.4 Before and during application, shake the paint thoroughly in its container to remove the clumped materials, to ensure the complete dispersion of the deposited pigments, and to preserve the uniformity of the color and gloss of the paint applied.

2.4 Degree of gloss (luster)

.1 By gloss of the paint, we mean the degree of luster of the paint used, according to the values presented in the following table:

	Brilliant at 60 degrees	Ready at 85 degrees
Gloss degree 1 - matt finish	max. 5	max. 10
Gloss degree 2 - velvet finish	max 10	from 10 to 35
Degree of gloss 3 – egg shell finish	from 10 to 25	from 10 to 35
Gloss degree 4 - satin finish	from 20 to 35	at least 35
Gloss degree 5 - traditional semi-gloss finished	from 35 to 70	
Gloss degree 6 – traditional gloss finish traditional	from 70 to 85	
Gloss degree 7 – bright finish bright	well over 85	

.2 The gloss levels of paint-coated surfaces must be in accordance with the indications.

2.5 Painting systems

Note: The systems described may not apply to the project, used the appropriate system depending on the nature of the surface to be painted and its location, have all systems approved by the architect.

.1 For concrete block walls already painted with latex or oil:

- .1 Apply a layer of 100% acrylic latex primer Portico 270-0 from M.F.
- .2 Apply two semi-gloss layers of Epoxy Plus 3700-0 from M.F.

.2 For walls made of gypsum or concrete blocks already painted with epoxy:

- .1 Apply a layer of 100% acrylic latex primer Adhereo Plus 290-0 from M.F.
- .2 Apply two semi-gloss layers of Epoxy Plus 3700-0 from M.F.

.3 For frame of doors and interior doors in metal already painted:

- .1 Apply a layer of 100% acrylic latex primer Adhereo Plus 290-0 from M.F.
- .2 Apply two semi-gloss layers of M.F. Epoxy Plus 3700-0.

.4 For gypsum ceilings already painted with latex:

.1 Apply a coat of M.F. Proline 6070-0 latex sealing primer.
.2 Apply two matte layers of Proline Éco 7050-8 from M.F.

.5 Un painted concrete block walls:

.1 Apply a coat of Primer Bouche Pore for concrete block 206-0 from M.F.
.2 Apply two semi-gloss layers of Epoxy Plus 3700-0 from M.F.

.6 Un painted metal door frames and interior doors:

.1 Apply a layer of 100% acrylic latex primer Adhereo Plus 290-0 from M.F.
.2 Apply two semi-gloss layers of Epoxy Plus 3700-0 from M.F.

.7 Unpainted gypsum ceiling:

.1 Apply a coat of M.F. Proline 6070-0 latex sealing primer.
.2 Apply two coats of Proline Eco 7050-8 from M.F.

.8 Steel exterior doors and door frames:

.1 Apply an alkyd anti-corrosion primer, acceptable product: CORROStop 280-260 from SICO.
.2 Apply two layers of SICO EXPERT EPOXY/FLEX, 603 series color 6182-83 Black pepper or 6181-83 Nunavut **or** Corrostop Ultra 635-120 aluminum from Sico or color of the owner's choice **or** high-performance polyurethane product Rust-Oleum urethane sealant system Rust-o-Thane 9800 solid color.

.9 System for galvanized metal:

.1 Apply a primer for galvanized metal 100% acrylic Adhereo Plus 290-0 from M.F.
.2 Apply two layers of epoxy Plus 3700-0 from M.F.
.3 Apply two coats of M.F. Sierra Performance 0 VOC S70/71 Primer to bare surfaces.
.4 Apply two layers of Epoxy Sierra Performance 0 VOC S60 glossy finish from M.F.

PART 3 - EXECUTION

3.1 Manufacturer's instructions

.1 Compliance: Comply with the manufacturer's written recommendations or instructions, including product bulletins and data sheets and instructions for handling, storing and implementing products.

3.2 General

.1 Apply paint products according to the manufacturer's written instructions.

3.3 Inspection

.1 The Contractor must inspect the existing substrates to verify whether their condition may compromise the proper preparation of the surfaces to be coated with paint or plaster. For existing surfaces check the nature of the existing paint (water base or alkyd) and validate whether the products to be applied are compatible with the nature of the existing surface. Before starting the work, report to the Consultant, if any, any damage, defects or unsatisfactory or unfavorable conditions detected.

.2 The Contractor shall carry out tests to verify the moisture content of the surfaces to be painted using a properly calibrated electronic moisture meter; however, the moisture content of concrete floors must be assessed by a simple "control of the covering power on the reference surface". Do not start work until the condition of the substrates is considered acceptable, according to the range of values recommended by the manufacturer.

.3 Maximum permissible moisture content:

.1 Stucco, plasterboard and plasterboard: 12%.
.2 Concrete: 12%.
.3 Concrete or fired clay blocks and bricks: 12%.
.4 Wood: 15%.

3.4 Work preparation

.1 Protection :

.1 Protect building surfaces and surrounding structures that should not be painted or coated from spackling, markings and other damage with clean blankets or hideouts. If the surfaces in question are damaged, clean them and return them to their original condition.
.2 Protect permanently attached items, such as fire resistance approval labels for doors and frames.
.3 Protect factory-coated materials and components with a finishing product.

.2 Surface preparation

.1 Remove finish plates from electrical appliances, lighting fixtures, applied hardware to doors, bathroom accessories and other parts of equipment, as well as surface-mounted fasteners and fittings before starting coating work. Identify all deposited items and store them in a safe place; rest them once the paint coating is complete.
.2 If necessary, cover or move furniture elements and transportable materials to facilitate painting work. Put these elements and materials back in place as the work progresses.
.3 Install "FRESH PAINT" signs in the occupied areas during the execution of the work.
.4 For all surfaces:
.1 Scrape off any peeling paint and probe well around to make sure the paint is solid.
.2 Sand to thin the contour of the scales and frost the still shiny surfaces.
.3 Any hard, shiny and polished surface must be sandblasted to allow better adhesion of the coating.
.4 Holes and slots will need to be plugged with a suitable mortar.
.5 Metal handrails, scrape the surface from the top to the metal and clean all surfaces with T.S.P. (Trisodium Phosphate).
.6 For rusted metal, remove rust and paint that flakes or detaches to the metal using a steel brush, scraper or emery paper. Treat the surface with a metal cleaner such as the Surf-Pro "Dewammer" and follow the manufacturer's instructions.
.7 Concrete, remove dust and clean the surface with the Surf-Pro "Concrete mixer" and follow the manufacturer's instructions.

.3 Cleaning:

.1 The application of paints should not begin until the surfaces to be painted have been properly prepared. All surfaces must be solid, dry, clean, free of dirt, dust, grease, oil, rust, mortar splashes, salts and any foreign materials that may compromise the good adherence and appearance of the paints.
.1 Dust and dirt: remove by dusting. If dirt remains, wash and brush with a detergent solution or alkaline cleaner, then rinse. If there is mold, add bleach to the washing solution.
.2 Grease, oil, tar: wash with a cloth soaked in thinner, avoiding spreading stains over a larger area. Wipe with clean, dry cloths.
.2 Plaster surfaces and wall panels: Fill small cracks with a patching product. Clean the bottom

of corridor walls, gyms, stairwells and very busy areas on a height of at least 5 feet from the ground, with water with a degreasing solution of the T.S.P. type or equivalent. Rinse well with clear water and leave the surfaces dried. Sand shiny surfaces.

.3 Non-galvanized ferrous metals: Remove rust, scales, weld fluxes and other solid contaminants using steel brushes and emery cloth. Treat the metal with a phosphate solution. Proceed to the application of the anti-rust primer as soon as possible (a maximum of 4 hours after cleaning the surfaces). For damaged surfaces of elements that have already received a layer of primer in the workshop, clean in the required places and retouch the anti-rust primer.

.4 Non-galvanized ferrous metals that have already received a primer or primary layer in the workshop: Remove rust, chipe and clean as stipulated in article .6 described above. Subsequently, clean all surfaces to be prepared with pressurized air.

.5 Existing metal surfaces, new, already painted, interior:

.1 Surfaces already painted:

- Clean already painted surfaces, leave them clean, dry, free of any contaminants that may affect the adhesion of the new paint.
- Peeling paints: scrape and sand the contours of the chips, prepare the bare surfaces according to the recommended primers.

3.5 Application

.1 Apply the paint with a brush, roller, with an air gun or with an airless high-pressure spray gun. Unless otherwise indicated, apply the product according to the manufacturer's instructions.

.2 Brush and roller application

.1 Apply an even coat of paint with a brush, brush and/or roller of the appropriate type.
.2 Penetrate the paint into cracks, and corners of the elements.
.3 Apply paint with a gun, sponge or sheepskin to surfaces and corners inaccessible to a brush. Use a brush, sponge or sheepskin when it is impossible to paint certain surfaces or corners with a roller.
.4 Remove festoons and drips with a brush, or roller, and iron over the marks left. Roller painted surfaces must be free of roller marks and excess paint.
.5 Remove festoons, drips, and brush marks from finished surfaces, and repaint those surfaces.

.3 Application with a gun

.1 Provide equipment designed for the desired result, capable of spraying the product to be applied and equipped with the appropriate pressure regulators and pressure gauges. Maintain this equipment in good condition.
.2 During paint application, ensure proper mixing of ingredients in the container by continuous mechanical stirring or intermittent stirring repeated as often as necessary.
.3 Apply a uniform coat of paint, overlapping the covered surface during the previous pass. Iron with a dry roller after applying the first layer.
.4 Immediately remove drips and festoons with a brush.
.5 Use brushes to penetrate paint into cracks, and other hard-to-reach places with the spray of the gun.

.4 Use a sponge or sheepskin, or soak only if there are no other ways to paint hard-to-reach surfaces.

.5 Apply each coat of paint so as to obtain a continuous film of uniform thickness. Repaint surfaces that have been stripped or covered with a film that is too thin before applying the next layer.

.6 Allow surfaces to dry and harden properly after cleaning and between each successive layer, waiting for the minimum time recommended by the manufacturer.

.7 Sand and dust the surfaces between each layer to eliminate apparent defects.

.8 Finish surfaces above and below the lines of vision in accordance with the requirements applicable to neighboring surfaces, including places such as the tops of cabinets and wardrobes and protruding edges.

.9 Finish the interior of cabinets and wardrobes according to the indications provided for the exposed surfaces.

.10 Finish the alcoves and storage according to the indications provided for the adjoining rooms.

.11 Finish the top, bottom, edges and door openings in accordance with the requirements applicable to door facings, after the door has been adjusted.

.12 For the patching, the contractor must apply the paint finish to the nearest end.

3.6 Electrical and mechanical equipment

.1 Unless otherwise indicated, apply the paint product on pipes, electrical ducts, ventilation ducts, supports/suspensions and other visible interior electrical and mechanical elements so that the color is uniform.

.2 Retouch scratches and marks on factory-applied coatings using the product provided by the hardware manufacturer.

.3 Do not paint the nameplates.

3.7 Implementation tolerances

.1 Walls: no defects visible at a distance of 1000 mm, at an angle of 90 degrees to the surface examined.

.2 Ceiling: no defect visible to an observer on the ground, at an angle of 45 degrees to the surface examined, under the final lighting provided.

.3 The color and gloss of the topcoat shall be uniform over the entire surface under examination.

3.8 Restoration of the premises

.1 Clean and reinstall all removed hardware items to facilitate painting work.

.2 Remove protections and warning signs as soon as possible after completion of the work.

.3 Remove splashes on exposed surfaces that have not been painted. Remove slumps and spackles as work progresses, using a compatible solvent.

.4 Protect freshly painted surfaces from dripping and dust, to the satisfaction of the Consultant, and avoid scratching new coatings.

.5 Return premises used for storing, mixing and handling paints and cleaning tools and equipment used in their original state of cleanliness.

.6 At the end of the work, remove all unused debris, tools and materials. Clean the premises to the satisfaction of the owner.

END OF SECTION