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PARKS CANADA AGENCY

HISTORICAL SITE OF COTEAU-DU-LAC REPAIR OF BLOCKHAUS

PCA Project : 45358735
SNC-Lavalin File : 630584

TECHNICAL SPECIFICATIONS ISSUED FOR TENDER

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1. GENERAL

1.1 Work covered by the contract documents

- .1 The works covered by the present contract documents include the repair of the Blockhaus of the Coteau-du-Lac historical site.

1.2 Work by others

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

1.3 Contractor use of premises

- .1 Limit use of premises for work, for storage, for access, to allow:
 - .1 Occupancy by PCA;
 - .2 Work by other contractors (if applicable);
- .2 Co-ordinate use of premises under direction of PCA Representative.
- .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .4 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .5 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by PCA Representative.
- .6 At completion of operations condition of existing work: equal to or better than that which existed before new work started. This includes the grassy areas and gravel roads. All damages to the gravel roads caused by the construction shall be repaired by the contractor to the satisfaction of the PCA Representative.

- .7 Due to the site's high archaeological potential, access roads and material stocking zones must be protected with a geotextile and a rock dust pad during the construction period.

1.4 Use of premises – Particular conditions

- .1 In general, the operations of the PCA are prioritized to those of the Contractor. Under no circumstances shall the Contractor interfere or interrupt the operations of the PCA.
 - .1 Normal site operation hours are the following:
 - .1 7:00 a.m. to 4:00 p.m. from Monday to Friday.
 - .2 All works outside the normal hours of the garrison must be approved beforehand by the PCA Representative.
 - .2 The Contractor and his subcontractors must notify the PCA Representative of the date and time of any delivery vehicle and details beforehand. If necessary, the Contractor shall provide a staff member for the reception of the goods.
 - .3 Use of the site is restricted to the zone of work necessary for the construction, storage of material and access to the construction site. As much as possible, the site shall be open to the public's use. If the contractor uses the existing access roads during construction, all steps necessary shall be taken to share these roads with the public. As necessary, the contractor shall provide a flagman to coordinate movements and insure the safe access to the public throughout the construction period. Contractor is made aware that the access roads are used by pedestrians, cyclists, wheelchairs, elderly and by the personnel of Parks Canada on foot and in vehicles.

1.5 Occupancy by Parks Canada Agency

- .1 The Blockhaus building will not be used by the PCA during the works; However, PCA will occupy the surrounding areas during the entire construction and will pursue its normal activities during this period.
- .2 The Contractor must take into account that the site will remain active during the construction period. The Contractor must determine a working methodology to do the work without affecting the daily operations of the area surrounding the building.

- .3 Collaborate with the PCA Representative when establishing the work schedule, so as to reduce conflicts and facilitate the use of the premises by PCA.

1.6 Alterations, additions or repairs to existing building

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

1.7 Scope of Work

- .1 Without being exhaustive, the following list describes the scope of work to be performed. Complete the work in detail to deliver a complete, functional and efficient installation. Unless otherwise indicated, the work includes supply, installation and connection hardware as well as the dismantlement of identified existing facilities.
 - .1 Dismantle and replace damaged second floor beams
 - .2 Modify and reinforce the roof truss structure.
 - .3 Dismantle and rebuild the entrance stairs.
 - .4 Install new aluminum flashing to the perimeter of the foundation wall.
- .2 As specified in the plans.
- .3 As the work progresses, the Contractor shall rid the site of demolition debris at his own expense and dispose of it off site. At the end of the work, the Contractor must pick up all that remains and clutters the site, including excess waste; He must leave the premises clean and undefiled.
- .4 The Contractor shall return in their original state, the areas and sectors used during construction. He must take knowledge of the nature and scope of patching work and perform all of the patching work necessary. Perform the finishing patching work using the same materials, colours, finishes and laying methods as the existing adjacent finishes.

1.8 Plans and technical specifications

- .1 Consider the plans and technical specifications as complementary and that all that appears either on the plans or in the technical specifications shall be included on the plans and in the technical specifications.

- .2 The drawings indicate, in general, the routing of services and the location of devices and equipment; they should not be considered working drawings. Determine the exact location on site of all equipments that do not appear on the plans.
- .3 Notify the PCA Representative of any errors or omissions it find in the plans and in the technical specifications, as well as any incompatibility and that, before the delivery of the bid.
- .4 Consider that the PCA Representative reserves the right to interpret the plans technical specifications.

1.9 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.

1.10 Site meetings

- .1 Weekly project meetings are to be held throughout the progress of the work, as requested by the PCA Representative. Ensure the management of these meetings.

2. PRODUCTS

2.1 Not used

.1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 Access and egress

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

1.2 Use of site and facilities

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with PCA Representative to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Closures: protect work temporarily until permanent enclosures are completed.

1.3 Existing services

- .1 Provide for pedestrian and vehicular traffic.

1.4 Special requirements

- .1 Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedule - Bar (GANTT) Chart.
- .2 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3 Keep within limits of work and avenues of ingress and egress.

1.5 Security

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

1.6 Building smoking environment

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

1.7 Grass

- .1 The turf around the construction site must be protected at all times during the construction work.
- .2 If the turf is damaged, it must be replaced with sod rolls of the same species as the existing one over the affected areas.

2. PRODUCTS

2.1 Not used

- .1 Not Used.

3. EXECUTION

3.1 Not used

- .1 Not Used.

1. GENERAL

1.1 Definitions

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

1.2 Requirements

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.3 Action and Informal Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within 10 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress
- .3 Submit Project Schedule to Departmental Representative within (5) working days of receipt of acceptance of Master Plan.

1.4 Project milestones

- .1 Project milestones form interim targets for Project Schedule.

1.5 Master Plan

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

1.6 Implementation schedule

- .1 Develop detailed Project Schedule derived from Master Plan.

- .2 Ensure detailed Project Schedule includes at least the milestone and activity types as follows:
 - .1 Award
 - .2 Shop Drawings, Samples.
 - .3 Permits.
 - .4 Mobilization.
 - .5 Dismantling of various works/tasks.
 - .6 Installation ou construction of different tasks.
 - .7 Testing and Commissioning

1.7 Project Schedule Reporting

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

1.8 Project meetings

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

2. PRODUCTS

2.1 Not used

- .1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 Administratives

- .1 Submit to the PCA 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 PCA 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 PCA 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 Works are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by PCA Representative review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by PCA 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 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.
- .3 Allow 5 days for PCA Representative review of each submission.
- .4 Adjustments made on shop drawings by PCA Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to PCA Representative prior to proceeding with Work.
- .5 Make changes in shop drawings as PCA Representative may require, consistent with Contract Documents. When resubmitting, notify PCA in writing of revisions other than those requested.
- .6 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project Title and Number.
 - .3 Contractor's name and address.
 - .4 Identification of all reference sections and articles of specification related to shop drawings.
 - .5 La désignation de la section du devis et de l'article aux quelles font référence chaque dessin.
 - .6 Identification and quantity of each shop drawing, product data and sample.
 - .7 Other pertinent data.
- .7 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 Performance characteristics.
 - .5 Standards;
 - .6 Operating weight;
- .8 After PCA Representative's review, distribute copies of shop drawings and technical documents.
- .9 Supplement standard information to provide details applicable to project.
- .10 If upon review by the Representative of PCA, no errors or omissions are discovered or if only minor corrections are made, fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

2. PRODUCTS

2.1 Not used

.1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 References

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Quebec
 - .1 An Act Respecting Occupational Health and Safety, R.S.Q., c.S-2.1 (current edition) - Updated [2005].

1.2 Action and informational submittals

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation [found in work plan].
- .3 Submit two copies of Contractor's authorized representative's work site health and safety inspection reports to authority having jurisdiction, weekly, to PCA Representative.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 PCA Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within three days after receipt of plan. Revise plan as appropriate and resubmit plan to PCA Representative within three days after receipt of comments from PCA Representative.
- .7 PCA Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

- .8 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to PCA Representative.

1.3 Filing of notice

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award. Contractor to submit written acknowledgement to CSST along with Ouverture de Chantier Notice.
- .3 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

1.4 Safety assessment

- .1 Perform site specific safety hazard assessment related to project.

1.5 Meetings

- .1 Schedule and administer Health and Safety meeting with PCA Representative prior to commencement of Work.

1.6 General requirements

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 PCA Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.7 Responsibility

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

- .2 Contractor shall be the Principal Contractor as described in the Quebec Act Respecting Health and Safety code for the Construction for only their scope and areas of work as defined and described this project specification.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 Compliance requirements

- .1 Comply with R.S.Q., c. S-2.1, an Act respecting Health and Safety, and c. S-2.1, r.4 Safety Code for the Construction Industry.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.9 Unforeseen hazards

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise PCA Representative verbally and in writing.

1.10 Posting of documents

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with PCA Representative.

1.11 Correction of non-compliance

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by PCA Representative.
- .2 Provide PCA Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 PCA Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.12 Work stoppage

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

2. PRODUCTS

2.1 Not used

.1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 Fire department briefing

- .1 PCA Representative will co-ordinate arrangements for contractor for briefing on Fire Safety at pre-work conference by Fire Chief before work is commenced.

1.2 Reporting fires

- .1 Know location of nearest fire alarm box and telephone, including emergency phone number.
- .2 Report immediately fire incidents to Fire Department as follows:
 - .1 Activate nearest fire alarm box; or
 - .2 Telephone.
- .3 When reporting fire by telephone, give location of fire, name or number of building and be prepared to verify location.

1.3 Interior and exterior fire protection and alarm systems

- .1 Fire protection and alarm system will not be:
 - .1 Obstructed;
 - .2 Shut-off; and
 - .3 Left inactive at end of working day or shift without authorization from Fire Chief.
- .2 Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Fire Chief.

1.4 Fire extinguishers

- .1 Supply fire extinguishers, as scaled by Fire Chief, necessary to protect work in progress and contractor's physical plant on site.

1.5 Blockage of roadways

- .1 Advise Fire Chief of work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by Fire Chief, erecting of barricades and digging of trenches.

1.6 Smoking precautions

- .1 Observe smoking regulations.

1.7 Rubbish and waste materials

- .1 Keep rubbish and waste materials at minimum quantities.
- .2 Burning of rubbish is prohibited.
- .3 Removal:
 - .1 Remove rubbish from work site at end of work day or shift or as directed.
- .4 Storage:
 - .1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
 - .2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and remove specified.

1.8 Flammable and combustible liquids

- .1 Handling, storage and use of flammable and combustible liquids governed by current National Fire Code of Canada.
- .2 Keep flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Fire Chief.
- .3 Transfer of flammable and combustible liquids is prohibited within buildings or jetties.
- .4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.
- .5 Do not use flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents.

- .6 Store flammable and combustible waste liquids, for disposal, in approved containers located in safe ventilated area. Keep quantities minimum and Fire Department is to be notified when disposal is required.

1.9 Hazardous substances

- .1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, in accordance with National Fire Code of Canada.
- .2 Obtain from Fire Chief a "Hot Work" permit for work involving welding, burning or use of blowtorches and salamanders, in buildings or facilities.
- .3 When Work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of Fire Chief. Contractors are responsible for providing fire watch service for work on scale established and in conjunction with Fire Chief at pre-work conference.
- .4 Provide ventilation where flammable liquids, such as lacquers or urethanes are used, eliminate sources of ignition. Inform Fire Chief prior to and at cessation of such work.

1.10 Questions and/or clarification

- .1 Direct questions or clarification on Fire Safety in addition to above requirements to Fire Chief.

1.11 Fire inspection

- .1 Co-ordinate site inspections by Fire Chief through PCA Representative.
- .2 Allow Fire Chief unrestricted access to work site.
- .3 Co-operate with Fire Chief during routine fire safety inspection of work site.
- .4 Immediately remedy unsafe fire situations observed by Fire Chief.

2. PRODUCTS

2.1 Not used

.1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 References

.1 Definitions:

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

.2 References

- .1 « *U.S. Environmental Protection Agency (EPA)/Office of Water* »
 - .1 EPA 832/R-92-005-92, « *Storm Water Management for Construction Activities, Chapter 3* ».

1.2 Fires

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

1.3 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.

1.4 Notification

- .1 The PCA 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 the PCA Representative of proposed corrective action and take such action for approval by the latter.
 - .1 Take action only after receipt of written approval by the PCA Representative.
- .3 The PCA 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.

2. PRODUCTS

2.1 Not used

- .1 Not used.

3. EXECUTION

3.1 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

1. GENERAL

1.1 Inspection

- .1 Allow the PCA Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by the PCA Representative, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 The PCA 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, the contractor will correct such Work and pay the cost of examination and correction

1.2 Procedures

- .1 Notify the PCA 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.

1.3 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 the PCA 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 the opinion of PCA 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 the PCA Representative.

1.4 Reports

- .1 Submit one (1) copy of inspection and test reports to the PCA Representative.
- .2 Provide copies to subcontractor of work being inspected or tested.

1.5 On site Tests

- .1 Submit the certificates of the tests carried out at the site which are required in the various sections of the specification.

2. PRODUCTS

2.1 Not used

- .1 Not used.

3. EXECUTION

3.1 Not used

- .1 Not used.

1. GENERAL

1.1 References

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-[1994], Stipulated Price Contract.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
 - .2 CGSB 1.59-[97], Alkyd Exterior Gloss Enamel.
- .3 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-0121-[M1978(R2003)], Douglas Fir Plywood.
 - .3 CAN/CSA-S269.2-[M1987(R2003)], Access Scaffolding for Construction Purposes.
 - .4 CAN/CSA-Z321-[96(R2001)], Signs and Symbols for the Occupational Environment.
- .4 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004.

1.2 Action and informational submittals

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

1.3 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.

1.4 Scaffolding

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

1.5 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.

1.6 Site storage/loading

- .1 Refer to CCDC 2, GC 3.12.
- .2 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .3 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.7 Construction parking

- .1 Parking will be permitted on site [provided it does not disrupt performance of Work].
- .2 Provide and maintain adequate access to project site.
- .3 Clean runways and taxi areas where used by Contractor's equipment.

1.8 Offices

- .1 Provide office heated to [22] degrees C, lighted [750] lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.

- .3 Subcontractors to provide their own offices as necessary. Direct location of these offices.
- .4 PCA Representative's Site office.
 - .1 Provide temporary office for PCA Representative.
 - .2 Inside dimensions minimum 3.6 m long x 3 m wide x 2.4 m high, with floor 0.3 m above grade, complete with 4 50% opening windows and one lockable door.
 - .3 Insulate building and provide heating system to maintain 22 degrees C inside temperature at -20 degrees C outside temperature.
 - .4 Finish inside walls and ceiling with plywood, hardboard or wallboard and paint in selected colours. Finish floor with 19 mm thick plywood.
 - .5 Install electrical lighting system to provide min 750 lx using surface mounted, shielded commercial fixtures with 10 % upward light component.
 - .6 Provide private washroom facilities adjacent to office complete with flush or chemical type toilet, lavatory and mirror and maintain supply of paper towels and toilet tissue.
 - .7 Equip office with 1 x 2 m table, 4 chairs, 6 m of shelving 300 mm wide, one drawer filing cabinet, one plan rack and one coat rack and shelf.
 - .8 Maintain in clean condition.

1.9 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.

1.10 Sanitary facilities

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

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

1.11 Construction signage

- .1 Provide project identification site sign comprising foundation, framing, and one 1200 x 2400 mm signboard as detailed and as described below.
 - .1 Foundations: 15 MPa concrete to CSA-A23.1 minimum 200 mm x 900 mm deep.
 - .2 Framework and battens: SPF, pressure treated minimum 89 x 89 mm.
 - .3 Signboard: 19 mm Medium Density Overlaid Douglas Fir Plywood to CSA O121.
 - .4 Paint: alkyd enamel to CAN/CGSB-1.59 over exterior alkyd primer to CAN/CGSB 1.189.
 - .5 Fasteners: hot-dip galvanized steel nails and carriage bolts.
 - .6 Vinyl sign face: printed project identification, self adhesive, vinyl film overlay, supplied by PCA Representative.
- .2 Locate project identification sign as directed by PCA Representative and construct as follows:
 - .1 Build concrete foundation, erect framework, and attach signboard to framing.
 - .2 Paint surfaces of signboard and framing with one coat primer and two coats enamel. Colour white on signboard face, black on other surfaces.
 - .3 Apply vinyl sign face overlay to painted signboard face in accordance with installation instruction supplied.
- .3 Direct requests for approval to erect Consultant/Contractor signboard to PCA Representative. For consideration general appearance of Consultant/Contractor signboard must conform to project identification site sign. Wording in both official languages.
- .4 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

- .5 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 PCA Representative.

1.12 Protection and maintenance of traffic

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by PCA Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads necessary.
- .8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by PCA Representative.
- .12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .13 Provide snow removal during period of Work.

- .14 Remove, upon completion of work, haul roads designated by PCA Representative.

1.13 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.

2. PRODUCTS

2.1 Not used

- .1 Not Used.

3. EXECUTION

3.1 Not used

- .1 Not Used.

1. GENERAL

1.1 Quality

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility of the contractor, but is precaution against oversight or error. Contractor has to remove and replace defective products at his own expense and be responsible for delays and expenses caused by rejection.
- .3 Should disputes arise as to quality or fitness of products, decision rests strictly with the PCA Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacturer for any particular or like item throughout building.
- .5 Use products which do not pose a risk to the health and safety of people and animals.

1.2 Storage, handling and protection of products

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Remove and replace damaged products at own expense and to satisfaction of the PCA Representative.

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

1.3 Transportation

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

1.4 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 the PCA Representative in writing, of conflicts between specifications and manufacturer's instructions, so that PCA Representative is able to establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, the PCA Representative could require removal and re-installation at no increase in Contract Price or Contract Time.

1.5 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 the PCA 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. The PCA 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 the PCA Representative, whose decision is final.

1.6 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.

1.7 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.

1.8 Location of fixtures

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

2. PRODUCTS

2.1 Not used

- .1 Not used.

3. EXECUTION

3.1 Not used

- .1 Not used.

1. GENERAL

1.1 Submittals

- .1 Submit to the Representative of PCA copies of the following documents, including updates published:
 - .1 Prior to starting work on the construction site, submit the health and safety program, as indicated in the paragraph 1.9.
 - .2 Immediately after the time of their receipt, the reports and the directives transmitted by the competent authorities.
 - .3 The reports of accidents or incidents, within 24 hours of their occurrence.
- .2 Submit other data, information and documents on request of the PCA Representative, as stipulated elsewhere in this section.

1.2 Compliance requirements

- .1 Comply with Quebec's latest regulations of occupational health and safety, as well as with the regulations pertaining to it.
- .2 Observe and apply the security measures in construction required by:
 - .1 The National Building Code of Canada (latest version).
 - .2 The Commission of health and safety at work of Quebec (CSST).
 - .3 The regulations and ordinances of the municipalities.
- .3 In case of conflict between the stipulations of above mentioned authorities, apply the most rigorous one.
- .4 Provide and maintain insurance for workers compensation for all employees, for the duration of the contract. Before the start of the work, at the time of provisional execution and before the final payment, give the PCA Representative a letter (a certificate) of occupational health and safety (or the equivalent agency) attesting that the account of the contractor is in good standing.
 - .1 If the contractor is the only owner, give the PCA Representative an acceptable documented evidence of personal protection insurance

which satisfies at least the set of requirements of compensation insurance for accidents at workplace.

1.3 Responsibility

- .1 The contractor is responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment in case where they may be affected by the execution of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applying federal, provincial, territorial and local laws, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .3 If a risk or an unforeseen danger or incident occurs during the execution of the work, immediate measures must be taken to correct the situation and to prevent all sorts of damage and injury. Inform the Representative of PCA verbally and in writing of the danger or the situation.

1.4 Site and access control

- .1 Control the worksite access and the activities which take place therein. Define the site boundary and isolate the adjacent or neighboring areas by the use of appropriate means to maintain control of all the access points of the worksite.
- .2 Take proper measures to allow worksite access to all persons who should have access. The procedures for access authorization must be in accordance with Quebec occupational health and safety, the pertinent regulations thereunder and the health and safety program of the contractor.
- .3 Ensure that the persons authorised to access the site possess and carry minimum personal safety equipment specified in contractor's health and safety program. Ensure that the authorized persons have received the appropriate safety equipment, which are more stringent in character than those of the minimum equipment previously mentioned, and site-specific, they have received the training to use these equipments they carry. Ensure the equipments are effective.
- .4 Install signboards at access points and at other strategic locations around the site clearly indicating that the zone(s) of the site is (are) "prohibited(s)" for non-authorized persons. The signs must be prepared according to the rules of the art and bear the symbols well understood. The panels should

not be used for advertising purposes, but to clarify information on site safety and on the main resource persons.

.1 Information required on signboard:

.1 Name and description of the project

.2 Name of the contractor

.3 Name and phone no. of the superintendent of the project

.4 Name and phone no. of the contact-person of PCA.

.5 Ensure the safety of the site at any time in order to prevent the access of non-authorized persons.

1.5 Filing of notice

.1 Prior to commencing work, file the Notice of project and all other advices from provincial or territorial authorities and give a copy to the Representative of PCA.

1.6 Permits

.1 Obtain all required permits, licenses and compliance certificates stipulated by the competent authorities.

.2 Make all the permits, licenses and compliance certificates available on-site and submit copies to the PCA Representative.

1.7 Site condition

.1 The hazardous substances and conditions at the site must be regarded as dangerous to health and environment, and must be managed in an appropriate manner:

.1 Refer to section 01 35 00 - Environment, management of materials designated.

.2 Contractors must take into account the dangerous substances and conditions known and must include in price proposal all the work that would be executed in the danger zone or adjacent to it and in the presence of dangerous substances.

- .2 The above list should not be interpreted as a complete list of all the health and safety dangers that may arise from the activities of the contractor during the execution of the work. Include the above mentioned articles in the danger evaluation program of this specification.

1.8 Meetings

- .1 Prior to commencing work, attend a scheduled meeting led by the Representative of PCA. Ensure at least of the presence of the contractor's site superintendent. The PCA Representative must specify the time, date and place of the meeting and take care of the drafting and distribution of the minutes.
- .2 Arrange meetings on site-specific health and safety as required by Quebec Occupational health and safety law and the relevant regulations made thereunder.
- .3 Prepare and display at site, the minutes of all meetings. Ensure that the Representative of PCA can get copies on request.

1.9 Health and Safety Program

- .1 Under the Quebec Occupational health and safety law and the other pertinent regulations made thereunder, the contractors must schedule a health and safety program. The compliance requirements related to the content, the details and implementation of the program fall within provincial or territorial regulations. For the purposes of this contract, the health and safety program must include a site-specific health and safety plan, which recognizes, assesses and addresses the hazardous conditions and substances specified in paragraph 1.7 above, as well as continuous assessments of dangers arising during the duration of the work and documenting the health risks and dangers for the security, new or potential, unknown and not previously identified.
- .2 Prior to starting work, give the Representative of PCA a copy of the health and safety program. The copy handed to the Representative of PCA must be used to assess the program based on the contract requirements concerning the known hazardous substances and conditions. The review does not imply that the Representative of PCA approves the program as being complete, accurate, and legally consistent with the Quebec act on occupational health and safety and other pertinent regulations, and must not relieve the contractor of his legal obligations under such an act.

1.10 Reporting of accidents

- .1 Investigate the accidents and occurrences and report them as required by the Quebec law on health and safety at work, as well as other regulations made thereunder.
- .2 For the purpose of this contract, investigate immediately the accidents or the occurrences including the following points and submit a report to the PCA Representative:
 - .1 An injury that may or may not require a medical assistance, but resulting in a loss of work time for the injured person(s).
 - .2 An exposure to toxic chemicals or substances.
 - .3 Property Damage.
 - .4 An interruption of activities within the infrastructure or adjacent to it, likely to result in losses.
- .3 During the investigation of the incidents and accidents and the reporting of accident, the contractor is obliged to intervene quickly in order to rectify the actions deemed as the causes of the accident or incident and provide a written notice of the measures taken to prevent the incident or accident to happen again.

1.11 On-site documents

- .1 A copy of security documents prescribed in this section, as well as all other reports and documents related to the security prescribed by the competent authorities must be available.
- .2 The security documents should be available to the PCA Representative any time on request.

2. PRODUCTS

2.1 Not used

- .1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 Project Cleanliness

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site daily at scheduled times or dispose of as directed by PCA representative. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Dispose of waste materials and debris off site.
- .5 Store volatile waste in covered metal containers, and remove from premises at the end of each working day.
- .6 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .7 Utiliser uniquement les produits de nettoyage recommandés par le fabricant de la surface à nettoyer, et les employer selon les recommandations du fabricant des produits en question.
- .8 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.2 Final cleaning

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

- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .7 Remove dirt and other disfiguration caused by the work.
- .8 Clean the equipments and appliances.

1.3 Waste management and disposal

- .1 Separate waste materials for reuse and recycling.

2. PRODUCTS

2.1 Not used

- .1 Not used

3. EXECUTION

3.1 Not used

- .1 Not used

1. GENERAL

1.1 References

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-[2008], Stipulated Price Contract.
- .2 Canadian Environmental Protection Act (CEPA)
 - .1 SOR/2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

1.2 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 PCA Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request PCA Representative's inspection.
 - .2 PCA Representative's Inspection:
 - .1 PCA Representative and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates in English and French that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Equipment and systems: tested and fully operational.
 - .4 Work: complete and ready for final inspection.

.4 Final Inspection:

- .1 When completion tasks are done, request final inspection of Work by PCA Representative, and Contractor.
- .2 When Work incomplete according to PCA Representative, complete outstanding items and request re-inspection.

1.3 Final cleaning

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

2. PRODUCTS

2.1 Not used

- .1 Not used.

3. EXECUTION

3.1 Not used

- .1 Not used.

1. GENERAL

1.1 Administrative requirements

- .1 Scheduled Pre-warranty meeting upon closeout
 - .1 Convene meeting one week prior to completion of work with contractor's representative and the Representative of PCA in order to:
 - .1 Verify project requirements.
 - .2 Review warranty requirements and installation instructions.
 - .2 The PCA Representative will establish communication procedures for:
 - .1 Notifying the defects for elements, materials or systems covered by a warranty.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.2 Submittals for approval

- .1 Submit the required documents and samples in accordance with section 01 33 00 Documents and samples to submit.
- .2 All documents must be in French.
- .3 On request, provide the documents confirming the type, source of supply and the quality of the products supplied.

1.3 Format

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf [219 x 279] mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by operational sequence, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.

1.4 Contents - Project record documents

- .1 Table of Contents for Each Volume: provide title of project.
 - .1 Date of submission
 - .2 Names, addresses, and telephone numbers of PCA Representative as well as names of responsible parties.
 - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.5 As-built document and samples

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

- .5 Keep record documents and samples available for inspection by the Representative of PCA.

1.6 Recording Information on project record documents

- .1 Record information on set of opaque drawings, provided by PCA Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract.
 - .4 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications,[inspection certifications, field test records required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

2. PRODUCTS

2.1 Not used

.1 Not used.

3. EXECUTION

3.1 Not used

.1 Not used.

1. GENERAL

1.1 Definitions

.1 Definitions

- .1 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, include but not limited to: poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or materials that endanger human health or environment if handled improperly.
- .2 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as co-ordinating related, required submittal and reporting requirements.
- .3 Waste Audit (WA): detailed inventory of materials in building. Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project. Indicates quantities of reuse, recycling and landfill.
- .4 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. WRW is based on information acquired from WA.

1.2 References

- .1 Canadian Environmental Protection Act (CEPA)
 - .1 CCME PN 1327-[2008], Environmental Code of Practice for Aboveground and Underground Storage Tank Systems for Petroleum Products and Allied Petroleum Products.
- .2 CSA International
 - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- .3 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.
 - .2 Canadian Environmental Protection Act (CEPA), 1999, c. 33.

- .1 SOR/2003-2, On-Road Vehicle and Engine Emission Regulations.
- .2 SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.
- .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

1.3 Administratives requirements

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting one (1) week prior to beginning work of this Section, with the PCA Representative focusing on:
 - .1 Verify project requirements.
 - .2 Verify existing site conditions adjacent to demolition work.
 - .2 Hold project meetings to inform PCA Representative about the work progress.
 - .3 Ensure the presence of the key personnel of the project.
 - .4 WMC must provide written report on status of waste diversion activity at each meeting.
- .2 Scheduling:
 - .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.
 - .1 In event of unforeseen delay notify PCA Representative.

1.4 Action and informal submittals

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 The CGD will need to ensure compliance of all the requirements related to the transmission of documents, samples and required reports.
- .3 Submit at the end of the work all copies of certified weigh bills, bills of landfill, receipts from authorized disposal sites and reuse and recycling facilities for material removed from site.

.1 Written authorization from PCA Representative is required to deviate from waste receiving organizations listed in Waste Reduction Workplan.

.4 Shop Drawings:

.1 Submit for review and approval demolition drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.

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

.5 Sustainable Design Submittals:

.1 Management of construction waste in compliance with sections 01 35 43 – Environment protection and 01 35 00 - Environment – Management of designated materials.

1.5 Quality assurance

.1 Regulatory Requirements: Ensure Work is performed in compliance with CEPA and Municipal regulations.

1.6 Site conditions

.1 Environmental protection:

.1 Ensure Work is done in accordance with Section 01 35 43 - Environmental Procedures.

.2 Ensure Work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.3 Fires and burning of waste or materials is not permitted on site.

.4 Do not bury rubbish waste materials.

.5 Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.

.1 Ensure proper disposal procedures are maintained throughout project.

- .6 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.
- .7 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with authorities having jurisdiction.
- .8 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .9 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
- .10 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

1.7 Existing conditions

- .1 If material resembling spray or trowel applied asbestos or other designated substance listed as hazardous be encountered in course of demolition, stop work, take preventative measures, and notify PCA Representative immediately. Proceed only after receipt of written instructions have been received from PCA Representative.
- .2 Structures to be demolished are based on their condition on date that tender is accepted, at time of examination prior to tendering.

2. PRODUCTS

2.1 Equipement

- .1 Equipment and heavy machinery
 - .1 On-road vehicles have to respect CEPA-SOR/2003-2, On-Road Vehicle and Engine Emission Regulations, CEPA-SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.
- .2 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

3. EXECUTION

3.1 Work preparation

- .1 Protection of in-place conditions:
 - .1 Work in accordance with Section 01 35 43 - Environmental Procedures.
 - .2 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, adjacent grades, properties, parts of existing building.
 - .1 Provide bracing, shoring and underpinning as required.
 - .2 Repair damage caused by demolition as directed by PCA Representative.
 - .3 Support affected structures and, if the structure being demolished appears to endanger the adjacent structures or services, take preventative measures, stop Work and immediately notify PCA Representative.
- .2 Surface preparation
 - .1 Disconnect and re-route electrical and telephone service lines entering buildings to be demolished.
 - .1 Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
 - .2 Disconnect and seal mechanical services.
 - .1 Natural gas supply lines: remove in accordance with gas company requirements.
 - .2 Sewer and water lines: remove them within the property line in accordance with authority having jurisdiction.
 - .3 Other underground services: remove and dispose them as directed by Representative of PCA.
 - .3 Do not disrupt active or energized utilities traversing the premises

- .4 Remove rodent and vermin, if applicable.

3.2 Temporary shoring

- .1 After the installation of the temporary shoring and its inspection by an engineer member of the Ordre des ingénieurs du Québec, the contractor must submit to the PCA Representative a written notice sign by the engineer indicated that the shoring is installed as plans.
- .2 This notice must contain the date and time of the inspection and must be submitted before the demolition work.

3.3 Demolition

- .1 Execute the demolition work conforming the structural plans and specifications.
- .2 Blasting operations not permitted during demolition.
- .3 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.
- .4 Remove the existing equipments, services and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.
- .5 At end of each day's work, leave Work in safe and stable condition.
- .6 Demolish to minimize dusting.
- .7 Contain fibrous materials to minimize release of airborne fibres while being transported within facility.

3.4 Cleaning

- .1 Divert excess materials from landfill to site approved
- .2 Designate appropriate security resources / measures to prevent vandalism, damage and theft.
- .3 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

- .1 Label stockpiles, indicating material type and quantity.
- .4 Remove stockpiles of like materials by alternate disposal option once collection of materials is complete.
- .5 Transport material designated for alternate disposal using approved haulers facilities by receiving organizations listed in Waste Reduction Workplan and in accordance with applicable regulations.
- .6 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.

1. GENERAL

1.1 References

- .1 ASTM International
 - .1 ASTM D1761-[06], Standard Test Methods for Mechanical Fasteners in Wood.
 - .2 ASTM D5456-[11], Standard Specification for Evaluation of Structural Composite Lumber Products.
- .2 CSA International
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples (Clous, fiches et cavaliers en fil d'acier).
 - .2 CSA O112.9-10, Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
- .3 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship (Principes et critères de gestion forestière).
- .4 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2008.

1.2 Action and informal submittals

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for wood products and accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.

- .2 Submit erection drawings in accordance with CSA S16 and CSA O86.
- .3 Shop drawings must indicate the stress resistance, service classes and finishing elements, the finished product made in the factory, the camber, the notches, cross pieces, the holes as well as the joint details.
- .4 The manufacturer's instructions: Submit the installation instructions provided by the manufacturer, including any indication of particular methods of handling, cleaning and installation.

1.3 Delivery, storage and handling

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store equipments and materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area. Store and protect wood from marks, scratches, and blemishes.
 - .2 Replace defective or damaged equipments and materials with new.

2. PRODUCTS

2.1 Framing structural and panel materials

- .1 Lumber: softwood, grade 1, moisture content 19% (S-dry) or less in accordance with following standards:
 - .1 CSA O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
- .2 Timber: western red cedar of grade No. 1/No. 2 or better.

- .1 CSA O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.

2.2 Accessories

- .1 Nails, spikes and staples: to CSA B111.
- .2 Bolts: [12.5] mm diameter unless indicated otherwise, complete with nuts and washers. Galvanised. ASTM A307
- .3 Joist hangers: according to specification G-40.21.98, grade 300W, galvanized.
- .4 Lag-screws: according to AISI/ASME B18.2.1-2010. Galvanised.
- .5 Treatment Product of Douglas Fir lumber:
 - .1 Preservative: according to manufacturer's recommendation depending on the surface condition.

3. EXECUTION

3.1 Preparation

- .1 Inspect the building with PCA representative, and check the location and extent of the elements which must be removed, eliminated, recovered, recycled, reclaimed as well as the elements that would be left in place.
- .2 Locate and protect the utility lines and ensure that the ones still in service are in good condition.
- .3 Notify PCA Representative and obtain from him all the necessary approvals prior to commencing the demolition.

3.2 Preparatory work

- .1 Treat surfaces of material with wood preservative, before installation
- .2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.

- .3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

3.3 Installation

- .1 Install members true to line, levels and elevations, square and plumb.
- .2 Install spanning members with "crown-edge" up.
- .3 Select exposed framing with great care for appearance. Install timber materials in a way so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .4 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .5 Countersink bolts where necessary to provide clearance for other work.
- .6 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

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 installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by rough carpentry installation.

1. GENERAL

1.1 Description

- .1 As shown on the structure plans, a flashing is required around the perimeter of the foundation wall. To assess the cost of different options available for the flashing, the contractor must provide a price for three different alternatives:
 - .1 Stainless steel: tinned natural color.
 - .2 Galvanized pre-painted steel, color to be determined by the APC representative.
 - .3 Pre-painted aluminum, color to be determined by the APC representative.
- .2 The Contractor shall provide the cost of materials and labor for each option on the bid form. Only the cost of Option 1 (stainless steel) will be considered for the evaluation of the project cost. The cost of the two options is only for consideration. APC reserves the right to choose one of three options, depending on the cost and quality of the product.
- .3 The decision will be taken following the receipt of the samples of the three options and will be communicated to the contractor. The cost of the contractor's contract will be adjusted depending on the chosen option.

1.2 References

- .1 The Aluminum Association Inc. (AAI)
 - .1 AAI-Aluminum Sheet Metal Work in Building Construction.
 - .2 AAI DAF45, Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A167- Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .2 ASTM A240/A240M, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

- .3 ASTM A606, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
- .4 ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .5 ASTM A792/A792M, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .6 ASTM D523, Standard Test Method for Specular Gloss.
- .7 ASTM D822, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .3 Canadian Roofing Contractors Association (CRCA)
 - .1 Roofing Specifications Manual.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.32, Sheathing, Membrane, Breather Type. CAN/CGSB-93.1-[M85], Sheet Aluminum Alloy, Prefinished, Residential.
- .5 Canadian Standards Association (CSA International)
 - .1 CSA B111, Wire Nails, Spikes and Staples.
- .6 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.3 Action and informational submittals

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

product characteristics, performance criteria, physical size, finish and limitations.

- .2 Submit a copy of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Shop Drawings:
 - .1 Shop drawings: submit drawings required for folded flashing.
- .4 Sustainable Design Submittals:
 - .1 A sample of length 300mm bent to the profile requested. Plans for each of the 3 options:
 - .1 Stainless steel tinted natural color
 - .2 Galvanized pre-painted steel, color to be determined by APC representative.
 - .3 Pre-painted aluminum, color to be determined by the APC representative.
- .5 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
 - .1 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.

1.4 Delivery, storage and handling

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

2. PRODUCTS

2.1 Sheet metal materials

- .1 (Option 1) Stainless steel plate : ASTM A240 / A240M, 304, natural color, 24 gauge.

- .2 (Option 2) Sheets of galvanized steel; 24 gauge, commercial grade. ASTM A653/A653M, with zinc coating Z275. Smooth surface for painted finish.
- .3 (Option 3) Aluminum sheets ; commercial grade, trademarked, smooth surface for painted finish.

2.2 Prefinished steel sheet

- .1 Prefinished steel with factory applied polyvinylidene fluoride.
 - .1 Colour selected by representative of APC from manufacturer's standard range.
 - .2 Resistance to accelerated weathering for chalk rating of 8, colour fade 5units or less and erosion rate less than 20 % to ASTM D822 as follows:
 - .1 Outdoor exposure period 2500 hours.
 - .2 Humidity resistance exposure period 5000 hours.

2.3 Prefinished aluminum sheet

- .1 Finish: factory applied coating to CAN/CGSB-93.1 supplemented and amended as follows:
 - .1 Colour selected by Departmental Representative APC from manufacturer's standard range.
 - .2 Outdoor exposure period: 25 years.
 - .3 Exposure period for humidity resistance: 5000 hours.
 - .4 Exposure period for salt spray resistance: 2500 hours.
- .2 Thickness specified for prefinished aluminum sheet applies to base metal.

2.4 Accessories

- .1 Plastic cement: to CAN/CGSB 37.5.
- .2 Mounting tabs: the same material and same caliber as the sheet used.

- .3 Fasteners: of same material as sheet metal, to CSA B111, [ring thread] flat head roofing nails of length and thickness suitable for metal flashing application.
- .4 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .5 Flux: rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.
- .6 Touch-up paint: as recommended by prefinished material manufacturer.

2.5 Fabrication

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

3. EXECUTION

3.1 Manufacturer's instructions

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

3.2 Installation

- .1 Install sheet metal work in accordance with AAI-Aluminum Sheet Metal Work in Building Construction.

- .2 Use concealed fastenings except where approved by APC before installation.
- .3 Lock end joints and caulk with sealant.
- .4 Insert metal flashing into perimeter of wood to form weather tight junction.

3.3 Field quality control

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

3.4 Cleaning

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Leave work areas clean, free from grease, finger marks and stains.