PUBLICS WORKS AND
GOVERNMENT SERVICES CANADA
CLIENT SERVICE TEAM HERITAGE
QUEBEC REGION

REPAINTING OF ADMINISTRATIVE CENTER
GRAIN SHED REPAIR
PETITE FERME SECTOR

CANADIAN WILDLIFE SERVICE
CAP-TOURMENTE WILDLIFE AREA

129/04/PR1-030
R.049992.107

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June 2013

END OF SECTION

Part 1 General

1.1 DEFINITIONS

.1 The following words are used within the specifications with the meaning defined here under:

.1 Contractor: A person, business group or company having signed a contract with the Ministry for the construction of this project and who has a contracting permit in accordance with the laws of the Government of Quebec. The contractor is the constructor and act as such in fulfilling the requirements of the Commission de santé et sécurité au travail (CSST).

.2 Project Document or Plans and Specifications: The entire set of documents used in the call for tenders including specifications and engineering plans listed in the attached index as well as any later documents later issued for the sais works.

1.2 INTERPRETATION

.1 Word, expressions and abbreviations having a common technical meaning are so used in this document.

.2 Stated dimensions are to take priority over scaled drawings.

.3 Larger scale plans are to take priority over smaller scale drawings. The latest issue of plans and documents are to be used.

.4 In case of conflicting dimensions, request direction from the Departmental Representative. Do not scale drawings.

.5 Conflicting requirements between plans and drawings are to be submitted in writing to the Departmental Representative who will issue written final resolution.

.6 Drawings and plans are complementary such that requirements of one are also required by the other. The works to be constructed, in accordance with the plans and specifications, is to be complete, that is, to include all items normally associated with the specified work whether the items are specifically mentioned or not.

.7 Contractor is not to profit from Client obviously involuntary error or omission.

.8 When the entire extent of work is not described in detail, the trade concerned is to supply the best quality.

.9 The Despartmental Representative may, for information purposes only, provide the Contractor with additional drawings to ensure appropriate execution of the works. The drawings shall have the same significance and contract influence as if they have been part of the Contract Documents.

1.3 SCOPE OF WORK

.1 Purpose of Contract:

.1 The Canadian Wildlife Service of the Ministry of the Environment's mandate is to preserve exceptional sites as Cap Tourmente National Wildlife Area.

.2 Since 1978, the site of Cap Touremente belongs to the Canadian Wildlife Service. The first occupational activity of this site is to insure the protection of America's bulrush marshes, the main habitat for the Greater Snow Geese during their migratory periods and also many others species of migratory birds.

.3 The Shed grain or bird's cereal was built at the beginning of the 20th century and was used to store the grains following the harvesting activities. Since it is used as a garage to range all vehicules and other goods that are used for the current operations for the National Wildlife.

.4 The Administrative Center "la Petite Ferme" had been built between the end of the XVII^{e} and the XVIII^{e} centuries. Until 1969, the house named "la Petite ferme", keep its purpose as a home. The house is an excellent example of construction from the French period and has a neo-classical features influence. The house has been here for more than 250 years, which demonstrated the quality of materials used and craftsmen's skills of the time.

.2 Summary description of the projects:

.1 For the GRAIN SHED the working projects for the present contract consist and is not limited to, supply the labour, the materials, the equipment and all that is necessary for :

.1 Repair of the building foundation;
.2 Construction of a concrete's slab with rigid insulation;
.3 Stabilization of the building's structure;
.4 Reinforcement of the building's structure;
.5 Repair of the garage doors;
.6 Repair of the entrance doors;
.7 Repair of the windows;
.8 Level the ground and put a drain around building;
.9 Replace some siding on the building;
.10 Surface's preparation and paint all the exterior siding on the building;
.11 Repair the roof coating;
.12 Repair some elements;
.13 Take off shelves;
.14 Lift and replace the cold room;
.15 Clean-up and protect the site;
.16 Daily and final maintenance of roads and parking used;
.17 The site must be in the same condition as it was before the project.

.2 For the ADMIISTRATIVE CENTER the working projects for A the present contract consist and is not limited to, supply the labour, the materials, the equipment and all that is necessary for:

.1 The exterior repainting of the wood and iron elements of the Administrative Center building “La Petite-Ferme”.

.2 Cleaning of all existing painted surfaces, including porches, s-irons, doors and windows, as well as their components.

.3 Scraping and sanding of all existing painted surfaces, including porches, s-irons, doors and windows including their components.

.4 Repair of woodwork (porches, fascias, etc) including the replacement of all rotten wood pieces.

.5 Repair doors and windows (frames, door head, jamb, supports, storm sashes and windows) including replacement of all rotten wooden pieces.

.6 Repainting of all existing painted surfaces including porches, s-irons, doors and windows, as well as their components.

.3 The contractor will have to respect the hours of the opening and closure of the Cap Tourmente National Wildlife Area.

.4 The contractor will have to work with limited access at the National Wildlife.

.5 All the projects must be realized with respect and the recommendations must be applied also for the Environment and by virtue of the section 01 35 43 – Environment Protection.

.6 There must not have any project or work activity done on the building while the swallow birds are nesting and hanging on the shed.

.1 The projects must be realized when the nesting period is finished.

1.4 PERMITS AND CERTIFICATES

.1 Contractor to obtain all permits needed for the execution of the work. Perform work in accordance with all federal, provincial, municipal and other pertinent regulations. Be responsible for any infractions resulting thereof.

.2 Contractor to implement and pay for all security related needs as directed by law related to workplace safety such as Loi sur la santé et la sécurité au travail from Quebec’s Province.

.3 Provide copy of inspection certificates issued by authorities having jurisdiction.

.4 Provide to Departmental Representative copies of applications for permit and resulting permits.

.5 Contractor must proceed the labor with the presence of people and vehicle circulation near the buildings.

.6 Contractor must take off all the swallow’s nests under the roof of the buildings. The work can only be done after the nesting period is finished.

1.5 EXISTING UTILITY SERVICES

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

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

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

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

1.6 PROTECTION OF EXISTING WORKS

.1 Contractor to particularly prevent damage to existing works and access thoroughfares.

.2 Contractor to be solely responsible for any damage to existing works and is to, at his cost, restore any damaged works to current standards and to the Departmental Representative satisfaction.

.3 Expert consultation if needed and restoration of deteriorated works to be at the cost of the contractor.

1.7 CONTRACTOR USE OF PREMISES

.1 Limit use of premises for execution of work and storage to delimited areas as determined by Departmental Representative.

.1 More specifically, equipment staging area, storage area and field offices to be located as specified by Departmental Representative.

.2 Do not unduly encumber site with material, equipment, stored material or piles of material.

.1 Relocate latter when they hinder work of others or of the Departmental Representative.

.3 Do not use worksite for shelter or temporary residence of contractor employees.

.4 After obtaining requisite authorization, assume costs associated with use of storage areas or other work required for the execution of the works.

1.8 OWNER OCCUPANCY

.1 Owner will occupy premises during entire construction period for execution of normal operations.

.2 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

.3 The National Wildlife Area has an intense activity throughout the fall season during the migration of Snow Geese.

.4 Site of the National Wildlife Area to remain accessible to the public.

.5 Normal maintenance operations are to be maintained.

1.9 REMOVALS

.1 Unless otherwise noted, all removals to become property of Contractor and are to be removed from site at the earliest opportunity.

.2 The Contractor is solely responsible for the consequences (damages, claims, etc.) related to the disposal of waste and claims that may follow. The owner assumes no responsibility for the disposal of waste material excavation.

.3 Submit to Departmental Representative delivery slips from site where demolition waste was delivered.

1.10 MEASUREMENT OF PAYMENT

.1 Advise Departmental Representative sufficiently in advance of operation to permit measurement for payment.

1.11 UNIT PRICES AND LUMP SUM PRICES

.1 Unit or Lump Sum prices to govern the work whether at the Contractor’s profit or loss. Thus, Unit or Lump Sum prices to include cost of all work, expenses, payments, direct or indirect fees, or Contractor’s errors or omissions.

.2 Thus, Contractor, at the stated prices, is to supply all material, workmanship, tools, equipment and accessories for the execution of the works.

.3 Unit or Lump Sum prices to include transportation and handling of materials, general costs of operation, administration, insurance, fees, interest, rent, taxes and other incidental expenses.

.4 Prices to include value of losses or damages which may result from work of this nature, changes in prices and salaries, contracting risks, strikes, delays not the result of Ministry.

1.12 COST BREAKDOWN

.1 As required provide Departmental Representative with detailed breakdown of costs, and total contract cost as directed. Once accepted by departmental Representative, cost breakdown will govern progress payments.

1.13 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.

1.14 EXAMINATION OF SITE

.1 Examine worksite to obtain information required for the execution of contract and be familiar with site conditions.

.2 Ignorance of site conditions will not be cause for additional payment.

.3 In the case of mandatory site visit, the date, time and place will be noted in tender call.

1.15 WORK SEQUENCE

.1 Contractor to start work at award of contract by Ministry and work diligently in the prosecution of the work.

.2 Undertake site work approval of Departmental Representative and complete work (including prepared work) within 60 work days at award of contract.

.3 The selected tenderer is to provide the Ministry with a work schedule within a time considered reasonable by the Departmental Representative. Provide schedule of stages of work with anticipated completion date for each.

.4 In accordance with work schedule and within 5 work days of award of contrat, submit to Departmental Representative, in acceptable form, dates for shop drawing submittal, list of material and samples.

.5 Update work schedule as directed by Departmental Representative. Perform weekly update with cooperation and approval of Departmental Representative.

1.16 ARCHAEOLOGY

.1 Cap Tourmente is an important archaeology site.

.2 Excavation to be performed under review of archaeologist.

.3 Before undertaking excavation work, provide 3 day notice to Departmental Representative to ensure presence of Ministry archaeologist. In default of such notice, delay excavation work until arrival of archaeologist.

.4 Cooperate with Departmental Representative, archaeologist and his representative to prevent loss of information, retrieval of significant artifacts.

.5 Take note that archaeologist will make short duration site visits as excavation work progresses.

.6 Advise Departmental Representative, or in his absence, archaeologist or his representative of any archaeological discovery (remains of construction, installations, objects or fragments thereof) at the site and await instructions before continuing with excavation work.

.7 Provide site access for archaeologist and cooperate in the gathering of information.

.8 Allow cost for work stoppage at the rate of 15 minutes per half day of excavation for archaeological purposes. Such periods, if not uses, to be cumulative and applicable

.9 If unexpected discoveries require longer work stoppage, Departmental Representative will assess impact of stoppage and will advise Contractor accordingly.

.10 Contractor is hereby notified that during excavation work, due to possible archaeological discoveries, that some hand excavation will be required and that some protection works may be required for discoveries. Contractor will be reimbursed in accordance with arrangements to be made at first site meeting. In the case of destruction of artifacts, Contractor to be solely responsible and Departmental Representative will assess costs.

1.17 LAW CONCERNING NATIONAL WILDLIFE AREA

.1 Work within limit properties of the National Wildlife Area must be conducted in accordance with laws governing National Wildlife Area such as the Canada Wildlife Act

1.18 CODES AND STANDARDS

.1 Work to be executed in accordance with contract documents and the latest edition of standards by : Canadian Government Specification Board (CGSB), Canadian Standards Association (CSA), National Building Code (NBC), American Society for Testing and Materials (ASTM), Bureau de Normalisation du Québec (BNQ), Cahier des Charges et Devis Généraux (CCDG) and other codes and standards as noted.

1.19 FIELD QUALITY CONTROL

.1 Work to be performed by qualified workers or by apprentice, in accordance with Provincial law related to professional training.

1.20 LAYOUT OF WORK

.1 Contractor must perform layout of work from control points shown on plans with necessary material.

.2 Protect field control points from being disturbed.

.3 Provide necessary material for Departmental Representative to perform field checks as needed.

.4 Before undertaking work, field check all measurements and advise Departmental Representative at any discrepancy.

.5 Contractor to replace, at his cost, work which was incorrectly laid out.

1.21 ERRORS AND OMISSIONS

.1 Advise Departmental Representative in writing of any errors on plans or discrepancy between plans and site dimensions, in default of which Contractor will be deemed to proceed at his own risk unless otherwise instructed by Departmental Representative.

1.22 DRILING, ADJUSTMENTS AND SEALING

.1 Execute the necessary drilling, adjustment and sealing work to ensure that elements which need to be linked or joined to other elements are connected tightly and with precision.

.2 When a new element is connected to one already in place and the latter is modified, execute the necessary drilling, sealing and restoration work so as to adapt it to the element already in place.

.3 Perform drilling operations in such way that ridges are left clean and smooth, and ensure that the sealing joint is as inconspicuous as possible.

1.23 WEATHER CONDITIONS

.1 No claims will be accepted from Contractor with respect to unfavourable weather conditions.

.2 Include in tender costs related to weather and weather related work.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

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

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

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

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

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

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

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

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.

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

1.2 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 drawings stamped and signed by professional engineer registered or licensed in Province Quebec.

.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 7 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, in 2 duplicate, containing:

.1 Date.

.2 Project title and number.

.3 Contractor's name and address.

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

.5 Other pertinent data.

.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 Capacities.

.5 Performance characteristics.

.6 Standards.

.7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

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

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

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

.12 Submit one electronic 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 3 years of date of contract award for project.

.13 Submit one electronic 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 Submit one electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.15 Submit one electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.

.16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.17 Submit one electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.

.18 Delete information not applicable to project.

.19 Supplement standard information to provide details applicable to project.

.20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, [transparency] [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.

.21 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 SAMPLES

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

.2 Deliver samples prepaid to Departmental Representative's business address.

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

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

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

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

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

1.4 MOCK-UPS

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

1.5 PLANS SIGNED BY A PROFESSIONAL ENGINEER

.1 Submit the proposed plan that describes the method of lifting and retained the hangar à grain to the Departmental Representative or approval.

.2 The plan must be sign and seal by a member of the Ordre des Ingénieurs du Québec.

1.6 CERTIFICATES AND TRANSCRIPTS

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

.2 Submit transcription of insurance immediately after award of Contract.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

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

1.2 REFERENCES

.1 Canada Labour Code - Part II, Canadian Occupational Safety and Health Regulations.

.2 Canadian Standards Association (CSA)

.3 Workplace Hazardous Materials Information System (WHMIS)

.4 Act Respecting Occupational Health and Safety, R.S.Q. Chapter S-2.1.

.5 Construction Safety Code, S-2.1, r.6.

1.3 SUBMITTALS

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

.2 Submit to Departmental Representative, the CSST the site-specific safety program, as outlined in 1.8 at least 10 days prior to start of work. The Contractor must review his program during the course of the project if any change occurs in work methods or site conditions. The Departmental Representative may, after receiving the program or at any time during the project, ask the Contractor to update or modify the program in order to better reflect the reality of the construction site and activities. The Contractor must make the required changes before work begins.

.3 Submit to Departmental Representative the site inspection sheet, duly completed, at the intervals indicated in 1.13.1.

.4 Submit to Departmental Representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by federal or provincial inspectors.

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

.6 Submit to Departmental Representative all safety data sheets for hazardous material to be used at the site at least three days before they are to be used.

.7 Submit to Departmental Representative copies of all training certificates required for application of the safety program, in particular:

.1 General construction site safety and health courses;

.2 Safety officer attestations;

.3 First aid in the workplace and cardiopulmonary resuscitation;

.4 Work likely to release asbestos dust;

.5 Work in confined spaces;

.6 Lockout procedures;

.7 Wearing and fitting of individual protective gear;

.8 forklift truck;

.9 positioning platform;

.10 Any other requirement of Regulations or the safety program.

.8 Medical examinations: Wherever legislation, regulations, directives, specification or a safety program require medical examinations, Contractor must:

.1 Prior to start-up, submit to Departmental Representative certificates of medical examination for all concerned supervisory staff and employees who will be on duty when the site opens.

.2 Thereafter, submit without delay certificates of medical examination for any newly hired concerned personnel as and when they start work at the site.

.9 Emergency plan: The emergency plan, as defined in 1.8.3, shall be submitted to Departmental Representative at the same time as the site-specific safety program.

.10 Notice of site opening: Notice of site opening shall be submitted to the Commission *de la santé et de la sécurité du travail* before work begins . A copy of such notice shall be submitted to Departmental Representative at the same time and another posted in full view at the site. During demobilization, a notice of site closing shall be submitted to the CSST, with copy to Departmental Representative.

.11 Plans and certificates of compliance: Submit to the CSST and to Departmental Representative a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the Construction Safety Code (S-2.1, r. 6), or by any other legislation or regulation or by any other clause in the specifications or in this contract. Copies of these documents must be on hand at the site at all times.

.12 Certificate of compliance delivered by the CSST: The certificate of compliance is a document delivered by the CSST confirming that the contractor is in rule with the CSST, i.e. that he had pay out all the benefits concerning this contract. This document must be delivered to Departmental Representative at the end of the work.

1.4 HAZARDS ASSESSMENT

.1 The contractor must identify all hazards inherent in each task to be carried out at the site.

.2 The contractor must plan and organize work so as to eliminate hazards at source or promote mutual protection so that reliance on individual protective gear can be kept to a minimum. Where individual protection against falling is required, workers shall use safety harness that meets standard Can - CSA- Z-259.10 - M90. Safety belts shall not be used as protection against falling.

.3 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.

.4 All mechanical equipment shall be inspected before delivery to the site. Before using any mechanical equipment, submit to Departmental Representative a certificate of compliance signed by a qualified mechanic. Whenever he suspects a defect or accident risk, Departmental Representative may at any time order the immediate shut-down of equipment and require a new inspection by a specialist of his own choosing.

.5 For use of equipment for lifting persons or materials, ensure that the inspections required by the standards are met and be able to provide a copy of certificates of inspection upon request of Representative of the Ministry.

1.5 MEETINGS

.1 Contractor decisional representative must attend any meetings at which site safety and health issues are to be discussed

.2 Set up a site safety committee, and convene meetings every in accordance with the Construction Safety Code (S-2.1, r.6).

1.6 LEGAL AND REGULATORY REQUIREMENTS

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

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

.3 Regardless of the publication date shown in the construction safety code, always use the most recent version.

1.7 SITE-SPECIFIC CONDITIONS

.1 At the site, the contactor must take account of the following specific conditions:

.1 Vehicles presences on the working site
.2 Presence of bird droppings.
.3 Employees and public constantly surrounding job site.

1.8 SAFETY AND HEALTH MANAGEMENT

.1 Acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the Act Respecting Occupational Health and Safety (R.S.Q., chapter S-2.1) and the Construction Safety Code (S-2.1, r.6).

.2 Develop a site-specific safety program based on the hazards identified and apply it from the start of project work until close-out is completed. The safety program must take account of all information appearing in 1.7 and must be submitted to all parties concerned, in accordance with the provisions set forth in 1.3. At a minimum, the site-specific safety program must include :

.1 Company safety and health policy.
.2 A description of the work, total costs, schedule and projected workforce curve.

.3 Flow chart of safety and health responsibility.

.4 The physical and material layout of the site.

.5 First-aid and first-line treatment standards.

.6 Identification of site-specific hazards.

.7 Risk assessment for the tasks to be carried out, including preventive measures and the procedures for applying them.

.8 Training requirements.

.9 Procedures in case of accident/injury

.10 Written commitment from all parties to comply with the prevention program.

.11 A site inspection schedule based on the preventive measures.

.3 The contractor must draw up an effective emergency plan based on the characteristics and constraints of the site and its surroundings. Submit the emergency plan to all parties concerned, pursuant to the provisions of 1.3.The emergency plan must include:

.1 Evacuation procedure;

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

.3 Identification of persons in charge at the site;

.4 Identification of those with first-aid training;

.5 Training required for those responsible for applying the plan;

.6 Any other information needed, in the light of the site characteristics.

1.9 RESPONSIBILITIES

.1 No matter the size of the construction site or how many workers are present at the workplace, designate a competent person to supervise and take responsibility for health and safety. Take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the site and likely to be affected by any of the work.

.2 Take all necessary measures to ensure application of and compliance with the safety and health requirements of the contract documents, applicable federal and provincial regulations and standards as well as the site-specific safety program, complying without delay with any order or correction notice issued by the Commission de la santé et de la sécurité du travail.

.3 Take all necessary measures to keep the site clean and in good order throughout the course of the work

1.10 COMMUNICATIONS AND POSTING

.1 Make all necessary arrangements to ensure effective communication of safety and health information at the site. As they arrive on site, all workers must be informed of their rights and obligations pertaining to the site specific safety program. The Contractor must insist on their right to refuse to perform work which they feel may threaten their own health, safety or physical integrity or that of other persons at the site. The Contractor must keep and update a written record of all information transmitted with signatures of all affected workers.

.2 The following information and documents must be posted in a location readily accessible to all workers:

.1 Notice of site opening;
.2 Identification of principal Contractor;
.3 Company OSH policy;
.4 Site-specific safety program;
.5 Emergency plan;
.6 Data sheets for all hazardous material used at the site;
.7 Minutes of site committee meetings;
.8 Names of site committee representatives;
.9 Names of those with first-aid training;
.10 Action reports and correction notices issued by the CSST.

1.11 UNFORESEEN CIRCUMSTANCES

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

1.12 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS

.1 Inspect the work site and complete the site inspection sheet at least once a week.

.2 Immediately take all necessary measures to correct any lapses from legislative or regulatory requirements and any hazards identified by a government inspector, by the Departmental Representative, by the site safety and health coordinator or during routine inspections.

.3 Submit to Departmental Representative written confirmation of all measures taken to correct lapses and hazardous situations.

.4 Give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order interruption and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and site workers and environmental protection take precedence over cost and scheduling considerations.

.5 Without limiting the scope of sections 1.8 and 1.9, Departmental Representative may order cessation of work if, in his/her view, there is any hazard or threat to the safety or health of site personnel or the public or to the environment.

1.13 BLASTING

.1 Blasting and other use of explosives are forbidden.

1.14 PROTECTION DISPOSITION WHEN CLEANING THE DROPPINGS OF THE BIRDS

.1 Respiratory protection

.1 As infected substances are potentially present in droppings and may be transmitted to humans by air, the use of a protection respiratory tool is required because of the alteration risk for health to breathe this air pollution.

.2 The choice of the type of respiratory protection you use must be in consideration with the exposition levels of dejection, which means the individuals activity, the working environment, and also the quantity of droppings and the duration of the exposition. Depending which model you use, the instrument must be minimally a mask with a cartridge for air-purifying for high capacity (HEPA ou N100), to answer the Canadian standards and be certified by NIOSH (National Institute for Occupational Safety and H115ealth) and be used by employees that have been trained for the masks handling and utility before use.

.3 In addition with this respiratory protection in regards to the infected substances, a protection from the chemical steam is critical each time there will be use of Javel water. An adapted antigas filter (white with a yellow label for the chlorine) will be added to the mask, or half of the mask in addition to the filter for the atmospheric particles. Disposable suits and covers for shoes must be worn by all the workers so that there won't be any contaminations with the pathogenic substances on clothing. Workers must also wear gloves to avoid any cuts or contamination on any skin wound.

.4 After work in contaminated environment, workers must before taking off there respiratory protection and disposable clothing, place all of these in a resistant plastic bag which will evacuate all the birds droppings to the burial to landfill or incinerator by respecting all the requirements to dispose of the junk.

.5 Sinks with disposable towels must be available for the workers. The minimum that the workers must do is wash theirs hands and face each time they go out the contaminated zone. The sanitary installations must be located outside of the contaminated zone.

1.15 POWDER ACTUATED DEVICES

.1 Use of power hammers and other explosive-actuated devices must be authorized by Departmental Representative.

.2 Any person using a power hammer shall hold a training certificate and meet all requirements of Section 7 of the Construction Safety Code (S-2.1, r. 6).

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

Part 2 Special requirements

2.1 HEIGHT WORK

.1 The Contractor must see to it that any person who performs work where there is a risk of falling from a height of more than 2.4 m is adequately protected from falls.

.2 Plan and organize the Work in such a way as to eliminate dangers at source and ensure collective safety, thereby reducing to a minimum the need for individual protective equipment. When individual protection against falls is required, workers shall use a safety harness in accordance with CSA Standard Z-259.10-M90. Workers may not use a safety belt as a means of protection against falls.

.3 It is mandatory to wear a safety harness on elevating platforms with telescopic booms, whether articulated or rotary.

.4 Seal off as a danger zone any area where height work equipment is used.

2.2 SCAFFOLDS

.1 Base:

.1 Scaffolds must be placed on a firm base to keep them from slipping or toppling over.

.2 The contractor who wishes to set up a scaffold on a roof, roof overhang, glass awning or garret must submit to the Ministry Representative his loads and calculations and obtain the approval prior to commencing installation.

.2 Assembly, wind bracing and anchoring:

.1 All scaffolds must be assembled, wind braced and anchored in accordance with the manufacturer's instructions and the provisions of the Safety Code for the construction industry.

.2 In any situation where it is necessary to remove certain elements of the scaffold (e.g., cross-bars), the Contractor must submit an assembly procedure signed and sealed by an engineer certifying that the scaffold, thus assembled, will allow the work to be performed safely, given the loads it will be subjected to.

.3 For any scaffold structure whose span, between two supports, exceeds 3 m, the Contractor must provide an assembly signed and sealed by an engineer.

.3 Protection against falls during assembly:

.1 Before the start of the Work, the Contractor must submit to the Ministry Representative a procedure describing the means of protection used and, where applicable, the anchor points for emergency cables or lanyards. This procedure must comply with the provisions of sections 3.9.4.5, 2.9.1 and 2.10.12 of the Safety Code for the construction industry (amended August 2, 2001).

.4 Floors:

.1 Scaffold floors must be designed and installed in accordance with the provisions of the Safety Code for the construction industry.

.2 If planks are used, they must be approved and stamped in accordance with the provisions of section 3.9.8 of the Safety Code for the construction industry.(effective since January 1, 2002).

.3 The floors must cover the entire surface protected by the guardrails.

.4 Notwithstanding the foregoing, scaffolds of 4 sections or more (or 6 m) in height must have a full floor covering the entire surface of the putlogs at intervals of 3 m or fraction of 3 m. Moreover, elements of floors may at no time be moved to create intermediate platforms.

.5 Guardrails:

.1 A guardrail must be installed on each work platform.

.2 The cross-bars of wind bracings may not be considered guardrails.

.3 In the case of scaffolds of 4 sections or more (or 6 m) in height where full floors are required, guardrails must be installed on each platform at the start of the Work and remain in place until the Work is completed.

.6 Access:

.1 The Contractor must ensure that accesses to the scaffold do not jeopardize the workers' safety.

.2 Where the floors of the scaffold consist of planks, ladders must be installed so that protruding planks do not impede climbing or descent.

.3 Notwithstanding the provisions of the Safety Code for the construction industry, it is required to install stairs on any scaffold consisting of 6 or more rows of posts and 6 sections or more (or 9 m) in height.

.7 Protection of occupants and the public:

.1 The Contractor must delimit and barricade his work area so as to limit its access to authorized workers only.

.2 The Contractor must install covered passageways, nets or other similar devices to protect occupants or the public from falling objects.

.8 Use of public way:

.1 When it is necessary to encroach on the public way, the Contractor must obtain, at his own expense, all permits and authorizations required by the competent authority.

The Contractor must install, at his own expense, any signage, barricades and other devices required to ensure the safety of the public and his own installations.

2.3 PROTECTION AGAINST VERTICAL FALLS

.1 Guardrails:

.1 It is mandatory to install guardrails. The Ministry Representative may indicate certain restrictions regarding anchoring, in which case the Contractor must ensure that guardrails still comply with all the requirements of section3.8 of the Safety Code for the construction industry (R.S.Q., S-2.1, r.6).

.2 The Contractor agrees to keep the guardrails in place until the project is completed. The Ministry Representative shall authorize their dismantling upon confirming that all work, all inspections and all required corrections have been performed.

.2 Harness:

.1 It is mandatory to wear a safety harness when installing the guardrails.

.2 When installing or modifying parapets or flashings, it is mandatory to wear a safety harness if the guardrails have to be moved temporarily.

.3 It is mandatory to wear a safety harness when receiving material or signalling to the crane operator from the edge of a void.

.4 It is mandatory to wear a safety harness for any work performed on the edge of a void where collective protection does not provide adequate safety.

.5 The Contractor must submit an attachment method and an emergency cable system for each sector or workplace in compliance with section 2.10.12 of the Safety Code for the construction industry (R.S.Q.,S-2.1, r. 6).

.3 Ladders:

.1 All ladders must be long enough to exceed a platform by at least three rungs.

.2 All ladders must be tied off at the top so as to prevent lateral movement. The Contractor must implement a system permitting compliance with this rule during finish work (flashings, etc.)

.4 Scaffolds:

.1 All scaffolds must be inspected and assembled in accordance with the provisions of the Safety Code for the construction industry (R.S.Q., S-2.1, r. 6).

.2 When scaffolds are being assembled, the Contractor must ensure that workers are protected against falls at all times, in accordance with section 3.9.4.5 of the Safety Code for the construction industry (R.S.Q., S-2.1, r. 6).

.5 Lifting of materials:

.1 For all lifting devices, the Contractor must transmit to the Ministry Representative a certificate of mechanical inspection, which inspection must performed prior to the delivery of equipment to the job site.

.2 For all winch installations, the Contractor must transmit to the Ministry Representative the installation procedure recommended by the manufacturer or, failing that, an installation procedure signed and sealed by an engineer. The installation procedure must take into account the maximum loads permitted, the number, weight and location of counterweights, as well as any other detail that might affect the capacity and stability of the device.

.3 In addition to a certificate of mechanical inspection, all cranes, including self-propelling mobile cranes, must have a certificate of annual inspection and a log book inside their cabins.

.4 Lifting devices must be positioned in such a way that loads are not carried above the heads of workers, occupants and members of the general public.

.5 The entire lifting zone must be barricaded to prevent any unauthorized person from the entering the area.

.6 If it is necessary to block the public way temporarily in order to comply with the preceding paragraph or for any other reason concerning the safety of workers, occupants or the public, the Contractor must obtain and pay for the required permits.

.7 The Contractor must carefully inspect all hoisting slings and accessories and ensure that those in poor condition are destroyed and scrapped.

.8 The lifting of compressed gas cylinders must be performed using a basket specially designed for this purpose.

.6 Protection against burns:

.1 Workers assigned to boilers must wear long sleeves, safety goggles and a facial shield when performing loading operations.

.2 Workers assigned to tarring operations or work involving other hot liquids must wear gloves, long sleeves and safety goggles.

.7 Protection against fire**:**

.1 Work on the job site must be performed in accordance with the FC (Fire Commissioner) 301 Standard for Construction Operations, June 1982.

.2 At the start of each shift and for each sector, the Contractor must obtain a Hot Work Permit from the person in charge of the workplace (or a person designated by the latter).

.3 A functional portable extinguisher adequate for dealing with potential fires must be available and easily accessible within a radius of 5 m of any flame, source of sparks or intense heat.

.4 A person must be designated to conduct a two-hour fire patrol after the work shift. Following this two-hour period, the person must countersign the Permit and hand it over to the person in charge of the workplace (or a person designated by the latter).

.5 Propane cylinders must be stored in accordance with the CSA Standard B149.2-05, Propane Storage and Handling Code and comply with the special conditions set out in this document. Cylinders must be stored outside in a safe location and secured from any unauthorized handling. They must be placed in a specially designed storage cabinet, which must be firmly maintained in a vertical position and locked at all times, in an area where there are no moving vehicles, unless they are protected by barriers or the equivalent approved by the Ministry Representative.

.6 Fuel or combustible gas tanks/containers must be stored at a distance of at least 10 m from any building.

.7 The number of propane cylinders on the roof may not exceed the quantity required for a single day's work. Moreover, the cylinders must be tied in a vertical position at all times, or be maintained vertically in a cart designed for this purpose.

.8 All cylinders used or stored on job sites must be equipped with a valve protection cap.

.9 It is not permitted to fill cylinders on the job site, unless a procedure to this effect and compliant with CSA Standard B149.2 has been approved and authorized by the Ministry Representative.

.8 Management of materials and refuse:

.1 On the roof, light materials and sheet materials must be kept in containers or firmly attached. In the event of non-compliance, however minor, the Ministry Representative may prohibit the storage of materials on the roof.

.2 The foregoing paragraph also applies to refuse.

.3 Refuse must be disposed of as it is generated, either through a refuse chute or in the appropriate containers.

.4 All refuse must be removed from the roof at the end of the work shift.

.5 Unless the Ministry Representative gives special authorization to the contrary, all refuse trucks must be at a distance of at least 3 m from any building or structure.

.9 General protection and job site organization:

.1 Regardless of the circumstances and the nature of the work, persons who have access to the job site must wear a safety hat and protective footwear. The Contractor must provide employees who work in a squatting or bending position with chin rests or hard hats with ratchet suspension.

.2 Covered passageways must be installed to protect accesses and exits.

.3 A ground-level safety perimeter must be set up under the work area to protect both occupants and the public.

.4 The ground-level work area, materials handling area and the area where the boiler is located must be barricaded, so that occupants and the public have no access to them.

.5 Before installing any gas- or vapour-emitting device, the Contractor must obtain authorization from the person in charge of the workplace. The latter shall ensure that there is no risk of infiltration in the building's ventilation systems.

.6 The Contractor must ensure that the job site remains clean and in good order.

.7 Copies of all controlled product material data safety sheets must be transmitted to the Ministry Representative and the person in charge of the workplace before the start of work.

.8 The Contractor must provide sanitary facilities and rest areas that comply with the requirements of the Safety Code for the construction industry.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

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 SUBMITTALS

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

.2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.

.3 Address topics at level of detail commensurate with environmental issue and required construction tasks.

.4 Environmental protection plan: include:

.1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.

.2 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.

.3 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.

.4 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.

.5 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

.6 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

.7 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

1.3 WILDLIFE

.1 Swallows built nest on the hangar à grain and Administrative Center. The nesting period is from late May to mid-August.

.2 Contractor will not be allowed to start work as long as swallows nest on the buildings.

.3 The Canadian Wildlife service will allow start of work only when the nesting period will be complete.

1.4 FIRES

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

.2 Provide supervision, attendance and fire protection measures as directed.

1.5 DRAINAGE

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

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

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

1.6 SITE CLEARING AND PLANT PROTECTION

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

.2 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.

.3 Avoid unnecessary traffic, dumping and storage of materials over root zones.

.4 Minimize stripping of topsoil and vegetation.

1.7 WORK ADJACENT TO WATERWAYS

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

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

1.8 POLLUTION CONTROL

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

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

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

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

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 INSPECTION

.1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.3 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.2 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work.

.2 Cost of such services will be borne by Departmental Representative.

.3 Provide equipment required for executing inspection and testing by appointed agencies.

.4 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.5 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect.

.6 Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

1.3 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.4 PROCEDURES

.1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

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

1.5 REJECTED WORK

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

.3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.6 REPORTS

.1 Submit 4 copies of inspection and test reports to Departmental Representative.

1.7 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as requested.

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

1.8 MILL TESTS

.1 Submit mill test certificates as requested by Departmental Representative or required of specification Sections.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 INSTALLATION AND REMOVAL

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

.2 Identify areas which have to be gravelled to prevent tracking of mud.

.3 Indicate use of supplemental or other staging area.

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

.5 Remove from site all such work after use.

1.2 SCAFFOLDING

.1 Scaffolding must be conform to CAN/CSA-S269.2.

.2 Provide, operate and maintain scaffolding as required for the scope of work.

1.3 HOISTING

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

.2 Hoists cranes to be operated by qualified operator.

1.4 SITE STORAGE/LOADING

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

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

1.5 CONSTRUCTION PARKING

.1 Parking will be permitted on site provided it does not disrupt performance of Work with Departmental Representative autorisation.

.2 Provide and maintain adequate access to project site.

.3 Clean runways and taxi areas where used by Contractor's equipment.

1.6 EQUIPMENT, TOOL AND MATERIALS STORAGE

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

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.7 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

.3 Sanitary facilities of the Ateliers will be available if only the area is keep in good and clean condition.

1.8 CONSTRUCTION SIGNAGE

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

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

1.9 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.

.2 Protect travelling public from damage to person and property.

.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 Dust control: adequate to ensure safe operation at all times.

.6 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.

.7 Provide snow removal during period of Work.

1.10 CLEAN-UP

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Store materials resulting from demolition activities that are salvageable.

.4 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

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

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

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

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

1.2 QUALITY

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

.2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.

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

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

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

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

1.3 AVAILABILITY

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

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

1.4 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.

.3 Do not remove from packaging or bundling until required in Work.

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

.5 Protect finished surfaces of wood and steel pieces.

.6 Store cementitious products clear of earth or concrete floors, and away from walls.

.7 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.

.8 Store sheet materials, lumber on flat, solid supports and keep clear of ground.

.1 Slope to shed moisture.

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

.10 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.

.11 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.

.12 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction.

.1 Use touch-up materials to match original. Do not paint over name plates.

1.5 TRANSPORTATION

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

1.6 MANUFACTURER'S INSTRUCTIONS

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

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

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

1.7 QUALITY OF WORK

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

.2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.8 CO-ORDINATION

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

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

1.9 REMEDIAL WORK

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

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

1.10 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.

1.11 FASTENINGS - EQUIPMENT

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

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

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

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

1.12 EXISTING UTILITIES

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

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 WASTE MANAGEMENT GOALS

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

.2 Accomplish maximum control of solid construction waste.

.3 Preserve environment and prevent pollution and environment damage.

.4 Waste removal process must not degrade local quality of operation.

.5 Submittals in accordance with Section 01 33 00 – Submittal Procedures.

1.2 DISPOSAL OF WASTES

.1 Do not bury rubbish or waste materials.

.2 Do not dispose of waste or others materials into waterways, storm, or sanitary sewers.

.3 Do not burn waste on site.

.4 Submit written proposal to Departmental Representative describing proposed waste management practices.

1.3 USE OF SITE AND FACILITES

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

.2 Maintain security measures established by existing facility.

1.4 SCHEDULING

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 GENERAL

.1 Maintain clean worksite, free of waste accumulation.

.2 Conform to waste management practices submitted to Departmental Representative.

.3 Remove waste on regular schedule and dispose off site or as may be directed by Departmental Representative.

.4 Maintain access to site clean and free of ice and snow.

.5 Obtain permits form authorities having jurisdiction for disposal of waste.

.6 Provide containers on site for waste.

.7 Remove waste at the end of each work shift.

.8 Dispose of waste and demolition waste at a site authorized to accept same.

.9 Submit to Departmental Representative delivery slips from site where demolition waste was delivered.

3.2 CLEANING

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

.2 Leave work area in clean and orderly condition.

.3 Clean-up work area as work progresses.

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

END OF SECTION

Part 1 General

1.1 PROJECT CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.

.2 Keep streams and rivers free of all sorts all the time.

.3 Sweep natural surfaces at the end of each working day when work was performed.

.4 Remove waste materials from site daily.

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

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

.7 Provide and use marked separate bins for recycling.

.8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

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

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

1.2 FINAL CLEANING

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

.2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment. The work site must be leave in a satisfactory state of cleanliness or under the same conditions it was at the beginning of work to the satisfaction of the Departmental Representative.

.4 It is agreed that the cost of cleaning after completion of the work must be included in the Contractor’s bid.

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

.6 Remove stains, spots, marks and dirt on exterior surfaces and around site.

.7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.8 Clean lighting reflectors, lenses, and other lighting surfaces.

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

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

.11 Remove dirt and other disfiguration from exterior surfaces.

.12 Clean and sweep roofs, gutters, areaways, and sunken wells.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedures:

.1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

.1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.

.2 Request Departmental Representative inspection.

.2 Departmental Representative Inspection:

.1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.

.2 Contractor to correct Work as directed.

.3 Completion Tasks: submit written certificates in French that tasks have been performed as follows:

.1 Work: completed and inspected for compliance with Contract Documents.

.2 Defects: corrected and deficiencies completed.

.3 Work: complete and ready for final inspection.

.4 Final Inspection:

.1 When completion tasks are done, request final inspection of Work by Departmental Representative, and Contractor.

.2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.

.6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

.7 Final Payment:

.1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.

.2 Refer to CCDC 2: when Work deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.2 FINAL CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International)

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

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Shop Drawings:

.1 Provide shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Provide drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.

.3 Before proceeding with demolition of load bearing walls and columns and where required by authority having jurisdiction submit for review by Departmental Representative shoring and underpinning drawings prepared by qualified professional engineer registered or licensed in the Province of Quebec in Canada showing proposed method.

1.3 DISPOSAL OF WASTES

.1 Do not bury rubbish or waste materials.

.2 Do not dispose of waste, volatile materials, oil into waterways, storm, or sanitary sewers.

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

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

.5 Clean-up work area as work progresses.

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

1.4 SITE CONDITIONS

.1 Notify Departmental Representative before disrupting building access or services.

Part 2 Products

2.1 EQUIPMENT

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

.2 Demonstrate that tools and machinery are being used in manner which allows for salvage of materials in best condition possible.

Part 3 Execution

3.1 PREPARATION

.1 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.

.2 Protection:

- .1 Prevent movement, settlement, or damage to adjacent structures, utilities, [and parts of building] to remain in place. Provide bracing and shoring required.
- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building systems, services and equipment.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.

.3 Disconnect and re-route electrical, telephone and communication service lines. Post warning signs on electrical lines and equipment which must remain energized to serve other products during period of demolition.

3.2 DEMOLITION SALVAGE AND DISPOSAL

.1 Remove parts of existing building to permit new construction.

.2 Sort materials into appropriate piles for reuse and/or recycling.

.3 Refer to demolition drawings and specifications for items to be salvaged for reuse.

.4 Remove items to be reused, store as directed by Departmental Representative and re-install under appropriate section of specification.

.5 Trim edges of partially demolished building elements to tolerances as defined by Departmental Representative to suit future use.

.6 Dispose of removed materials, in accordance with authority having jurisdiction.

3.3 PARTIAL DEMOLITION OF STRUCTURES

.1 Wood structure for stocking purpose inside the Grain Shed.

3.4 REMOVAL FROM SITE

.1 Transport material in accordance with applicable regulations.

.2 Give to the Departmental Representative receipts coupons from the authorised disposal site.

3.5 CLEANING AND RESTORATION

.1 Keep site clean and organized throughout demolition procedure.

.2 Upon completion of project, reinstate areas affected by Work to condition which existed prior to beginning of Work.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International)

- .1 CSA-A23.1-04/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
- .2 CSA-O86S1-05, Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood.
- .3 CSA O121-M1978(R2003), Douglas Fir Plywood.
- .4 CSA O151-04] Canadian Softwood Plywood.
- .5 CSA O153-M1980(R2003), Poplar Plywood.
- .6 CSA O437 Series-93(R2006), Standards for OSB and Waferboard.
- .7 CSA S269.1-1975(R2003), Falsework for Construction Purposes.
- .8 CAN/CSA-S269.3-M92(R2003), Concrete Formwork, National Standard of Canada

.2 Underwriters' Laboratories of Canada (ULC)

- .1 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Submit shop drawings for formwork and falsework.

- .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Québec, Canada.

.3 Submit WHMIS MSDS - Material Safety Data Sheets.

.4 Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners, and locations of temporary embedded parts.

- .1 Comply with CSA S269.1, for falsework drawings.
- .2 Comply with CAN/CSA-S269.3 for formwork drawings.

.5 Indicate formwork design data: permissible rate of concrete placement, and temperature of concrete, in forms.

.6 Indicate sequence of erection and removal of formwork/falsework as directed by Departmental Representative.

Part 2 Products

2.1 MATERIALS

.1 Formwork materials:

.1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O121, CAN/CSA-O86, CSA O437 Series and CSA-O153.

.2 For concrete with special architectural features, use formwork materials to CSA-A23.1/A23.2.

.3 Tubular column forms: round, spirally wound laminated fibre forms, internally treated with release material.

.4 Rigid insulation board: to CAN/ULC-S701.

.2 Form ties:

.1 For concrete not designated 'Architectural', use removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface.

.2 For Architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.

.3 Fill tie holes with single component cementicious patching material. Match concrete colour and provide 40 MPa compression resistance at 28 days, 4 MPa tension resistance at 21 days and 1.5 MPa adhesion at 7 days.

.3 Form release agent: chemically active components which combine free lime to form water insoluble soap.

.4 Falsework materials: to CSA-S269.1.

Part 3 Execution

3.1 FABRICATION AND ERECTION

.1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.

.2 Obtain Departmental Representative's approval for use of earth forms framing openings not indicated on drawings.

.3 Hand trim sides and bottoms and remove loose earth from earth forms before placing concrete.

.4 Fabricate and erect falsework in accordance with CSA S269.1 and CAN/CSA-086-01.

.5 Refer to architectural drawings for concrete members requiring architectural exposed finishes.

.6 Do not place shores and mud sills on frozen ground.

.7 Provide site drainage to prevent washout of soil supporting mud sills and shores.

.8 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA-A23.1/A23.2.

.9 Align form joints and make watertight.

.1 Keep form joints to minimum.

.10 Use 25 mm chamfer strips on external corners and/or 25 mm fillets at interior corners, joints, unless specified otherwise.

.11 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.

.12 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections.

.1 Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.

.13 Clean formwork in accordance with CSA-A23.1/A23.2, before placing concrete.

3.2 REMOVAL AND RESHORING

.1 Leave formwork in place for following minimum periods of time after placing concrete.

.1 3days for walls and sides of beams.

.2 3days for columns.

.3 28ays for beam soffits, slabs, decks and other structural members, or 7 days when replaced immediately with adequate shoring to standard specified for falsework.

.4 3 days for footings and abutments.

.2 Remove formwork when concrete has reached 80 % of its design strength or minimum period noted above, whichever comes later, and replace immediately with adequate reshoring.

.3 Round column form may remain in place but should not be visible.

.4 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.

.5 Re-use formwork and falsework subject to requirements of CSA-A23.1/A23.2.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 American Concrete Institute (ACI)

.1 SP-66-04, ACI Detailing Manual 2004.

.1 ACI 315-99, Details and Detailing of Concrete Reinforcement.

.2 ACI 315R-04, Manual of Engineering and Placing Drawings for Reinforced Concrete Structures.

.2 CSA International

.1 CSA-A23.1-F04/A23.2-F04, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

.2 CAN/CSA-A23.3-04(R2010), Design of Concrete Structures.

.3 CSA-G30.18-09, Carbon Steel Bars for Concrete Reinforcement.

.4 CSA-G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

.5 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

.6 CSA W186-M1990(R2007), Welding of Reinforcing Bars in Reinforced Concrete Construction.

.3 Reinforcing Steel Institute of Quebec, Reinforcing Steel Manual of Standard Practice.

.4 Reinforcing Steel Institute of Canada (RSIC)

.1 RSIC-2004, Reinforcing Steel Manual of Standard Practice.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Prepare reinforcement drawings in accordance with RSIC Manual of Standard Practice and ACI315.

.3 Shop Drawings Indicate placing of reinforcement and:

.1 Bar bending details.

.2 Lists.

.3 Quantities of reinforcement.

.4 Sizes, spacings, locations of reinforcement and mechanical splices if approved by Departmental Representative, with identifying code marks to permit correct placement without reference to structural drawings.

.5 Indicate sizes, spacings and locations of chairs, spacers and hangers.

.4 Detail lap lengths and bar development lengths to CAN/CSA-A23.3.

1.3 QUALITY ASSURANCE

.1 Submit in accordance with Section 01 45 00 - Quality Control and as described in PART 2 - SOURCE QUALITY CONTROL.

.1 Mill Test Report: provide Departmental Representative with certified copy of mill test report of reinforcing steel, minimum 4 weeks prior to beginning reinforcing work.

.2 Submit in writing to Departmental Representative proposed source of reinforcement material to be supplied.

1.4 DELIVERY, STORAGE AND HANDLING

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

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

.3 Storage and Handling Requirements:

.1 Store materials off ground, indoors and in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

.1 Reinforcing steel: billet steel, grade 400, deformed bars to CSA-G30.18, unless indicated otherwise.

.2 Reinforcing steel: weldable low alloy steel deformed bars to CSA-G30.18.

.3 Cold-drawn annealed steel wire ties: to ASTM A82/A82M.

.4 Welded steel wire fabric: to ASTM A185/A185M.

.1 Provide in flat sheets only.

.5 Galvanizing of non-prestressed reinforcement: to CAN/CSA-G164, minimum zinc coating 610 g/m².

.6 Chairs, bolsters, bar supports, spacers: to CSA-A23.1/A23.2.

.7 Mechanical splices: subject to approval of Departmental Representative.

.8 Plain round bars: to CSA-G40.20/G40.21.

.9 For exposed surfaces, use support and chairs which show no stain or defect on finished surface of concrete.

2.2 FABRICATION

.1 Fabricate reinforcing steel in accordance with CSA-A23.1/A23.2, Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada.

.2 Obtain Departmental Representative's written approval for locations of reinforcement splices other than those shown on placing drawings.

.3 Upon approval of Departmental Representative, weld reinforcement in accordance with CSA W186.

.4 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.

2.3 SOURCE QUALITY CONTROL

.1 Provide Departmental Representative with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 4 weeks prior to beginning reinforcing work.

.2 Upon request inform Departmental Representative of proposed source of material to be supplied.

Part 3 Execution

3.1 FIELD BENDING

.1 Do not field bend or field weld reinforcement except where indicated or authorized by Departmental Representative.

.2 When field bending is authorized, bend without heat, applying slow and steady pressure.

.3 Replace bars, which develop cracks or splits.

3.2 PLACING REINFORCEMENT

.1 Place reinforcing steel as indicated on placing drawings in accordance with CSA-A23.1/A23.2.

.2 Use plain round bars as slip dowels in concrete.

.1 Paint portion of dowel intended to move within hardened concrete with one coat of asphalt paint.

.2 When paint is dry, apply thick even film of mineral lubricating grease.

.3 Prior to placing concrete, obtain Departmental Representative's approval of reinforcing material and placement.

.4 Ensure cover to reinforcement is maintained during concrete pour.

.5 Protect coated portions of bars with covering during transportation and handling.

3.3 FIELD TOUCH-UP

.1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcing steel with compatible finish to provide continuous coating.

3.4 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.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Reference Standards:

.1 ASTM International

.1 ASTM C260/C260M-10a, Standard Specification for Air-Entraining Admixtures for Concrete.

.2 ASTM C309-11, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

.3 ASTM C494/C494M-13, Standard Specification for Chemical Admixtures for Concrete.

.4 ASTM D412-92, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.

.5 ASTM D624-00(2012), Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomer.

.6 ASTM D1751-04(2008), Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

.7 ASTM D1752-96(2010), Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.

.2 National Research Council (NRC) et Régie du bâtiment du Québec

.1 Code de construction du Québec, Chapitre 1 – National Building Code of Canada (NBC) 2010 ainsi que le Guide de l'utilisateur – CNB 2005 : Commentaires sur le calcul des structure (partie 4 de la division B)..

.3 CSA International

.1 CSA A23.1/A23.2-09, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.2 CSA A3000-F08, Cementitious Materials Compendium

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 At least 4 weeks prior to beginning Work, provide Departmental Representative with samples of materials proposed for use as follows:

.1 Hydraulic cement.

.2 Each type of supplementary cementing material.

.3 Each admixture.

.4 Fine and coarse aggregate.

.5 Type of backer.

.2 Provide testing results reports for review by Departmental Representative and do not proceed without written approval when deviations from mix design or parameters are found.

.3 Concrete pours: provide accurate records of poured concrete items indicating date and location of pour, quality, air temperature and test samples taken as described in PART 3 - FIELD QUALITY CONTROL.

.4 Concrete hauling time: provide for review by Departmental Representative deviations exceeding maximum allowable time of 120 minutes for concrete to be delivered to site of Work and discharged after batching.

.5 Provide two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements 01 35 43 - Environmental Procedures.

1.3 QUALITY ASSURANCE

.1 Quality Assurance: in accordance with Section 01 33 00 – Submittal Procedures.

.2 Provide Departmental Representative, minimum 4 weeks prior to starting concrete work, with valid and recognized certificate from plant delivering concrete.

.1 Provide test data and certification by qualified independent inspection and testing laboratory that materials and mix designs used in concrete mixture will meet specified requirements.

.3 Minimum 4 weeks prior to starting concrete work, provide proposed quality control procedures for review by Departmental Representative on following items:

.1 Falsework erection.

.2 Hot weather concrete.

.3 Cold weather concrete.

.4 Curing.

.5 Finishes.

.6 Formwork removal.

.7 Joints.

.4 Quality Control Plan: provide written report to Departmental Representative verifying compliance that concrete in place meets performance requirements of concrete as established in PART 2 - PRODUCTS.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Delivery and Acceptance Requirements:

.1 Concrete hauling time: deliver to site of Work and discharged within 120 minutes maximum after batching.

.1 Do not modify maximum time limit without receipt of prior written agreement from Departmental Representative and concrete producer as described in CSA A23.1/A23.2.

.2 Deviations to be submitted for review by Departmental Representative.

.2 Concrete delivery: ensure continuous concrete delivery from plant meets CSA A23.1/A23.2.

.2 Packaging Waste Management: remove for reuse [and return] [by manufacturer] of [pallets,] [crates,] [padding,] [packaging materials] in accordance with Section [01 74 21 - Construction/Demolition Waste Management and Disposal].

Part 2 Products

2.1 MATERIALS

.1 Portland Cement: to CSA A3001, Type GU.

.2 Use only one brand of cement for the whole project.

.3 Hydraulic cement: Type GU to CSA A3001.

.4 Water: to CSA A23.1.

.5 Aggregates: to CSA A23.1/A23.2. Coarse aggregate to be clean, durable particles, free of dust or deleterious material. Unless noted, use maximum size 20 mm aggregates with normal weight. Flat and elongated particles to meet requirements of CSA A23.1/A23.2.

.6 Admixtures:

- .1 Air entraining admixture: to ASTM C260.
- .2 Chemical admixture: to ASTM C494 and ASTM C1017.
- .3 Departmental Representative to approve accelerating or set retarding admixtures during cold and hot weather placing.

.7 Curing compound: to CSA A23.1/A23.2, white, ASTM C309.

2.2 MIXES

.1 Alternative 2 - Prescriptive Method for specifying concrete: owner's concrete mix to CSA A23.1.

- .1 Ensure materials used in concrete mix have been submitted for testing and meet requirements of CSA A23.1.
- .2 Co-ordinate construction methods to suit Departmental Representative concrete mix proportions and parameters.
- .3 Identify and report immediately to Departmental Representative when concrete mix design and parameters pose anticipated problems or deficiencies related to construction.
- .4 Provide concrete mix to meet following hard state requirements:
  - .1 Compressive strength at 28 days of age: 25 Mpa minimum.
  - .2 Durability and class of exposure: F-2.
  - .3 Aggregate size 20 mm maximum.
  - .4 Departmental Representative to approve chemical admixture.
  - .5 Compressive strength at 28 days of age: 25 Mpa minimum.
  - .6 Ratio water/cement maximum: 0.50
  - .7 Air content: 3 to 6 %.
  - .8 Normal density concrete.
- .5 Obtain Departmental Representative permission for use of admixture in the concrete mix.
- .6 The use of Calcium Chloride is prohibited.
- .7 Follow manufacturer’s instructions for use of admixture.

.8 Contractor is responsible to ensure compatibility of admixtures with each other and with components of concrete mixture.

.9 Note type and quantity of admixture uses on delivery slips.

.10 No admixture to reduce concrete durability or resistance to freeze-thaw cycles.

Part 3 Execution

3.1 PREPARATION

.1 Obtain Departmental Representative's written approval before placing concrete.

.1 Provide 48 hours minimum notice prior to placing of concrete.

.2 Do not begin work unless the laboratory designated and paid for by Owner is on site in order to control concrete quality.

.2 Place concrete reinforcing in accordance with Section 03 20 00 - Concrete Reinforcing.

.3 During concreting operations:

.1 Development of cold joints not allowed.

.2 Ensure concrete delivery and handling facilitates placing with minimum of re-handling, and without damage to existing structure or Work.

.4 Pumping of concrete is permitted only after approval of equipment and mix.

.5 Ensure reinforcement and inserts are not disturbed during concrete placement.

.6 Prior to placing of concrete obtain Departmental Representative's approval of proposed method for protection of concrete during placing and curing.

.7 Protect previous Work from staining.

.8 Clean and remove stains prior to application for concrete finishes.

.9 Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.

.10 Do not place load upon new concrete until authorized by Departmental Representative.

3.2 INSTALLATION/APPLICATION

.1 Do cast-in-place concrete work to CSA A23.1/A23.2.

.2 Finishing and curing:

.1 Finish concrete to CSA A23.1/A23.2.

.2 Use procedures as reviewed by those noted in CSA A23.1/A23.2 to remove excess bleed water.

.3 Ensure surface is not damaged.

.4 Use curing compounds compatible with applied finish on concrete surfaces. Applied finish on concrete. Provide written declaration that compounds used are compatible.

.5 Finish concrete floor to CSA A23.1/A23.2. Class F-2.

.6 Concrete floor to have finish hardness equal to or greater than 5 Mohs hardness to CSA A23.1/A23.2.

.7 Provide screed finish unless otherwise indicated.

.8 Rub exposed sharp edges of concrete with carborundum to produce 3 mm minimum radius edges unless otherwise indicated.

3.3 SURFACE TOLERANCE

.1 Concrete tolerance to CSA A23.1 Straightedge Method.

3.4 FIELD QUALITY CONTROL

.1 Inspection and testing of concrete and concrete materials will be carried out by testing laboratory designated by Departmental Representative for review to CSA A23.1/A23.2.

.2 Departmental Representative will pay for costs of tests.

.3 Departmental Representative will take additional test cylinders during cold weather concreting. Cure cylinders on job site under same conditions as concrete which they represent.

.4 Non-Destructive Methods for Testing Concrete: to CSA A23.1/A23.2.

.5 Inspection or testing by Departmental Representative will not augment or replace Contractor quality control nor relieve Contractor of his contractual responsibility.

3.5 CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.2 Do not dispose of unused admixtures and additive materials into sewer systems, into lakes, streams, onto ground or in other location where it will pose health or environmental hazard.

.3 Prevent admixtures and additive materials from entering drinking water supplies or streams.

.4 Using appropriate safety precautions, collect liquid or solidify liquid with inert, non combustible material and remove for disposal.

.5 Dispose of waste in accordance with applicable local, Provincial/Territorial and National regulations.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 CSA International

.1 CAN/CSA-A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction//Methods of Test for Concrete.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Provide manufacturer's printed product literature and data sheets for concrete finishes and include product characteristics, performance criteria, physical size, finish and limitations.

.1 Provide two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements et 01 35 43 - Environmental Procedures. WHMIS MSDS acceptable to Labour Canada and Health and Welfare Canada for concrete floor treatment materials. Indicate VOC content in g/L.

.2 Include application instructions for concrete floor treatment.

1.3 ENVIRONMENTAL REQUIREMENTS

.1 Temporary lighting:

.1 Minimum 1200 W light source, placed 2.5 m above floor surface, for each 40 sq m of floor being treated.

.2 Electrical power:

.1 Provide sufficient electrical power to operate equipment normally used during construction.

.3 Work area:

.1 Make work area water tight protected against rain and detrimental weather conditions.

.4 Temperature:

.1 Maintain ambient temperature of not less than 10 degrees C from 7 days before installation to at least 48 hours after completion of work and maintain relative humidity not higher than 40% during same period.

.5 Moisture:

.1 Ensure concrete substrate is within moisture limits prescribed by [flooring] manufacturer.

.6 Safety:

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.

.7 Ventilation:

.1 Provide continuous ventilation during and after coating application.

1.4 DELIVERY, STORAGE AND HANDLING

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

.2 Delivery and Acceptance Requirements:

.1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

Part 2 Products

2.1 SEALING COMPOUNDS

.1 Surface sealer: clear seal mix of methacrylate resin Sikaguard Clear/Seal II of Sika or approved equivalent.

2.2 CURING COMPOUNDS

.1 Select low VOC, water-based, organic-solvent free curing compounds.

2.3 MIXES

.1 Mixing ratios in accordance with manufacturer's written instructions.

Part 3 Execution

3.1 EXAMINATION

.1 Verify that slab and site conditions surfaces are ready to receive work and elevations are as recommended by manufacturer's written instructions.

3.2 PREPARATION OF EXISTING SLAB

.1 Rub exposed sharp edges of concrete with carborundum to produce 3 mm radiused edges unless otherwise indicated.

.2 Saw cut control joints to CAN/CSA-A23.1, 24 hours maximum after placing of concrete.

.3 Use protective clothing, eye protection, respiratory equipment during stripping of chlorinated rubber or existing surface coatings.

3.3 APPLICATION

.1 After floor treatment is dry, seal control joints and joints at junction with vertical surfaces with sealant.

.2 Apply floor treatment in accordance with Sealer manufacturer's written instructions.

.3 Clean over spray. Clean sealant from adjacent surfaces.

3.4 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.

3.5 PROTECTION

.1 Protect finished installation in accordance with manufacturer's instructions.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 ASTM International Inc.

- .1 ASTM A36/A36M-08, Standard Specification for Carbon Structural Steel.
- .2 ASTM A193/A193M-08, Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature or High-Pressure Service and Other Special Purpose Applications.
- .3 ASTM A307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .4 ASTM A325-07a, Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- .5 ASTM A325M-08, Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength.

.2 Canadian Standards Association (CSA International)

- .1 CSA G40.20/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CAN/CSA-S16-01(R2007), Limit States Design of Steel Structures.
- .4 CSA W59-03, Welded Steel Construction (Metal Arc Welding).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Shop Drawings:

- .1 Provide drawings stamped and signed by professional engineer registered or licensed in Province of Québec, Canada.

.3 Erection drawings:

- .1 Submit erection drawings indicating details and information necessary for assembly and erection purposes including:
  - .1 Description of methods.
  - .2 Sequence of erection.
  - .3 Type of equipment used in erection.
  - .4 Temporary bracings.

.4 Fabrication drawings:

- .1 Submit fabrication drawings showing designed assemblies, components and connections are stamped and signed by qualified professional engineer licensed in the Province of Québec, Canada.

1.3 DELIVERY, STORAGE AND HANDLING

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

.2 Deliver materials in manufacturer's original, undamaged containers with identification labels intact.

Part 2 Products

2.1 DESIGN REQUIREMENTS

.1 Design details and connections in accordance with requirements of CAN/CSA-S16.1 to resist forces, moments, shears and allow for movements indicated.

2.2 MATERIALS

.1 Structural steel: to CSA-G40.20/G40.21 Grade 350W.

.2 Anchor bolts: to CSA-G40.20/G40.21, Grade 300W.

.3 Bolts, nuts and washers: to ASTM A325.

.4 Welding materials: to CSA W59 and certified by Canadian Welding Bureau.

.5 Hot dip galvanizing: galvanize steel, where indicated, to CAN/CSA-G164, minimum zinc coating of 600 g/m².

2.3 FABRICATION

.1 Fabricate structural steel in accordance with CAN/CSA-S16 and in accordance with approved shop drawings.

Part 3 Execution

3.1 APPLICATION

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

3.2 GENERAL

.1 Structural steel work: in accordance with CAN/CSA-S16.

3.3 CONNECTION TO EXISTING WORK

.1 Verify dimensions and condition of existing work, report discrepancies and potential problem areas to Departmental Representative for direction before commencing fabrication.

3.4 ERECTION

.1 Erect structural steel, as indicated and in accordance with CAN/CSA-S16 and in accordance with approved drawings.

.2 Field cutting or altering structural members: to approval of Departmental Representative.

3.5 FIELD QUALITY CONTROL

.1 Inspection and testing of materials and workmanship will be carried out by testing laboratory designated by Departmental Representative.

3.6 CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

END OF SECTION

Part 1 General

1.1 ALTERNATES

.1 Obtain Departmental Representative's approval before changing manufacturer's brands, sources of supply, wood species, or wood grade.

1.2 REFERENCES

.1 CSA International

.1 CSA G40.20/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

.2 CSA O86 Consolidation-10, Engineering Design in Wood.

.3 CSA O121-F08, Douglas Fir Plywood.

.2 National Lumber Grading Authority (NLGA)

.1 NLGA Standard Grading Rules for Canadian Lumber.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Shop Drawings:

.1 Submit drawings to of metal-wood connections showing details of layout, materials, and construction.

1.4 QUALITY ASSURANCE

.1 Advise the Ministry Representative before ordering or purchasing materials.

.2 Ministry Representative to examine and approve materials prior to purchase by contractor.

.3 Retain invoices, purchase orders, and suppliers' certificates to prove that materials used in this contract meet requirements of specification.

.4 Produce above upon request by the Ministry Representative.

.5 Allow free access to materials for examination by the Ministry Representative before beginning work on site.

1.5 MOCK-UPS

.1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.

.2 Construct a full-size mock-up including specified materials.

.3 Allow 48 hours for inspection of mock-up by Departmental Representative before proceeding with work.

.4 When accepted, mock-up demonstrates minimum standard for this work.

.1 Mock-up may remain as part of finished work.

1.6 DELIVERY, STORAGE AND HANDLING

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

.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 Storage area designated by Departmental Representative.

.2 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.3 Store and protect wood from nicks, scratches, and blemishes.

.4 Replace defective or damaged materials with new.

.4 Stack wood above ground or soil with spacer slats between layers to ensure adequate ventilation for air drying.

.5 Cover wood supply with breathable membrane or polyethylene sheet.

Part 2 Products

2.1 MATERIALS

.1 Replacement wood, vertical board siding:

.1 Use eastern or Western cedar which faithfully integrates and reflects the existing woodworks all the while respecting the historical nature of the work.

.2 Grade: #2 or better, heartless and without sapwood.

.3 Actual and typical dimensions are to be based on the existing work as measured.

.4 Moisture contents: after air dryer to 19%.

.2 Replacement wood, window sills, column base, facing board, etc.:

.1 Use Western cedar, grade C select which faithfully integrates and reflects the existing woodworks all the while respecting the historical nature of the work.

.2 Grade: A Select, heartless and without sapwood.

.3 Actual and typical dimensions are to be based on the existing work as measured.

.4 Moisture content: after air dryer to 19%.

.3 Heavy Timber

.1 Use Fir Douglas or Hemlock quality number 1.

.2 Actual and typical dimensions are to be based on the existing work as measured.

.3 Moisture content: after air dryer to 19%.

.4 Metal framing connections:

.1 Steel: to CSA G40.20/G40.21, grade 350 W.

.2 All steel connections, plates must be hot dipped galvanised to CSA 086.

.5 Timber connections:

.1 Bolts: to ASTM A325M, grade 350W.

.2 Lag screws: to CSA 086, hot dip galvanized.

.6 Accessories

.1 Nails, spikes and staples: stainless steel grade 304.

.7 Adhesives:

.1 Set dowels wood plugs or wood inserts in bed of polyurethane adhesive.

Part 3 Execution

3.1 INSTALLERS

.1 Contractor undertaking work in this section are required to be skilled and to have a good experience in this field.

3.2 EXAMINATION

.1 Visually inspect actual condition on site 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.

.4 Stop work and report immediately to Departmental Representative conditions relevant to this contract not described in drawings: evidence of deficiencies, fungal or insect attack which may affect the scope of work and/or durability of the finished product.

3.3 PREPARATION

.1 Protection of in-place conditions:

.1 Protect existing timber elements adjacent to repair area from damage during the Work.

.2 Surface Preparation:

.1 Install adequate scaffolding, ladders and platforms for completion of work in accordance with Contract Drawings.

.2 Install adequate bracing. Ensure support in vicinity of repair.

.1 Review with Departmental Representative before start of Work.

3.4 CONSTRUCTION

.1 Special techniques: study tool marks and methods of reproducing them.

.2 Cut back damaged wood to a point 40 mm beyond the last evidence of decay.

.3 Remove decayed wood with extreme care. Cause neither disruption nor damage to adjacent surfaces.

.4 Create a cavity in to receive wood laminates.

.5 Remove decayed wood from building site daily.

.6 Joints:

.1 Lay out and cut joints to approved mock-up.

.2 Shape repair piece to Departmental Representative's approval.

.3 Trial fit joints before fastening in place. Adjust as necessary to ensure close accurate fit with adjacent surfaces.

.7 Metal Connectors:

.1 Trial fit joint and metal framing connections before fastening in place. Adjust as necessary to ensure close accurate fit.

.8 Lamination:

.1 Apply adhesive evenly to both surfaces and clamp to 600 kPa.

.2 Avoid adhesive drippings. Remove drips and splashes immediately.

3.5 CLEANING

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

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

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

3.6 PROTECTION

.1 Cover completed work not enclosed or sheltered with waterproof covering. Anchor securely in place.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CSA 086-01, Wood Design.

.2 Workplace Hazardous Materials Information System (WHMIS)

.1 Safety data sheet.

.3 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2005.

1.2 SUBMITTALS

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

1.3 QUALITY ASSURANCE

.1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board 127b.

.2 Entire shipment of wood to be accepted by Departmental Representative before its delivery to worksite.

.3 Owner reserve the right to refuse any wood which does not meet current specifications.

.4 Wood supplier to provide traceability documentation (woodlot and sawmill) to confirm the origin, species and quality of lumber.

.5 Any piece with damaged edges or surface as well as any piece with substantial amounts of “false wood” may be refused by Departmental Representative.

.6 Such material to be replaced at the expense of the Wood Supplier at no cost to Owner.

CERTIFICATES

.1 Submit Certificate describing wood preservative treatment to Departmental Representative.

DIMENSIONS

.1 Contractor to confirm all dimensions on site before work.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Transport decking without damaging same to the worksite.

.2 Store in dry, well ventilated area where accepted at worksite without damaging same.

.3 Store wood in dry, well ventilated area, sheltered from rain, snow and sunlight.

.4 Store above ground or on flooring.

.5 Cover bundles with waterproof tarps.

.6 Protect wood from theft or vandalism.

.7 Protect from permanent deformation.

.8 Do not store for extended periods at worksite.

Part 2 Products

2.1 MATERIALS

.1 Lumber: unless specified otherwise, softwood, SPF no.2 or better, S4S, moisture content 19% (S-dry) or less in accordance with following standards:

.1 In accordance with CSA O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

2.2 ACCESSORIES

.1 Nails, spikes and staples: to CSA B111 and CSA 086-01.

.2 Bolts: hot dip galvanized, complete with nuts and washers..

.3 Membrane; self adhesive, SBS modified bituminous, polyethylene weave such as Sopraseal Stick 1100 T or approved equivalent.

.1 Membrane must be air barrier/vapour

.2 Membrane to be UV resistant and suitable for anchor bolt installation.

2.3 WOOD PRESERVATIVE

.1 Preservative, Alkaline **Copper Quaternary** (ACQ) water based wood preservative method

.2 If possible, use GEN II “Micro Incision” treatment method.

Part 3 Execution

3.1 PREPARATION

.1 Apply two coats of preservative at all faces of cuts, boring or planning.

3.2 INSTALLATION

.1 Do work in accordance with CAN/CSA 086-01 except where specified otherwise.

.2 Remove surface damaged wood.

.3 Construct continuous members from pieces of longest practical length.

.4 Install members true to line, levels and elevations, square and plumb.

.5 Assemble, anchor, drill and brace to provide solid, rigid installation.

.6 Countersink lag bolt holes so they do not project above finished work. Conform to CAN/CSA-086 for pilot hole of lag screws.

.1 Pilot hole drill is mandatory and will be verified on the site

3.3 EXPOSED SURFACES

.1 Install such that no stamp or marking is visible on exposed surface.

3.4 SURFACE FINISH

.1 Remove all took marks, scrapes or abrasion.

END OF SECTION

1.1 SAMPLES

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

.2 Samples: Submit two 50 x 50 mm samples of each type of sheet metal material, finishes and colours.

Part 2 Products

2.1 SHEET METAL MATERIALS

.1 Tern Plate Stainless Steel sheet, gauge 26, prepared as indicated in paragraph 2.3.

2.2 ACCESSORIES

.1 Sealants such as polyurethane sealant three-component epoxy and chemical ripening.

.2 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.

.3 Fasteners of stainless steal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.

.4 Solder: to ASTM B32, alloy composition Sn.

.5 Flux: rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.

2.3 FABRICATION

.1 The metal plaster fillings and the other sheet elements must be worked in accordance with the indications of plan

.2 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.

.3 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.

.4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

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

2.4 METAL FLASHING

.1 The plaster fillings, crownings and the edges of roof must be shape according to profiles' prescribed with sheet steel galvanized.

2.5 PLANS

.1 The sleeves of sealing must be worked with sheet steel galvanized. The sleeves must make covered at least 75 mm on the covered roof and be provided with a continuous flange of 100 mm free from open angles.

.2 The joints must be produced by soldering. The diameter of the sleeves must be higher at least 500 mm than that of the elements which cross the membrane of cover.

Part 3 Execution

3.1 INSTALLATION

.1 Clean all surfaces before to install new metal flashing and accessories.

.2 Install sheet metal work in accordance with specifications.

.3 Use concealed fastenings except where approved before installation.

.4 Provide a sealing membrane before the installation of steel plates. Secure in place and lap joints 100 mm.

.5 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock forming tight fit over hook strips, as detailed.

.6 Lock end joints and caulk with sealant.

.7 Install surface mounted reglets true and level, and caulk top of reglet with sealant.

.8 Insert metal flashing into reglets under cap flashing to form weather tight junction.

.9 Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm.

END OF SECTION

Part 1 General

1.1 SAMPLES

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

.2 Submit 2 samples of each type of material and colour.

.3 Cured samples of exposed sealants for each colour where required to match adjacent material.

1.2 INSTALLATION CONDITIONS

.1 Maintain materials above 5^{o} C during installation (sealants and support).

.2 Consult manufacturer to get instructions to apply sealants below 5^{o} C.

1.3 QUALITY CONTROL

.1 Submit technical brochures with product trade marks and CGSB standards to conform with data to be submitted in accordance with section 01 33 00 – Submittal Procedures.

1.4 WARRANTY

.1 Submit to owner warranty certificate at his name stating sealant joint and other works of this section are guaranteed five (5) years against density and waterproofing losses, cracking, crumbling and staining of adjacent surfaces from date of certificate of final work completion.

Part 2 Products

2.1 MATERIALS

.1 Primer: as recommended by manufacturer.

.2 Back-up materials:

- .1 General: compatible with primers and waterproofing materials, oversized 30 to 50 %.
- .2 Polyethylene, urethane, neoprene or vinyl foam: extruded closed cell, shore A, hardness 20, tensile strength 140 to 200 kPa.
- .3 Neoprene or butyl rubber: round solid core, shore A hardness 70.
- .4 Polyvinyl chloride (PVC) or neoprene: extruded tube 6 mm thick (minimum).

.3 Bond breaker tape: plastic tape, hand pressure adhesive which will not bond to sealant.

.4 For inside and outside uses around openings such as false window frames, doors and others: pressurized urethane foam, two (2) parts, for sprayed and hose application.

.5 Colour at Ministry Representative choice.

.6 Joint cleaner: xylol, nethylethylcetone or non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.7 Polyvinyl chloride (PVC) or neoprene: extruded tube, 6 mm thick (minimum).

2.2 SEALER PRODUCTS

.1 Sealants acceptable for use on this project except CAN/CGSB-19.1 and CAN/CGSB-19.18 must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers, use only these primers.

.2 Where sealants are qualified with primers, use only these primers.

.3 Glazing included in doors and storm windows: self-adhesive sealer mastic for painting, one (1) component.

2.3 PADS SPACING

.1 Polyethylene pads 19mm diameter by 6mm thick.

Part 3 Execution

3.1 PREPARATION OF JOINT SURFACES

.1 Remove dust, paint, loose mortar and other foreign materials and dry joint surfaces.

.2 Remove rust, calamine and other deposits on steel surfaces with metal brush, grinder or sand blast.

.3 Remove oil, grease patch and other deposits on steel surfaces with specified joint cleaner.

.4 Prepare concrete, masonry, glazing surfaces as recommended by sealer manufacturer.

.5 Check joint dimensions and make all necessary corrections so that joint depth will be equal to half its width ranging between minimum 6 mm deep and wide, and maximum 25 mm wide.

.6 Install permanent back-up joint to obtain specified depth for filling product.

.7 Prior to apply primer and sealer, mask adjacent surfaces to avoid staining.

.8 Install non-sticking tape as recommended by manufacturer.

.9 Apply primer on joint lateral faces immediately prior to install sealer.

3.2 APPLICATION

.1 Apply primer, back-up joint, non-adhesive tape in accordance with manufacturer's instructions. Apply sealer with gun having appropriate nozzle dimensions. Feeding pressure to be strength enough to fill completely cavities and joints. Superficial skin caulking is not allowed.

.2 Form sealant joint with continuous and full bead without ridges, folds, wrinkles, sags, air pockets and embedded impurities. Form concave joint.

.3 Apply sealant to fill joints between door and window frames and adjacent building components, around each exterior opening, in recessed masonry joints and at indicated locations.

.4 Fill with sprayed pressure polyurethane foam all free spaces around door and window frames after having waterproof exterior perimeter. Foam pressure should be enough to completely fill cavities without generating too much pressure on frames to avoid damaging their operation.

.5 Clean without delay adjacent surfaces and leave work in perfect condition. Remove excess compound promptly from adjacent surfaces with cleaner recommended by manufacturer. Remove hide-tape after forming joint.

.6 Ensure joint surfaces are dry and frost free.

3.3 SELF-LEVELLING SEALANT

.1 Insure surfaces to apply sealant on are solid, clean and dry. Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease and other matters which may impair bonding.

.2 Apply breaking-adhesion tape or roll at joint base to prevent three (3) sides bonding.

.3 Prime sides of joints in accordance with sealant manufacturer's instructions.

.4 Do sealant application between 5^{o} C and 38^{o} C.

.5 Clean adjacent surfaces with specified cleaner recommended by manufacturer.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Architectural Woodwork Manufacturers Association of Canada (AWMAC)

.1 Architectural Woodwork Quality Standards Illustrated - 8th Edition, 2003.

.2 Canadian Standards Association (CSA International)

.1 CAN/CSA-O132.5-M1992(R1998), Stile and Rail Wood Doors.

.2 CAN/CSA-O141-05, Softwood Lumber.

.3 National Lumber Grading Authority (NLGA)

.1 NLGA Standard Grading Rules for Canadian Lumber, 2012.

1.2 QUALITY ASSURANCE

.1 Arrange for Departmental Representative to inspect period wood door fabrication shop during the Work.

.2 Mock-ups:

.1 Prepare one mock-up for inspection by Departmental Representative before proceeding with further Work.

.3 Mock-up:

.1 Size: full size.

.2 Surfaces: ready for coatings but not treated with coatings.

.3 Install hardware.

.4 Notify Departmental Representative 48 hours in advance of required inspection.

.5 Approved mock-up becomes standard of acceptance for finished Work.

.6 Approval of mock up and approval of installation will not occur at the same time.

.7 Obtain approval of Departmental Representative before installing approved mock-up.

.8 Approved mock-up will be incorporated in finished work.

1.3 QUALIFICATIONS

.1 Carry out door fabrication work using skilled tradesperson trained and experienced in fabrication and installation of wood doors.

.2 Door fabricators: experienced in use of materials. Supply job references showing door fabrication experience of similar size and scope as this project.

.3 Competent worker: equipped with tools and equipment necessary to carry out work in a traditional manner.

1.4 DELIVERY, STORAGE AND HANDLING

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

.2 Store or hang doors in enclosed space with controlled ambient temperature and relative humidity.

.3 Refinish newly exposed surfaces after fitting and cutting for hardware installation with two coats of paint,.

.4 Protect doors from scratches, handling marks and other damage. Wrap doors.

.5 Waste Management and Disposal:

.1 Separate waste materials for reuse/recycling.

Part 2 Products

2.1 MATERIALS

.1 Softwood lumber: west Cedar, cat. A select without heart and sapwood CAN/CSA-O141 and National Lumber Grades Authority (NLGA) requirements, with maximum moisture content of 16%.

.2 Fasteners: nails, wood screws, wood pegs, wood pins, wood glues.

2.2 FABRICATION

.1 Wood boards to be one piece solid stock.

.2 Mouldings on frame members specified as solid to be run in solid stock and not simulated with an applied moulding.

.3 Allow 1 mm clearance around panel edges.

.4 Cut off excess material from framed and panelled doors; allow 76 mm extra in length of stiles and 13 mm in length of rails.

.5 Prepare doors for glass. Provide glazing stops and run mouldings on frame members "stickings".

.6 Wood board doors (Grain Shed)

.1 Type: doors horizontal boards inside and outside vertical boards.

.2 Grade: face to equal in appearance AWMAC Quality Standards.

.3 Material: boards to be Western cedar. Moisture content not to exceed 10 percent at time of fabrication.

.4 Construction: Connections by tongue and groove boards, glued and nailed in match with 2 nails per board cross.

.7 Framed and panelled doors:

.1 Type: 2 panel - in 2 horizontal tiers - upper horizontal tier of one window with a lower horizontal tier of 2 standard panels solid construction.

.2 Grade: face to equal in appearance AWMAC, premium grade.

.3 Material: solid doors to be made from Western cedar. Moisture content not to exceed 10 percent at time of fabrication. Dowels: hardwood.

.4 Construction:

.1 Mortise and Tenon:

.1 CAN/CSA-O132.5 top rail and stile, single, bevelled haunched, mortise and tenon.
.2 Intermediate rail and stile mortise and tenon.
.3 Middle or lock rail and stile double mortise and tenon.
.4 Bottom rail and stile mortise and tenon, draw-bore pinned, glued.
.5 Intermediate stile or munting and rails stump-tenoned, glued.

.2 Dowelled:
.1 CAN/CSA-O132.5, rails and stiles ordinary dowelled, chamfer ends of dowels and glue groove.
.2 Intermediate stile or munting and rails stump-tenoned, glued.

.8 Hardware:
.1 Remove, strip, brush and wash the existing hardware.
.2 Apply 2 coats of metal paint on all sides of the hardware.
.3 Replace the hardware on the new door and the new framework.

Part 3 Execution

3.1 INSTALLATION

.1 Sizing for height: door height must be equal to the existing door to replace.
.2 Sizing for width: door width must be equal to the existing door.
.3 Lock-edge bevel: bevel lock-edge of door 3mm.
.4 Hinge as existing.
.5 Mounting hardware as existing.
.6 Adjust hardware for correct function.

3.2 ADJUSTING

.1 Re-adjust doors and hardware just prior to completion of the building to function freely and properly.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Architectural Woodwork Manufacturers Association of Canada (AWMAC)

.1 Architectural Woodwork Quality Standards Illustrated - 8th Edition, 2003.

.2 Canadian Standards Association (CSA International)

.1 CAN/CSA-O132.5-M1992(R1998), Stile and Rail Wood Doors.

.2 CAN/CSA-O141-05, Softwood Lumber.

.3 National Lumber Grading Authority (NLGA)

.1 NLGA Standard Grading Rules for Canadian Lumber, 2012.

1.2 QUALITY ASSURANCE

.1 Arrange for Departmental Representative to inspect period wood windows fabrication shop during the Work.

.2 Mock-ups:

.1 Prepare one mock-up for inspection by Departmental Representative before proceeding with further Work.

.3 Mock-up:

.1 Size: full size.

.2 Surfaces: ready for coatings but not treated with coatings.

.3 Install hardware.

.4 Notify Departmental Representative 48 hours in advance of required inspection.

.5 Approved mock-up becomes standard of acceptance for finished Work.

.6 Approval of mock up and approval of installation will not occur at the same time.

.7 Obtain approval of Departmental Representative before installing approved mock-up.

.8 Approved mock-up will be incorporated in finished work.

1.3 QUALIFICATIONS

.1 Carry out door fabrication work using skilled tradesperson trained and experienced in fabrication and installation of wood windows.

.2 Window fabricator: experienced in use of materials. Supply job references showing window fabrication experience of similar size and scope as this project.

.3 Competent worker: equipped with tools and equipment necessary to carry out work in a traditional manner.

1.4 DELIVERY, STORAGE AND HANDLING

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

.2 Store or hang windows in enclosed space with controlled ambient temperature and relative humidity.

.3 Refinish newly exposed surfaces after fitting and cutting for hardware installation with two coats of paint,.

.4 Protect windows from scratches, handling marks and other damage. Wrap windows.

.5 Waste Management and Disposal:

.1 Separate waste materials for reuse/recycling.

Part 2 Products

2.1 MATERIALS

.1 Softwood lumber: west Cedar, cat A select without heart and sapwood CAN/CSA-O141 and National Lumber Grades Authority (NLGA) requirements, with maximum moisture content of 16%.

.2 Adhesive for wood quality water resistant, conforming to CSA 0132.1-M1977.

.3 Fasteners: nails, wood screws, wood pegs, wood pins, wood glues.

.4 Hardware: handles, hooks, eyelets, hinges, screws and galvanized steel half-butterfly. Triangles fixing glasses galvanized steel.

.5 Single clear glass 4 mm thick.

.6 Flexible sealant glazing in one component white.

.7 Polyethylene pads 19 mm diameter 6 mm thick.

.8 Calles in eastern white cedar.

.9 Sealants:

.1 Primary: type recommended by the manufacturer of the sealant.

.2 Joint Backing:

.1 General: compatible with primers and sealants, oversized 30 to 50%.

.2 Polyethylene, urethane, neoprene or vinyl: extruded closed cell foam, hardness 20 at Shore A scale, tensile strength 140 to 200 kPa.

.3 Neoprene or butyl rubber: massive round rod, hardness 70 at Shore A. scale.

.4 Polyvinyl chloride or neoprene: extruded tube, a minimum thickness of 6 mm.

.3 Sealant: For joints between frames and wood siding: General purpose sealant based on polyurethane elastomer component, color at choice and conforming to ASTM C-920, Class NS, Class 25 ; Color sealant as the color of element of wood or requested by the Departmental Representative.

.4 Cleaning: Cleaner Attachments: Xylol, néthyléthylcétone or non-corrosive product recommended by the manufacturer of the sealant compatible with the materials forming the joint.

.10 Primer and paint:

.1 Primer Alkyd for exterior, mildew resistant. One (1) layer.

.2 Exterior Paint Latex, mildew resistant, semi-gloss finish. Two (2) layers.

2.2 FABRICATION

.1 Frames, shelves, wood boards to be one piece solid stock.

.2 Mouldings on frame members specified as solid to be run in solid stock and not simulated with an applied moulding.

.3 Windows and storm-windows:

.1 Type: traditional wooden windows and storm-windows.

.2 Quality: the final appearance of wood elements must correspond to the first class quality of the AWMAC.

.3 Construction: assembly wooden parts according to standard CAN/CSA-O132.5: tenon and mortise shoulder, pinned and glued.

.4 Profile: Profile frames and all wooden parts will be as existing.

.4 Hardware:

.1 Remove, strip, brush and wash the existing hardware.

.2 Apply 2 coats of metal paint on all sides of the hardware.

.3 Replace the hardware on the new window and the new framework.

.5 Installation of glass:

.1 All wood comes into contact with the sealant should be coated with a primer and at least one layer of paint before installing the glass.

.2 A 1 mm shall be provided around each glass to allow expansion.

.3 Glass tiles must be perfectly clean before installation. They should be placed on a bed of mastic and embedded in it, with fixed mounting triangles before being smoothed inside and outside.

.4 Achieve putty joints to form a continuous seal at 45 ° and perfectly smooth, free of edges, folds, subsidence, air voids and dirt coated.

.6 Primer and paint:

.1 Before applying primer, remove wood dust and dirt with a wet rag and let dry.

.2 If necessary, use a solution of TSP and rinse with clear water.

.3 Let dry before applying the primer.

.4 Before applying the primer, make sure the surfaces are perfectly smooth and clean, ready to receive primer.

.5 Priming and painting workshop and under the conditions recommended by the product manufacturer.

.6 Apply primer and paint to obtain a smooth, uniform, without spot or stroke roll, difference in intensity of color, brand overlap difference gloss and any kind of imperfection. The surfaces must be covered evenly everywhere.

.7 Ensure that the application of the paint does not prevent the operation of opening parts of windows.

Part 3 Execution

3.1 INSTALLATION

.1 Remove the framework of the opening to replace, taking care to do not damage the existing elements and conserved.

.2 Replace at the Contractor's expense any damaged item.

.3 Prepare the opening to receive the new framework.

.4 Install the framework level and square by cedar shims. Cut the excess shims. Bridging the gap between the frame and the studs with low expansion urethane.

.5 Once the curing urethane finished, cut and remove the excess. Sealing the junction of the frame with the wooden elements.

.6 Install hardware parts such as existing openings.

.7 Adjust them for windows and storm-windows work smoothly as planned. Sizing for height: door height must be equal to the existing door to replace.

3.2 ADJUSTING

.1 Re-adjust windows and hardware just prior to completion of the building to function freely and properly.

.2 Touch up paint where needed.

.3 Make a final wash of the glasses before acceptance of work.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Except contrary indication, build-up the new wooden window in accordance with the requirements of ACNOR 0132.1-M1977 standard.

1.2 WORK SCOPE

.1 Contractor shall provide the re-painting of all windows with its, including:

.1 Stripping of all surfaces with cracks.

.2 Re-painting in accordance with the requirements of section 09 91 61 –Historic Exterior Re-painting.

.3 Complete removal of existing sealing and their replacement in accordance with the requirements of section 07 92 00 and as indicated on plans.

.4 Replacement of shelves as indicated on plans.

.5 Replacement of frame or frame section as indicated on plans.

1.3 SHOP INSPECTION

.1 Departmental representative can do periodical inspection at window manufacturer's shop and at any other places where window reparation works are executed to examine and check material and fabrication quality.

.2 Ministry Representative inspection and method of checking quality cannot be blamed for delay intended to be claimed for by Contractor and/or sub.

1.4 TECHNICAL DATA

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

.1 Technical data of wood protection.

.2 Technical data of sealant.

.3 Technical data of caulking.

1.5 SHOP DRAWINGS

.1 Submit ship drawings in accordance with Section 01 33 00 – Submittal Procedures.

.2 Shop drawings must clearly indicate construction details, dimensions for each type of windows, various types of joints, glazing and sealant, caulking finishes and all other appropriate data.

1.6 PRODUCT SAMPLE

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

.1 One sample of each wood species to be used dimensions 38 mm x 100 mm x 600 mm.

.2 One (1) section of each wood window profile, length 300 mm.

.3 Each type of nail and screw.

.4 Any other sample of specified products required by Ministry Representative.

.2 Submit samples and get approval prior to fabricate the following prototype.

1.7 WARRANTY

.1 Contractor certify that new and repaired wood windows are guaranteed against air leakage, material and installation defects for a five (5) years period beginning the date of final work acceptance by Ministry Representative.

.2 Following lacks will be considered as defects:

.1 Water infiltration through walls or inside the building caused by defective window joints.

.2 Glaze breaking resulting from fabrication and/or installation defects, weather exposure.

.3 Any abnormal defects caused by inadequate handling.

.3 Warranty includes cost of all expenses caused by defect repairs and damages to adjacent works following window defects.

.4 Warranty certificate to be submitted and approved by Ministry Representative before allowing sub-contract for works of this section.

1.8 LIST OF WORKS

.1 Contractor must submit to Ministry Representative prior to allocate sub-contract for this section listing of works for each window for approval.

.2 Work listing must indicate nature and quantity of components to be repaired and replaced including hardware as well as nature and scope of finish reconditioning (paint stripping, scarpping, sanding, etc.).

.3 Listing of works for each window including work allowance for each one will be included to finish estimated price.

.4 Window listing to be reviewed by Contractor and Ministry Representative.

Part 2 Products

2.1 MATERIALS

.1 Wood for new storm-windows : west cedar, selected grade Premium n^{o} 1, clear of knots, straight grain free from sapwood cracks, splits and other defects harmful to wood quality, kiln dry maximum 12 % humidity content; species and quality as follows :

.1 Humidity level in accordance with wood classification rules of Canadian Lumberman’s Association.

.2 Wood adhesive: waterproof in accordance with ACNOR 0132.1-M1977.

.3 Mounting: finishing nails galvanized steel suitable length according to CSA B111-1974, galvanized steel screw with countersunk head suitable length.

.4 Storm-windows Hardware: tradition of wood lumber such existing and/or reproduction.

.5 Caulking : refer to section 07 92 00.

2.2 FABRICATION

.1 New wood : plane on four (4) faces in accordance with profiles and dimensions indicated in shop drawings. Indicated dimensions are finished dimensions after planing.

.2 Shape wood with modern machinery and tooling. Exposed wood faces to be free from roughness, warping and machinery marks. Moulding profiles to be clean cut, sharp and free from curbs.

.3 Various wood components including moulding to be supplied straight, free from cracks, splits and other defects.

.4 Foresee and install various parts so they can contract or expand while staying waterproof when used outside. Reinforce components where required and fasten them so they can resist to efforts and strengths without damage.

.5 Glue all assembly wood with pressure press.

.6 Use pegs in addition to glue to fasten wood components where splicing are required for partial replacement of members.

.7 Fabricate new window and storm-window in shop so they are ready to install in opening with their frame.

.8 Fabricate members as required following individual dimension survey of each window and shutter.

.9 Fabricate new frames and doors with accurate dimensions, with no more than 1.6 mm for 2 meters or less measured in a diagonal way across frames and doors.

.10 Repair existing windows and shutters and fabricate new ones so that mobile casements can be opened with a maximum effort of 2,5 kg.

.11 Repair and/or replace arched lintel with solid wood as required profile and shape following reknown and tested methods. Note that centring may vary for each opening.

.12 Repair and/or replace window sills and lintels and adjust them to existing openings following sloped angle of recessed windows.

2.3 WOOD MEMBERS FOR REPLACEMENT

.1 Prepare in shop all wood members for replacement at required dimensions and profiles surveyed on site so they exactly fit in existing openings and casements.

2.4 MODIFICATIONS TO EXISTING FRAMES

.1 Replace lower transoms if necessary in accordance with approved prototype. Do not damage stiles.

Part 3 Execution

.1 WINDOW REPAIR

.1 Proceed as approved prototypes by Ministry Representative.

.2 Replace all defective members compromising shutter and window airtighness, waterproofness, solidity and durability.

.2 REPLACEMENT OF WINDOWS AND SHUTTERS

.1 Remove all movable sash with taking care to number each part.

.2 Fabricate new movable sash in the locations shown in the plans.

.3 Install new movable sash or those repaired to their original location. Adjust the existing parties remained in place.

.3 GLAZING SEALANT

.1 Work includes removal of old mastic and application of new sealant as well as re-installation of new galvanized fixing triangles.

.2 Apply new sealant to all glazing on existing or new windows in accordance with section 07 92 00. This sealant will be painted once cure is complete, take care to cover the glass with paint about 1mm at perimeter.

.4 GLAZING

.1 Replace all broken glazing after beginning contract at Contractor’s expenses.

END OF SECTION

Part 1 General

1.1 SECTIONS INCLUDES

.1 Moisture testing of substrates.

.2 Surface preparation of substrates as required for acceptance of paint, including cleaning, small crack repair, patching, caulking and making good surfaces and areas to limits defined under MPI Repainting Maintenance Manual requirements.

.3 Specific pre-treatments noted herein or specified in the MPI Repainting Maintenance Manual.

.4 Sealing/touch-up, spot priming, and/or full priming surfaces for repainting in accordance with MPI Repainting Maintenance Manual requirements.

1.2 REFERENCE

.1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.2 The Master Painters Institute (MPI)

.1 Maintenance Repainting Manual by the Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List

.3 National Fire Code of Canada.

.4 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coating) of the Environmental Protection Agency (EPA).

1.3 INTERPRETATION

.1 The words and expressions paint, painting and repainting include surface treatment with the help of products such as primers or printing products, paints, coatings, varnishes, stains, lacquers and others included in the list of the MPI Painting Specification Manual.

1.4 QUALITY ASSURANCE

.1 Conform to latest MPI requirements for exterior repainting work including cleaning, preparation and priming.

.2 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with the latest edition of the MPI Approved Product List and shall be from a single manufacturer for each system used.

.3 Paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in MPI Maintenance Repainting Manual and shall be compatible with other coating materials as required.

.4 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by the Ministry Representative.

.5 Mock-ups:

.1 Provide a mock-up in accordance with requirements of Section 01 45 00 - Quality Control to Departmental Representative.

.2 Prepare and repaint mock-up designated exterior surface or item to requirements specified herein, with specified paint or coating showing selected colours, number of coats, gloss/sheen, textures and workmanship to MPI Maintenance Repainting Manual standards for review and approval.

.3 When approved, repainted surface and/or item shall become acceptable standard of finish quality and workmanship for similar on-site exterior repainting work.

.6 Standard of Acceptance: When viewed using natural prevailing sunlight at peak period of the mid-day on surface viewed, surfaces shall indicate the following:

.1 Walls: No defects visible from a distance of 1000 mm at 60° to surface.

.2 Soffits: No defects visible from grade at 45° to surface.

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

1.5 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

.1 Provide paint products meeting MPI "Environmentally Friendly" ratings based on VOC (EPA Method 24) content levels.

1.6 INSPECTION REQUIREMENTS

.1 Exterior surfaces requiring repainting shall be inspected by both painting contractor and Paint Inspection Agency who shall notify the Ministry Representative in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.

.2 Where an assessed degree of surface degradation of DSD-1 to DSD-3 before preparation of surfaces for repainting is revealed to be DSD-4 after preparation, repair or replacement of such unforeseen defects discovered shall be rectified by others, as mutually agreed, before repainting is started.

1.7 SCHEDULING OF WORK

.1 Submit work schedule for various stages of painting to the Ministry Representative for approval. Submit schedule a minimum of 48 hours in advance of proposed operations.

.2 Paint occupied facilities in accordance with approved schedule. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

.3 Obtain written authorization from the Ministry Representative for changes in work schedule.

.4 Schedule repainting operations to prevent disruption by other trades if applicable and by occupants in and about the building.

1.8 SUBMITTALS

.1 Submittals shall be in accordance with the requirements of Section 01 33 00 - Submittal procedures.

.1 Submit full range colour sample chips for review and selection. Indicate where colour availability is restricted.

.2 Submit product data and manufacturer's installation/application instructions for paints and coating products to be used.

.3 Submit WHMIS Material Safety Data Sheets (MSDS).

.4 Quality Assurance Submittals:

.1 Manufacturer's Instructions: manufacturer's installation instructions.

.5 Upon completion, submit records of products used. List products in relation to finish system and include the following:

.1 Product name, type and use (i.e. materials and location).

.2 Manufacturer's product number.

.3 Colours'code number.

.4 MPI Environmentally Friendly classification system rating.

.5 Manufacturer's Material Safety Data Sheets.

1.9 QUALITY CONTROL

.1 Provide a mock-up to the Ministry Representative.

.2 Prepare and repaint mock-up designated exterior surface or item to requirements specified herein, with specified paint or coating showing selected colours, gloss/sheen, textures and workmanship to MPI Maintenance Repainting Manual standards for review and approval.

.3 When approved, repainted surface and/or item shall become acceptable standard of finish quality and workmanship for similar on-site exterior repainting work.

1.10 EXTRA MATERIAL

.1 Submit maintenance materials as required.

.2 Submit one four liters can of each type and color of finish coating. Identify type and color in relation to established color schedule and finish system.

.3 Deliver and store where directed by the Ministry Representative.

1.11 DELIVERY, HANDLING AND STORAGE

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

.1 Deliver and store materials in original containers, sealed, with labels intact.

.2 Labels shall clearly indicate :

.1 Manufacturer's name and address.

.2 Type of paint or coating.

.3 Compliance with applicable standard.

.4 Colour number in accordance with established colour schedule.

.3 Remove damaged, opened and rejected materials from site.

.4 Store and handle in accordance with manufacturer's recommendations.

.5 Store materials and equipment in secure, dry, well-ventilated area with temperature range between 7 degrees C to 30 degrees C. Store materials and supplies away from heat generating devices and sensitive products above minimum temperature as recommended by manufacturer.

.6 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. Upon completion of operations, return areas to clean condition to approval of Departmental Representative.

.7 Remove paint materials from storage in quantities required for same day use.

.8 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.

.9 Fire Safety requirements :

.1 Provide two 9 kg dry chemical fire extinguisher adjacent to storage area.

.2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site daily.

.3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada.

.2 Waste Management and Disposal:

.1 Paint, stain and wood preservative finishes and related materials are hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.

.2 Materials that cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

.3 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.4 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:

.1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.

.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.

.3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.

.4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.

.5 Empty paint cans are to be dry prior to disposal or recycling (where available).

.6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

.7 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

1.12 SITE REQUIREMENTS

.1 Temperature, Humidity and Substrate Moisture Content Levels:

.1 Unless specifically pre-approved by the Ministry Representative.

.2 Do not perform repainting work when:

.1 Ambient air and substrate temperatures are below 10°C.

.2 Substrate temperature is over 32°C unless paint is specifically formulated for application at high temperatures.

.3 Substrate and ambient air temperatures are expected to fall outside paint manufacturer's prescribed limits.

.4 Relative humidity is above 85% or when dew point is less than 3°C variance between air/surface temperature.

.5 Rain or snow is forecast to occur before paint has thoroughly cured.

.6 It is foggy, misty, raining or snowing at site.

.3 Conduct moisture tests using a properly calibrated electronic Moisture Meter,

.4 Do not perform repainting work when maximum moisture content of substrate exceeds: 15° for wood.

.2 Application Requirements:

.1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind conditions are such that airborne particles will affect quality of finished surface.

.2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.

.3 Apply paint when previous coat of paint is dry or adequately cured, unless otherwise pre-approved by specific coating manufacturer.

.4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.

.5 Do not apply paint when:

.1 Temperature is expected to drop below 10°C before paint has thoroughly cured.

.2 Substrate and ambient air temperatures are expected or paint manufacturer’s limits.

.3 Surface to be painted is wet, damp or frosted.

.6 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.

.7 Schedule repainting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.

.8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

1.13 DUST COVERS

.1 Plan on having insolated dust covers to close off dust creating spaces to protect workers, the public and surfaces and areas where the work has already been completed.

.2 Keep dust covers and move them as required until all activities are completed.

Part 2 Products

2.1 MATERIALS

.1 Paint materials listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project.

.2 Paint materials for repaint systems shall be products of a single manufacturer.

2.2 COLORS

.1 Ministry Representative will provide the list of colors after contract award.

.2 The list of colors will be determined based on the colors found on site.

.3 The colors are chosen from the full range of colors and shades offered by manufacturers.

.4 If specific products are offered in a limited range of colors, the colors of the products actually implemented will be selected in this narrow range.

2.3 MIXING AND TINTING

.1 Perform color tinting operations prior to delivery of paint to site. On-site tinting of painting materials is allowed with the Ministry Representative's written permission.

.2 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and color and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

.1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following MPI gloss/sheen standard values:

Gloss Level Category	Units @ 60°	Units @ 85°
G1 - matte finish	0 to 5	maximum 10
G2 - velvet finish	0 to 10	10 to 35
G3 - eggshell finish	10 to 25	10 to 35
G4 - satin finish	20 to 35	minimum 35
G5 - semi-gloss finish	35 to 70	

G6 - gloss finish	70 to 85
G7 - high gloss finish	> 85

.2 Gloss level ratings of repainted surfaces shall be as specified herein and as noted on Finish Schedule.

2.5 EXTERIOR PAINTING SYSTEMS

.1 Grain Shed

.1 Wood

.1 Healthy wood laid bare:

.1 Primer exterior Alkyd mildew resistant. One (1) layer.

.2 Painting exterior latex mildew resistant semi-gloss finish. Two layers.

.2 Primed or painted wood:

.1 Painting exterior latex mildew resistant semi-gloss finish. Two (2) layers.

.2 Metal

.1 Metal exposed and/or rusty

.1 Primer Alkyd Rust. One (1) layer.

.2 Enamel alkyd gloss finish. Two (2) layers.

.2 Metal primed or painted

.1 Enamel alkyd gloss finish. Two (2) layers.

.2 Administrative Center

.1 New and existing exterior woodwork and other items.

.1 Floors, stairs, stringers and treillis:
opaque dye gray as the existing (DEK Rubbol "Sikkens"). Two (2) layers.

.2 Columns, columns, handrails, balusters, moldings, decorations and board face:

.1 White opaque stain as existing (DEK Rubbol "Sikkens"). Two (2) layers.

.3 Primed or painted wood:

.1 Painting exterior latex semi-gloss finish. Two (2) layers.

.2 Woodwork doors and windows

.1 Wood healthy exposed:

.1 Primer Alkyd. One (1) layer.

.2 Painting exterior latex semi-gloss finish. Two (2) layers.

.2 Wood primed or painted:

.1 Painting exterior latex semi-gloss finish. Two (2) layers.

.3 Metal (S-iron, fixtures,backibg strip of guttering and hardware).

.1 Metal exposed and / or rusty:

.1 Primer Alkyd Rust. One (1) layer.

.2 Enamel alkyd. Two (2) layers.

.2 Metal primed or painted:

.1 Enamel alkyd. Two (2) layers.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 EXAMINATION

.1 Exterior surfaces requiring repainting: inspected by both painting contractor and Departmental Representative in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.

3.3 CLEANING AND PREPARATION

.1 Clean and prepare exterior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements.

.2 Apply paint materials in accordance with paint manufacturer's written application instructions.

.3 Refer to MPI Manual in regard to specific requirements and as follows:

.1 The surface must be clean, free from dirt and oil stains. Seal knots and sap streaks with POLYPREP shellac 205-112, or approved equivalent by the Departmental Representative, after burning or scraping resin exudations. Sand rough spots. Fill holes and cracks with putty after the primer coat has dried. Wood treated with a preservative must be free from all traces of solvent.

.2 Remove dust, dirt, and surface debris by brushing, wiping with dry, clean cloths or compressed air.

.3 Wash surfaces with a biodegradable detergent (and bleach where applicable) and clean warm water using a stiff bristle brush to remove dirt, oil and surface contaminants.

.4 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.

.5 Use trigger operated spray nozzles for water hoses.

.6 Allow surfaces to drain completely and to dry thoroughly.

.7 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water based paints.

.8 Many water-based paints cannot be removed with water once dried. However, minimize the use of kerosene or such organic solvents to clean up water-based paints.

.4 Where required, pressure wash exterior surfaces prior to repainting in accordance with MPI standards for type of surfaces and recommended pressures to ensure complete removal of loose paint, stains, dirt, and foreign matter. This work to be carried out by qualified tradesman experienced in pressure water cleaning. Use of spray equipment such as water hose cleaning will not be considered satisfactory unless specified herein. Allow sufficient drying time and test surfaces using an electronic moisture meter before commencing work.

.5 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminates from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required.

.6 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.

.7 Do not apply paint until prepared surfaces have been accepted by the Ministry Representative.

.8 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects from previously painting (e.g. runs, sags, etc.) that are visible from a distance up to 1000 mm.

.9 Rusted nails treatment:

.1 Remove by sanding all rust stained paint down to the nail head.

.2 Sand the nail head to remove accumulated rust.

.3 Countersink the nail.

.4 Apply a coat of primer and a coat of exterior wood filler.

3.4 EXISTING CONDITIONS

.1 Prior to commencing work, thoroughly examine site conditions and existing exterior substrates to be repainted and report in writing to the Ministry Representative damages, defects, unsatisfactory or unfavorable conditions of surfaces that will adversely affect this work.

.2 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter. Report findings to the Ministry Representative. Maximum moisture content shall not exceed 12%.

.3 No repainting work shall commence until such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor and Inspection Agency. Commencement of work shall not be held to imply acceptance of surfaces except as qualified herein.

.4 Degree of surface deterioration (DSD) shall be assessed using MPI Identifiers and Assessment criteria indicated in the MPI Maintenance Repainting Manual. MPI DSD ratings and descriptions are as follows:

DSD-0Sound Surface (includes visual (aesthetic) defects that do not affect film's protective properties).

DSD-1Slightly Deteriorated Surface (indicating fading; gloss reduction, slight surface contamination, minor pin holes scratches, etc.).

DSD-2Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, staining, etc.).

DSD-3Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).

DSD-4Substrate Damage (repair or replacement of surface required by others).

3.5 PROTECTION

.1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore such surfaces as directed by the Ministry Representative.

.2 Protect items that are permanently attached such as Fire Labels on doors and frames.

.3 Protect factory finished products and equipment.

.4 Protect general public and building occupants in and about the building.

.5 Removal of light fixtures, surface hardware on doors, and surface mounted equipment, fittings and fastenings shall be done prior to undertaking painting operations by General Contractor. Items shall be securely stored and re-installed after painting is completed by General Contractor.

.6 Move and cover exterior furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

.7 As painting operations progress, place "WET PAINT" signs in pedestrian and vehicle traffic areas to approval of the Ministry Representative.

3.6 APPLICATION

.1 Apply paint by method that is best suited for substrate being repainted Conform to manufacturer's application instructions unless specified otherwise. In each case the method of application shall be as pre-approved by the Ministry Representative before commencing work.

.2 Roller Application:

.1 Apply paint in a uniform layer using roller of types suitable for application.

.2 Work paint into cracks, crevices and corners.

.3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.

.4 Brush and/or roll out runs and sags, and over-lap marks.

.5 Remove runs, sags and brush marks from finished work and repaint.

.3 Spray Application:

.1 Keep paint ingredients properly mixed in containers during paint application either by intermittent agitation as frequently necessary.

.2 Apply paint in a uniform layer, with overlapping at edges of spray pattern.

.4 Use dipping, sheepskins or daubers when no other method is practical in places of difficult access and when specifically authorized by the Ministry Representative.

.5 Apply paint coats in a continuous manner and allow surfaces to dry and properly cure between coats for minimum time period as recommended by manufacturer. Minimum dry film thickness of coats shall not be less than that recommended by the manufacturer. Repaint thin spots or bare areas before next coat of paint is applied.

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

.7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.

.8 Finish to doors shall include all edges including top and bottom edges. Surfaces concealed by door hardware shall also be repainted unless otherwise pre-approved.

3.7 FIELD QUALITY CONTROL

.1 Advise the Ministry Representative and Paint Inspection Agency when each surface and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

.2 Co-operate with the Paint Inspection Agency and provide access to areas of work.

3.8 CLEAN-UP

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

.3 Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.

.4 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.

.5 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil based materials as well as cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints, thinners, paint removers / strippers in accordance with the safety requirements of authorities having jurisdiction and as noted herein.

.6 Painting equipment shall be cleaned in leak-proof containers that will permit particulate matter to settle out and be collected. Sediment remaining from cleaning operations shall be recycled in a manner acceptable to authorities having jurisdiction.

3.9 RESTORATION

.1 Clean and re-install hardware items removed before undertaken painting operations.

.2 Remove protective coverings and warning signs as soon as practical after operations cease.

.3 Remove paint splashings on affected exposed surfaces. Remove smears and spatter immediately as operations progress, using compatible solvent.

.4 Protect freshly completed surfaces from paint droppings and dust to approval of the Ministry Representative. Avoid scuffing newly applied paint.

.5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by the Ministry Representative.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

.1 Excavation classes: three classes of excavation will be recognized; common excavation and rock excavation.

.1 Rock : solid material in excess of 1 m^3 and which cannot be removed by means of heavy duty mechanical excavating equipment with [0.95 to 1.15] m^3 bucket]. Frozen material not classified as rock.

.2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.

.3 Clay excavation: excavation of clay material.

.2 Topsoil:

.1 Material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.

.2 Material reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than 25 millimeters in any dimension.

.3 Waste material: excavated material unsuitable for use in Work or surplus to requirements.

.4 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.

.5 Unsuitable materials:

.1 Weak, chemically unstable, and compressible materials.

.2 Frost susceptible materials:

.1 Fine grained soils with plasticity index less than 10 when tested to ASTM D4318, and gradation within limits specified when tested to ASTM D422 and ASTM C136 : Sieve sizes to CAN/CGSB-8.2.

.2 Coarse grained soils containing more than 20% by mass passing 0.075 mm sieve.

.6 Unshrinkable fill: very weak mixture of cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

1.2 DELIVERY, STORAGE AND HANDLING

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

.2 Transportation and Handling: handle and transport aggregates to avoid segregation, contamination and degradation.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

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

.1 Submit for review by Departmental Representative proposed dewatering methods as described in PART 3 of this Section.

.2 Submit to Departmental Representative written notice at least 7 days prior to excavation work, to ensure cross sections are taken.

.3 Submit to Departmental Representative written notice when bottom of excavation is reached.

.4 Submit to Departmental Representative testing results as described in PART 3 of this Section.

.3 Preconstruction Submittals:

.1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.

.4 Samples:

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

.2 Inform Departmental Representative at least 2 weeks prior to beginning Work, of proposed source of fill materials and provide access for sampling.

.3 Ship samples prepaid to Departmental Representative, in tightly closed containers to prevent contamination and exposure to elements.

1.4 QUALITY ASSURANCE

.1 Do not use soil material until written report of soil test results are approved by Departmental Representative.

.2 Health and Safety Requirements:

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.5 EXISTING CONDITIONS

.1 Buried services:

.1 Before commencing work establish location of buried services on and adjacent to site.

.2 Remove obsolete buried services within 2 m of foundations: cap cut-offs.

.3 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.4 Prior to beginning excavation Work, notify applicable Departmental Representative establish location and state of use of buried utilities and structures.

.5 Confirm locations of buried utilities by careful test excavations.

.6 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered [as indicated].

.7 Where utility lines or structures exist in area of excavation, obtain direction of Departmental Representative before removing or re-routing.

.8 Record location of maintained, re-routed and abandoned underground lines.

.9 Confirm locations of recent excavations adjacent to area of excavation.

.2 Existing buildings and surface features:

.1 Conduct, with Departmental Representative, condition survey of existing buildings, trees and other plants, lawns, pavement and monuments which may be affected by Work.

.2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by Departmental Representative

Part 2 Products

2.1 MATERIALS

.1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, free from adherent coatings and injurious amounts of disintegrated pieces or other deleterious substances.

.2 Fine coarse aggregates satisfying requirements of applicable section to be one of or blend of following:

.1 Natural sand.

.2 Crushed sand

.3 Gravel and crushed gravel composed of naturally formed particles of stone.

.3 Coarse aggregate satisfying requirements of applicable section to be one of or blend of following :

.1 Crushed stone

.2 Gravel and crushed stone composed of naturally formed particles of stone.

.4 Aggregate Materials must respect the following requirements:

.1 Crushed, pit run or screened stone, gravel or sand.

.2 Gradations to be within limits specified by requirements from the NQ 2560-114 « Travaux de génie civile » and the chapter 12 of « Cahier des charges et devis généraux du ministère des Transports du Québec ».

.3 Table:

Sieve Designation	% Passing	% Passing
	MG 20	Sand class A
31 mm	100	100
20 mm	90 - 100	-
14 mm	68-93	-
5 mm	35-60	35-100
1.25 mm	19-38	-
315 µ	9-17	-
160 µm	-	4-25
80 µm	2.0-7.0	0 - 10

.5 Type 3 fill: selected material from excavation or other sources, approved by Departmental Representative for use intended, unfrozen and free from rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials.

.6 Geotextile polypropylene nonwovens like Texel 7616 or equivalent approved

.1 Thickness: 2.0 mm minimum.

.2 Tensile strength: 1020 N minimum.

.3 Transmissivity: 0.19 cm/sec

.4 Bursting strength: 2910n KPa

.5 Width: 3 500 mm minimum.

.7 Board like Styrofoam HighLoad HI-40 Blue insulation from Dow Chemical or equivalent approuved.

.1 The insulation board must respect the following requirements:

.1 Tensile strength: 275 MPa min.

.2 Compressive Modulus : 9 650 KPa.

.3 Thermal resistance: 0.88 $m^2.{}^{O}C/W$.

.4 Water absorption: 0.7 % volume

.5 Coefficient of linear expansion: 6.3 x 10^{-2} $mm/m.{}^{O}C$.

.2 Board dimensions Length and width: 2 440 mm x 610 mm

.3 Board Thickness: 38 mm

2.2 SOURCE QUALITY CONTROL

.1 Inform Departmental Representative of proposed source of aggregates and provide access for sampling 2 weeks minimum before starting production.

.2 If materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate alternative source.

.3 Advise Departmental Representative 2 weeks minimum in advance of proposed change of material source.

.4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

Part 3 Execution

3.1 SITE PREPARATION

.1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

3.2 STRIPPING OF TOPSOIL

.1 Begin topsoil stripping of areas as indicated by Departmental Representative after area has been cleared of brush, weeds and grasses and removed from site.

.2 Strip topsoil to depths as directed by Departmental Representative.

.3 Do not mix topsoil with subsoil.

.4 Stockpile in locations as directed by Departmental Representative.

3.3 STOCKPILING

.1 Stockpile fill materials in areas designated by Departmental Representative.

.2 Stockpile granular materials in manner to prevent segregation.

.3 Protect fill materials from contamination.

.4 Stockpile should not be higher than 2 meters.

3.4 DEWATERING AND HEAVE PREVENTION

.1 Keep excavations free of water while Work is in progress.

.2 Provide for Departmental Representative review details of proposed dewatering or heave prevention methods.

.3 Avoid excavation below groundwater table if quick condition or heave is likely to occur.

.4 Prevent piping or bottom heave of excavations by groundwater lowering.

.5 Protect open excavations against flooding and damage due to surface run-off.

.6 Dispose of water in manner not detrimental to public and private property, or portion of Work completed or under construction.

.7 In case of Contractor’s error, if the excavation bottom is not stable, the material must be replace without cost for the Departemental Representative.

3.5 EXCAVATION

.1 Advise Departmental Representative at least 2 days in advance of excavation operations for initial cross sections to be taken.

.2 Excavate to lines, grades, elevations and dimensions as indicated.

.1 Excavation in clay must be executed in order to least possible excavated the existing ground but allow to remove the footings and columns.

.2 The excavated clay material must be stored in a clean and far enough site from the other materials in order to not be contaminated and eventually be reused.

.3 Remove concrete and other obstructions encountered during excavation.

.4 Excavation must not interfere with bearing capacity of adjacent foundations.

.5 Keep excavated and stockpiled materials safe distance away from edge of trench as directed by Departmental Representative.

.6 Restrict vehicle operations directly adjacent to open trenches.

.7 Dispose of surplus and unsuitable excavated material off site.

.8 Do not obstruct flow of surface drainage or natural watercourses.

.9 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

.10 Notify Departmental Representative when bottom of excavation is reached.

.11 Obtain Departmental Representative approval of completed excavation.

.12 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by Departmental Representative.

.13 Hand trim, make firm and remove loose material and debris from excavations.

.1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.

.14 Install geotextiles in accordance with manufacturer's recommendations and as directed by the Departmental Representative.

3.6 FILL TYPES AND COMPACTION

.1 Use types of fill as indicated or specified below. Compaction densities are percentages of maximum densities obtained from ASTM D698.

.1 Exterior side of perimeter walls: use material as required on plan to fill to subgrade level. Compact to 95% of corrected maximum dry density.

.2 Within building area: use material as required on plans to underside of base course for floor slabs. Compact to 98% of corrected maximum dry density.

.3 Under concrete slabs: provide 150 mm compacted thickness base as indicated on plans to underside of slab. Compact base course to 98 % of corrected maximum dry density.

3.7 GEOTEXTILE INSTALLATION

.1 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated and retain in position.

.2 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.

.3 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile.

.4 Overlap each successive strip of geotextile 600 mm over previously laid strip.

.5 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.

.6 After installation, cover with overlying layer within 4 hours of placement.

.7 Replace damaged or deteriorated geotextile to approval of Departmental Representative.

3.8 INSULATION BOARD INSTALLATION

.1 Excavate and implement granular materials as indicated on plans.

.2 After compaction of sand layer, depending on the requirements, the surface must be parallel to the finished surface on the concrete slab.

.3 The granular base must be regular and no more than 10 mm of a rule of 3 meters lying on the ground.

.4 Set up as shown on the plans, two layers of rigid insulation boards.

.5 Implement the boards so that the joints are alternated on the half length and width of the board. Joints should not be stacked.

.6 Replace any board that has been punched, broken or damaged during the implementation.

.7 Ensure that boards remain stable.

.8 Press the boards against each other and fasten them securely to the ground.

.9 Maintain during construction, a curved surface to ensure the smooth flow of runoff.

.10 Do not implement board when there is presence of water.

3.9 BACKFILLING

.1 As required on plans, place clay, clean and without contamination, material first in the excavation.

.2 Do not proceed with backfilling operations until completion of following:

.1 Departmental Representative has inspected and approved installations.

.2 Departmental Representative has inspected and approved of construction below finish grade.

.3 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.

.4 Do not use backfill material which is frozen or contains ice, snow or debris.

.5 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.

.6 Backfilling around installations:

.1 Place bedding and surround material as specified elsewhere.

.2 Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.

.7 Place fill in areas as indicated.

.8 Consolidate and level fill with internal vibrators.

.9 Install drainage system in backfill as indicated.

.10 For the exterior, Contractor must put in place 100 mm of topsoil where mechanical weed is needed.

3.10 RESTORATION

.1 Upon completion of Work, remove waste materials and debris, trim slopes, and correct defects as directed by Departmental Representative.

.2 Replace topsoil as indicated by Departmental Representative.

.3 Reinstate lawns to elevation which existed before excavation.

.4 Reinstate pavements disturbed by excavation to thickness, structure and elevation which existed before excavation.

.5 For all duration of work, roads used by the Contractor must stay free and clean.

.6 Clean and reinstate areas affected by Work as directed by Departmental Representative and as required in section 01 74 11 - Cleaning.

END OF SECTION