PUBLICS WORKS AND
GOVERNMENT SERVICES CANADA (PWGSC)
FOR THE PARKS CANADA AGENCY (PCA)
QUEBEC REGION

FORGES DU SAINT-MAURICE NATIONAL HISTORIC SITE OF CANADA, TROIS-RIVIÈRES, (QUÉBEC)

CONSERVATION OF REMAINS OF LOWER FORGE'S CHIMNEY

PWGSC: R.086375.001

For biding
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END OF TABLE

Architecture :

Part 1 - GENERAL

1.1 Description of the Work

.1 The Work set forth in the Contract includes mainly, but is not limited to:

- .1 The reparation and repointing of stone masonry remains from the Lower Forge's chimney
- .2 The application of a protective coating
- .3 Replacement of gravel around the chimney.
- .4 Adress:
  Forges-du-Saint-Maurice
  National historic site of Canada
  10 000, des Forges bvrd.
  Trois-Rivières (Québec)
  Canada G9C 1B1

.2 Specifically, masonry Works include:

- .1 Inspection of masonry joints
- .2 Removing of decay joints and repointing
- .3 Disassembling of some wall parts and re-assembling
- .4 Cleaning out the entire exposed surface from dirt, mildew, and moss including 10cm under the finish soil level
- .5 Application of a protective coating on 100% of exposed masonry surface

.3 Specifically, landscaping Works include:

- .1 Replacement of existing gravel surface as indicated on plans up to 10cm depth with new gravel of the same type

1.2 Work Schedule

.1 The Contractor shall, within a period deemed reasonable by the Ministry Representative, submit a schedule indicating the various stages of progress and the planned completion date.

.2 Based on the Work schedule and in a form acceptable to the Ministry Representative, provide, within ten (10) business days following the award of the Contract, submission dates for the shop drawings, lists of materials and samples.

.3 The Ministry Representative shall, at his discretion, review the progress of the Work based on the submitted schedule of implementation. The Contractor shall update the schedule with the cooperation and approval of the Ministry Representative.

1.3 Contractor use of premises

.1 The site, as defined by the limits shown on the plans, can be used without restriction until the substantial completion of the Work.

.2 Co-ordinate use of premises under direction of Departmental Representative.

.3 After obtaining the necessary authorizations, assume all costs related to the use of additional storage or work areas required for the execution of the Work.

1.4 Existing services

.1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.

.2 Provide alternative routes for personnel, pedestrian and vehicular traffic.

.3 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.

.4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.

.5 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.

.6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.

.7 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.

.8 Record locations of maintained, re-routed and abandoned service lines.

.9 Construct barriers in accordance with Section 01 56 00 (Temporary Barriers and Enclosures).

1.5 Documents required

.1 Maintain at job site, one copy each document as follows:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed Shop Drawings.

.5 List of Outstanding Shop Drawings.

.6 Change Orders.

.7 Other Modifications to Contract.

.8 Field Test Reports.

.9 Copy of Approved Work Schedule.

.10 Health and Safety Plan and Other Safety Related Documents.

.11 Other documents as specified.

1.6 Preservation of historic/archeological resources

.1 The Artillery Park and the buildings included within its walls are part of the Fortifications of Quebec, and are considered a historic site of national importance,

which contains many archaeological resources. Notify the Departmental Representative immediately of any archaeological discovery made during Work, and await written instructions before resuming Work in the area of the discovery.

.2 During excavation Work, PWGSC will supply and pay for an archaeologist to be present on site to provide archaeological supervision, and to determine the possibility of archaeological discoveries.

.3 Notify Departmental Representative 48 hours prior to beginning excavation, to ensure a PWGSC archaeologist will be present.

.4 Contractor to facilitate archaeologist's access to construction site and ensure collaboration to provide any desired information.

.5 Contractor to include one fifteen-minute work stoppage per half-day of work in their Contract and at their cost, during which time archaeological surveys will take place. Work stoppages not used may be taken at any time and accumulated for a longer interruption, if necessary, but only for archaeological purposes.

.6 Contractor shall plan for four prolonged work stoppages, four hours each, in the event of unexpected discoveries that would require more time than the previously described fifteen-minute stoppage. These four-hour periods may be used as needed or may be combined. Contractor to take these stoppages into account when establishing tenders and may not subsequently claim supplementary payment due to application of said stoppages.

.7 If discoveries occur requiring a stoppage over and above allotted time, Contractor shall assign machinery to a different task in a different area of the construction site to allow archaeological work to take place in original location. If such re-assignment of machinery is impossible, Contractor shall be compensated, subject to Departmental Representative approval, for the delays and costs effectively and directly caused by said situation (when applicable).

.8 Due to the possibility of archaeological discoveries, manual excavation may be required. The presence of archaeological resources could also necessitate slowing of excavation activities, in order to be able to uncover certain type of remains and protect them from damage. In that event, Contractor shall be compensated, subject to Departmental Representative approval, for the delays and costs effectively and directly caused by said situation (when applicable).

.9 Protection of remains and structures: Contractor shall take all reasonable precautions necessary during excavation work to protect any remains brought to light so that said remains may be uncovered for examination by archaeologists. The Departmental Representative tolerate no exceptions in this regard. The Contractor shall be held responsible for any negligence resulting in remains being damaged. The Departmental Representative will determine the impact.

.10 Provide historical, archaeological, cultural and biological resources plan that defines procedures for identifying and protecting historical, archaeological, cultural resources and biological resources known to be on project site, and/or identifies procedures to be followed if historical archaeological, cultural resources and biological resources not previously known to be onsite or in area are discovered during construction.

.11 Plan to include methods to ensure protection of known or discovered resources and identify lines of communication between Contractor personnel and Departmental Representative.

.12 Any element of historical/archaeological nature discovered on site during excavation work shall be returned to the Departmental Representative.

END OF SECTION

Part 1 - GENERAL

1.1 Access and egress

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

1.2 Use of site and facilities

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.

.2 Maintain existing services to building and provide for personnel and vehicle access.

.3 Where security is reduced by work provide temporary means to maintain security.

.4 Closures: protect work temporarily until permanent enclosures are completed.

1.3 Alterations, additions or repairs to existing building

.1 Execute work with least possible interference or disturbance to normal use of premises. To this end, arrange with Departmental Representative to facilitate execution of specified Work.

1.4 Special requirements

.1 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

.2 Keep within limits of work and avenues of ingress and egress.

.3 The facilities must not encroach on neighbouring land.

.4 The Contractor must maintain building access safe and easily accessible at all times.

.5 Consider construction work of similar scope and nature to the Work of this project at the site of the Artillery Park and its surrounding area, for the duration of the construction work. Shared access to the Artillery Park area is planned for both sites.

1.5 Security

.1 Where security has been reduced by Work of Contract, provide temporary means to maintain security.

1.6 Building smoking environment

.1 Comply with smoking restrictions. Smoking is not permitted inside the building and within the site limits.

END OF SECTION

Part 1 - GENERAL

1.1 Definitions

.1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.

.2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally, Bar Chart should be derived from commercially available computerized project management system.

.3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.

.4 Construction Work Week: Monday to Friday, inclusive, will provide five-day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.

.5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.

.6 Master Plan: summary-level schedule that identifies major activities and key milestones.

.7 Milestone: significant event in project, usually completion of major deliverable.

.8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

.9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

1.2 Requirements

.1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.

.2 Plan to complete Work in accordance with prescribed milestones and time frame.

.3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.

.4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Certificate of Substantial Performance and Certificate of Completion as defined times of completion are of essence of this contract.

1.3 Action and informational submittals

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

.2 Submit to Departmental Representative within 10 working days of Notice of Acceptance of Offer Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.

.3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

1.4 Master plan

.1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).

.2 Departmental Representative will review and return revised schedules within 5 working days.

.3 Revise impractical schedule and resubmit within 5 working days.

.4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.5 Project schedule

.1 Develop detailed Project Schedule derived from Master Plan.

.2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:

.1 Award;

.2 Shop Drawings, Samples;

.3 Supplied equipment required dates;

.4 Mobilization;

.5 Survey and inspection;

.6 Landscaping demolition;

.7 Excavation;

.8 Removing joints;

.9 Masonry disassembling;

.10 Masonry reparation and reassembling;

.11 Repointing;

.12 Weeding and gravel replacement;

.13 Slope shaping;

.14 Masonry cleaning;

.15 Protective coating application;

.16 Final cleaning.

1.6 Project schedule reporting

.1 Update Project Schedule on a weekly basis or prior to every site meeting in order to reflect activity changes and completions, as well as activities in progress.

.2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.7 Job site meetings

.1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

.2 Weather related delays with their remedial measures will be discussed and negotiated.

END OF SECTION

Part 1 - GENERAL

1.1 Administrative

.1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for submission of complete and accurate documents and samples to requirements of Contract Documents is not relieved by Departmental Representative's review of submittals.

.9 Keep one reviewed copy of each submission on site.

1.2 Shop drawings and product data

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in Province of Québec.

.3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.4 Allow 10 days for Departmental Representative's review of each submission.

.5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

.6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.

.7 Accompany submissions with transmittal letter containing:

.1 Date;

.2 Project title and number;

.3 Contractor's name and address;

.4 Identification and quantity of each shop drawing, product data and sample;

.5 Other pertinent data.

.8 Submissions include:

.1 Date and revision dates;

.2 Project title and number;

.3 Name and address of:

.1 Subcontractor

.2 Supplier

.3 Manufacturer

.4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents;

.5 Details of appropriate portions of Work as applicable:

.1 Fabrication

.2 Layout, showing dimensions, including identified field dimensions, and clearances

.3 Setting or erection details

.4 Relationship to adjacent work

.9 After Departmental Representative's review, distribute copies.

.10 Submit 2 copies of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

.11 Submit 2 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

.12 Submit 2 copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative:

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 2 years of date of contract award for project.

.13 Submit 2 copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative:

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.14 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.3 Samples

.1 Submit for review samples in as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Departmental Representative's site office.

.3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

.6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 Mock-ups

.1 Erect mock-ups in accordance with Section 01 61 00 (Common Product Requirements).

END OF SECTION

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 Do the Work in accordance with Section [01 41 00 - Regulatory Requirements].

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

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

.4 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: summer 2017. The Contractor shall consider the following specific requirements for the protection of employees and / or the public:

.1 1 august to 15 oct. 2017

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 five (5) 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 BLASTING

.1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Departmental representative.

.2 Do blasting operations in accordance with Section 31 23 16.26 - Rock Removal.

.3 Any operation involving explosives must be carried out under the supervision of a qualified shot-firer.

.4 The purchase, carriage, storage and use of explosives must comply with all applicable federal and provincial legislation:

.1 Canada: *Explosives Act* (E-17)1, *Explosives Regulations* (C.R.C. CH. 599), Standard for Storage of Blasting Charges and Detonators, *Transportation of Dangerous Goods Act and Regulations*.

.2 Québec: *Loi sur les explosifs* (Explosives Act) (E-22), *Règlement d'application sur les explosifs* ((E-22, r.1), *Code de sécurité pour les travaux de construction* (S-2.1, r.4), (Safety code for the Construction Industry) *Règlement sur le transport des matières dangereuses* (Transportation of Dangerous Goods Regulations).

.5 Contractor shall obtain all permits required pursuant to the legislation and regulations referred to above and keep copies on hand at the construction site.

.6 Contractor shall facilitate inspection of the construction site, stored explosives and vehicles used to transport explosives by any government representatives or police officers whose jurisdiction encompasses explosives.

1.19 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.

1.20 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.

1.21 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.

1.22 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.

1.23 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.

1.24 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–and this, before anybody uses the facility. A copy of these documents must be available on the construction site at all times.

1.25 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
- Dimensions 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

1.26 WORK NEAR BODIES OF WATER

1. For all work done near a body of water (such as work above water, work on a wharf, work on the edge of a watercourse, etc.), the Contractor must respect the requirement of the following paragraphs in addition to those in article 2.10.13 du *Code de sécurité pour les travaux de construction* (Safety code for the Construction Industry).

2. The Contractor must plan his work in a way to implement safety measures to prevent any worker from falling in the water. The use of theses measures should be favoured over the wearing of a life jacket.

3. Submit the following documents to the Departmental representative before the beginning of the work:

    a. description of the body of water;
    b. description of the work done next to this body of water;
    c. plan of transportation on water adapted to the work and to the characteristics of the body of water;
    d. rescue plan adapted to the work and to the characteristics of the body of water;

    Each of the document listed above must contain at a minimum the information required in section 11 of the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry).

    If there is the possibility that all or part of the work can be done during the winter, the safety measures included in the documents required above must be adapted accordingly.

4. The Contractor must submit to the Departmental representative the certificate of training required
    in article 11.2 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry) for the following individuals:
    a. the person assigned to prepare the documents required in the preceding paragraph; and
    b. each person responsible for the transport or rescue operations

5. If the rescue plan stipulates the use of a vessel, the Contractor must submit to Departmental representative the competency card or certificate for the individuals in the rescue team for his work, issued by Transport Canada.

6. The Contractor must include in his weekly inspection checklist the devices required in the articles 11.4 and 11.5 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry).

7. Ensure that a rescue vessel moored and in the water is available at each place where a worker may fall in the water. However, a vessel may serve more than one workplace on the same construction site provided the distance between any of these workplaces and the vessel is less than 30 m.

8. Where the construction site is a wharf, a pier, a quay or any similar structure, a ladder with at least two (2) rungs below the surface of the water shall be installed on the front of the structure every 60 m.

1.27 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.

END OF SECTION

Part 1 - GENERAL

1.1 Definitions

.1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.

.2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2 Fires

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

1.3 Disposal of wastes

.1 Do not bury on site rubbish and waste materials, which must be disposed of in appropriate landfill sites in accordance with section 01 74 21 (Construction/Demolition Waste Management and Disposal).

1.4 Drainage

.1 Provide erosion control plan and indicate the control measures implemented, including monitoring and reporting requirements to assure that control measures are in compliance with Federal, Provincial, and Municipal laws and regulations.

.2 Storm Water Pollution Prevention Plan (SWPPP) to be substituted for erosion and sedimentations control plan.

.3 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.4 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

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

1.5 Site clearing and plant protection

.1 Protect trees and plants on site and adjacent properties where indicated.

.2 Wrap in burlap, trees and shrubs adjacent to construction site, storage areas and truck lanes.

.3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.

.4 Minimize stripping of topsoil and vegetation.

1.6 Work adjacent to waterways

.1 Do not operate construction equipment in waterways.

.2 Do not dump excavated fill, waste material or debris in waterways.

1.7 Pollution control

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and tools to local authorities emission requirements.

.3 Prevent sanding dust and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

1.8 Historical/Archaeological control

.1 Provide historical, archaeological, cultural and biological resources plan that defines procedures for identifying and protecting such resources known to be on project site, and/or identifies procedures to be followed if such resources not previously known to be onsite or in area are discovered during construction.

.2 Plan: include methods to assure protection of known or discovered resources and identify lines of communication between Contractor personnel and Departmental Representative.

1.9 Notification

.1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.

.2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.

.3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.

.4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

Part 1 - GENERAL

1.1 Section includes

.1 Temporary utilities.

1.2 Section Includes

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.3 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.4 Related Sections

.1 Section 01 52 00 - Construction Facilities.

.2 Section 01 56 00 – Temporary protection access.

1.5 Installation and Removal

.1 Provide temporary utilities controls in order to execute work expeditiously.

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

1.6 Water Supply

.1 The Contractor must see to hauling and storing the drinking water required in the performance of work.

1.7 Temporary Power

.1 The Contractor must provide a power supply for the electricity required in the performance of work.

.2 The site does not have any electric power supply.

1.8 Fire Protection

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

Part 1 - GENERAL

1.1 Section Includes

.1 Construction aids.

.2 Parking.

.3 Office and sheds.

.4 Accommodation, food supply and worker's transportation.

.5 Transportation, loading and unloading, and storage of materials and tools.

.6 Sanitary facilities.

.7 Construction signage.

.8 Protection and Maintenance of Traffic.

1.2 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.3 Related Sections

.1 Section 01 35 30 – Health and Safety Requirements.

.2 Section 01 51 00 - Temporary Utilities.

.3 Section 01 56 00 - Temporary Barriers and Enclosures.

1.4 References

.1 Canadian General Standards Board (CGSB)
- .1 CGSB 1-GP-189M-84, Primer, Alkyd, Wood, Exterior.
- .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.2 Canadian Standards Association (CSA International)
- .1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
- .2 CSA-0121-M1978(R2003), Douglas Fir Plywood.
- .3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
- .4 CAN/CSA-Z321-[96(R2001), Signs and Symbols for the Occupational Environment.

1.5 Submittals

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

1.6 Installation and Removal

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.7 Scaffolding

.1 Scaffolding in accordance with CAN/CSA-S269.2.

.2 Provide and maintain, scaffolding, ramps, ladders, platforms, temporary stairs

1.8 Hoisting

.1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.

.2 Hoists and cranes shall be operated by qualified operator.

1.9 Site Storage/Loading

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products. Refer to annex B.

.2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.10 Vehicles and Construction Parking

.1 Provide all vehicles required to perform work, including fuel.

.2 Parking on site will be permitted at the locations indicated by the Departmental Representative but limited to a minimum.

.3 The Departmental Representative shall transmit the procedure to the Contractor.

1.11 Security

.1 Security measures to protect construction site contents will be assured by the Contractor.

1.12 Equipment, Tool and Materials Storage

.1 One of the buildings designated by the Departmental Representative will be made available to the Contractor for the purpose of storing certain materials and tools.

.2 Where required, provide and install one or more temporary tarp shelters inside the construction site fence, to store equipment, materials and tools required for the project.

.3 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.4 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

1.13 Sanitary Facilities

.1 Contractor shall for see a temporary sanitary for his own use

1.14 Construction Signage

.1 No sign identifying the Contractor or any other signs or advertisements, other than warning signs, are permitted on site.

.2 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

.3 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative

1.15 Protection and Maintenance of Traffic

.1 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative. Maintain and protect pedestrian traffic in and out of the third-class hotel canteen at all times (visitors, deliveries, cleaning, employees).

.2 The Contractor is not required to maintain public access to buildings. Visitors are only allowed access to outdoor facilities.

.3 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.4 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

.5 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

END OF SECTION

PART 1 – General

1.1 Section includes

.1 Environmental Controls.

1.2 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.3 Related Sections

.1 Section 01 51 00 - Temporary Utilities.

.2 Section 01 52 00 - Construction Facilities.

1.4 References

.1 Canadian General Standards Board (CGSB)

.1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.

.2 Canadian Standards Association (CSA International)

.1 CSA-O121-M1978 (R2003), Douglas Fir Plywood.

1.5 Installation and Removal

.1 Provide temporary controls in order to execute Work.

.2 Remove from site all such work after use.

1.6 Hoarding

.1 Erect temporary site enclosure using new 2.0 m high self-supporting wired fence. Provide one (1) lockable truck gate. Maintain fence in good repair.

1.7 Guard Rails and Barricades

.1 Provide secure, rigid guard rails and barricades around scaffoldings and open edges of roof.

.2 Provide as required by governing authorities.

1.8 Shelters, Enclosures and Weather Protection

.1 Design enclosures to withstand wind pressure.

1.9 Dust Tight Screens

.1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such work is complete.

1.10 Access to Site

.1 Use access roads already arranged and identified.

1.11 Public Traffic Flow

.1 Provide safety measures as required to perform work and protect the public while delivering of materials and removing construction waste.

1.12 Fire Routes

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

1.13 Protection for Off-Site and Public Property

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.14 Protection of Building Finishes

.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with Departmental Representative locations and installation schedule three (3) days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

1.15 Waste management and Disposal

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

END OF SECTION

PART 1 – General

1.1 Section Includes

.1 Product quality, availability, storage, handling, protection, and transportation.

.2 Manufacturer's instructions.

.3 Quality of Work, coordination and fastenings.

.4 Existing facilities.

1.2 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.3 Reference Standards

.1 Within text of each specifications section, reference may be made to reference standards.

.2 Conform to these reference standards, in whole or in part as specifically requested in specifications.

.3 If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.

.4 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

.5 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.

1.4 Quality

.1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.

.4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 Availability

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify the Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 Storage, Handling and Protection

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementations products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

.9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates

1.7 Transportation

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

.2 Transportation cost of products supplied by Departmental Representative will be paid for by Departmental Representative. Unload, handle and store such products.

1.8 Manufacturer's Instructions

.1 Unless otherwise indicated in specifications install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.9 Quality of Work

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.

1.10 Co-ordination

.1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.11 Concealment

.1 In finished areas, conceal pipes, ducts, wiring and lighting of the luminaries in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation, inform Departmental Representative if there is interference. Install as directed by Departmental Representative.

1.12 Remedial Work

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.13 Location of Fixtures

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform Departmental Representative of conflicting installation. Install as directed.

1.14 Fastenings

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.15 Fastenings Equipment

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur

1.16 Protection of Work in Progress

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

1.17 Existing Utilities

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and pedestrian and vehicular traffic.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

END OF SECTION

PART 1 - General

1.1 Section Includes

.1 Progressive cleaning.

.2 Final cleaning.

1.2 Related Section

.1 Section 01 35 43 - Environmental Procedures

1.3 Project Cleanliness

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative and Consultant. Do not burn waste materials on site.

.3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.4 Provide on-site containers for collection of waste materials and debris.

.5 Dispose of waste materials and debris at designated dumping areas and off site.

.6 Clean areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.

.7 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.8 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4 Final Cleaning

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

.2 Remove waste products and debris and leave Work clean.

.3 Prior to final review, remove surplus products, tools, construction machinery and equipment.

.4 Remove waste products and debris including that caused by Owner or other Contractors.

.5 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.6 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.

.7 Remove dirt and other disfiguration from exterior surfaces.

.8 Sweep and wash clean paved areas.

END OF SECTION

Part 1 GENERAL

1.1 Waste management goals

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

.2 PWGSC's Waste Management Goal is to reduce to a minimum the total flow of construction/demolition waste ending in landfill sites. Provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.

.3 Accomplish maximum control of solid construction waste.

.4 Preserve environment and prevent pollution and environment damage.

1.2 Related sections

.1 Section 01 52 00 – Construction Facilities.

.2 Section 01 56 00 – Temporary Barriers and Enclosures.

.3 Annexe A – Mitigation Measures.

1.3 Definitions

.1 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

.2 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials fo purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.3 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:

.1 Salvaging reusable materials from re-modeling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.

.2 Returning reusable items including pallets or unused products to vendors.

.4 Salvage: removal of structural and non structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

.5 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials.

.6 Maintain at job site, one copy of following document:

.1 Waste Reduction Workplan.

1.4 Submittals

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

.2 Submit before final payment one copy of the completed Waste Reduction Workplan (WRW).

1.5 Waste reduction workplan (WRW)

.1 WRW should include but not limited to:

.1 Number of bins used and size;

.2 Quantity of materials to be salvaged for recycling for each of the following category:

.1 Metal elements;

.2 Non contaminated wood elements;

.3 Paper and cardboard packaging;

.4 Plastic packaging;

.5 Masonry elements

.6 Other(s).

.3 Destination of recycled materials

.4 Quantities of materials sent to landfill;

.5 Destination of materials sent to landfill.

1.6 Materials source separation program (MSSP)

.1 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.

.2 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.

.3 Locate separated materials in areas which minimize material damage.

.4 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.

.1 Transport to users of material for recycling.

1.7 Storage, handling and protection

.1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.

.2 Unless specified otherwise, materials for removal become Contractor's property.

.3 Protect, stockpile, store and catalogue salvaged items.

.4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

.5 Protect structural components not removed for demolition from movement or damage.

.6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.

.7 Protect surface drainage, mechanical and electrical from damage and blockage.

.8 Separate and store materials produced during dismantling of structures in designated areas.

.9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.

1.8 Disposal of wastes

.1 Do not bury rubbish or waste materials.

.2 Do not dispose of waste, volatile materials, mineral spirits, oil and paint thinner into waterways, storm, or sanitary sewers.

.3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

1.9 Use of site and facilities

.1 Execute work with least possible interference or disturbance to normal use of premises.

1.10 Scheduling

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

Part 2 PRODUCT

2.1 Not used.

.1 Not used.

Part 3 EXECUTION

3.1 Application

.1 Do Work in compliance with WRW.

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

3.2 Cleaning

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

.2 Clean-up work area as work progresses.

.3 Source separate materials to be reused/recycled into specified sort areas.

.4 Provide all means of transportation, loading and unloading required for waste disposal to designated facilities.

3.3 Diversion of materials

.1 From following list, separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Departmental Representative, and consistent with applicable fire regulations.

.2 Identified Demolition / Construction Waste:

.1 Type of materials to be recycled
  .1 Metal elements;
  .2 Non contaminated wood elements;
  .3 Paper and cardboard packaging;
  .4 Plastic Packaging;
  .5 Masonry elements

.2 Recommended percentages of materials recycled: 100%.

.3 Actual percentages of materials recycled: to be confirmed at the end of the project.

END OF SECTION

Part 1 GENERAL

1.1 Section Includes

.1 As-built, samples, and specifications.

.2 Equipment and systems.

.3 Product data, materials and finishes, and related information.

.4 Operation and maintenance data.

.5 Spare parts, special tools and maintenance materials.

.6 Warranties and bonds.

1.2 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.3 Submission

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.

.2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.3 Copy will be returned after final inspection, with Departmental Representative's comments.

.4 Revise content of documents as required prior to final submittal.

.5 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, four final copies of maintenance manuals in French.

.6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.7 If requested, furnish evidence as to type, source and quality of products provided.

.8 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.9 Pay costs of transportation.

1.4 Format

.1 Organize data in the form of an instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf [219 x 279] mm with spine and face pockets.

.3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

.4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5 Arrange content by systems, under Section numbers and sequence of Table of Contents.

.6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

.7 Text: Manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.5 Contents - Each Volume

.1 Table of Contents: provide title of project;

.1 date of submission; names,
.2 addresses, and telephone numbers of Departmental Representative, Contractor with name of responsible parties;
.3 schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 61 00 - Common Product Requirements.

1.6 As-built and Samples

.1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:

.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Change Orders and other modifications to the Contract.
.5 Reviewed shop drawings, product data, and samples.
.6 Field test records.
.7 Inspection certificates.
.8 Manufacturer's certificates.

.2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by Departmental Representative.

1.7 Recording Actual Site Conditions

.1 Record information on set of blue line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.

.2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.3 Contract Drawings and shop drawings: mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.
.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
.4 Field changes of dimension and detail.
.5 Changes made by change orders.
.6 Details not on original Contract Drawings.
.7 References to related shop drawings and modifications.

.4 Specifications: mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
.2 Changes made by Addenda and change orders.

.5 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.8 Equipment and Systems

.1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Include manufacturer's printed operation and maintenance instructions.

.3 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.4 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.5 Additional Requirements: as specified in individual specifications sections.

1.9 Materials and Finishes

.1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional Requirements: as specified in individual specifications sections.

1.10 Spare Parts

.1 Provide spare parts, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to location as directed; place and store.

.4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.11 Maintenance Materials

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site and location as directed for place and store.

.4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.12 Special Tools

.1 Provide special tools, in quantities specified in individual specification section.

.2 Provide items with tags identifying their associated function and equipment.

.3 Deliver to site and location as directed by Departmental Representative; place and store.

.4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

1.13 Storage, Handling and Protection

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.14 Warranties and Bonds

.1 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

.4 Verify that documents are in proper form, contain full information, and are notarized.

.5 Co-execute submittals when required.

.6 Retain warranties and bonds until time specified for submittal.

.2 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.

END OF SECTION

Part 1 – General

1.1 Related sections

.1 Section 04 03 08 - Historic - Mortaring.

1.2 Measurement for payment

.1 Work of this section, except as specified otherwise, will be measured by Departmental representative. It will be paid for under payment items:

.1 Repointing per square meter of surface area of masonry and quantities are as indicated in the cost submission.

.2 Repair work will be paid for on a unit price basis according to pre-established unit prices and shall be measures per number of stones repaired.

1.3 References

.1 Canadian Standards Association (CSA)

.1 .1 CSA A23.1-94, Construction Materials and Methods of Concrete Construction.

.2 .2 CAN3-A371-94, Masonry Construction for Buildings.

1.4 Definitions

.1 Raking: the removal of loose or deteriorated mortar until sound mortar is reached and at minimum 4 times the joint thickness.

.2 Repointing: filling and finishing of masonry joints from which mortar has been raked out or has been omitted.

.3 Tooling: finishing of masonry joints using tool to provide final contour.

.4 Repair: using adhesives to rebond sections of fractured masonry.

.5 Consolidation: strengthening masonry units to prevent deterioration (spalling).

.6 Descaling: the removal of loose portions of the masonry (usually spalled area) through impact with a brush hammer or similar device.

1.5 System description

.1 Work of this Section includes but is not limited to:

.1 Visually inspecting for obvious signs of deteriorated masonry and testing/verification of masonry joints.

.2 Raking identified unsound joints.

.3 Repointing of identified masonry joints.

.4 Removal of loose portions on stone surface.

.5 Resetting of dislodged masonry units.

.6 Ensuring cure of mortar.

.7 Grouting by hand, small voids.

.8 Replacement of deteriorated or missing units.

1.6 Samples

.1 Submit samples in accordance with Section 01 33 00 (Submittal Procedures).

.2 Submit labelled samples of materials used on project for approval before work commences.

1.7 Qualifications

.1 Contractor-Mason:

.1 Use single Contractor-mason for all masonry work. Ensure Contractor-mason has 10 years minimum in masonry work especially historic stone masonry.

.2 Ensure mason has certificate of qualification with experience in stone masonry. Ensure that all masonry work is strictly undertaken by certified masons.

.3 Ensure Contractor-mason has good level of understanding of structural behavior of masonry walls if masonry work involves replacing or repairing stones which are part of structural masonry work.

.2 Cement grouting: grouting activities should be undertaken by experienced workers in manipulation and cement grouting methods.

1.8 Mock-ups

.1 Construct mock-up in accordance with Section 01 61 00 (Common Product Requirements).

.2 Construct 2 m x 2 m mock-up displaying the technique and finished repointing of stone facing in limestone (interior face) and of sandstone (exterior face).

.3 Construct mock-up under supervision of Departmental representative to demonstrate full understanding of and conformance with specified procedures, techniques and formulations before work commences.

.4 Construct mock-up where directed.

.5 Allow 24 hours for inspection of mock-up by Departmental representative before proceeding with masonry repointing and repair work.

.6 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

1.9 Delivery, storage and handling

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

.2 Store cementations materials and aggregates in accordance with CSA A23.1.

.3 Store lime putty in plastic lined sealed drums.

.4 Keep material dry. Protect from weather, freezing and contamination.

.5 Ensure that manufacturer's labels and seals are intact upon delivery.

.6 Remove rejected or contaminated material from site.

1.10 Storage and Protection

.1 Deliver, store, handle and protect materials of this section in accordance with Section 01 61 00 (Common Product Requirements).

.2 At end of each working day, cover unprotected work with waterproof membranes. Membranes should extend to 0.5 m over surface area of work and be tightly installed to prevent finished work from drying out too rapidly.

.3 Protect adjacent finished work against damage which may be caused by on-going work.

1.11 Existing conditions

.1 Report in writing, to Departmental representative areas of deteriorated masonry revealed during work. Obtain Departmental representative's approval and instructions of repair and replacement of masonry units before proceeding with repair work.

1.12 Environmental requirements

.1 When temperature is 10°C or less:

.1 Store cements and sands for immediate use within heated. Allow these materials to reach minimum temperature of 10°C (that is equilibrium with air temperature in enclosure).

.2 .Heat water to minimum of 20°C and maximum of 30°C:

.1 At time of use temperature of mortar to be minimum of 15°C and maximum of 30°C.

.2 Do not mix cement with water or with aggregate or with water-aggregate mixtures having higher temperature than 30°C.

.2 Obtain approval from Departmental representative for methods of enclosure and protection.

Part 2 – Products

2.1 Materials

.1 Mortar materials: to Section 04 03 08 (Historic – Mortaring).

2.2 Proportions

.1 Proportions: to Section 04 03 08 (Historic – Mortaring).

Part 3 - Execution

3.1 General

.1 Perform work in accordance with CAN3-A371.

.2 Use manual raking tool to remove deteriorated mortar and ensure that no masonry units are chipped/altered/damaged by work to remove mortar.

.3 Power tools may be used to remove mortar. Exercise required care and do not work at less than 10 mm from the edges of stone.

.4 Tool and compact using jointing tool to force mortar into joint.

.5 Finish joints to match existing joints, except where specified otherwise.

3.2 Removing / Repointing

.1 Removing joints:

.1 Where mortar has deteriorated or is loose to the point where it needs replacement, rake unsound joints free of deteriorated and loose mortar, dirt and other undesirable material.

.2 Clean joints to full depth of deteriorated mortar but in no case to less than 50 mm. Clean out voids and cavities encountered.

.3 Clean by compressed air, surfaces of joints without damaging texture of exposed joints.

.4 Flush open joints and voids; clean open joints and voids with low pressure water and if not free draining blow clean with compressed air.

.5 Leave no standing water.

.2 Repointing:

.1 Dampen joints and completely fill with mortar. If surface of masonry units/ stone has worn rounded edges keep pointing back from surface to keep same width of joint. Avoid feather edges. Pack mortar solidly into voids and joints.

.2 Keep masonry damp while pointing is being performed.

.3 Do no pointing in freezing weather.

.4 Build-up pointing in layers not exceeding 12 mm in depth. Allow bottom layers to set before applying subsequent layers. Maintain joint width.

.5 Tool joints behind masonry face with identical tools used for weathered joints. Match weathered joint.

.6 Remove excess mortar from masonry face before it sets. Finish jointing neatly as specified.

.7 Moisten mortar during seven (7) days in order to ensure moist-curing.

3.3 Descaling

.1 Remove loose masonry portions by impact with bush hammer as directed by Departmental representative

3.4 Resetting

.1 Fix dislodged masonry units in correct location with stone flakes.

.2 Insert and compress firm mortar to within 50 mm of pointing surface. Allow mortar to set 24 hours.

.3 Point to surface in two layers.

3.5 Grouting

.1 Clean out void with water until water runs clear.

.2 Fill joints and cracks with mortar set back 50 mm from final mortar surface.

.3 Where grout inlet drillings are required, pour cement grout through tube until void is full.

.4 Point as rest of work.

3.6 Repair

.1 Remove fractured unit without losing pieces or worsening damage or damaging adjacent units.

.2 Drill 10 mm diameter holes, 100 mm deep, in each section and fracture.

.3 Insert 10 mm diameter stainless steel threaded dowels, 180 mm long. Fasten anchors and coat surfaces with epoxide resin. Press firmly until joint is perfectly sealed. Maintain pressure and let assembly set for 8 hours minimum.

.4 Reinstate repaired units into work and repoint with specified mortar as rest of work.

3.7 Cleaning

.1 Clean surfaces of mortar droppings, stains and other blemishes resulting from work of this contract as work progresses.

.2 Do further cleaning after mortar has set and cured.

.3 Clean masonry with stiff natural bristle brushes and plain water only. Vinegar or chemicals are not to be used unless instructed in writing by Departmental representative.

END OF SECTION

PART 1 – General

1.1 Related work

.1 Section 04 03 07 - Repointing and repair of historic masonry.

1.2 References

.1 ASTM C 5-79(1988) Specification for Quicklime for Structural Purposes.

.2 ASTM C 207-79(1988) Specification for Hydrated Lime for Masonry.

.3 CAN/CSA-A5-M88 Portland Cement.

.4 CAN/CSA-A8-M88 Masonry Cement.

.5 CSA A82.56-1950 (R1971) Aggregate for Masonry Mortar.

.6 CSA A179-M1976 Mortar and Grout for Unit Masonry.

1.3 Allowable tolerances

.1 Mortar compression strength according to standard ASTM C-109:

.1 Mortar for exterior repointing: 1,5 MPa minimum after 7 days and 2,5 MPa maximum after 28 days of curing.

.2 Mortar for interior repointing and masonry reconstruction: 7,5 to 9 MPa minimum after 7 days and 12,5 to 14 MPa maximum after 28 days of curing.

.2 If the mortar fails to meet the 7 days compressive strength requirements, but meets the 28 days compressive strength requirement, it is to be accepted. If the mortar fails to meet the 7 days compressive strength requirement, but its strength at 7 days exceeds two thirds of the value required for the 7 days strength, the contractor may elect to continue work at his own risk whilst awaiting the results of the 28 days tests, or to take down the work affected.

1.4 Samples

.1 Submit samples in accordance with Section 01 33 00 (Submittal Procedures).

.2 Submit samples in quantity and size in accordance with CSA A179M.

1.5 Test reports

.1 Submit 5 sets of test results to show that properties are appropriate to particular mortar mix.

1.6 Existing conditions

.1 Investigate possible structural problems and report before beginning masonry work.

.2 Study pointing styles and methods of reproducing them, and submit sample for approval before starting work.

.3 Examine horizontal and vertical joints to determine which were struck first and whether they are same style, as well as other aspects of workmenship which establish authenticity of original work.

1.7 Environmental requirements

.1 Cold weather working conditions

.1 When daily temperature is:

.1 Above 4°C: Execute work according to standard methods et cover walls with plastic or tarpaulin to protect from water penetration and wind action.

.2 Between 0°C and 4°C: Heat up mixing water to get a mortar temperature between 5°C and 50°C until its use. Cover walls and materials with tarpaulin or plastic to protect them from water and from freezing.

.2 Put in place masonry units on a dry surface et use dry materials only. Unless indicated otherwise or unless prescribed by the manufacturer, never wet masonry units.

1.8 Scheduling of work

.1 Submit work schedule indicating anticipated progress stages within time of final completion shown in bid document.

.2 Take measures necessary to complete work within approved schedule time. Schedule may not be changed without approval.

1.9 Alternatives

.1 Obtain Departmental representative's approval before changing manufacturer's brands or sources of supply of mortar materials during entire contract or other methods of mixing mortar specified elsewhere in this specification..

1.10 Measurement of payment

.1 Payment for this work will be on the quantity of work executed measured on site according to unit prices submitted.. Basis and will include costs associated with supplying, mixing, testing and executing masonry work as specified.

PART 2 – Products

2.1 Materials

.1 Sand: fine aggregate, particle size in accordance with table 1 of standard A179-94; aggregate must pass through a 1.18 mm sieve.

.2 Water: potable or from approved non potable supply.

.3 Lime: Hydrated lime, ''S'' type, in accordance with standard ASTM C207-91 (1992).

.4 Portland cement: Type 10, in accordance with standard CAN/CSA-A5.

.5 Colour: coloured sand to match the existing mix.

.6 Air entraining admixture: In accordance with standard CAN3-A266.1-M78.

2.2 Proportioning of mortar

.1 Sand: fine aggregate, particle size in accordance with table 1 of standard A179-94; aggregate must pass through a 1.18 mm sieve.

.2 Water: potable or from approved non potable supply.

.3 Lime: Hydrated lime, ''S'' type, in accordance with standard ASTM C207-91 (1992).

.4 Portland cement: Type 10, in accordance with standard CAN/CSA-A5.

.5 Colour: coloured sand to match the existing mix.

.6 Air entraining admixture: In accordance with standard CAN3-A266.1-M78.

PART 3 – Execution

3.1 Mixing

.1 Add mixture as per manufacturers' instructions.

.2 Mix mortar ingredients in quantities for use in 2 hours.

.3 Use manual mixing as long as quantities of materials and water are accurately controlled and the method of mixing is approved by Departmental representative.

.4 Operate power driven mixer when fully charged, for minimum of 5 minutes and maximum of 10 minutes.

.5 Add water slowly while mixing until all lumps are eliminated.

.6 Mix to a consistency of soft mush.

.7 Mortars that have begun to set within the period prescribed in article 2.3.2 due to the evaporation of humidity may be mixed with water to yield the required consistence.

3.2 Field quality control

.1 Follow proper batching procedure.

.2 Use batching box.

.3 Monitor mixing time.

.4 Take the samples for testing.

3.3. Cleaning

.1 Remove droppings and splashings using clean sponge and water.

.2 . Clean masonry with low pressure clean water and soft natural bristle brush.

3.4 Protection of completed work

.1 Cover completed and partially completed work not enclosed or sheltered with waterproof covering at end of each work day. Anchor securely in position.

END OF SECTION

Part 1 – General

1.1 Related sections

.1 Section 04 03 07 – Historic: Masonry Repointing and Repair.

.2 Section 04 03 08 - Historic: Mortaring.

1.2 References

.1 Canadian General Standards Board (CGSB):

.1 CAN/CGSB-37.2-M88 Emulsified Asphalt, Mineral-Colloid Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings.

.2 Canadian Standards Association (CSA):

.1 CSA A179-94, Mortar and Grout for Unit Masonry.

1.3 Samples

.1 Submit samples in accordance with Section 01 33 00 (Submittal Procedures).

.2 Submit samples of replacement stones not less than 60 days before masonry works begin.

.3 Samples from substitute quarry: submit sample of replacement stones from quarry having similar stone as original quarry.

.1 Submit two stones sized and dressed to match existing stone units.

.2 Select samples from currently worked bed of quarry and accompanied by quarry certification.

.4 Samples of used or previously quarried stone: submit one stone; sized and dressed to match existing stone units. Make supply of stone accessible to Departmental Representative. Departmental Representative may select any number of stones for sampling and request sizing and dressing according to requirements.

.5 Submit mortar samples in quantity and size specified in CSA A179M.

1.4 Scope of work

.1 Mine quarries and dress and supply dimension stones that possess quality attributes identical to that of original stones and displaying the same characteristics in terms of preparation method and finish.

.2 This section governs the following work:

.1 The supply all limestone and sandstone as specified and displaying the required dimensions and profiles to match the stone siding in which the new stones are inserted.

.2 The supply of all the stone required for the repair or the reconstruction of the masonry core walls.

.3 The finish of stone facings as per approved samples (retain samples).

1.5 Quality assurance

.1 Make mason's workshop accessible to Departmental Representative for inspection of current work-in-progress.

.2 Ensure work of this section is executed by personnel experienced in restoration of historic masonry.

.3 Employ workers specially trained and experienced in this type of work.

.4 Ensure repairs involving cement-based stone restoration mortar are carried out by persons who have successfully completed the manufacturer's training course and have been certified by the manufacturer for the type of work required. Provide manufacturer's proof of accreditation before work begins.

.5 Ensure that all masons hired by Masonry Contractor have acquired a minimum of 10 years' experience with heritage structures in masonry. Departmental Representative may reject any mason who is unable to demonstrate that he is adequately experienced and knowledgeable as required.

.6 All masons employed on this project throughout course of project must meet above requirements. Where, during course of project, masons leave work force, any replacement masons must also meet requirements.

1.6 Protection of works

.1 Cover top of completed and partially completed wall, not enclosed or sheltered, with weatherproof coverings at end of each working day. Drape cover over wall and extend 0.5 m down both sides. Anchor securely in position. Prevent finished work from curing too quickly.

.2 Protect adjacent work from marking or damage due to work.

.3 Provide temporary bracing of masonry work during erection until permanent structure provides adequate bracing.

Part 2 – Products

2.1 Materials

.1 Calcareous monumental from Saint-Marc-des-Carrières for facing and coping:

.1 Pure calcite lithic limestone of the Trenton formation class 1, type 2, density 2.63.

.2 Medium grain stone, mined without blasting, medium density, free of seams, fissures and displaying no imperfection likely to lessen the structural integrity.

.3 Stone shall be free of marmorisis and shall display no pick mark, no continuous trace of clay or charcoal anywhere on the stone, no iron channels, no layering marks, no excessively open stylolites and no other foreign material that would deface the stone.

.4 Exposed finish of new stone shall be identical to existing stones next to which new stones are inserted.

.5 Absorption in weight: 24 hours in cold water 0,11.

.6 Compression in lb/ft^2: 10 780.

.2 Sandstone rock siding: meets ASTM C 616 standard, Type II sandstone-quartzite, dimension color and texture must match existing stones to replace.

.1 Relative density: 2,70; free of seams, fissures and displaying no imperfection likely to lessen the structural integrity.

.2 The stone shall be free of defective composition, and shall display no pick mark, no continuous trace of clay or charcoal anywhere on the stone, no iron channels, no layering marks, no excessively open stylolite's and no other foreign material that would deface the stone.

.3 Field stone: angularly or round shaped split or natural round faced granite field stone. Dimension, color and texture must match existing stones to replace.

2.2 Stone cutting

.1 Cut ashlar facing, edge and coping stone, to obtain the exact dimensions and profile of existing stones measured on site.

.2 Even out irregularities on exposed facings, hand-craft beds and joints of same thickness as existing beds and joints and square with facings.

.3 No quarry stone shall be deemed acceptable if damaged in any way. The use of wedges and shims to repair damages is not acceptable

2.3 Tolerances

.1 Fabrication tolerances of dressed stones shall not exceed:

.1 a variance of $\pm$ 1,5 mm for all dimensions;

.2 a square variance of $\pm$ 1,5 mm;

.3 a planimetry variance of $\pm$ 1,0 mm for all exposed facings.

2.4 Foundation

.1 All stones shall be supplied for fitting in on their natural bed.

2.5 Finish

.1 Finish exposed surfaces of new stones in such way as to duplicate the surfaces and textures of existing stones in the relevant sectors.

Part 3 – Execution

3.1 Removal of existing stone

.1 Rake out mortar joints of stones which are split through or spalled, or that are indicated on the drawings.

.2 Clean dust, mortar and stone fragments from slot.

3.2 Cutting/sizing of stone

.1 Use calipers, squares and levels to measure hole for new stone. Allow for mortar joints of thickness equal to that of contiguous joints.

.2 Provide 1:10 slope on top face of stone unit, sloping down to front face.

3.3 Inserting new stone

.1 Clean stone by washing with water and natural fibre brush before laying.

.2 Dampen surfaces of slot and apply mortar.

.3 Lay heavy stones and projecting stones after mortar in courses below has hardened sufficiently to support weight.

.4 Prop and anchor projecting stones until wall above is set.

.5 Set stones on stone flakes to support stone in place until mortar has set.

.6 Remove mortar dropping from face of stone before mortar is set. Sponge stone free of mortar along joints as work progresses.

3.4 Filling joints/pointing

.1 Fill joints and point: in accordance with Sections 04 03 07 (Historic Structures – Masonry Repointing and Repair) and 04 03 08 (Historic - Mortaring).

END OF SECTION

Part 1 – General

1.1 Storage and protection

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

.2 Protect stones and facilitate their resetting.

.3 Dismantled masonry units are to be protected from exposure to water, elements, and potential mechanical damage. Units are not to sit directly on the ground.

1.2 Sequencing

.1 Survey:

.1 Position of stones on a elevation drawing corresponding to the mark designation;

.2 Measurement of each surveyed stone;

.3 Photographic record of stonework to be dismantled and rebuilt.

.2 Mark:

.1 Stones and other elements or components to show identity and position.

.2 Wood platforms or other equipment used to transport and store stones.

.3 Work and storage areas.

.3 Prepare chart or card-index to help locate any stone or unit when necessary, and to control availability of platforms and of work and storage areas.

.4 Keep chart or card-index up-to-date and, if required, produce copy every day.

.5 Submit up-to-date copies of chart or card-index, as well as chronological information concerning each numbered unit (individual cards of units), when requested.

Part 2 – Products

2.1 Not used

.1 Not used.

Part 3 – Execution

3.1 Inspection

.1 Record and report, to Departmental Representative, site conditions not described in Contract

3.2 Temporary marking and recording

.1 Mark stone, on face, before removal using marking product which can be completely erased when required without damaging masonry unit.

.2 Photographically record stonework to be dismantled and rebuilt.

.3 Ensure that temporary marking will remain in use resistant to weather, handling and cleaning until final marking of stones.

.4 Ensure that markings and adhesive are removed without damaging units by brushing with vegetable fibre brush used either dry or with water. Use no solvent, acid or other chemical product.

3.3 Support

.1 Construct shoring and cradling, and other temporary framing work needed to support structure, or parts of it, during removal operations and in anticipation of resetting, if structure is not to be completely dismantled, according to approved drawings, bearing seal and signature of qualified Departmental Representative familiar with historic masonry structures and licensed to practice in Québec.

3.4 Loosening stones

.1 Use approved methods to loosen stones which will cause no damage either to stones or to other architectural elements.

.2 Do not use circular millstone or saw, pneumatic chisel, steel tools exerting concentrated pressure on edge of stone. Obtain Departmental Representative's approval for use of power tools before commencing work.

.3 Loosen wet masonry only when temperature is above freezing point.

3.5 Handling

.1 Place detached stones on wood surfaces during handling. Prevent contact with metal.

.2 When stones are lowered to ground, place directly on wooden platform that will be used for transport or storage.

.3 Ensure that sharp edges of stones do not come into contact with any hard object.

.4 Do not place stones directly on ground or vegetation.

.5 In freezing weather, keep stones dry.

.6 Protect wet stones from freezing.

3.6 Temporary storage

.1 Place stones in designated area of site for cleaning, detailed inspection and for final marking, before storage.

.2 Ensure that stones are accessible and easily removed, and placed so as to be retrieved quickly, when required.

3.7 Cleaning

.1 Do cleaning operations at above freezing temperature. After cleaning, protect wet stones against freezing until dry.

.2 Clean stones by wet scrubbing with vegetable fibre brush unless otherwise instructed by Departmental Representative. Do not use high pressure water jet.

.3 Remove excess mortar by hand.

.4 Ensure masonry does not dry out too quickly.

3.8 Final marking

.1 Do final marking after cleaning, on surface that supports good adhesion and legibility and will not be visible after resetting.

.2 Ensure that product used will not affect mortar to stone adhesion when resetting.

.3 Ensure that product used for marking will survive storage until resetting of stone.

END OF SECTION

Part 1 – General

1.1 Related requirements

.1 Section 04 03 07 - Historic - Masonry repointing and repair.

1.2 Action and informational submittals

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

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for water repellents and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit copies of WHMIS MSDS in accordance with Section 01 35 29.6 - Health and Safety Requirements 01 35 43 - Environmental Procedures. Indicate VOC's for water repellent.

.3 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.3 Quality assurance

.1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

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

1.4 Delivery, storage and handling

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

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

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

.2 Store and protect water repellents from nicks, scratches, and blemishes.

.4 Replace defective or damaged materials with new.

1.5 Site conditions

.1 Ambient Conditions:

.1 Maintain substrate temperature and moisture level at water repellent installation area in accordance with water repellent manufacturer's printed instructions.

.2 Protect plants and vegetation which might be damaged by water repellents.

.2 Protect surfaces not intended to have application of water repellents.

1.6 Guarantee

.1 Contractor will deliver a manufacturer written guarantee, certifying that the anti-graffiti protector will be exempt from any defects of materials and labour for a period of ten (10) years from the date of the certificate of final approval of works.

Part 2 – Products

2.1 Materials

.1 Water base protector oil repellent and damp-proof for porous surfaces; high performance impregnation:

.1 Serves as graffiti resistant protection and against surfaces soiled by aqueous, oil or grease based substances.

.2 Can be used on types of vertical surfaces, inclined, horizontal, smooth or porous of stone masonry.

.3 Does not modify treated surfaces capability to evaporate humidity.

.4 Is not reversible and represents a permanent anti-graffiti system. After five (5) or six (6) cleanings of a specific surface, protector can be reapply to recharge to original protection.

.5 Transparent. **– Execution**

3.1 Examination

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

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

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

3.2 Manufacturer's instructions

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

3.3 Preparation

.1 Prepare and clean substrate surfaces in accordance with water repellent manufacturer's printed instructions.

3.4 Application

.1 Apply water repellents using low pressure spraying apparatus, minimum of 2 coats, in accordance with manufacturer's printed instructions.

3.5 Field quality control

.1 After water repellent has dried, spray coated surfaces with water to verify coating coverage. Allow Departmental Representative to witness tests.

3.6 Cleaning

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal 01 35 21 - LEED Requirements.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.7 Protection

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

.2 Repair damage to adjacent materials caused by water repellent application.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-12.12-M90, Plastic Safety Glazing.

.2 CGSB 41-GP-6M-83, Sheets, Thermosetting Polyester Plastics, Glass Fibre Reinforced.

.3 CAN/CGSB-63.14-M89, Plastic Skylights.

.2 CSA International

.1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for skylight, frame, fasteners, and caulking and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Indicate size and description of components, materials, attachment devices, description of frame and finish, and construction details.

.4 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.3 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00-Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for skylights for incorporation into manual.

1.4 QUALITY ASSURANCE

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

1.5 DELIVERY, STORAGE AND HANDLING

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

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

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

.2 Store and protect skylights and frames from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

Part 2 Products

2.1 SKYLIGHT

.1 Plastic skylights: to CAN/CGSB-63.14, Type 1 -Single glazed.

.2 Dome: pyramidal of clear polycarbonate, dimensions on plan.

2.2 FRAME FINISH

.1 Aluminum frame: see instructions on plan.

2.3 ACCESSORIES

.1 Fasteners: aluminum.

.2 Sealants: to manufacturer's instructions.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for plastic skylights installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

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

3.2 INSTALLATION

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

.2 Install skylights in accordance with CAN/CGSB-63.14 and supplement as follows:

.1 Erect components plumb, level and in proper alignment.

.2 Ensure continuity of envelope air barrier and vapour retarder systems.

.3 Secure preformed curb assembly to structure.

.4 Adjust and seal assembly with provision for expansion and contraction of components.

.5 Secure and seal frame to curb.

3.3 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Remove protective film from plastic surfaces.

.3 Clean interior and exterior plastic surfaces in accordance with manufacturers' instructions.

.4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11-Cleaning.

3.4 PROTECTION

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

.2 Repair damage to adjacent materials caused by plastic skylight installation.

END OF SECTION

Part 1 – General

1.1 Reference

.1 American Society for Testing and Materials (ASTM):

.1 ASTM C 136-[96a], Method for Sieve Analysis of Fine and Coarse Aggregates.

.2 ASTM C 117-[95], Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.

.3 ASTM E 11-[95], Specification for Wire - Cloth Sieves for Testing Purposes.

.4 ASTM D 4318-[98], Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.2 Canadian General Standards Board (CGSB):

.1 CAN/CGSB-8.1-[88], Sieves, Testing, Woven Wire, Inch Series.

.2 CAN/CGSB-8.2-[88], Sieves, Testing, Woven Wire, Metric.

Part 2 – Products

2.1 Materials

.1 Granular topping

.1 Crushed stone: hard, durable, angular particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

.2 Crushed stone replacement must have the same characteristics (color, size, type of stone, etc.) as existing crushed stone for harmonization. Submit samples for approval on the spot by Departmental Representative. Clean crushed stone prior to remove residual dust.

Part 3– Execution

3.1 Subgrade

.1 Ensure that the infrastructure is prepared according to the level and degree of compaction required to enable the implementation of crushed stone.

3.2 Granular sub-base

.1 Place granular sub-base materials so as to obtain a minimum thickness as indicated.

.2 Place in layers of 150 mm compacted thickness. Compact each layer to 95% Standard Density in accordance with ASTM D 698.

3.3 Granular Topping

.1 Placing

.1 Install material on the prepared sub-base, a thickness of 100mm. Connect with the existing surrounding surfaces.

.2 The limits of the surfaces shall be defined cleanly and well aligned. The joints with the neighboring finishes shall be regular and stable, without

undulations. The surfaces shall conform and harmonized to the existing grades and slopes.

.3 Any paving considered to be unsuccessful (thickness, grades, alignments) by the Departmental Representative shall be reworked to his satisfaction.

END OF SECTION