Correctional Service Canada
Minimum Security Correctional Facility - Joliette
Project no. 91473

INSTALLATION OF BARBED WIRE AND GAURDRAILS ON ROOFS JOLIETTE CORRECTIONAL FACILITY

ISSUED FOR TENDER
2017-03-07

SPECIFICATIONS :

DRAWING LIST

ARCHITECTURE

A000	FRONTISPICE, LEGEND AND SITE PLAN
A500	DETAIL OF GUARDRAIL AND BARBED WIRE MAIN BUILDING
A501	DETAILS OF RESIDENCE GUARDRAIL AND LADDER
A502	DETAIL OF BARBED WIRE UNIT PROVATE FAMILY VISITS

END OF SECTION

1. General

1.1 REFERENCES

.1 National building code of Canada (CNB) 2010, including all modifications until the date of bid closing.

1.2 DESCRIPTION OF WORK

.1 See specification's section

1.3 SITE VISIT BY BIDDERS

.1 For security reasons, the visit inside the penitentiary will be held at a fixed time, at a given time specified in bidding documents. The meeting will take place at the main entrance of the institution. **The site visit is mandatory.**

.2 Proceed to the site's examination and special conditions that could affect the work. The submission of a bid implies a confirmation that the Bidder agrees to the conditions.

1.4 SECURITY CONTROL

.1 All workers will be forced to submit to a security check to be accredited to a level of safety as required by the Correctional Service of Canada and Public Works & Government Services Canada.

.2 Section 01 35 13 describes the detailed procedures of the security check

.3 Before starting work, a special meeting site will be attended by representatives of the institution to define the safety and prisons site work.

1.5 CODES

.1 Perform the work in accordance with national building code of Canada (CNB) and other provincial or local codes that apply. In the event of any discrepancy or inconsistency, the more stringent requirements shall prevail.

.2 Perform the work so as to satisfy all the requirements:

.1 contract documents;

.2 specified codes and standards and other referenced documents.

1.6 REQUIRED DOCUMENTS

.1 Keep on the site a copy of each of the following documents:
.1 contract drawings;
.2 specifications;

.3 addendum;
.4 revised shop drawings;
.5 change orders;
.6 other contract amendments;
.7 reports of tests conducted on site;
.8 approved work schedule;
.9 laying and implementation instructions provided by the manufacturers.

1.7 STATE OF THE BASEMENT

.1 n/d

1.8 WORK SCHEDULE

.1 Undertake planning work immediately after receiving the notice of acceptance of your offer. The work covered by this document, including corrections to construction defects, must be completed within the timeframe specified in this document. In case of non compliance of timetable, measures are taken under Clauses and conditions of purchase of Public Works and Government Services Canada (PWGSC).

.2 Within 10 working days of the award, submit the timetable showing the progress of the various stages of the project and the date of completion.

.3 Within 10 working days of the award, submit shop drawings, data sheets, samples and safety survey forms for approval.

.4 The sequence of work is as follows;
.1 Start meeting and submission calendar, shop drawings, data sheets, samples and safety survey forms for approval;
.2 Approval of submitted documents;
.3 Start of work;
.5 Submit operating and maintenance manuals for approval;
.6 Provisional acceptance;
.7 Training of maintenance and operating staff;
.8 Correction of deficiencies
.9 Final acceptance.

.5 Within ten (10) working days after contract award, the Contractor shall provide, in a form acceptable to the Project, a work schedule indicating:

.1 The submission of shop drawings dates, lists of materials and samples;
.2 The delivery dates of the pieces of equipment and the following materials: **barbed wire Concertina Razor Wire;**
.3 Dates of the beginning and the end of the work described in each section of the budget;
.4 The final date of completion with respect to the completion period stipulated in the contract documents.

.6 Preliminary reviews of the progress of work, according to the implementation schedule submitted, will be made at the discretion of the responsible CSC project. The calendar will be updated by the contractor, with the cooperation and approval of the responsible CSC project.

1.9 ACCEPTANCE OF EQUIVALENT

.1a The firm that suggests substitutes or equivalents compared to the products mentioned in the quote, plans or other contractual terms, must include in its proposal the data sheets for approval by the Evaluation Committee. These products must be of equal or superior quality so that the proposal be retained if not, it will be denied. The financial proposal must reflect these alternatives.

.2 It is up to the contractor to provide proof of equivalence. The equivalence request must be presented clearly and understand all the details that will make the analysis.

.3 The main criterias for acceptance of equivalent are: construction, performance, capacity, size, arrangement of connections, availability of spare parts, easy maintenance, delivery, existence of similar equipment in service for some time.

.4 If the use of a device accepted as equivalent cause any changes to the facilities shown on the plans or specifications, these changes will be the responsibility of the general contractor that will habe to bear the changes that may be required in the works specialized contractors because of these changes.

1.10 COST BREAKDOWN

.1 With its tender, the contractor will provide a detailed breakdown of costs for this market, also indicating the overall market price **on the bid provides slip attached**. Once approved, the breakdown of costs serve as a baseline for the purposes of calculating payments.

1.11 PAYMENTS

.1 Payment will be made on a monthly basis, in proportion to the progress of work. Before sending an invoice, the Contractor must send a request for approval of ventilated payment, as the bid form, with the percentage of completion for each item. A 10% withholding will be applied to the total amount of the payment request before tax. The deduction will be payable to the final acceptance of work.

1.12 MEASUREMENT PROCEDURES FOR PAYMENT

.1 Notify the engineer in sufficient time before the start of work to enable it to conduct the measurements necessary for payment.

1.13 USE OF PREMISES BY CONTRACTOR

.1 During construction, the facility must be maintained in full activity; for this purpose, the project manager of CSC or responsible for the security of the institution may ask the contractor to stop immediately, temporarily, execution of a work, so as not to jeopardize the activities away.

.2 Use of the premises; limited access to the site enclosure. Works and works identified to be executed outside of the enclosure of the site, must be performed by a team accompanied by an escort provided by CSC, see Section 01 35 13.

.3 Execute work with minimal disruption to occupants and ensuring, wherever possible, normal use of the premises. Agree to with the CSC project to facilitate the execution of the work.

.4 Maintain existing services in buildings.

.5 No vehicle or mobile construction machine can be left inside the establishment outside of working hours. Construction vehicles must be stored in the parking lot in front of the gate (main entrance). Refer to Section 01 35 13.

1.14 NOISY ATMOSPHERE AND CELL PHONE

.1 No radio apparatus or "thunderous" is allowed on site.

.2 The use or carrying a cell phone is prohibited within the boundaries of the property.

1.15 PARKING ON SITE

.1 The contractor should be limited to parking areas authorized by the director of the institution.

1.16 SITE MEETINGS

.1 Hold site meetings at times and places approved by the CSC project manager.

.2 Advise all participants about the site meeting.

.3 The engineer will organize site meetings, set the date and time and will prepare and distribute the minutes.

1.17 SITE MARKERS

.1 n/d

1.18 LOCATION OF DEVICES AND OTHER EQUIPMENT

.1 n/d

1.19 HIDDEN WORKS

.1 n/d

1.20 DRILLING AND SEALING

.1 Obtain approval from the engineer before cutting or drilling a carrier or to insert a sleeve.

.2 Run the drilling and sealing work required for the works to be connected or related to the other are precisely and without backlash.

.3 Make the openings so that the banks are clean, straight and smooth.

.4 When adding a new work involves modifications to an existing structure, execute the digging, sealing and other repairs needed to bring the existing structure to its former condition.

1.21 EXISTING NETWORKS

.1 When the work requires connection to existing networks, execute the work at the hours fixed by the competent authorities to minimize interference with the movement of pedestrians and vehicles

.2 Submit to the responsible CSC project manager work schedule and obtain approval at least 48 hours in advance regarding any failure or interruption of existing networks or services. Make the cuts according to the approved schedule and prior notice to those affected.

.3 In the event that non-identified installations are discovered during construction, immediately notify the engineer and send him a written report on the findings.

.4 Remove all abandoned service lines that are within 2 m of the works. Seal the pipes in areas where they were cut off by a cap or other waterproof device, according to the engineer's specifications.

.5 Keep a record of the location of pipes which are maintained in service, misappropriated or abandoned.

1.22 CHANGES, ADDITIONS OR REPAIR TO EXISTING BUILDINGS

.1 Execute work with minimal disruption to occupants and the public and ensuring, wherever possible, normal use of the premises. Agree to with the CSC project manager to facilitate the execution of the work.

.2 In no time, the safety measures must be reduced about the work covered by the contract, take the necessary steps to ensure all required security.

.3 When there are in the building lifts, hoists, conveyors and escalators, only use, to move personnel and equipment within a building, those reserved the use of the contractor. Before using elevators, protect the walls of the cabins as directed by the engineer. Assume responsibility for damages to the safe use of equipment and overloading of existing equipment.

.4 When work takes place in a busy place, supply and install all necessary protection to furniture, equipment and finishes, install dust screens, partitions and temporary warning of signs and cleaned at the end of each evening of work.

1.23 ADDITIONAL DRAWINGS

.1 The engineer can provide the contractor additional drawings for clarification. These additional drawings have the same meaning and the same scope as if they were part of the contract documents.

1.24 RUINS AND ANTIQUES

.1 Protect relics, antiques and other items of historic or scientific interest, such as the cornerstones and their contents, commemorative plaques and other items bearing inscriptions found during construction.

.2 Immediately notify the CSC project manager and wait his written instructions before continuing work in this location.

.3 The remains, antiques and other objects of historic or scientific interest shall become the property of the Crown.

1.25 RESTRICTIONS ON SMOKING

.1 Comply with the restrictions that apply to smoking on the property of the Crown.

1.26 PRESENCE OF ASBESTOS

.1 The removal of asbestos fiber applied by spray or trowel may be hazardous to health. If, during the execution of the work, the contractor discovers materials that look like asbestos applied by spray or trowel, it must interrupt its work and advise the consultant immediately. Do not resume work until you have received written instructions of the consultant in this regard.

1.27 OPERATIONS MANUAL

.1 The Contractor shall provide for approval three (3) copies of an operating manual includes the following items:
- a table of contents
- a list of suppliers and their coordinates
- warranty letters
- approved shop drawings
- maintenance and operation manuals
- «as built » drawings

1.28 STAFF TRAINING

.1 The contractor will provide two (2) training periods;
- One for those responsible for systems maintenance and new installations

2. Products (n/d)

3. Execution (n/d)

END OF SECTION

Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

.1 The work covered by the contract includes, unless otherwise specified, the supply of all labour, equipment and materials required to install barbed wire and guardrails on the roofs as described in the various sections of the technical specifications and shown on drawings.

1.2 WORK BY OTHERS

.1 Work of Project executed during Work of this Contract, and which is specifically excluded from this Contract:

.1 Not required.

.2 Work of Project which will be executed after completion of Work of this Contract, and which is specifically excluded from this Contract:

.1 Not required.

.3 Work of this Project must include provisions for co-ordinating additional or related work, identified in Contract Documents, for following principal items.

.1 Not required.

1.3 FUTURE WORK

.1 Not applicable

1.4 WORK SEQUENCE

.1 Construct Work in stages to accommodate Departmental Representative continued use of premises during construction.

.2 Coordinate Progress Schedule and co-ordinate Occupancy with Departmental Representative during construction.

.3 Required stages:

.1 Not applicable

.4 Construct Work in stages to provide for uninterrupted public usage. Maintain public access of facilities until work has progressed enough to allow for an alternate access.

.5 Required stages:

.1 Not applicable

.6 Maintain fire access/control and provide fire protection equipment.

1.5 CONTRACTOR USE OF PREMISES

.1 Limit use of premises for Work, for storage and for access, to allow:

.1 Owner occupancy.

.2 Partial owner occupancy.

.3 Work by other contractors.

.4 Public usage.

.5 Not applicable

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

.3 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.6 OWNER OCCUPANCY

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

.2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

1.7 PARTIAL OWNER OCCUPANCY

.1 Not applicable.

1.8 PRE-ORDERED PRODUCTS

.1 Not applicable.

1.9 PRE-PURCHASED EQUIPMENT

.1 Purpose for pre-purchasing this equipment is to ensure delivery to site within required project completion schedule. Obtain necessary shop drawings from Consultant and proceed to co-ordinate details for installation, expedite, receive, unload, install, connect and test specified equipment, and be responsible for warrantee.

.2 Notify Departmental Representative in writing at least 5 calendar days in advance of date on which materials and equipment are required.

.1 Pick up materials and equipment no later than 10 calendar days after such date.

.3 Receive equipment F.O.B. and store and process equipment until installation.

1.10 OWNER FURNISHED ITEMS

.1 Departmental representative Responsibilities:

.1 Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to Contractor.

.2 Deliver supplier's bill of materials to Contractor.

.3 Arrange and pay for delivery to site in accordance with Progress Schedule.

.4 Inspect deliveries jointly with Contractor.

.5 Submit claims for transportation damage.

.6 Arrange for replacement of damaged, defective or missing items.

.7 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties and bonds to Contractor.

.2 Contractor Responsibilities:

.1 Designate submittals and delivery date for each product in progress schedule.

.2 Review shop drawings, product data, samples, and other submittals. Submit to Consultant notification of observed discrepancies or problems anticipated due to non-conformance with Contract Documents.

.3 Receive and unload products at site.

.4 Inspect deliveries jointly with Owner; record shortages, and damaged or defective items.

.5 Handle products at site, including uncrating and storage.

.6 Protect products from damage, and from exposure to elements.

.7 Assemble, install, connect, adjust, and finish products.

.8 Provide installation inspections required by public authorities.

.9 Repair or replace items damaged by Contractor or subcontractor on site (under his control).

.3 Schedule of Owner furnished items:

.1 Not applicable

1.11 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

.2 Use only spaces designated by Departmental Representative in building for moving workers and material.

.1 Not required.

.2 Accept liability for damage, safety of equipment and overloading of existing equipment.

1.12 EXISTING SERVICES

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

.2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours prior notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian and vehicular traffic.

.3 Provide alternative routes for personnel pedestrian and vehicular traffic.

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

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

.6 Provide temporary services when directed by Departmental Representative maintain critical building and tenant systems.

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

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

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

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

.11 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

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.

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 ACCESS AND EGRESS

.1 Access to the site by workers is via the property's main entrance. Only motorized platforms are permitted to carry out the Work. No scaffolding or construction fences are permitted inside the institution and the work area.

.2 The platforms must be removed from the site at the end of each day. They must be stored in the parking lot and locked.

.3 No storage is allowed inside the institution or construction area. Provide a closed and locked container outside the institution.

1.2 USE OF SITE AND FACILITIES

.1 Execute Work with least possible interference or disturbance to the normal use of premises. Coordinate with Departmental Representative to facilitate the Work as stated.

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

.3 Provide temporary means to maintain security where security is reduced by the Work.

.4 Departmental Representative will not install sanitary facilities for use by Contractor's personnel.

.5 Use only existing stairs or provide lifts to move workers and material.

.1 Protect installations against damage, provide means of safety and avoid subjecting them to overloading.

.6 Protect Work by temporary means until all permanent closures are installed.

1.3 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

1.4 EXISTING SERVICES

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

.2 Provide circulation for personnel pedestrian and vehicular traffic.

1.5 SPECIAL REQUIREMENTS

.1 Loud Work must be undertaken Monday to Friday during normal working hours.

.2 Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedule - Critical Path Method (CPM)

.3 Ensure Contractor's personnel are familiar with and obey regulations including safety, fire, traffic and security regulations.

.4 Keep within limits of Work and paths of ingress and egress.

.5 Site Ingress and egress of Contractor vehicles is limited to normal working hours.

.6 Deliver materials during normal working hours, unless otherwise approved by Departmental Representative.

1.6 SECURITY CLEARANCES:

.1 Personnel employed on this project are subject to security checks. Obtain clearance as per Section 01 35 10 for each individual who will require entry to the premises.

.2 Personnel will be checked by security daily at start of work shift and provided with a pass which must be worn at all times. The pass must be returned at end of work shift and personnel checked out.

.3 Contractor's personnel will require RCMP initiated security screening in order to complete Work on the premises and on site.

1.7 SECURITY ESCORT:

.1 Construction activities, personnel and vehicles movements will be inspected and monitored by SCC personnel in order to ensure that security standards are completely respected, to section 01 35 13.

1.8 BUILDING SMOKING ENVIRONMENT

.1 Comply with smoking regulations. Smoking is forbidden in the facility and within the perimeter of the property.

Part 2 Products

.1 Not Used.

Part 3 Execution

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All sections of this Specification.

1.2 DEFINITIONS

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

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

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

.4 Construction Work Week: Monday to Friday, inclusive, will provide five (5) 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 elements. Usually expressed as workdays or workweeks.

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

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

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

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

1.3 REQUIREMENTS

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

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

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

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

1.4 SUBMITTALS

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

.2 Submit to Departmental Representative within 5 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.

1.5 PROJECT MILESTONES

.1 Project milestones form interim targets for Project Schedule.

.1 Excavation completed within 30 working days of Award of Contract date.

.2 Substructure completed within 45 working days of Award of Contract date.

.3 Superstructure completed within 60 working days of Award of Contract date.

.4 Building closed-in and weatherproofed within 80 working days of Award of Contract date.

.5 Interior finishing and fitting, mechanical, and electrical work completed within 240 working days of Award of Contract date.

.6 Interim Certificate (Substantial Completion) within 280 working days of Award of Contract date. Once the contract has been awarded, we expect it to be complete in a maximum of 60 days.

1.6 MASTER PLAN

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

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

.3 If the schedule is deemed unfeasible it is to be revised and resubmit within 5 working days.

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

1.7 PROJECT SCHEDULE

.1 Develop detailed Project Schedule derived from Master Plan.

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

.1 Award.
.2 Shop Drawings, Samples.
.3 Permits.
.4 Mobilization.
.5 Excavation.
.6 Backfill.
.7 Building footings / piles.
.8 Slab on grade.
.9 Structural Steel.
.10 Siding and Roofing.
.11 Interior Architecture (Walls, Floors and Ceiling).
.12 Plumbing.
.13 Lighting.
.14 Electrical.
.15 Piping.
.16 Controls.
.17 Heating, Ventilating, and Air Conditioning.
.18 Millwork.
.19 Fire Systems.
.20 Testing and Commissioning.
.21 Supplied equipment long delivery items.
.22 Engineer supplied equipment required dates.

1.8 PROJECT SCHEDULE REPORTING

.1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.

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

1.9 PROJECT MEETINGS

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

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

Part 2 Products

.1 Not used.

Part 3 Execution

.1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

All sections of this Specification requiring sample or document submissions.

1.2 REFERENCES

.1 National building Code 2010 edition and CSST regulations.

1.3 ADMINISTRATIVE

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

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

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

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

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

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

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

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

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

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

1.4 SHOP DRAWINGS AND PRODUCT DATA

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

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

.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 Without restricting the general scope of prior notes, it is important to notify that the contractor is responsible for accuracy of all dimensions, providing information for execution methods or construction techniques, installation and coordination of works by all trades.

.5 Allow 5 working days for Departmental Representative's review of each submission.

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

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

.8 Accompany submissions with transmittal letter, in 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.

.9 Submissions include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.
  - .6 Standards.

.7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

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

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

.12 Submit (1)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.

.13 Submit 1 electronic copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.

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

.2 Testing must have been within (3) years of date of contract award for project.

.14 Submit (1) electronic copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.

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

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

.15 Submit (1) electronic copy 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.

.16 Submit (1) electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.

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

.18 Submit (1) electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.

.19 Delete information not applicable to project.

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

.21 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected

shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.5 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 office.

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

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

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

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

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

1.6 MOCK-UPS

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

1.7 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic copy of colour digital photography in jpg fine resolution monthly with progress statement and as directed by Departmental Representative.

.2 Project identification: name and number of project and date of exposure indicated.

.3 Number of viewpoints: (3) locations.

.1 Viewpoints and their location as determined by Departmental Representative.

.4 Frequency of photographic documentation: and weekly as directed by Departmental Representative

.1 Upon completion of: framing and services before concealment, of Work, and as directed by Departmental Representative.

1.8 CERTIFICATES AND TRANSCRIPTS

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

Part 2 Products

2.1 Samples used in each of present specification

.1 Provide samples in their standard dimensions (as provided by commercial representative of manufacturer) or required erected /constructed samples by departmental representative of all parts of work.

Part 3 Execution

.1 Not Used.

END OF SECTION

Part 1 General

1.1 PURPOSE

.1 To ensure that both the construction project and the institutional operations may proceed without undue disruption or hindrance and that the security of the Institution is maintained at all times.

1.2 DEFINITIONS

.1 "Contraband" means:

- .1 an intoxicant, including alcoholic beverages, drugs and narcotics,
- .2 a weapon or a component thereof, ammunition for a weapon, and anything that is designed to kill, injure or disable a person or that is altered so as to be capable of killing, injuring or disabling a person, when possessed without prior authorization,
- .3 an explosive or a bomb or a component thereof,
- .4 currency over any applicable prescribed limit $20.00, and
- .5 any item not described in paragraphs .1 to .4 that could jeopardize the security of a Penitentiary or the safety of persons, when that item is possessed without prior authorization
- .6 unauthorized smoking items

.2 “Unauthorized Smoking Items” means all smoking items including, but not limited to, cigarettes, cigars, tobacco, chewing or snuffing tobacco, cigarette making machines, matches and lighters.

.3 "Commercial Vehicle" means any motor vehicle used for the shipment of material, equipment and tools required for the construction project.

.4 "CSC" means Correctional Service Canada.

.5 "Director" means Director or Warden of the Institution as applicable or their representative.

.6 "Construction employees" means persons working for the general contractor, the sub-contractors, equipment operators, material suppliers, testing and inspection companies and regulatory agencies.

.7 “Departmental Representative” means the Public Works and Government Services Canada (PWGSC) or the Correctional Service Canada (CSC) project manager depending on project.

.8 "Perimeter" means the fenced or walled area of the institution that restrains the movement of the inmates.

.9 "Construction zone" means the area as shown on the contract drawings where the contractor will be allowed to work. This area may or may not be isolated from the security area of the institution.

1.3 PRELIMINARY PROCEEDINGS

.1 Prior to the commencement of work, the contractor shall meet with the Director to:

- .1 Discuss the nature and extent of all activities involved in the Project.
- .2 Establish mutually acceptable security procedures in accordance with this instruction

and the institution's particular requirements.

.2 The contractor will:

.1 Ensure that all construction employees are aware of the CSC security requirements.

.2 Ensure that a copy of the CSC security requirements is always prominently on display at the job site.

.3 Co-operate with institutional personnel in ensuring that security requirements are observed by all construction employees.

1.4 CONSTRUCTION EMPLOYEES

.1 Submit to the Director a list of the names with date of birth of all construction employees to be employed on the construction site and a security clearance form for each employee.

.2 Allow two (2) weeks for processing of security clearances. Employees will not be admitted to the Institution without a valid security clearance in place and a recent picture identification such as a provincial driver's license. Security clearances obtained from other CSC institutions are not valid at the institution where the project is taking place.

.3 The Director may require that facial photographs be taken of construction employees and these photographs be displayed at appropriate locations in the institution or in an electronic database for identification purposes. The Director may require that Photo ID cards be provided for all construction workers. ID cards will then be left at the designated entrance to be picked up on arrival at the institution and shall be displayed prominently on the construction employees clothing at all time while employees are at the institution.

.4 Entry to Institutional Property will be refused to any person there may be reason to believe may be a security risk.

.5 Any person employed on the construction site will be subject to immediate removal from Institutional Property if they:

.1 appear to be under the influence of alcohol, drugs or narcotics.
.2 behave in an unusual or disorderly manner.
.3 are in possession of contraband.

1.5 VEHICULES

.1 All unattended vehicles on CSC property shall have windows closed; doors and trunks shall be locked and keys removed. The keys shall be securely in the possession of the owner or an employee of the company that owns the vehicle.

.2. The director may limit at any time the number and type of vehicles allowed within the Institution.

.3. Drivers of delivery vehicles for material required by the project will require security clearances and must remain with their vehicle the entire time that the vehicle is in the Institution. The director may require that these vehicles be escorted by Institutional staff or Commissionaires while in the Institution.

.4. If the Director permits trailers to be left inside the secure perimeter of the Institution, these trailer doors will be locked at all times. All windows will be securely locked when left unoccupied. All trailer windows shall be covered with expanded metal mesh. All storage trailers inside and outside the perimeter must be locked when not in use.

1.6 PARKING

.1 The parking area(s) to be used by construction employees will be designated by the Director. Parking in other locations will be prohibited and vehicles may be subject to removal. All signage required to indicate the designated parking area(s) will be furnished and installed by the Contractor.

1.7 SHIPMENTS

.1 All shipments of project material, equipment and tools shall be addressed in the Contractor's name to avoid confusion with the institution's own shipments. The contractor must have its own employees on site to receive any deliveries or shipments. CSC staff will **NOT** accept receipt of deliveries or shipments of any material equipment or tools for the contractor.

1.8 TELEPHONES

.1 There will be no installation of telephones, Facsimile machines and computers with Internet connections permitted within the perimeter of the institution unless prior approval of the Director is received.

.2 The Director will ensure that approved telephones, Facsimile machine and computers with Internet connections are located where they are not accessible to inmates. All computers will have an approved password protection that will stop an Internet connection to unauthorized personnel.

.3 Wireless cellular and digital telephones, including but not limited to devices for telephone messaging, pagers, BlackBerries, telephones used as 2-way radios, are not permitted within the perimeter of the Institution unless approved by the Director. If wireless cellular telephones are permitted, the user will not permit their use by any inmate.

.4. The Director may approve but limit the use of two way radios.

1.9 WORK HOURS

.1 Work hours within the Institution are: Monday to Friday 07:00 a.m. to 5:00 p.m.

.2 Work will not be permitted during weekends and statutory holidays without the permission of the Director. A minimum of seven days advance notice will be required to obtain the required permission. In case of emergencies or other special circumstances, this advance notice may be waved by the Director.

1.10 OVERTIME WORK

.1 No overtime work will be allowed without permission of the Director. Give a minimum forty-eight (48) hours advance notice when overtime work on the construction project is necessary and approved. If overtime work is required because of an emergency such as the completion of a concrete pour or work to make the construction safe and secure, the contractor shall advise the Director as soon as this condition is known and follow the directions given by the Director. Costs to Canada for such events may be attributed to the

contractor.

.2 When overtime work, weekend statutory holiday work is required and approved by the Director, extra staff members may be posted by the Director or his designate, to maintain the security surveillance. The actual cost of this extra staff may be attributed to the contractor.

1.11 TOOLS AND EQUIPMENT

.1 Maintain on site a complete list of all tools and equipment to be used during the construction project. Make this inventory available for inspection when required.

.2 Throughout the construction project maintain an up-to-date list of tools and equipment specified above.

.3 Keep all tools and equipment under constant supervision, particularly power-driven and cartridge-driven tools, cartridges, files, saw blades, rod saws, wire, rope, ladders and any sort of jacking device.

.4 Store all tools and equipment in approved secure locations.

.5 Lock all tool boxes when not in use. Keys to remain in the possession of the employees of the contractor.

.6 Scaffolding shall be secured and locked when not erected and when erected, shall be secured in a manner agreed upon with the director.

.7 All missing or lost tools or equipment shall be reported immediately to the Director.

.8 The Director will ensure that the security staff members carry out checks of the Contractor's tools and equipment against the list provided by the Contractor. These checks may be carried out at the following intervals:

.1 At the beginning and conclusion of every construction project.
.2 Weekly, when the construction project extends longer than a one week period.

.9 Certain tools/equipment such as cartridges and hacksaw blades are highly controlled items. The contractor will be given at the beginning of the day, a quantity that will permit one day's work. Used blades/cartridges will be returned to the Director's representative at the end of each day.

.10 If propane or natural gas is used for heating the construction, the institution will require that an employee of the contractor supervise the construction site during non-working hours.

1.12 KEYS

.1. Security Hardware Keys

.1 The Contractor shall arrange with the security hardware supplier/installer to have the keys for the security hardware to be delivered directly to Institution, specifically to the Security Maintenance Officer (SMO).
.2 The SMO will provide a receipt to the Contractor for security hardware keys.

.3 The contractor will provide a copy of the above-mentioned receipt to the Departmental Representative.

2. Other Keys

.1 The contractor will use standard construction cylinders for locks for its use during the construction period.

.2 The contractor will issue instructions to its employees and sub-trades, as necessary, to ensure safe custody of the construction set of keys.

.3 Upon completion of each phase of the construction, the CSC representative will, in conjunction with the lock manufacturer:

.1 Prepare an operational keying schedule;

.2 accept the operational keys and cylinders directly from the lock manufacturer;

.3 Arrange for removal and return of the construction cores and install the operational core in all locks.

.4 Upon putting operational security keys into use, the CSC construction escort shall obtain these keys as they are required from the SMO and open doors as required by the Contractor. The Contractor shall issue instructions to its employees advising them that all security keys shall always remain with the CSC construction escort.

1.13 SECURITY HARDWARE

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

1.14 PRESCRIPTION DRUGS

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

1.15 SMOKING RESTRICTIONS

.1 Contractors and construction employees are not permitted to smoke inside correctional facilities or outdoors within the perimeter of a correctional facility and must not possess unauthorized smoking items within the perimeter of a correctional facility.

.2 Contractors and construction employees who are in violation of this policy will be requested to immediately cease smoking or dispose of any unauthorized smoking items and, if they persist, will be directed to leave the institution.

.3 Smoking is only permitted outside the perimeter of a correctional facility in an area to be designated by the Director.

1.16 CONTRABAND

.1 Weapons, ammunition, explosives, alcoholic beverages, drugs and narcotics are prohibited on institutional property.

.2 The discovery of contraband on the construction site and the identification of the person(s) responsible for the contraband shall be reported immediately to the Director.

.3 Contractors should be vigilant with both their staff and the staff of their sub-contractors and suppliers that the discovery of contraband may result in cancellation of the security clearance

of the affected employee. Serious infractions may result in the removal of the company from the Institution for the duration of the construction.

.4. Presence of arms and ammunitions in vehicles of contractors, sub-contractors and suppliers or employees of these will result in the immediate cancellation of security clearances for the drivers of the vehicles.

1.17 SEARCHES

.1 All vehicles and persons entering institutional property may be subject to search.

.2 When the Director suspects, on reasonable grounds, that an employee of the Contractor is in possession of contraband or unauthorized items, he may order that person to be searched.

.3 All employees entering the Institution may be subject to screening of personal effects for traces of contraband drug residue.

1.18 ACCESS TO AND REMOVAL FROM INSTITUTIONAL PROPERTY

.1 Construction personnel and commercial vehicles will not be admitted to the institution after normal working hours, unless approved by the Director.

1.19 MOVEMENT OF VEHICULES

.1 Escorted commercial vehicles will be allowed to enter or leave the institution through the vehicle access gate during the following hours:
.1 7:30 a.m. to 4:00 p.m.
Construction vehicles shall not leave the Institution until an inmate count is completed.

.2 The contractor shall advise the Director twenty four (24) hours in advance to the arrival on the site of heavy equipment such as concrete trucks, cranes, etc.

.3 Vehicles being loaded with soil or other debris, or any vehicle considered impossible to search, must be under continuous supervision by CSC staff or Commissionaires working under the authority of the Director.

.4 Commercial vehicles will only be allowed access to institutional property when their contents are certified by the Contractor or its representative as being strictly necessary to the execution of the construction project.

.5 Vehicles shall be refused access to institutional property if, in the opinion of the Director, they contain any article which may jeopardize the security of the institution.

.6 Private vehicles of construction employees will not be allowed within the security perimeter of medium or maximum security institutions without the authorization of the Director.

.7 With prior approval of the Director, a vehicle may be used in the morning and evening to transport a group of employees to the work site. This vehicle will not remain within the Institution the remainder of the day.

.8 With the approval of the Director, certain equipment may be permitted to remain on the construction site overnight or over the weekend. This equipment must be securely locked, with the battery removed. The Director may require that the equipment be secured with a

chain and padlock to another fixed object. No vehicles or equipment left on the site at night or on weekends.

1.20 MOVEMENT OF CONSTRUCTION EMPLOYEES ON INSTITUTIONAL PROPERTY

.1 Subject to the requirements of good security, the Director will permit the Contractor and his employees as much freedom of action and movement as is possible.

.2 However, notwithstanding paragraph above, the Director may:

.1 Prohibit or restrict access to any part of the institution.

.2 Require that in certain areas of the institution, either during the entire construction project or at certain intervals, construction employees only be allowed access when escorted by a member of the CSC security staff or a Commissionaire.

.3 During the lunch and coffee/health breaks, all construction employees will remain within the construction site. Construction employees are not permitted to leave the institution. The construction employees are only permitted to eat within their construction trailer.

1.21 SURVEILLANCE AND INSPECTION

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

.2 CSC staff members will ensure that an understanding of the need to carry out surveillance and inspections, as specified above, is established among construction employees and maintained throughout the construction project.

1.22 STOPPAGE OF WORK

.1 The Director may order at any time that the contractor, its employees, sub-contractors and their employees to not enter or to leave the work site immediately due to a security situation occurring within the Institution. The contractor's site supervisor shall note the name of the CSC staff member giving this instruction, the time of the request and obey the order as quickly as possible.

The contractor shall advise the Departmental Representative of this interruption of the work within 24 hours.

1.23 CONTACT WITH INMATES

.1 Unless specifically authorized, it is forbidden to come into contact with inmates, to talk with them, to receive objects from them or to give them objects. Any construction employee doing any of the above will be removed from the site and his security clearance revoked.

.2 It is to be noted that cameras are not allowed on CSC property.

.3 Notwithstanding the above paragraph, if the Director approves of the usage of cameras, it is strictly forbidden to take pictures of inmates, of CSC staff members or of any part of the Institution other than those required as part of this contract.

1.24 COMPLETION OF CONSTRUCTION PROJECT

.1 Upon completion of the construction project or, when applicable, the takeover of a facility,

the Contractor shall remove all remaining construction material, tools and equipment that are not specified to remain in the Institution as part of the construction contract.

END OF SECTION

PART 1 General

1.1 Directive

.1 The locations of the caravan sites will be determined at the first site meeting.

.2 Employees and agents of the contractor are not allowed to use the facilities of the Correctional Service of Canada (CSC) for meals. They will take their meals on site.

.3 Employees and agents of the contractor are not allowed to use the sanitary facilities of CSC. The Contractor shall provide a toilet construction.

.4 Scaffolds are not allowed. Percussion tools using cartridges are not accepted. However, pneumatic tools are allowed.

.5 The Contractor may use the following services:

- .1 Electricity: 110, 220 and 550 volts. All necessary connections should however be made by the contractor at his expense;
- .2 Water and Storage: Details to be finalized during the visit of the bidders;
- .3 Telephone: Contractor, its employees and agents shall not use a phone that the contractor will install at its own expense in his caravan site.
- .4 Cell: banned for all.

.6 For details on operations, the Contractor shall contact the Chief, Construction and Maintenance Services Institution, details of which will be transmitted following the contract award.

.7 A security guard (commission), as well as CSC security personnel assigned to this surveillance, will be hired and paid by the institution that he attended the Institution staff in monitoring activities related to construction.

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 13300 (Documents and samples to be submitted).

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

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

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

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

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

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

.1 General construction site safety and health courses;

.2 Safety officer attestations;

.3 First aid in the workplace and cardiopulmonary resuscitation;

.4 Work likely to release asbestos dust;

.5 Work in confined spaces;

.6 Lockout procedures;

.7 Wearing and fitting of individual protective gear;

.8 forklift truck;

.9 positioning platform;

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

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

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

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

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

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

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 HEALTH/SAFETY/HYGIENE/ENVIRONMENTAL SPECIALISTS

.1 As soon as work starts, hire one safety officer(s), pursuant to the provisions of sections 2.5.3 and 2.5.4 of the Construction Safety Code (S-2.1, r. 6) and give him/her/them the necessary authority to carry out the duties of this position, including authority to stop work on safety and health grounds.

.2 As of star of work, hire a qualified person whose duties will be to ensure compliance with and application of all legislation, regulations and standards and all contractual requirements pertaining to specify area of expertise.

.3 Provide this person with the authority, resources and tools needed for performance of his/her duties.

.4 The person selected shall meet the following requirements:

.1 As to be qualified by the CSST

.5 The person selected shall:

.1 have in-depth knowledge of legislation and regulations applicable to the site pertaining to (specify area of expertise).

.2 develop and disseminate a safety orientation program for all site workers.

.3 ensure that no worker is admitted to the site without having taken the safety orientation program and met all the training requirements of the applicable legislation and the site-specific safety program.

.4 inspect the work and ensure compliance with all regulatory requirements and those of the contract documents or the site-specific safety program.

.5 keep a daily log of actions taken and submitting a copy to Departmental Representative each week.

1.13 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS

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

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

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

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

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

1.14 DYNAMITING

.1 Not applicable

1.15 POWDER ACTUATED DEVICES

.1 Use of power hammers 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 are not permitted.

1.16 LOCKOUT

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

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

1) main building power feeders
2) feeder supply panels and sub-panels
3) bus ducts
4) motor control centres
5) emergency power circuits
6) fire alarm and fire protection equipment
7) mechanical protective equipment

8) alarm circuit for building services, including all heating, ventilating and air conditioning equipment
9) circuits supplying more than one (1) piece of equipment
10) circuits affecting one (1) single piece of equipment used in a cooling or heating system.

After having completed the form, the Contractor, shall have it countersigned by the Manager in Charge of Worksite before starting work.

.2 Notwithstanding the previous paragraphs, the Contractor shall, in emergency situation, receive an oral guarantee of isolation of the Manager in Charge of Worksite and immediately countersign the request of electrical isolation.

.3 The procedure requested at paragraph 1 must comply with the principles listed in the "Le cadenassage" pamphlet published by the Association paritaire pour la santé et la sécurité du travail secteur construction (ASP Construction).

.4 Supervisors and all workers concerned must have followed ASP Construction's "Les techniques de cadenassage" course (514 355-6190 or 1 800 361-2061) or an equivalent course given by another firm.

.5 Identify every work that must absolutely be done on live equipment and establish the safety measures that will be applied, including the personal protective equipment.

1.17 WORK IN HEIGHT

.1 GENERAL

.1 See also "SPECIFIC CONDITIONS FOR ROOFING WORK", down below.

.2 The Contractor must ensure that any person carrying out work that poses a risk of falling more than 2,4 m use fall protection equipment.

.3 Plan and organize work so as to eliminate the danger at source or ensure collective protection, thereby minimizing the use of personal protective equipment. When personal fall protection is required, workers must use a safety harness that complies with CSA standard CAN/CSA Z-259.10 M90. A safety belt must not be used as fall protection.

.4 Every person using an elevating platform must have a training regarding this equipment.

.5 Wearing of safety harness is obligatory in any elevating platform with telescopic , articulated or rotary boom.

.6 Delimit a danger zone in any place where equipment for work in height is used.

.2 SPECIAL REQUIREMENTS – SCAFFOLDING

.1 Not applicable

.2 Access:

.1 Voir section 011400

.3 Protection of the public and occupants:

.1 The Contractor shall install covered walkways, nets or other similar devices to protect the public or the occupants against falling objects.

.4 Use of public thoroughfares:

.1 Where it is necessary to encroach on a public thoroughfare, the Contractor shall obtain at the Contractor's expense any authorizations and permits required by the competent authority.

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

1.18 LIFTING MATERIAL

.1 Lifting devices shall be positioned in such a way that loads are not carried over workers, occupants or the public.

.2 The Contractor must transmit to Engineer a work procedure, signed and sealed by an engineer, including inter alia the position of the crane, a sketch of the trajectory of the transported loads, the length of the mast and a plan of lifting for the handling of loads above occupied buildings. Engineer can, if judge necessary, impose work of evening and weekend.

.3 All mobile cranes manufactured after January 1st 1980 must be equipped with a safety device against overload.

.4 All mobile cranes with cables manufactured after January 1st 1970, except if they are used for other end than lifting loads, must be provided with a safety device against two-blocking. Regarding mobile cranes with cables manufactured before January 1st 1970, they will have to be equipped with the device at the latest on December 31st 2006.

.5 The Contractor shall provide the Engineer with a mechanical service inspection certificate for each lifting device. Inspections must be carried out just prior to the delivery of the equipment to the work site.

.6 For all winch installations, the Contractor shall provide the Engineer with the installation method recommended by the manufacturer. If unavailable, the Contractor shall then provide an installation procedure signed and sealed by an engineer. The installation procedure must take into account load bearing capacity, the amount, weight and location of counterweight and any other detail that may affect the capacity and stability of the device.

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

.8 The entire lifting area shall be closed off to prevent non-authorized people from entering it.

.9 The Contractor shall obtain all of the permits at his own expense, in the event the thoroughfare must be temporarily closed off to meet the requirement stipulated in the preceding paragraph or for any other reason pertaining to the safety of workers, occupants or the public.

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

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

1.19 SILICA SECTION

Preventive measures to apply to the work site

.1 Source reduction methods

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

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

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

.4 When required, install shields or other containment device to prevent silica dust from migrating toward other workers or the public.

.2 Individual protection equipments

.1 Wear individual respiratory protection equipments (mask) during all the operations that could generate silica dust. Select respiratory protection in accordance with the « *Guide des appareils de protection respiratoire utilisés au Québec* »
http://www.prot.resp.csst.qc.ca/Guid_APR.pdf

.2 Wear an ocular protection (glasses or visors).

.3 Wear a coveralls to prevent contamination outside the worksite.

.3 Personal hygiene

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

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

1.20 SPECIFIC CONDITIONS FOR ROOFING WORK

.1 FALL PROTECTION

.1 Guardrails

.1 Installation of guardrails is mandatory. SCC may specify certain restrictions with regard to anchoring, in which case the Contractor must

make sure that the guardrails meet all of the requirements in section 3.8 of the *Safety Code for the Construction Industry (L.R.Q.,S-2.1, r. 6)*

.2 The Contractor agrees not to remove the guardrails until the project is completed. The Engineer will authorize their removal when he is able to attest that all of the work, inspections and corrections required have been carried out.

.2 Harnesses

.1 Workers installing the guardrails shall wear safety harnesses.

.2 Workers installing and modifying guardrails or flashing shall wear safety harnesses in the event guardrails must be moved temporarily.

.3 Workers shall wear safety harnesses when receiving material and giving directions to the crane operator next to a drop.

.4 Safety harnesses shall be worn when carrying out work next to a drop where collective protection is not sufficiently safe.

.5 The Contractor shall provide a fastening method and safety cable system compliant with section 2.10.12 of the *Safety Code for the Construction Industry (L.R.Q.,S-2.1, r. 6)* for each work site or location.

.3 Ladders

.1 All ladders must be at least three rungs taller than the access landing.

.2 All ladders must be attached at their summit so that they cannot slide sideways. The Contractor shall implement a system so that this regulation is abided by during finishing (flashing, etc).

.4 Scaffolding

.1 Not applicable

.2 LIFTING MATERIAL

.1 The Contractor shall provide the Engineer with a mechanical service inspection certificate for each lifting device. Inspections must be carried out just prior to the delivery of the equipment to the work site.

.2 For all winch installations, the Contractor shall provide the Engineer with the installation method recommended by the manufacturer. If unavailable, the Contractor shall then provide an installation procedure signed and sealed by an engineer. The installation procedure must take into account loadbearing capacity, the amount, weight and location of counterweight and any other detail that may affect the capacity and stability of the device.

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

.4 Lifting devices shall be positioned in such a way that loads are not carried over workers, occupants or the public.

.5 The entire lifting area shall be closed off to prevent non-authorized people from entering it.

.6 The Contractor shall obtain all of the permits at his own expense, in the event the thoroughfare must be temporarily closed off to meet the requirement stipulated in the preceding paragraph or for any other reason pertaining to the safety of workers, occupants or the public.

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

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

.3 PROTECTION AGAINST BURNS

.1 Individuals assigned to the boilers shall wear long sleeves, safety glasses and a face shield when filling the boilers.

.2 Individuals working with asphalt or other hot liquids shall wear gloves, long sleeves and safety glasses.

.4 PROTECTION AGAINST FIRE

.1 Work on construction sites must be carried out in compliance with *Fire Commissioner of Canada Standard CI 301, Standard for Construction Operations, June 1982*. This standard is available at the following website: http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml

.2 At the beginning of each shift on every site, the Contractor shall obtain a Hot Work Permit issued by the person in charge of the work location.

.3 A working portable fire extinguisher suitable to the fire risk shall be available and easily accessible within a 5 m radius from any flame, spark source or intense heat.

.4 An individual shall be appointed to go on rounds (fire) for a period of 30 minutes after the end of the shift. This individual shall countersign the permit and give it to the person in charge of the work site (or the individual he/she appoints) after the 30 minutes period.

.5 The storage of propane cylinders shall comply with the **CAN/CSA-B149.2-F00** ***Propane Storage and Handling Code*** and meet the specific conditions outlined in this document. The cylinders shall be stored outdoors, in a safe place, away from any unauthorized handling, in a storage cabinet specially designed for this purpose. The cylinders shall be securely kept upright and locked at all times in a place where no vehicles are allowed, unless the cylinders are protected by bars or the equivalent.

.6 Compressed gas, fuel tanks or containers must be stored at least 10 m from any buildings.

.7 The number of propane cylinders on the roof shall not exceed the number of cylinders necessary for a day's work, and cylinders shall at all times be secured upright or held in a cart designed for this purpose.

.8 All of the cylinders used or stored on the work site shall be equipped with a collar designed to protect the valve.

.9 Filling the cylinders on the work site is forbidden, unless a procedure compliant with the CAN/CSA B149.2 standard is approved and authorized by the Engineer.

.5 MATERIAL AND WASTE MANAGEMENT

.1 On the roof, light material and sheet material shall be kept in containers or be securely fastened. In the event this requirement is disregarded in the slightest way, the Engineer may disallow the storage of materials on the roof.

.2 The preceding paragraph also applies to waste.

.3 Waste shall be discarded as produced using a waste chute or appropriate containers.

.4 All waste must be removed from the roof at the end of shifts.

.5 Unless otherwise authorized by the Engineer, all waste bins must be placed at least 3 m from any structure or building.

.6 GENERAL PROTECTION AND WORK SITE ORGANIZATION

.1 Regardless of the circumstances and the nature of the work, individuals with access to the work site must wear protective footwear and hard hats. The Contractor shall provide chin cups or ratchet suspension helmets to workers who must bend over or crouch down.

.2 Covered passageways shall be set up to protect all entrances and exits.

.3 A safety perimeter on the ground must be placed under the work zone in order to protect the public and the occupants.

.4 The ground work site, material handling area and boiler area shall be clearly sealed off to prevent occupants or the public from accessing the site and areas.

.5 Before installing any device that may emit gas or fumes, the Contractor shall receive authorization from the person in charge of the work site, who shall make sure that there is no risk of gas or fumes infiltrating the building's ventilation system.

.6 The Contractor shall make sure that the work site is kept clean and tidy for the duration of the work.

.7 Copies of material safety data sheets of all controlled products shall be forwarded to the Engineer and to the person responsible of the work site before work begins.

.8 The Contractor shall provide sanitary facilities and rest areas compliant with requirements of the *Safety Code for the Construction Industry.*

1.21 HOT WORK

.1 General

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

.2 Before the beginning of work, the contractor must have received the "Hot Work Permit" of SCC completed by the Manager in Charge of Worksite when the duties to be undertaken involve hot work..

.3 Work on construction sites must be carried out in compliance with Fire Commissioner of Canada Standard CI 301, Standard for Construction Operations, June 1982. This standard is available at the following website:

http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml

.4 A working portable fire extinguisher suitable to the fire risk shall be available and easily accessible within a 5 m radius from any flame, spark source or intense heat.

.5 An individual shall be appointed to go on rounds (fire) for a period of 30 minutes after the end of the shift. This individual shall countersign the permit and give it

to the person in charge of the work site (or the individual he/she appoints) after the 30 minutes period.

.6 The storage of propane cylinders shall comply with the CAN/CSA-B149.2-F0*0 Propane Storage and Handling Code* and meet the specific conditions outlined in this document. The cylinders shall be stored outdoors, in a safe place, away from any unauthorized handling, in a storage cabinet specially designed for this purpose. The cylinders shall be securely kept upright and locked at all times in a place where no vehicles are allowed, unless the cylinders are protected by bars or the equivalent.

.7 All of the cylinders used or stored on the work site shall be equipped with a collar designed to protect the valve.

.8 Filling the cylinders on the work site is forbidden, unless a procedure compliant with the CAN/CSA B149.2 standard is approved and authorized by the Engineer.

.2 Welding and cutting

.1 Note : For welding and cutting activities, make sure that that the following conditions are met moreover that the ones mentioned above.

.2 The works must be carried out in accordance with the articles “3.13 Compressed gas supply” and “3.14 Welding and cutting” of the Safety Code for the construction industry, S-2.1, r. 6.

.3 Work on construction sites must be carried out in compliance with Fire Commissioner of Canada Standard CI 302, Standard for Welding and Cutting, June 1982. This standard is available at the following website:
http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/302/page05.shtml

.4 The welding and cutting devices are excessively dangerous with regard to the fire risk on the building work place. The following precautions must be taken at the time of this type of work :

.1 Store all compressed gas cylinder on a fireproof fabrics and make sure that the room is well ventilated.

.2 Store all oxygen cylinders more than 6 metres from a flammable gas cylinder (ex: acetylene) or a combustible such as oil or grease, unless the oxygen cylinder is separated from it by a wall made of non-combustible material as mentioned in the article 3.13.4 of the *Safety Code for the construction industry, S-2.1, r. 6.*

.3 Set up fireproof fabrics when work of welding is done in superposition and that there is risk of spark fall.

.4 Store the bottles far from all heat sources.

.5 Not to store the bottles close to the staircases, exits, corridors and elevators.

.6 Not to put acetylene in contact with metals with metals such as silver, mercury, copper and alloys of brass having more than copper 65%, to avoid the risk of an explosive reaction.

.7 Check that welding equipments with electric arc has the necessary tension and are grounded.

.8 Ensure that the conducting wire of the electric welding equipment are not damaged.

.9 Place the welding equipment on a flat ground away from the bad weather.

.10 Move away or protect the combustible materials which can be near the welding equipment.

.11 Prohibition to weld or cut any closed container.

.12 Envisage protection measures when welding or cutting is carried out near drains, tanks or other containers containing inflammable materials.

.13 Do not perform any cutting, welding or work with naked flame on a container, a tank, a pipe or other container containing a flammable or explosive substance unless:

.1 Air Samples indicating that work can be made without danger has been taken; or

.2 Provisions to ensure the safety of the workers has been done.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 All sections of this specification.

1.2 REFERENCES

.1 Definitions:

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

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Prior to commencing construction activities or delivery of materials to site, provide Environmental Protection Plan for review and approval by Departmental Representative.

.3 Ensure Environmental Protection Plan includes comprehensive overview of known or potential environmental issues to be addressed during construction.

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

.5 Include in Environmental Protection Plan:

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

.2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.

.3 Names and qualifications of persons responsible for training site personnel.

.4 Descriptions of environmental protection personnel training program.

.5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

.6 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary

facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.

.7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Ensure plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff.

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

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

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

.11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.

.12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

.13 Waste Water Management Plan identifying methods and procedures for management 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.

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

.15 Pesticide treatment plan to be included and updated, as required.

1.4 FIRES

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

1.5 DRAINAGE

.1 Provide Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls provided. Ensure plan includes monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

.2 Provide temporary drainage and pumping required to keep excavations and site free from water.

.3 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.

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

1.6 SITE CLEARING AND PLANT PROTECTION

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

.2 Minimize stripping of topsoil and vegetation.

.3 Restrict tree removal to areas indicated or designated by Departmental Representative.

1.7 WORK ADJACENT TO WATERWAYS

.1 Not required.

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.

.1 Provide temporary enclosures where directed by Departmental Representative.

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

1.9 HISTORICAL/ARCHAEOLOGICAL CONTROL

.1 Not required.

1.10 NOTIFICATION

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

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

.1 Do not take action until after receipt of written approval by Departmental Representative.

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

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 CLEANING

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

.2 Not required.

.3 Not required.

.4 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All sections of this specification.

1.2 REFERENCES AND CODES

.1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.3 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: demolition – not applicable.

.2 PCB: Polychlorinated Biphenyl: – not applicable.

.3 Mould: stop work immediately when material resembling mould is encountered during construction work. Notify Departmental Representative.

1.4 BUILDING SMOKING ENVIRONMENT

.1 It is strictly forbidden to smoke on the site and around the perimeter of the property.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All section of this specification

1.2 REFERENCES

.1 Not applicable

1.3 INSPECTION

.1 Not applicable

.2 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.

.3 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.

.4 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.

.5 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.

1.4 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 Not applicable

.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 as certain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

1.5 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.

1.6 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.

1.7 REJECTED WORK

.1 Not applicable

.2 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 failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

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

.4 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

1.8 REPORTS

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

.2 Provide copies to subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.

1.9 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.

1.10 MOCK-UPS

.1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.

.2 Construct in locations acceptable to Departmental Representative

.3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 If requested, Departmental Representative will assist in preparing schedule fixing dates for preparation.

.6 Remove mock-up at conclusion of Work or when acceptable to Departmental Representative.

.7 Mock-ups can be used as a part of the project

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

1.11 MILL TESTS

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

1.12 EQUIPMENT AND SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

.2 Refer to mechanical Section for definitive requirements.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All sections of this specification.

1.2 REFERENCES

.1 Canadian Green Building Council (CaGBC)

.1 Not applicable

1.3 SUBMITTALS

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

.2 LEED Submittals:

.1 Not Applicable.

1.4 INSTALLATION AND REMOVAL

.1 Not Applicable.

1.5 DEWATERING

.1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.6 WATER SUPPLY

.1 Departmental Representative will provide continuous supply of potable water for construction use.

.2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.

1.7 TEMPORARY HEATING AND VENTILATION

.1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.

.2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.

.3 Provide temporary heat and ventilation in enclosed areas as required to:

.1 Facilitate progress of Work.

.2 Protect Work and products against dampness and cold.

.3 Prevent moisture condensation on surfaces.

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

.5 Provide adequate ventilation to meet health regulations for safe working environment.

.4 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.

.5 Ventilating:

.1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.

.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

.3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.

.4 Ventilate storage spaces containing hazardous or volatile materials.

.5 Ventilate temporary sanitary facilities.

.6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.6 Permanent heating system of building, to be used when available. Be responsible for damage to heating system if use is permitted.

.7 On completion of Work for which permanent heating system is used, replace filters, and replace bearing.

.8 Ensure Date of Substantial Performance and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by Departmental Representative.

.9 Departmental Representative will pay costs for temporary heat, when using permanent heating system.

.10 Maintain strict supervision of operation of temporary heating and ventilating equipment to:

.1 Conform with applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of services.

.4 Prevent damage to finishes.

.5 Vent direct-fired combustion units to outside.

.11 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.8 TEMPORARY POWER AND LIGHT

.1 Departmental Representative will pay for temporary power during construction for temporary lighting and operating of temporary staging area, to a maximum supply of 120/240V, 30A. Power will be supplied from Building #3. Connect to existing power supply in accordance with Canadian Electrical Code and provide meters and switching. Breakers & boxes provided for temporary power will be left in place and given to the CCS after completion of contract.

.2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

.3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Departmental Representative.

.4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.

.5 Maximum power supply of 600 V, 200 Amp. (Building #26), is available and will be provided for construction use at no cost current cost rates. Connect to existing power supply in accordance with Canadian Electrical Code and provide meters and switching. The cables must pass thru the existing underground network up to the construction site. Breakers & services provided for temporary power will be left in place and given to the CCS after completion of contract.

.6 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Departmental Representative provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

1.9 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for temporary telephone, fax or E-Mail, lines, and equipment necessary for own use and use of Departmental Representative.

1.10 FIRE PROTECTION

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

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All sections of this specification.

1.2 REFERENCES

.1 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.2 Canadian Standards Association (CSA International)

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

1.3 SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

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

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

.3 Indicate use of supplemental or other staging area.

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

.5 Remove from site all such work after use. Equipment must be evacuated every night

1.5 SCAFFOLDING

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

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

1.6 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.

1.7 ELEVATORS

.1 Project elevator not to be used by construction personnel and transporting of materials. Co-ordinate use with Departmental Representative.

.2 Provide protective coverings for finish surfaces of cars and entrances.

1.8 SITE STORAGE/LOADING

.1 Ensure that work is performed within the limits specified in the contract documents. Do not clutter the site unreasonably with materials and equipment.

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

1.9 CONSTRUCTION PARKING

.1 Parking will be permitted on site at hours and in location indicated by Department Representative. Vehicles must be parked outside the CSC perimeter.

1.10 SECURITY

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

1.11 OFFICES

.1 Provide site meeting office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings (16 people) 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 out of the institution's safety precinct. Direct location of these offices.

1.12 EQUIPMENT, TOOL AND MATERIALS STORAGE

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

1.13 SANITARY FACILITIES

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

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

1.14 CONSTRUCTION SIGNAGE

.1 Apart from the warning signs, no other sign or other sign may not be installed on site.

1.15 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide access and temporary relocated roads as necessary to maintain traffic.

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

.3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs

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

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

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

.7 Construct access and haul roads necessary.

.8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.

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

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

.11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.

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

.13 Provide snow removal during period of Work.

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

1.16 CLEAN-UP

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

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

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

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All sections of this specification.

1.2 REFERENCES

.1 Canadian General Standards Board (CGSB)

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

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

.2 Canadian Standards Association (CSA International)

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

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 HOARDING

.1 Not applicable

1.5 GUARD RAILS AND BARRICADES

.1 Provide and install guardrails and rigid security barriers around roofs and other areas where the slope exceeds 1.50 meters.

.2 Provide as required by governing authorities.

1.6 WEATHER ENCLOSURES

.1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.

.3 Design enclosures to withstand wind pressure and snow loading.

1.7 DUST TIGHT SCREENS

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

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

1.8 ACCESS TO SITE

.1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.9 PUBLIC TRAFFIC FLOW

.1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.10 FIRE ROUTES

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

1.11 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

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

.2 Be responsible for damage incurred.

1.12 PROTECTION OF BUILDING FINISHES

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

.2 Provide necessary screens, covers, and hoardings.

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

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

1.13 WASTE MANAGEMENT AND DISPOSAL

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All section of this specification.

1.2 REFERENCES

.1 Within text of each specifications section, reference may be made to reference standards. List of standards reference writing organizations is contained in Section.

.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.

1.3 QUALITY

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

.2 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.

1.4 AVAILABILITY

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

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

1.5 STORAGE, HANDLING AND PROTECTION

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

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

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

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

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

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

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

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

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

1.6 TRANSPORTATION

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

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

1.7 MANUFACTURER'S INSTRUCTIONS

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

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

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

1.8 QUALITY OF WORK

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

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

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

1.9 CO-ORDINATION

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

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

1.10 CONCEALMENT

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

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

1.11 REMEDIAL WORK

.1 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.

1.12 LOCATION OF FIXTURES

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

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

1.13 FASTENINGS

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

.2 Prevent electrolytic action between dissimilar metals and materials.

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

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

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

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

1.14 FASTENINGS - EQUIPMENT

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

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

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

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

1.15 PROTECTION OF WORK IN PROGRESS

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

1.16 EXISTING UTILITIES

.1 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 RELATED SECTIONS

.1 All sections of this specification.

1.2 SUBMITTALS

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

.2 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of elements of project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of operational elements.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Owner or separate contractor.

.3 Include in request:

- .1 Identification of project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Owner or separate contractor.
- .7 Written permission of affected separate contractor.
- .8 Date and time work will be executed.

1.3 MATERIALS

.1 Required for original installation.

.2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.4 PREPARATION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 EXECUTION

.1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.

.2 Fit several parts together, to integrate with other Work.

.3 Uncover Work to install ill-timed Work.

.4 Remove and replace defective and non-conforming Work.

.5 Remove samples of installed Work for testing.

.6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

.7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.8 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.9 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

.10 Restore work with new products in accordance with requirements of Contract Documents.

.11 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.12 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with fire stopping materials.

.13 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

.14 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.6 WASTE MANAGEMENT AND DISPOSAL

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution not Used

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 All section of this specification

1.2 PROJECT CLEANLINESS

.1 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.

.2 Clear snow and ice from access to building, bank/pile snow in designated areas only.

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

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

.5 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.6 Dispose of waste materials and debris off site.

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

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

.9 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

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

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

1.3 FINAL CLEANING

.1 Not applicable

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

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

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

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

.6 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.

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

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

.9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.

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

.11 Vacuum clean and dust building interiors, behind grilles, louvers and screens.

.12 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.

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

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

.15 Remove dirt and other disfiguration from exterior surfaces.

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

.17 Sweep and wash clean paved areas.

.18 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.

.19 Clean roofs, downspouts, and drainage systems.

.20 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.21 Remove snow and ice from access to building.

1.4 WASTE MANAGEMENT AND DISPOSAL

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

Part 2 Products

2.1 NOT USED

.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 Correctional Service Canada's Waste Management Plan and Goals.

.2 Accomplish maximum control of solid construction waste.

.3 Preserve environment and prevent pollution and environment damage.

1.2 RELATED SECTIONS

.1 All sections of this specification which procedures produce waste materials and waste.

1.3 REFERENCES

.1 Not applicable.

1.4 DEFINITIONS

.1 Class III: non-hazardous waste - construction renovation and demolition waste.

.2 Cost/Revenue Analysis Workplan (CRAW): based on information from WRW, and intended as financial tracking tool for determining economic status of waste management practices.

.3 Demolition Waste Audit (DWA): relates to actual waste generated from project.

.4 Inert Fill: inert waste - exclusively asphalt and concrete.

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

.6 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.

.7 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.

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

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

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

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

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

.11 Separate Condition: refers to waste sorted into individual types.

.12 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

.13 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. Refer to Schedule A.

.14 Waste Management Co-ordinator (WMC) : contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.

.15 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. Refer to Schedule B. WRW is based on information acquired from WA (Schedule A).

1.5 DOCUMENTS

.1 Maintain at job site, one copy of following documents:

.1 Waste Reduction Workplan.

.2 Material Source Separation Plan.

1.6 SUBMITTALS

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

.2 Prepare and submit following prior to project start-up:

.1 Submit (2) copies of completed Waste Reduction Workplan (WRW).

.2 Submit (2) copies of Materials Source Separation Program (MSSP) description.

.3 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.

.1 Failure to submit could result in hold back of final payment.

.2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled, co-mingled and separated off-site or disposed of.

.3 For each material reused, sold or recycled from project, include amount in tonnes or quantities by number, type and size of items and the destination.

.4 For each material land filled or incinerated from project, include amount in tonnes of material and identity of landfill, incinerator or transfer station.

1.7 WASTE AUDIT (WA)

.1 Not applicable

1.8 WASTE REDUCTION WORKPLAN (WRW)

.1 Prepare WRW prior to project start-up.

.2 WRW should include but not limited to:

- .1 Destination of materials listed.
- .2 Deconstruction/disassembly techniques and sequencing.
- .3 Schedule for deconstruction/disassembly.
- .4 Location.
- .5 Security.
- .6 Protection.
- .7 Clear labelling of storage areas.
- .8 Details on materials handling and removal procedures.
- .9 Quantities for materials to be salvaged for reuse or recycled and materials sent to landfill.

.3 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.

.4 Describe management of waste.

.5 Identify opportunities for reduction, reuse, and recycling of materials. Based on information acquired from WA.

.6 Post WRW or summary where workers at site are able to review content.

.7 Set realistic goals for waste reduction, recognize existing barriers and develop strategies to overcome these barriers.

.8 Monitor and report on waste reduction by documenting total volume and cost of actual waste removed from project.

1.9 DEMOLITION WASTE AUDIT (DWA)

.1 Not applicable.

1.10 COST/REVENUE ANALYSIS WORKPLAN (CRAW)

.1 Prepare CRAW: Schedule D.

1.11 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)

.1 Prepare MSSP and have ready for use prior to project start-up.

.2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.

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

.4 Provide containers to deposit reusable and recyclable materials.

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

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

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

.1 Transport to approved and authorized recycling facility to users of material for recycling.

.8 Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition.

.1 Ship materials to sites operating under Certificate of Approval or other site indicated by Department Representative.

.2 Materials must be immediately separated into required categories for reuse or recycling.

1.12 WASTE PROCESSING SITES

.1 Not applicable

1.13 STORAGE, HANDLING AND PROTECTION

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

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

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

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

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

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

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

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

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

.1 On-site source separation is recommended.

.2 Remove co-mingled materials to off-site processing facility for separation.

.3 Provide waybills for separated materials.

1.14 DISPOSAL OF WASTES

.1 Do not bury rubbish or waste materials.

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

.3 Keep records of construction waste including:

.1 Number and size of bins.
.2 Waste type of each bin.
.3 Total tonnage generated.
.4 Tonnage reused or recycled.
.5 Reused or recycled waste destination.

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

.5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

1.15 USE OF SITE AND FACILITIES

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

.2 Maintain security measures established by existing facility and provide temporary security measures approved by Departmental Representative.

1.16 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 SELECTIVE DEMOLITION

.1 See Engineers specifications.

3.2 APPLICATION

.1 Do Work in compliance with WRW.

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

3.3 CLEANING

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

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

3.4 DIVERSION OF MATERIALS

Not applicable

3.5 WASTE AUDIT (WA)

.1 Refer to Departmental Representative on the form of presentation of these items if required by the Departmental Representative.

3.6 WASTE REDUCTION WORKPLAN (WRW)

.1 Refer to Departmental Representative on the form of presentation of these items if required by the Departmental Representative.

3.7 DEMOLITION WASTE AUDIT (DWA)

.1 Refer to Departmental Representative on the form of presentation of these items if required by the Departmental Representative.

3.8 COST/REVENUE ANALYSIS WORKPLAN (CRAW)-

Not applicable.

3.9 CANADIAN GOVERNMENTAL DEPARTMENTS CHIEF RESPONSIBILITY FOR THE ENVIRONMENT

.1 Refer to Departmental Representative

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 All section of this specification.

1.2 REFERENCES

.1 Canadian Environmental Protection Act (CEPA)

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

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedures:

.1 Contractor's Inspection: Contractor 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 English that tasks have been performed as follows:

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

.2 Defects: corrected and deficiencies completed.

.3 Equipment and systems: tested, adjusted and balanced and fully operational.

.4 Certificates required by Fire Commissioner Utility companies: submitted.

.5 Operation of systems: demonstrated to Owner's personnel.

.6 Commissioning of mechanical systems: completed in accordance with common product requirement and copies of final Commissioning Report submitted to Departmental Representative

.7 Not applicable.

.8 Work: complete and ready for final inspection.

.4 Final Inspection:

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

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

1.4 FINAL CLEANING

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

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

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

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 CONTENTS

.1 Project files, samples and specifications. Equipment and devices. Specifications, materials, equipment and finishes and related information. Sheets and operating and maintenance manuals. Materials / replacement equipment, special tools and spare parts. Warranties and guarantees.

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Pre-warranty Meeting:

.1 Convene meeting one week prior to contract completion with contractor's representative and Departmental Representative. The purpose of the project meeting is to:

.1 Verify Project requirements.

.2 Review manufacturer's installation instructions and warranty requirements.

.2 Departmental Representative to establish communication procedures for:

.1 Notifying construction warranty defects.

.2 Determine priorities for type of defects.

.3 Determine reasonable response time.

.3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.

.4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Two (2) weeks prior to substantial completion, submit four (4) final copies of the operating and maintenance manuals to Departmental Representative as well as a copy on electronic media (USB, CD)

.3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.

.4 Provide evidence, if requested, for type, source and quality of products supplied.

1.4 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 On the cover of each binder, indicate the name of the document, ie "Project Folder" written in block letters, the name of the project as well as the table of contents.

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

.6 Provide separator tabs for each product and system written in block letters. Include a product description and list for all major pieces of equipment.

.7 The text must consist of printed data supplied by the manufacturer.

.8 Drawings: provide with reinforced punched binder tab.

.1 Bind in with text; fold larger drawings to size of text pages.

.9 Provide 1: 1 scale CAD files formatted in DWG & PDF on CD.

1.5 CONTENTS - PROJECT RECORD DOCUMENTS

.1 Table of Contents for Each Volume: provide title of project;

.1 Date of submission; names.

.2 Addresses and telephone numbers of Consultant and Contractor with name of responsible parties.

.3 Schedule of products and systems, indexed to content of volume.

.2 For each product or system:

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

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

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

.5 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

.6 Training: see section 01 79 00 Demonstration and training.

1.6 AS -BUILT DOCUMENTS AND SAMPLES

.1 Maintain, in addition to requirements in General Conditions, at site for Departmental 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 Departmental Representative.

1.7 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

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

.2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently with construction progress.

.1 Do not conceal Work until required information is recorded.

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

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 References to related shop drawings and modifications.

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

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.6 Other Documents: maintain manufacturer's certifications, required by individual specifications sections.

.7 Provide digital photos, if requested, for site records.

1.8 FINAL SURVEY

.1 Not applicable

1.9 EQUIPMENT AND SYSTEMS

.1 For each item of equipment and each system include description of unit or system, and component parts.

.1 Give function, normal operation characteristics and limiting conditions.

.2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.

.1 Include regulation, control, stopping, shut-down, and emergency instructions.

.2 Include summer, winter, and any special operating instructions.

.3 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.4 Provide servicing and lubrication schedule, and list of lubricants required.

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

.6 Include sequence of operation by controls manufacturer.

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

.8 Provide installed control diagrams by controls manufacturer.

.9 Provide Contractor’s co-ordination drawings, with installed colour coded piping diagrams.

.10 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

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

.12 Include test and balancing reports as specified in Section 01 45 00 - Quality Control.

.13 Additional requirements: as specified in individual specification sections.

1.10 MATERIALS AND FINISHES

.1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.

.1 Provide information for re-ordering custom manufactured products.

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

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

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

1.11 MAINTENANCE MATERIALS

.1 Spare Parts:

- .1 Provide spare parts, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items.
  - .1 Submit inventory listing to Departmental Representative.
  - .2 Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

.2 Extra Stock Materials:

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items.
  - .1 Submit inventory listing to Departmental Representative.
  - .2 Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

.3 Special Tools:

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items.
  - .1 Submit inventory listing to Departmental Representative.
  - .2 Include approved listings in Maintenance Manual.

1.12 DELIVERY, STORAGE AND HANDLING

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

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

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

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

.5 Remove and replace damaged products at own expense and for review by Departmental Representative.

1.13 WARRANTIES AND BONDS

.1 Develop warranty management plan to contain information relevant to Warranties.

.2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Departmental Representative approval.

.3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.

.4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.

.5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.

.6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

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

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

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

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

.5 Co-execute submittals when required.

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

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

.8 Conduct joint (4) month and (9) month warranty inspection, measured from time of acceptance, by Departmental Representative.

.9 Include information contained in warranty management plan as follows:

.1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.

.2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and commissioned systems such as fire protection, alarm systems, sprinkler systems, lightning protection systems.

.3 Provide list for each warranted equipment, item, feature of construction or system indicating:

.1 Name of item.
.2 Model and serial numbers.
.3 Location where installed.
.4 Name and phone numbers of manufacturers or suppliers.
.5 Names, addresses and telephone numbers of sources of spare parts.
.6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
.7 Cross-reference to warranty certificates as applicable.
.8 Starting point and duration of warranty period.
.9 Summary of maintenance procedures required to continue warranty in force.
.10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
.11 Organization, names and phone numbers of persons to call for warranty service.
.12 Typical response time and repair time expected for various warranted equipment.

.4 Contractor's plans for attendance at (4) and (9) month post-construction warranty inspections.
.5 Procedure and status of tagging of equipment covered by extended warranties.
.6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.10 Respond in timely manner to oral or written notification of required construction warranty repair work.

.11 Written verification to follow oral instructions.

.1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

1.14 WARRANTY TAGS

.1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Departmental Representative.

.2 Attach tags with copper wire and spray with waterproof silicone coating.

.3 Leave date of acceptance until project is accepted for occupancy.

.4 Indicate following information on tag:

.1 Type of product/material.
.2 Model number.
.3 Serial number.
.4 Contract number.
.5 Warranty period.
.6 Inspector's signature.

.7 Construction Contractor.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 All section of this specification.

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Demonstrate operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of final inspection.

.2 Owner: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed-upon times.

.3 Preparation:

.1 Verify conditions for demonstration and instructions comply with requirements.

.2 Verify designated personnel are present.

.3 Ensure equipment has been inspected and put into operation in accordance with electromechanical Sections corresponding.

.4 Ensure testing, adjusting, and balancing has been performed and equipment and systems are fully operational.

.4 Demonstration and Instructions:

.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at scheduled times, at the equipment location.

.2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.

.3 Review contents of manual in detail to explain aspects of operation and maintenance.

.4 Prepare and insert additional data in operations and maintenance manuals when needed during instructions.

.5 Time Allocated for Instructions: ensure amount of time required for instruction of each item of equipment or system as follows:

.1 Not applicable

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative approval.

.3 Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.

.4 Give time and date of each demonstration, with list of persons present.

.5 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

1.4 QUALITY ASSURANCE

.1 When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:

.1 Instruct Owner's personnel.

.2 Provide written report that demonstration and instructions have been completed.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 This section should be read together with all other documents part of this tender.

1.2 SCOPE OF WORK

.1 The Work described in this section includes all interior and exterior demolition work shown in the drawings and/or schedules and/or specifications and Work not specifically indicated but required to perform the Work shown in the drawings and/or schedules and/or specifications.

.2 The Contractor shall familiarize himself with the scope of work by visiting the sites and by consulting and comparing the project drawings with the existing drawings or demolition drawings and various details and consider the included requirements of this section.

.3 Work includes and is not limited to:

a. demolition and timely removal of the exterior wall of brick masonry;

b. opening and removing soffits;

c. other Work not listed but work required for the execution of the demolition indicated in the documents.

d. The work of this section also includes the work of locating services and coordinating with the Representative of the Ministry the cutting or removal or rerouting of the various service lines for the execution of the Work.

1.3 REFERENCES

.1 Last Edit:

a. CSA S350-FM1980, Code of Practice for Safety in Demolition of Structures.

b. Safety Code for construction (S-2.1, r.6).

c. National Building Code of Canada

d. National Fire Code of Canada.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures and 01 74 21 - Construction/Demolition Waste Management Disposal.

.2 Submit demolition drawings:

.1 Submit for review and approval by Departmental Representative, shoring and underpinning drawings stamped and signed by professional engineer registered or licensed in the Province of Quebec, Canada, showing proposed method.

1.5 SITE CONDITIONS

.1 Review "Designated Substance Report" and take precautions to protect environment.

.2 If material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.

.1 Proceed only after receipt of written instructions have been received from Departmental Representative.

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

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 EXAMINATION

.1 Inspect building and site with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.

.2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

.3 Notify and obtain approval of utility companies before starting demolition.

.4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.

.1 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.

.2 Immediately notify the Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

3.2 PREPARATION

.1 Temporary Erosion and Sedimentation Control:

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during demolition.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal after completion of demolition work..

.2 Protection of In-Place Conditions:

.1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features, and parts of building to remain in place. Provide bracing and shoring required.

.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.

.5 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirement].

.3 Demolition/Removal:

.1 Remove items as indicated. Removal of Pavements, Curbs and Gutters:

.1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by Departmental Representative.

.2 Protect adjacent joints and load transfer devices.

.3 Protect underlying or adjacent granular materials.

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

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

3.3 CLEANING

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

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

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

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

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

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

END

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 05 50 00 – Metal fabrications

1.2 REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CSA-A165 Series-04, Standards on Concrete Masonry Units.

.2 CSA A179-04, Mortar and Grout for Unit Masonry.

.3 CSA-A371-04, Masonry Construction for Buildings.

.2 International Masonry Industry All-Weather Council (IMIAC)

.1 Recommended Practices and Guide Specification for Hot and Cold Weather Masonry Construction.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Pre-installation meetings: conduct pre-installation meeting one week prior to commencing work of this Section to:

.1 Verify project requirements, including mock-up requirements.

.2 Verify substrate conditions.

.3 Co-ordinate products, installation methods and techniques.

.4 Sequence work of related sections.

.5 Co-ordinate with other building subtrades.

.6 Review manufacturer's installation instructions.

.7 Review masonry cutting operations, methods and tools and determine worker safety and protection from dust during cutting operations.

.8 Review warranty requirements.

1.4 ACTION SUBMITTALS

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

.2 Product Data:

.1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, limitations and colours.

.2 Provide two copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 29.06 - Health and Safety Requirements.

.3 Samples:

.1 Provide samples as follows:

.1 Two of each type of masonry unit specified, including special shapes.

.2 Two cured samples of mortar and grout, illustrating mortar colour and colour range, supplemented with specific requirements in Section 04 05 12 - Masonry Mortar and Grout.

.3 Two of each type of masonry accessory and flashing specified, supplemented by specific requirements in Section 04 05 23 - Masonry Accessories.

.4 Two of each type of masonry anchorage, reinforcement and connector proposed for use, supplemented by specific requirements in Section 04 05 19 - Masonry Anchorage and Reinforcing.

.5 Samples: used for testing and when accepted become standard for material used.

.4 Shop Drawings:

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

.2 Provide shop drawings detailing temporary bracing required, designed to resist wind pressure and lateral forces during installation.

1.5 INFORMATION SUBMITTALS

.1 Certificates: provide manufacturer's product certificates certifying materials comply with specified requirements.

.2 Test and Evaluation Reports:

.1 Test reports to certify compliance of masonry units and mortar ingredients with specified performance characteristics and physical properties.

.2 Provide data for masonry units, in addition to requirements set out in referenced CSA and ASTM Standards, indicating initial rates of absorption.

.3 Installer Instructions: provide manufacturer's installation instructions, including storage, handling, safety and cleaning.

.4 Manufacturer's Reports: provide written reports prepared by manufacturer's on-site personnel to include:

.1 Verification of compliance of work with Contract.

.2 Site visit reports providing detailed review of installation of work, and installed work.

1.6 CLOSEOUT SUBMITTALS

.1 Provide manufacturer's instructions for care, cleaning and maintenance of prefaced masonry units for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

.1 Provide manufacturer's instructions in accordance with Section 01 78 00 - Closeout Submittals covering maintenance requirements and parts catalogue, with cuts and identifying numbers.

1.8 QUALITY ASSURANCE

.1 Qualifications:

.1 Manufacturer: capable of providing field service representation during construction and approving application method.

.2 Installer: experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

.3 Masons: company or person specializing in masonry installations with 5 years documented experience with masonry work similar to this project.

.1 Masons employed on this project must demonstrate ability to reproduce mock-up standards.

.2 Mock-ups:

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

.2 Construct mock-up panel of exterior masonry wall construction 1200 x 1800 mm showing masonry colours and textures, use of reinforcement, ties, through-wall flashing, weep holes, jointing, coursing, mortar and workmanship.

.3 Mock-up used:

.1 To judge workmanship, substrate preparation, operation of equipment and material application.

.2 For testing to determine compliance with performance requirements. Perform following tests.

.1 For clay units, in addition to requirements set out in referenced CSA and ASTM Standards include data indicating initial rate of absorption.

.4 Construct mock-up where directed by Departmental Representative.

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

.6 When accepted by Departmental Representative, mock-up will demonstrate minimum standard for this work. Mock-up may not remain as part of finished work.

.7 Start work only upon receipt of written approval of mock-up by Departmental Representative.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Deliver materials in accordance with Section 01 61 00 - Common Product Requirements.

.2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.3 Storage and Handling Protection:

.1 Keep materials dry until use.

.2 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids. Nothing will be stored on site. Everything must be taken away from the site at the end of each day.

.3 Packaging Waste Management:

.1 Remove for reuse and return of pallets, crates, paddling, and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.10 SITE CONDITIONS

.1 Ambient Conditions: assemble and erect components when temperatures are above 5 degrees C.

.2 Weather Requirements: to CSA-A371

.3 Cold weather requirements:

.1 To CSA-A371 with following requirements.

.1 Maintain temperature of mortar between 5 degrees C and 50 degrees C until batch is used or becomes stable.

.2 Maintain ambient temperature of masonry work and constituent materials between 5 degrees C and 50 degrees C and protect site from windchill.

.3 Maintain temperature of masonry above 0 degrees C for minimum of 7 days, after mortar is installed.

.4 Preheat unheated wall sections in enclosure for minimum 72 hours above 10 degrees C, before applying mortar.

.2 Hot weather requirements:

.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.

.2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashings or other permanent construction.

.3 Spray mortar surface at intervals and keep moist for maximum of three days after installation.

Part 2 Products

2.1 MATERIALS

.1 Masonry materials are specified in subsequent Sections:

Part 3 Execution

3.1 INSTALLERS

.1 Experienced and qualified masons to carry out erection, assembly and installation of masonry work.

3.2 MANUFACTURER'S INSTRUCTIONS

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

3.3 EXAMINATION

.1 Examine conditions, substrates and work to receive work of this Section.

.2 Examine openings to receive masonry units. Verify opening size, location, and that opening is square and plumb, and ready to receive work of this Section.

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

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

.3 Verification of Conditions:

.1 Verify that:

.1 Substrate conditions which have been previously installed under other sections or contracts, are acceptable for product installation in accordance with manufacturer's instructions prior to installation of brick and concrete block.

.2 Field conditions are acceptable and are ready to receive work.

.3 Built-in items are in proper location, and ready for roughing into masonry work.

3.4 PREPARATION

.1 Surface Preparation: prepare surface in accordance with manufacturer's written recommendations.

.2 Establish and protect lines, levels, and coursing.

.3 Protect adjacent materials from damage and disfiguration.

3.5 INSTALLATION

.1 Do masonry work in accordance with CSA-A371 except where specified otherwise.

.2 Build masonry plumb, level, and true to line, with vertical joints in alignment, respecting construction tolerances permitted by CSA-A371.

.3 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

3.6 CONSTRUCTION

.1 Exposed masonry:

.1 Remove chipped, cracked, and otherwise damaged units, in accordance with CSA A-165, in exposed masonry and replace with undamaged units.

.2 Jointing:

.1 Allow joints to set just enough to remove excess water, then tool with round jointer to provide smooth, joints true to line, compressed, uniformly concave joints where concave joints are indicated.

.2 Allow joints to set just enough to remove excess water, then rake joints uniformly to 6 mm depth and compress with square tool to provide smooth, compressed, raked joints of uniform depth where raked joints are indicated.

.3 Strike flush joints concealed in walls and joints in walls to receive plaster, tile, insulation, or other applied material except paint or similar thin finish coating.

.3 Cutting:

.1 Cut out for electrical switches, outlet boxes, and other recessed or built-in objects.

.2 Make cuts straight, clean, and free from uneven edges.

.4 Building-In:

.1 Build in items required to be built into masonry.

.2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.

.3 Brace door jambs to maintain plumb. Fill spaces between jambs and masonry with mortar.

.5 Wetting of bricks:

.1 Except in cold weather, wet bricks having initial rate of absorption exceeding 1 g/minute/1000 mm^2: wet to uniform degree of saturation, 3 to 24 hours before laying, and do not lay until surface dry.

.2 Wet tops of walls built of bricks qualifying for wetting, when recommencing work on such walls.

.6 Support of loads:

.1 Refer to requirements on drawings.

.2 Install construction paper below voids to be filled with concrete; keep paper 25 mm back from faces of units.

.7 Provision for movement:

.1 Leave 3 mm space below shelf angles.

.2 Leave 6 mm space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.

.3 Built masonry to tie in with stabilizers, with provision for vertical movement.

.8 Loose steel lintels:

.1 Install loose steel lintels. Centre over opening width.

.9 Control joints:

.1 Construct continuous control joints.

.10 Movement joints:

.1 Build-in continuous movement joints.

.11 Interface with other work:

.1 Cut openings in existing work as indicated.

.2 Openings in walls: approved and reviewed by Departmental Representative.

.3 Make good existing work. Use materials to match existing.

3.7 SITE TOLERANCES

.1 Tolerances in notes to CSA-A371 apply.

3.8 FIELD QUALITY CONTROL

.1 Site Tests, Inspection:

.1 Perform field inspection and testing in accordance with Section 01 45 00 - Quality Control.

.2 Notify inspection agency minimum of 24 hours in advance of requirement for tests.

.2 Manufacturer's Services:

.1 Have manufacturer of products supplied under this Section review work involved in handling, installation/application, and protection of its products, and submit written reports in acceptable format to verify compliance of work with Contract.

.2 Manufacturer's field services: 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 Schedule site visits to review work as installation is about to begin.

.4 Schedule site visits to review work at stages listed:

.1 After delivery and storage of products, and when preparatory work on which work of this Section depends is complete, but before installation begins.

.2 Twice during progress of work at 25% and 60% complete.

.3 Upon completion of work, after cleaning is carried out.

.5 Obtain reports within three days of review and submit immediately to Departmental Representative.

3.9 CLEANING

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

.2 Progress Cleaning: in accordance with related masonry sections.

.3 Final Cleaning:

.1 No final cleaning since cleaning is done every night.

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

.1 Divert unused or damaged masonry units from landfill as specified in Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.10 PROTECTION

.1 Temporary Bracing:

.1 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

.2 Bracing approved by Departmental Representative.

.3 Brace masonry walls as necessary to resist wind pressure and lateral forces during construction.

.2 Moisture Protection:

.1 Keep masonry dry using waterproof, nonstaining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until completed and protected by flashing or other permanent construction.

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

.3 Air Temperature Protection: protect completed masonry as recommended in 1.10 SITE CONDITIONS.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CAN/CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.2 CAN/CSA A179-04, Mortar and Grout for Unit Masonry.

.3 CAN/CSA A371-04, Masonry Construction for Buildings.

.4 CAN/CSA-A3000-03, Cementitious Materials Compendium; CAN/CSA-A3002-03, Masonry and Mortar Cement.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Product Data:

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

.2 Provide manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.

.3 Provide two copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 29.06 - Health and Safety Requirements. Indicate VOC's mortar, grout, parging, colour additives and admixtures. Expressed as grams per litre (g/L).

.2 Samples:

.1 Samples: provide unit samples in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:

.1 Provide two size samples of mortar.

.2 Provide confirmation of source or product data sheet, prior to mixing or preparation of mortars, to Departmental Representative of:

.1 Aggregate: course aggregate and sand

.2 Cement.

.3 Lime.

.4 Colour pigment samples.

.3 Manufacturer's Instructions:

.1 Provide manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Test Reports: certified test reports including sand gradation tests in accordance with CAN/CSA A179 showing compliance with specified performance characteristics and physical properties, and in accordance with Section 04 05 00 - Common Work Results for Masonry supplemented as follows:

.1 Submit laboratory test reports.

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

.3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section.

.4 Mock-ups:

.1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control and requirements of Section 04 05 00 - Common Work Results for Masonry supplemented as follows:

.1 Construct mock-up sample panel of pointing.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store and handles masonry mortar and grout materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:

.1 Deliver pre-packaged, dry-blended mortar mix to project site in labelled plastic-lined bags each bearing name and address of manufacturer, production codes or batch numbers, and colour or formula numbers.

.2 Maintain mortar, grout and packaged materials clean, dry, and protected against dampness, freezing, traffic and contamination by foreign materials.

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

1.5 SITE CONDITIONS

.1 Ambient Conditions: maintain materials and surrounding air temperature to:

.1 Minimum 5 degrees C prior to, during, and 48 hours after completion of masonry work.

.2 Maximum 32 degrees C prior to, during, and 48 hours after completion of masonry work.

.2 Weather Requirements: CAN/CSA A371.

Part 2 Products

2.1 MATERIALS

.1 Use same brands of materials and source of aggregate for entire project.

.2 Cement:

.1 Portland Cement: to CAN/CSA-A3000, Type GU - General use hydraulic cement (Type 10), white colour.

.2 Masonry Cement: to CAN/CSA-A3002 and CAN/CSA A179, Type N.

.3 Aggregate: supplied by one supplier.

.1 Fine Aggregate: to CAN/CSA A179, clean white quartzite or silica sand.

.2 Course Aggregate: to CAN/CSA A179 .

.4 Water: clean and potable.

.5 Lime:

.1 Quick Lime: to CAN/CSA A179

.2 Hydrated Lime: to CAN/CSA A179

.6 Bonding Agent: latex type.

.7 Polymer Latex: organic polymer latex admixture of butadiene-styrene type non-emulsifiable bonding admixture.

2.2 COLOUR ADDITIVES

.1 Use colouring admixture not exceeding 10% of cement content by mass, or integrally coloured masonry cement, to produce coloured mortar to match approved sample. Admixtures to be approved prior to use. Use in accordance with the specific manufacturer's recommendations.

.2 Powder: inorganic mineral oxide pigment colour as selected.

2.3 ADMIXTURES

.1 Admixtures that will increase air entrainment are not permitted. Other additives may be used as approved in writing by the Departmental Representative.

2.4 MORTAR MIXES

.1 Mortar for exterior masonry above grade:

.1 Non-Loadbearing: N and S based on proportion specifications.

.2 Mortar for Parapet walls, chimneys, unprotected walls: type N and S based on proportion specifications, CAN/CSA A179.

.3 Pointing Mortar: CAN/CSA A179, Type N and O using property specification with maximum 2 percent ammonium stearate or calcium stearate per cement weight.

.4 Stain Resistant Pointing Mortar: one part Portland cement, 1/8 part hydrated lime, and two parts graded (80 mesh) aggregate, proportioned by volume. Add aluminum tristearate, calcium stearate, or ammonium stearate to 2 percent of Portland cement by weight.

.5 Parging mortar: to CAN/CSA A179.

2.5 MORTAR MIXING

.1 Use pre-blended, pre-coloured mortar prepackaged under controlled factory conditions. Ingredients batching limitations to be within 1% accuracy.

.2 Mix mortar ingredients in accordance with CAN/CSA A179 in quantities needed for immediate use.

.3 Maintain sand uniformly damp immediately before mixing process.

.4 Add mortar colour and admixtures in accordance with manufacturer's instructions. Provide uniformity of mix and colouration. Colour to match sample approved by the Departmental Representative.

.5 Do not use anti-freeze compounds including calcium chloride or chloride based compounds.

.6 Do not add air entraining admixture to mortar mix.

.7 Use a batch type mixer in accordance with CAN/CSA A179.

.8 Pointing mortar: prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour no more than 2 hours then remix with sufficient water to produce mortar of proper consistency for pointing.

.9 Re-temper mortar only within two hours of mixing, when water is lost by evaporation.

.10 Use mortar within 2 hours after mixing at temperatures of 32 degrees C, or 2-1/2 hours at temperatures under 10 degrees C.

2.6 GROUT MIXES

.1 Grout: Minimum compressive strength of 20 MPa at 28 days. Maximum aggregate size and grout slump: CAN/CSA A179.

2.7 GROUT MIXING

.1 Mix batched and delivered grout in accordance with CAN/CSA-A23.1 transit mixed.

.2 Mix grout ingredients in quantities needed for immediate use in accordance with CAN/CSA A179 fine grout.

.3 Add admixtures as approved by the Departmental Representative in accordance with manufacturer's instructions; mix uniformly.

.4 Do not use calcium chloride or chloride based admixtures.

2.8 MIX TESTS

.1 Testing Mortar Mix:

.1 Test mortar to requirements of Section 01 45 00 - Quality Control and in accordance with CAN/CSA A179, for proportion specification. Test prior to construction and during construction for:

.1 Compressive strength.

.2 Consistency.

.3 Mortar aggregate ratio.

.4 Sand/cement ratio.

.5 Water content and water/cement ratio.

.6 Air content.

.7 Splitting tensile strength.

.2 Testing Grout Mix:

.1 Test grout to requirements of Section 01 45 00 - Quality Control, and in accordance with CAN/CSA A179, for proportion specification. Test prior to construction and during construction for:

.1 Compressive strength.

.2 Sand/cement ratio.

.3 Water content and water/cement ratio.

.4 Slump.

Part 3 Execution

3.1 EXAMINATION

.1 Request inspection of spaces to be grouted.

3.2 PREPARATION

.1 Apply bonding agent to existing concrete surfaces.

.2 Plug clean-out holes with masonry units. Brace masonry for wet grout pressure.

3.3 MANUFACTURER'S INSTRUCTIONS

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

3.4 CONSTRUCTION

.1 Do masonry mortar and grout work in accordance with CAN/CSA A179 except where specified otherwise.

.2 Apply parging in uniform coating not less than 10 mm thick in total, where indicated.

3.5 MIXING

.1 All pointing mortar can be mixed using a regular paddle mixer. Only electric motor mixers are permissible. Mixers run on hydrocarbons are not permitted, due to fumes, mixing by hand must be pre-approved by the Departmental Representative.

.2 Clean all mixing boards and mechanical mixing machine between batches.

.3 Mortar must be weaker than the units it is binding.

.4 Contractor to appoint one individual to mix mortar, for duration of project. In the event that this individual must be changed, mortar mixing must cease until the new individual is trained, and mortar mix is tested.

3.6 MORTAR PLACEMENT

.1 Install mortar to manufacturer's instructions.

.2 Install mortar to requirements of CAN/CSA A179.

.3 Install mortar and grout to requirements of Section 04 05 00 – Common work results for masonry.

.4 Remove excess mortar from grout spaces.

3.7 GROUT PLACEMENT

.1 Install grout in accordance with manufacturer's instructions.

.2 Install grout in accordance with CAN/CSA A179.

.3 Work grout into masonry cores and cavities to eliminate voids.

.4 Do not install grout in lifts greater than 400 mm, without consolidating grout by rodding.

.5 Do not displace reinforcement while placing grout.

3.8 FIELD QUALITY CONTROL

.1 Site Tests, Inspection: in accordance with Section 04 05 00 - Common Work Results for Masonry supplemented as follows:

.1 Test and evaluate mortar prior to construction and during construction in accordance with CAN/CSA A179.

.2 Test and evaluate grout prior to construction and during construction to CAN/CSA A179; test in conjunction with masonry unit sections specified.

.2 Manufacturer's Field Services: in accordance with Section 04 05 00 - Common Work Results for Masonry.

3.9 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

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

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

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

3.10 PROTECTION OF COMPLETED WORK

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

.1 Mortar:

.1 Brick Masonry: colour as selected by Departmental Representative

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 04 05 00 – Common work results for masonry

.2 Section 04 05 12 – Masonry mortar and grout

.3 Section 04 05 19 – Masonry anchorage and reinforcing

.4 Section 04 21 13 – Brick masonry units

1.2 REFERENCES

.1 ASTM International Inc.

.1 ASTM D2240-05, Standard Test Method for Rubber Property - Durometer Hardness.

.2 Canadian Standards Association (CSA International)

.1 CAN/CSA A371-04, Masonry Construction for Buildings.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Provide manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.

.3 Shop Drawings:

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

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

.2 Shop drawings consist of flashing and installation details. Indicate sizes, spacing, location and quantities of fasteners.

.4 Samples:

.1 Provide masonry accessory samples in accordance with Section 01 33 00 - Submittal Procedures, supplemented as follows:

.1 Materials: two samples, illustrating colour and colour range. Include:

.1 Movement joint filler.

.2 Lap adhesive.

.3 Mechanical fasteners.

.4 Reglets.

.2 Two moisture control material samples, illustrating colour and colour range, size, and shape. Include:

.1 Weep hole vents.

.2 Mortar diverters.

.3 Grout screens.

.3 Two flashing material samples, illustrating colour and colour range, size, shape, and profile. Include as specified:

.1 Sheet metal flashings.

.2 Plastic and rubber flashings.

.5 Quality Assurance Submittals:

.1 Test reports: submit certified test reports in accordance with Section 04 05 00 - Common Work Results for Masonry:

.2 Certificates: submit in accordance with Section 04 05 00 - Common Work Results for Masonry.

.3 Manufacturer's Instructions: submit in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:

.1 Submit installation instructions for fillers, adhesives, reglets, brick vents, weeps, vents, diverters, screens and flashings.

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

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

.8 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section 04 05 00 - Common Work Results for Masonry.

1.4 FIELD MEASUREMENTS

.1 Make field measurements necessary to ensure proper fit of members.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store and handle masonry accessories in accordance with, Section 01 61 00 - Common Product Requirements supplemented as follows:

.1 Keep fillers and adhesives dry, protected against dampness, and freezing.

.2 Store packaged materials off ground and in accordance with manufacturer's written instructions.

.2 Packaging Waste Management:

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

Part 2 Products

2.1 MATERIALS

.1 Movement joint filler: purpose-made elastomer 85 durometer hardness to ASTM D2240 of size and shape indicated.

.1 Material type: closed cell neoprene.

.2 Lap adhesive: recommended by masonry flashing manufacturer.

.3 Mechanical fasteners: non-ferrous as recommended by flashing manufacturer to suit project requirements.

2.2 MOISTURE CONTROL

.1 Weep Hole Vents: purpose-made recycled polypropylene fibre filter, colour to match mortar and to be approved by the Departmental Representative.

.2 Mortar diverters: shaped and sized to suit cavity spaces.

.1 Cavity space size: as indicated on drawings.

.2 Manufactured from recycled plastic material.

.3 Grout Screens: 6 mm square monofilament screen is fabricated form high-strength, non-corrosive polypropylene polymers to isolate flow of grout in designated areas.

2.3 FLASHINGS

.1 Sheet metal: prefinished aluminum

.1 Thickness: 1.0mm.

.2 Finish: PVF_2 resin based finish, colour as selected by the Departmental Representative.

.2 Rubber Flashings:

.1 Rubberized asphalt: 1.6mm thick, self adhering.

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 INSTALLATION: MATERIALS

.1 Install continuous movement joint fillers in movement joints at locations indicated on drawings.

.2 Lap adhesive: apply adhesive to flashing lap joints.

.3 Mechanical fasteners: install fasteners to suit application and in accordance with manufacturer's written installation instructions.

.4 Reglets: install reglets at locations indicated on drawings.

.5 Brick vents: install brick vents at locations indicated on drawings.

3.3 INSTALLATION: MOISTURE CONTROL

.1 Install weep hole vents in vertical joints immediately over flashings, in exterior wythes of cavity wall and masonry veneer wall construction, at maximum horizontal spacing of 600 mm on centre.

.2 Mortar diverters: install purpose made diverters in cavities where indicated and as directed, size and shape to suit purpose and function.

.3 Grout screens: install purpose made diverters in cavities where indicated and as directed, size and shape to suit purpose and function.

3.4 INSTALLATION: FLASHINGS

.1 Build in flashings in masonry in accordance with CAN/CSA A371.

.1 Install flashings under exterior masonry bearing on foundation walls, slabs, shelf angles, and steel angles over openings, and at base of cavity wall and where cavity is interrupted by horizontal members or supports and as shown on drawings. Install flashings under weep hole courses and as indicated.

.2 In cavity walls and veneered walls, carry flashings from front edge of exterior masonry, under outer wythe, then up backing not less than 150 mm, and as follows:

.1 For concrete backing, insert or bond flashing into reglets.

.2 For wood frame backing, staple flashing to walls behind water resistive barrier, and lap joints.

.3 Lap joints 150 mm and seal with adhesive.

.2 Form flashing (end dams) at lintels, sills and wall ends to prevent water from travelling horizontally past flashing ends.

.3 Install vertical flashing where outer veneer returns at window or door jambs, to prevent contact of veneer with inner wall.

3.5 CLEANING

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

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

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

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 ASTM International Inc.

.1 ASTM C73-05, Standard Specification for Calcium Silicate Brick (Sand-Lime Brick).

.2 ASTM C216-07a, Standard Specification for, Facing Brick (Solid Masonry Units Made of Clay or Shale).

.2 Brick Industry Association (BIA)

.1 Technical Note No. 20-2006, Cleaning Brick Work.

.3 Canadian Standards Association (CSA International)

.1 CAN/CSA A82-06, Fired Masonry Brick Made From Clay or Shale).

.2 CAN/CSA-A165 Series-2004, CSA Standards on Concrete Masonry Units.

.3 CAN/CSA A371-04, Masonry Construction for Buildings.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Provide manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.

.3 Manufacturer's Instructions:

.1 Provide manufacturer's installation instructions in accordance with Section 04 05 00 - Common Work Results for Masonry.

.4 Samples:

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

1.3 QUALITY ASSURANCE SUBMITTALS

.1 Provide Certificates: in accordance with Section 04 05 00 - Common Work Results for Masonry.

.2 Test and Evaluation Reports: submit certified test reports in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:

.3 Pre-Installation Meetings: conduct pre-installation meeting in accordance with Section 04 05 00 - Common Work Results for Masonry to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

.4 Mock-ups:

.1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control and requirements of Section 04 05 00 - Common Work Results for Masonry supplemented as follows:

.1 Construct mock-up panel of exterior brick construction 1200 x 1800 mm.

.5 Delivery, Storage, and Handling:

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

.6 Packaging Waste Management:

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

1.4 SITE CONDITIONS

.1 Ambient Conditions: assemble and erect components only when temperature is above 5 degrees C.

Part 2 PRODUCTS

2.1 Products manufactured Units

.1 Brick veneer:

.1 Fired clay brick: to CAN/CSA A82.

.1 Type: FBX.

.2 Grade: SW.

.3 Size: match existing

.4 Colour and texture: match existing

.5 Hollow.

.2 Reinforcement:

.1 Reinforcement in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

.3 Connectors:

.1 Connectors in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing .

.4 Flashings:

.1 Flashing: in accordance with Section 04 05 23 - Masonry Accessories.

.5 Mortar Mixes:

.1 Mortar and mortar mixes in accordance with Section 04 05 12 - Masonry Mortar and Grout.

.6 Grout Mixes:

.1 Grout and grout mixes in accordance with Section 04 05 12 - Masonry Mortar and Grout.

.7 Cleaning Compounds:

.1 Compatible with substrate and acceptable to masonry manufacturer for use on products.

.2 Cleaning compounds compatible with brick masonry units and in accordance with manufacturer's written recommendations and instructions.

.8 Masonry sills

.1 Provide limestone sills in accordance with section 04 43 23 – Quarried stone veneer cladding, profile as indicated on the drawings.

Part 3 Execution

3.1 EXAMINATION

.1 Verify surfaces and conditions are ready to accept work of this Section.

3.2 PREPARATION

.1 Protect adjacent finished materials from damage due to masonry work.

3.3 APPLICATION

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

3.4 INSTALLATION

.1 Construction to conform to CAN/CSA A371.

.2 Bond: running stretch bond

.3 Coursing height: 200 mm for three bricks and three joints.

.4 Jointing: concave where exposed.

.1 Mixing and blending: mix units within each pallet and with other pallets to ensure uniform blend of colour and texture.

.2 Clean unglazed clay masonry as work progresses.

.3 Reinforcement:

.1 Install reinforcing in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

.4 Connectors:

.1 Install connectors in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing

.5 Flashings:

.1 Install flashings in accordance with Section 04 05 23 - Masonry Accessories.

.6 Mortar Placement:

.1 Place mortar in accordance with Section 04 05 12 - Masonry Mortar and Grout.

.7 Grout Placement:

.1 Place grout in accordance with Section 04 05 12 - Masonry Mortar and Grout.

.8 Repair/Restoration:

.1 Upon completion of masonry, fill holes and cracks, remove loose mortar and repair defective work.

.9 Field Quality Control:

.1 Site Tests, Inspection: in accordance with Section 04 05 00 - Common Work Results for Masonry

.2 Manufacturer's Field Services: in accordance with Section 04 05 00 - Common Work Results for Masonry.

.10 Tolerances:

.1 To CAN/CSA A371

3.5 CLEANING

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

.2 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.

.3 Clean unglazed clay masonry: mock up panel specified in Section 04 05 00 - Common Work Results for Masonry as directed below and leave for one week. If no harmful effects appear and after mortar has set and cured, protect windows, sills, doors, trim and other work, and clean brick masonry as follows.

.1 Remove large particles with wood paddles without damaging surface. Saturate masonry with clean water and flush off loose mortar and dirt.

.2 Scrub with solution of 25 mL trisodium phosphate and 25 mL household detergent dissolved in 1 L of clean water using stiff fibre brushes, then clean off immediately with clean water using hose. Alternatively, use proprietary compound recommended by brick masonry manufacturer in accordance with manufacturer's directions.

.3 Repeat cleaning process as often as necessary to remove mortar and other stains.

.4 Use acid solution treatment for difficult to clean masonry as described in Technical Note No.20 by the Brick Industry Association.

.4 Clean concrete brick masonry as work progresses.

.1 Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of brick and finally by brushing.

.5 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

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

3.6 PROTECTION

.1 Brace and protect brick masonry in accordance with Section 04 05 00 - Common Work Results for Masonry.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 05 51 29 – Metal stairs and ladders

1.2 REFERENCES

.1 ASTM International

.1 ASTM A53/A53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.2 ASTM A307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.2 CSA International

.1 CSA G40.20/G40.21-04(R2009), 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 CSA S16-09, Design of Steel Structures.

.4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).

.5 CSA W59-M03(R2008), Welded Steel Construction (Metal Arc Welding) Metric.

.3 Environmental Choice Program

.1 CCD-047-98(R2005), Architectural Surface Coatings.

.2 CCD-048-98(R2006), Surface Coatings - Recycled Water-borne.

.4 Green Seal Environmental Standards (GS)

.1 GS-11-2008, 2nd Edition, Paints and Coatings.

.5 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.6 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual - current edition.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for sections, plates, pipe, tubing and bolts and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.

.3 Shop Drawings:

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

.2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 QUALITY ASSURANCE

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

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

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

.2 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove for reuse and return of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

.1 Stainless steel sheets, bands, plates and flat bars: to ASTM A666, Type 304, AISI no. 4 finish, minimum 75% recycled content, minimum steel thickness 3.0 mm

.2 SS bolts, nuts and washers: stainless steel to ASTM F593, minimum 75% recycled content

.3 Steel sections and plates: to CSA-G40.21, grade 300W

.4 Aluminum alloy: extrusions to Aluminum Association Designation AA6063-T5, sheet and plate to AA5005 for anodized finishes, minimum 80% recycled content, brushed aluminum with designation AA-A41 clear anodized finish. Steel pipe: to ASTM A53/A53M, extra strong, black finish, minimum 30% recycled content

.5 Steel tubing: to CAN/CSA-G40.20/G40.21, Grade 400, 4.78 mm wall thickness, sizes as indicated

.6 Welding materials: to CSA W59

.7 Bolts and anchor bolts: to ASTM A307; corrosion resistant types to ASTM A325M, Type 3. Provide all anchoring devices including anchor clips, bar and strap anchors, expansion bolts and shields, and other devices designed to support and secure work.

.8 Galvanizing: hot dipped galvanizing with minimum zinc coating of 600 g/m2 to ASTM A123. All ferrous metal fabrication for exterior locations to be galvanized after fabrication.

.9 Shop coat primer: to CAN/CGSB-1.40M

.10 Galvanize touch-up primer: zinc rich, ready mix to CAN/CGSB-1.181

.11 Drilled adhesive anchors: injection adhesive anchor consisting of fast curing 2-part adhesive injected into drilled hole, followed by insertion of bolt, rod or reinforcing bar.

.12 Expansion anchors: stud type expansion anchor driven into drilled hole, expand when nut torques. Minimum size 10 x 90 mm

.13 Thread lock adhesive: general purpose for threaded fasteners requiring disassembly with standard hand tools, one component acrylic, medium strength, di-methacrylate ester adhesive for fasteners subjected to medium shock/vibration loads/medium levels of stress.

1. Breakaway torque: 20 Nm to ISO 10964

2. Prevail torque: 7 Nm to ISO 10964

3. Breakloose torque: 24 Nm to DIN 54454

4. Maximum prevail torque: 24 Nm to DIN 54454

.14 Security fasteners:

1. Provide security screws, security nuts, rivets, spanner screws or other equally secure approved devices for affixing various items, ie torx pin head, socked pin head, Phillips pin head, hex pin head or equivalent.

2. Spanner screws to have slots that require a special spanner tool to remove screws.

3. Round head screws not acceptable except at locations approved where material is not thick enough to permit counter-sinking

4. Standard screws not acceptable.

2.2 FABRICATION

.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 Use self-tapping shake-proof flat headed screws on items requiring assembly by screws or as indicated.

.3 Where possible, fit and shop assemble work, ready for erection.

.4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 FINISHES

.1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m^2 to CAN/CSA-G164.

.2 Shop coat primer: to CAN/CGSB 1.401

.3 Zinc primer: zinc rich, ready mix to CAN/CGSB 1.181

2.4 ISOLATION COATING

.1 Isolate aluminum from following components, by means of bituminous paint:

.1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.

.2 Concrete, mortar and masonry.

.3 Wood.

2.5 SHOP PAINTING

.1 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.

.2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.

.3 Clean surfaces to be field welded; do not paint.

2.6 ANGLE LINTELS

.1 Steel angles: galvanized, sizes indicated for openings. Provide 150 mm minimum bearing at ends.

.2 Weld or bolt back-to-back angles to profiles as indicated.

.3 Finish: shop painted.

2.7 PIPE RAILINGS

.1 Steel pipe: 42 mm nominal outside diameter, formed to shapes and sizes as indicated.

.2 Galvanize exterior and interior pipe railings after fabrication

Part 3 Execution

3.1 EXAMINATION

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

.1 Visually inspect substrate in presence of Departmental Representative.

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

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

3.2 ERECTION

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 Provide suitable means of anchorage acceptable to Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

.4 Exposed fastening devices to match finish and be compatible with material through which they pass.

.5 Supply components for work by other trades in accordance with shop drawings and schedule.

.6 Make field connections with bolts to CSA S16 or Weld field connection.

.7 Deliver items over for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.

.8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces with primer after completion of installation

3.3 PIPE RAILINGS

.1 Install pipe railings to stairs as indicated.

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

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

3.5 PROTECTION

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

.2 Repair damage to adjacent materials caused by metal fabrications installation.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 05 50 00 – Metal fabrications

.2 Section 06 10 00 – Rough carpentry

1.2 REFERENCES

.1 American National Standards Institute/National Association of Architectural Metal Manufacturers (ANSI/NAAMM)

.1 ANSI/NAAMM MBG 531-00, Metal Bar Grating Manual.

.2 ASTM International

.1 ASTM A53/A53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.2 ASTM A307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.3 ASTM A325M-09, Standard Specification for Structural Bolts, Steel, Heat Treated, 830 MPa Minimum Tensile Strength .

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.

.2 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.

.4 CSA International

.1 CSA G40.20/G40.21-04(R2009), 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 CSA W59-03(R2008), Welded Steel Construction (Metal Arc Welding).

.5 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.6 National Association of Architectural Metal Manufactures (NAAMM)

.1 AMP 510-92, Metal Stair Manual.

.7 The Society for Protective Coatings (SSPC)

.1 Systems and Specifications Manual, Volume 2, 2008 Edition.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

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

.3 Shop Drawings:

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

.2 Indicate construction details, sizes of steel sections and thickness of steel sheet.

1.4 QUALITY ASSURANCE

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

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

1.5 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 in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect stairs and ladders from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

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

Part 2 Products

2.1 SYSTEM DESCRIPTION

.1 Design Requirements:

.1 Railings and metal supports and any assemblies must be designed to withstand dynamic loads to which they may be subjected in vertical and horizontal directions in accordance with the requirements of the National Building Code (NBC).

.2 Details of design and construction shall conform to the requirements of Metal Stairs Manual of NAAMM.

2.2 MATERIALS

.1 Steel sections: to CSA G40.20/G40.21, grade 300 W.

.2 Steel pipe: to ASTM A53/A53M, standard weight, schedule 40 seamless, black.

.3 Stainless steel tubing: to ASTM A269, grade 302, commercial quality, seamless with finish AISI # 4

.4 Steel tube: round, dimensions according to indications.

.5 Welding materials: to CSA W59.

.6 Bolts: to ASTM A307.

.7 High strength bolts: to ASTM A325M.

.8 Chemical anchor for brick masonry HIT-HY 70 from Hilti. Rod and screen included

.9 Stainless steel linear barbed wire, gauge 12

.10 Stainless steel barbed wire, 400 mm diameter, Concertina Razor Wire. Acceptable product: Maze from Razor Ribbon or approved equivalent.

.11 Intermediate cranked top 3 ½ inch – 45 degree aluminum

2.3 ASSEMBLY

.1 Weld connections where possible, otherwise bolt connections. Countersink exposed fastenings, cut off bolts flush with nuts. Make exposed connections of same material, colour and finish as base material on which they occur.

.2 Accurately form connections with exposed faces flush:

.1 Make mitres and joints tight.

.3 Grind or file exposed welds and steel sections smooth.

2.4 PIPE/TUBING GUARDRAILS

.1 Construct balusters and handrails from steel pipe as indicated on the drawings

.2 Cap and weld exposed ends of balusters and handrails.

.3 Pickets: 12,5 x 12,5 mm bar at 100 mm on centre.

.4 Railings and balusters must be welded to plates anchors as indicated.

2.5 FINISHES

.1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m^2 to CAN/CSA-G164.

Part 3 Execution

3.1 EXAMINATION

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

.1 Visually inspect substrate in presence of Departmental Representative.

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

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

3.2 CLEANING

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

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

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

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

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

.4 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.

.5 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.3 PROTECTION

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

.2 Repair damage to adjacent materials caused by metal stairs and ladders installation.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 05 51 29 Metal stairs and ladders

.2 Section 07 21 16 Blanket insulation

1.2 REFERENCES

.1 Canadian Standards Association (CSA)
- .1 CSA B111-1974, Wire Nails, Spikes and Staples.
- .2 CAN/CSA-G164-M92 Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CSA O121-M1978, Douglas Fir Plywood.
- .4 CAN/CSA-O141-91, Softwood Lumber.
- .5 CSA O151-M1978, Canadian Softwood Plywood.
- .6 CAN/CSA-O325.0-92, Construction Sheathing.

.2 2 National Lumber Grades Authority (NLGA)
- .1 Standard Grading Rules for Canadian Lumber 1991.

1.3 QUALITY CONTROL

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

.3 Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.

Part 2 Products

2.1 LUMBER MATERIAL

.1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
- .1 CAN/CSA-O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.

.2 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers.
- .1 Board sizes: "Standard" or better grade.
- .2 Dimension sizes: "Standard" light framing or better grade.
- .3 Post : "Standard" or better grade.

2.2 PLYWOOD BOARD

.1 Douglas fir plywood (DFP): to CSA O121, standard construction

.2 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.3 Plywood, OSB and wood based composite panels: to CAN/CSA-O323.

2.3 LIGHT CEMENT BOARD

.1 Made of Portland cement, sand, expanded polystyrene beads, with a fully embedded alkali resistant glass fibre mesh facing; ½ thick x width and length as indicated on drawings
- .1 Product: PermaBase® by UNIFIX Inc or approved equal.

2.4 ACCESSORIES

.1 Fastening devices:
- .1 Nails, spikes and staples: to CSA B111.
- .2 Bolts: 12.5 mm (½") diameter unless indicated otherwise, complete with nuts and washers.
- .3 Vis :
  - .1 Combined wood and metal screws to penetrate a minimum of 1mm metal deck tickness: #12-14, stainless steel, longer by 15mm (5/8") minimum than the tickness of steel sheet or metal deck to drill.
  - .2 Light cement obard : zinc protective coated; self-drilling #8-16, 1-1/4" or 1-5/8" long.
- .4 Other fastners : toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.

.2 Auto-adhesive tape on plywood panels joints, compatible with water repellent preservative:
- .1 100 -150 mm (4" - 6") large, covering joints between panels as between panels and windows or doors frames and bridging with the interior vapor barrier at walls openings; Wall Seam Tape auto-adhesive, 30 mils tick, by Perm-A-Barrier or alternative approved.

2.5 WOOD PRESERVATIVE

.1 Pressure-treated wood product :
- .1 Wood impregnation to a net retention of 3,84 kg/m.cu. fo wood for above ground use and 6,40 kg/m.cu. of wood for ground contact; soft green color.
- .2 Product : ProNature C.A.Q. (Alkalin Copper Quaternary) by Goodfellow or approved equal.

.2 End-cut preservative to cuts and holes to protect exposed untreated wood:
- .1 Waterproof solution, including 2% of Naphtenat Zinc, soft green color; apply two (2) coats;
- .2 Product : preservative END COAT by Goodfellow or approved equal.

2.6 FIRE-RETARDANT TREATED WOOD PRESERVATIVE (FIRE-RESISTANT SEPARATIONS OR ASSEMBLY)

.1 Pressure treated Douglas fir plywood (DFP) construction CSA 080-M1.20 et 1.27, ULC -- S102 and kiln-dried to 15% maximum moisture content .
- .1 Product : D-BLAZE distributed by Goodfellow or approved equal..

Part 3 Execution

3.1 WOOD TREATMENT WORKS

.1 Before installation, treat with wood preservative surfaces of material to be installed in unheated locations and exposed to rain and humidity, and that have been drilled or sawed on site.

.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.

.4 Treat all wood elements of parapets and roof deck, all wood inside the cavity walls, exposed or not to bad weather (un-protected by a waterproofing membrane).

3.2 INSTALLATION - GENERAL

.1 Comply with requirements of NBC, supplemented by the following paragraphs.

.2 Install furring and blocking:
- .1 To space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding and other work as required.
- .2 Align and plumb faces of furring and blocking to tolerance of 1:600.

.4 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.5 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using hot dipped galvanized fasteners.

.6 Install temporary partions and clousures required throughtout work duration : lumber and plywood.

.6 Install wood backing, dressed, tapered and recessed slightly below top surface of roof insulation for roof hopper.

.7 Mechanically fixed plywood and cement boards:
- .1 Screw the panels on metal deck, 400 mm (16") oc., both directions.
- .2 Screw on metal frame and other supporting material at 300 mm (12") oc vertically and on each post of metal frame and openings.

.9 Tape all panels and parts of walls panels or parapets joints, in such a manner to maintain the air barrier continuity obtained by the plywood.

3.3 ASSEMBLING

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

3.4 SUPPORTING PANELS FOR ELECTIRCAL PANELS

.1 Provide electrical equipment backboards for mounting electrical equipment as indicated. Use 1220 x 2440 x 19 mm thick fire-resistant plywood on vertical wood stiles 38 mm x 89 mm at 600 mm c/c.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 06 10 00 – Rough carpentry

1.2 REFERENCES

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

.1 ASTM C553-02, Specification for Mineral Fibre Blanket Thermal Insulation for Commercial and Industrial Applications.

.2 ASTM C665-01e1, Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

.3 ASTM C1320-05, Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.

.2 Canadian Standards Association (CSA International)

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

.3 Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S702-1997, Standard for Mineral Fibre Insulation.

1.3 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.

.2 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

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

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

.3 Convene pre-installation meeting one week prior to beginning work of this Section.

.1 Verify project requirements.

.2 Review installation and substrate conditions.

.3 Co-ordinate with other building sub-trades.

.4 Review manufacturer's installation instructions and warranty requirements.

.4 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.5 WASTE MANAGEMENT AND DISPOSAL

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

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.

Part 2 Products

2.1 INSULATION

.1 Batt and blanket mineral fibre: to CAN/ULC S702

.1 Unfaced

.2 Thickness: as indicated.

.3 Sound attenuation batts to ASTM C665, Type 1, CAN/ULC S702.2

1. Sound attenuation fire batt Insulation, self-supporting semi-rigid batts, to fit interior wall stud cavity, manufactured from basaltic rock with a melting point in excess of 1093°C
2. Surface burning characteristics: flame spread 5, smoke develop 0, when tested in accordance with CAN4-S102, ASTM E-84 and UL723.
3. Material listed as non-combustible by ULC and ULI; tested in accordance with CAN4-S114 and ASTM E-136

2.2 ACCESSORIES

.1 Nails: galvanized steel, length to suit insulation plus 25 mm, to CSA B111.

.2 Staples: 12 mm minimum leg.

.3 Tape: as recommended by manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 INSULATION INSTALLATION

.1 Install insulation to maintain continuity of thermal protection to building elements and spaces.

.2 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.

.3 Do not compress insulation to fit into spaces.

.4 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures.

.5 Do not enclose insulation until it has been inspected and approved by Departmental Representative.

3.3 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Two components spray in urethane foam insulation on the outer surface of the back wall of exterior envelop, in the roof spaces and the floor spaces.

.2 One component spray in urethane foam insulation, low expansion, to seal perimeter joints of exterior openings and any small cavities within exterior envelop.

1.2 RELATED SECTIONS

.1 Section 06 10 00 - CARPENTRY

1.3 REFERENCES

.1 Canadian Urethane Foam Contractors' Association (CUFCA)/Association canadienne des entrepreneurs en mousse de polyuréthane

.2 Underwriters' Laboratories of Canada (ULC)

- .1 CAN/ULC-S101-1989, Fire Endurance Tests of Building Construction and Materials.
- .2 CAN/ULC-S102-1988(R2000), Surface Burning Characteristics of Building Materials and Assemblies.
- .3 CAN/ULC-S705.1-01, Standard for Thermal Insulation Spray Applied Rigid Foam, Medium Density, Material Specification.
- .4 CAN/ULC-S705.2-02, Standard for Thermal Insulation Spray Applied Rigid Foam, Medium Density, Installer's Responsibilities-Specification.

1.4 TEST REPORTS

.1 Submit test reports, verifying qualities of insulation meet or exceed requirements of this specification, in accordance with Section 01450 - Quality Control.

.2 Submit test reports for fire endurance of constructions and materias and for surface burning characteristics of construction materials and connections, in accordance with CAN/ULC-S101 and CAN/ULC-S102 respectively.

1.5 QUALITY ASSURANCE

.1 Applicators to conform to CUFCA Quality Assurance Program.

1.6 MOCK-UP

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

.2 Construct mock-up 10 m.ca. minimum, of spray in place urethane foam insulation including one inside wall corner and one outside wall corner, and underneath steel deck.and wood deck. Mock-up may be part of finished work.

.3 Allow 24 hours for inspection of mock-up by architect before proceeding with waterproofing work.

1.7 SAFETY REQUIREMENTS

.1 Protect workers as recommended by CAN/ULC-S705.2 and manufacturer's recommendations.
- .1 Workers must wear gloves and respirators when applying foam insulation.
- .1 Workers must not eat, drink or smoke while applying foam insulation.

1.8 PROTECTION

.1 Ventilate area in accordance with Section 01 61 00 Products Requirements. Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during and 24 hour after application to maintain non-toxic, unpolluted, safe working conditions.

.2 Provide temporary enclosures to prevent spray and noxious vapours from contaminating air beyond application area.

.3 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.

1.9 ENVIRONMENTAL REQUIREMENTS

.1 Apply insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.

Part 2 Products

2.1 MATERIALS

.1 Spray in urethane foam insulation **:**
- .1 2.2 lb/f^3. (35 kg/m^3) minimum density;
- .2 Thermal resistance for 1" (25mm) thick, after 90 days and 50% Relative Humidity :
  - .1 R5.96 (RSI 1.05) to CAN/ULC-S705.1.
- .3 Air-barrier (ASTM E283 tests @ 75 Pa) : 0.000 297 pcf / min/ psf. (0.00014 L/s/m^2).
- .4 Vapor permeability :
  - .1 ASTM E 96 (foam core) : 86.6 ng/Pa.s.m.ca.). (1.5 PERMS)
  - .2 CNRC # A-3136.1 (as a system) :
    - .1 1" (25 mm) sprayed on concrete blocks : 0.64 PERMS (36.4 ng/Pa.s.m.ca.)
    - .2 1 ½" (38 mm) sprayed on gypsum : 0.98 PERMS (52.9 ng/Pa.s.m.ca L/s/m.ca.).
- .5 Compressive strength : 69 KPa to ASTM D1621
- .6 Product : Airrmetic 0223 by Demilec Inc.ou approved equal

.2 Low expansion one component urethane foam (when contained on three sides) which volume is 6 ft^3 or less.
- .1 22-25 kg/m^3 minimum density;
- .2 Thermal resistance for 1" (25mm) thick, after 90 days and 50% Relative Humidity
  - .1 R5.0 (RSI 0.88) to CAN/ULC-S705.1
- .3 Air-barrier (ASTM E283 tests @ 75 Pa) : 0.000 297 pcf / min/ psf L/s/m.ca.).
- 4 Compressive strength : 69 KPa to ASTM D1621 {±2}
- .5 Ambient humidity curing.
- .6 Product : R SEAL by Demilec Inc. or approved equal.

.3 Primers: in accordance with manufacturer's recommendations for surface conditions.

.4 Adhesive:
.1 To horizontal sprayed insulation underneath horizontal surfaces (ex : decking, etc. : high performance contact adhesive , solids by volume high, and low viscosity;
.2 Product : LSC 517 by Lepage or approved equal.

Part 3 Execution

3.1 LOCALIZATION

.1 Two components insulation :
.1 Above, under and around steel profiles and decking as thermal break passing through the exterior envelop.

.2 On component insulation
.1 Into and around different elements put in exterior walls or passing trough (ex : doors or windows frames), to insure continuity of the envelop thermal resistance.

3.2 APPLICATION

.1 General : Apply insulation to clean surfaces in accordance with CAN/ULC-S705.2 and manufacturer's printed instructions. Use primer where recommended by manufacturer.

.2 Horizontal supports (steel decks underside and others) : spray in the insulation on horizontal surfaces once adhesive applied and dry to manufacturer requirements.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 04 05 00 – Common work results for masonry

.2 06 10 00 – Rough carpentry

1.2 REFERENCES

.1 ASTM International

.1 ASTM D882, Test method for tensile properties of thin plastic sheeting

.2 ASTM D1117, Standard guide for evaluating non-woven fabrics

.3 ASTM E84, Test method for surface burning characteristics of building materials

.4 ASTM E96, Test method for water vapor transmission of materials

.5 ASTM E2357, Standard test method for determining air leakage of air barrier assemblies

1.3 SUBMITTALS

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

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include:

.1 Product characteristics.

.2 Performance criteria.

.3 Limitations.

.3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS).

.4 Quality assurance submittals:

.1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.2 Instructions: submit manufacturer's installation instructions and comply with written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

1.4 QUALITY ASSURANCE

.1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Waste Management and Disposal:

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

.2 Deliver air barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.

.3 Store weather barrier materials as recommended by weather barrier manufacturer

Part 2 Products

2.1 SHEET AIR BARRIER

.1 Non-woven, non-perforated air barrier

.1 Air penetration: 0.005 L/sm^2 at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677 = 0.2 L/sm^2 at 75 Pa, when tested in accordance with ASTM E2357.

.2 Water vapor transmission: 1600 mg/sm^{2}Pa

.3 Basis weight: Minimum 0.8 g/m^2

.4 Tensile strength: Minimum 4.3/3.95 n/m when tested in accordance with ASTM D882, method A

.5 Surface burning characteristics: Class A, when tested in accordance with ASTM E84. Flame spread: 10. Smoke development: 10

2.2 ACCESSORIES

.1 Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by air barrier manufacturer, 50 mm wide for lap joints and perimeter seals, 25 mm wide elsewhere.

.2 Sealant: compatible with air barrier materials, recommended by air barrier manufacturer.

.3 Staples: minimum 15 mm leg with 25 mm plastic cap.

.4 Flexible membrane flashing for window openings and penetrations recommended by manufacturer.

.5 Through-wall flashing at changes in direction and elevation and at transitions between different assemblies.

Part 3 Execution

3.1 EXAMINATION

.1 Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories.

3.2 INSTALLATION

.1 Install air barrier flashings at openings, through flashings, seams and sealants in accordance with the manufacturer's written instructions.

.2 Ensure services are installed and inspected prior to installation of barrier as recommended by manufacturer.

.3 Install air barrier on cold side of exterior wall prior to installation of brick veneer to form continuous retarder.

.4 Use sheets of largest practical size to minimize joints.

.5 Inspect for continuity. Repair punctures and tears with sealing tape before work is concealed.

.6 Install air barrier prior to the installation of windows and doors

3.3 CLEANING

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

.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 06 10 00 – Rough carpentry

.2 Section 07 62 00 – Metal flashing and trim

1.2 REFERENCES

.1 ASTM International Inc.

.1 ASTM D41-05, Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

.2 ASTM D312-00(2006), Standard Specification for Asphalt Used in Roofing.

.3 ASTM D6162-00a, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fibre Reinforcements.

.4 ASTM D6163-00e1, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fibre Reinforcements.

.5 ASTM D6164-05, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

.2 Canadian General Standards Board (CGSB)

.1 CGSB 37-GP-9Ma-83, Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing.

.2 CGSB 37-GP-56M-80b(A1985), Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.

.3 CAN/CGSB-51.33-M89, Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.3 Canadian Roofing Contractors Association (CRCA)

.1 CRCA Roofing Specifications Manual-1997.

.4 Canadian Standards Association (CSA International)

.1 CSA A123.21-04, Standard Test Method for the Dynamic Wind Uplift Resistance of Mechanically Attached Membrane-Roofing Systems

.2 CSA-A123.4-04, Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.

.3 CSA A231.1-06, Precast Concrete Paving Slabs.

.4 CSA O151-04, Canadian Softwood Plywood.

.5 Factory Mutual (FM Global)

.1 FM Approvals - Roofing Products.

.6 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.7 Underwriters Laboratories' of Canada (ULC)

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

.2 CAN/ULC-S704-03, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Convene pre-installation meeting one week prior to beginning waterproofing Work, with roofing contractor's representative and Departmental Representative to:

.1 Verify project requirements.

.2 Review installation and substrate conditions.

.3 Co-ordination with other building subtrades.

.4 Review manufacturer's installation instructions and warranty requirements.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Provide two copies of most recent technical roofing components data sheets describing materials' physical properties and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Provide two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements and 01 35 43 - Environmental Procedures, and indicate VOC content for:

.1 Primers.

.2 Asphalt.

.3 Sealers.

.4 Filter fabric.

.3 Provide shop drawings:

.1 Indicate flashing, control joints and tapered insulation details.

.2 Provide layout for tapered insulation.

.4 Manufacturer's Certificate: certify that products meet or exceed specified requirements.

.5 Test and Evaluation Reports: submit laboratory test reports certifying compliance with specification requirements.

.6 Manufacturer's Installation Instructions: indicate special precautions required for seaming the membrane.

.7 Manufacturer's field report: in accordance with Section 01 45 00 - Quality Control.

.8 Reports: indicate procedures followed ambient temperatures and wind velocity during application.

1.5 QUALITY ASSURANCE

.1 Installer qualifications: company or person specializing in application of modified bituminous roofing systems with 5 years documented experience approved by manufacturer.

1.6 FIRE PROTECTION

.1 Fire Extinguishers:

.1 Maintain one cartridge operated type or stored pressure rechargeable type with hose and shut-off nozzle,

.2 ULC labelled for A, B and C class protection.

.3 Size 9 kg on roof per torch applicator, within 6 m of torch applicator.

.2 Maintain fire watch for 2 hours after each day's roofing operations cease.

1.7 DELIVERY, STORAGE, AND HANDLING

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

.2 Storage and Handling Requirements:

.1 Safety: comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of asphalt, sealing compounds, primers and caulking materials.

.2 Provide and maintain dry, off-ground weatherproof storage.

.3 Store rolls of felt and membrane in upright position. Store membrane rolls with salvage edge up.

.4 Remove only in quantities required for same day use.

.5 Place plywood runways over completed Work to enable movement of material and other traffic.

.6 Store sealants at +5 degrees C minimum.

.7 Store insulation protected from daylight and weather and deleterious materials.

.3 Packaging Waste Management: remove for reuse and return of pallets, crates, paddling and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

.2 Fold up metal banding, flatten and place in designated area for recycling.

1.8 FIELD CONDITIONS

.1 Ambient Conditions

.1 Do not install roofing when temperature remains below -5 degrees C for torch application.

.2 Minimum temperature for solvent-based adhesive is -5 degrees C.

.2 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.9 WARRANTY

.1 For Work of this Section 07 52 00 - Modified Bituminous Membrane Roofing, including insulation, installation and metal flashing, 12 months warranty period is extended to 120 months.

Part 2 Products

2.1 PERFORMANCE CRITERIA

.1 Compatibility between components of roofing system is essential. Provide written declaration to Departmental Representative stating that materials and components, as assembled in system, meet this requirement.

.2 Roofing System: to CSA A123.21 for wind uplift resistance.

.3 Membranes:

.1 Modified bitumen membrane:

.1 Primer : as per manufacturer recommendations for the surface where applied.

.2 Underlayment for curbs and parapets: Non-woven polyester reinforced sealing membrane of 180 g / m2, a thermofusible bitumen product of a mixture of SBS modified bitumen and SBS thermoplastic polymer and coated with a plastic film on the upper and lower faces, exclusively torch welded.

.1 Physical Properties:

.1 Thickness: 3mm minimum

.2 Traction resistance: 1060 N / 5 cm minimum longitudinally and 785 N / 5 cm minimum transversally, in conformance with: CAN/ONGC 37.56.

.2 Acceptable products: SOPRALENE FLAM 180 by SOPREMA, MODIFIEDPLUS NP180 P/P by BAKOR, or approved equivalent.

.4 Finishing layer for the main parts, curbs and parapets: non-woven polyester reinforced sealing membrane of 250 g / m2, a thermofusible bitumen product of a mixture of SBS modified bitumen and SBS thermoplastic polymer and coated with coloured granules on the upper face and a plastic film on the lower face, exclusively torch welded.

.1 Physical Properties:

.1 Thickness: 4mm minimum

.2 Traction resistance: 1450 N / 5 cm minimum longitudinally and 1090 N / 5 cm minimum transversally, in conformance with: CAN/ONGC 37.56.

.3 Colour of granules: Grey

.2 Acceptable products: SOPRALENE FLAM 250 by SOPREMA, MODIFIEDPLUS NP250 P/P by BAKOR, or approved equivalent.

.3

.5 Sealants:

.1 Waterproof sealant: Rubber-bitumen based, in conformance with CAN/ONGC-37.29-M

.2 Plastic sealant: Rubber-bitumen based, in conformance with CAN/ONGC-37.29-M

.6 Accessories:

.1 Sealing box for roof penetrations:

.1 Acceptable products: SYSTEM INTER CLIP by SOPREMA, CHEMCURB by CHEM LINK », or approved equivalents.

Part 3 Execution

3.1 QUALITY OF WORK

.1 Do examination, preparation and roofing Work in accordance with Roofing Manufacturer's Specification Manual and CRCA Roofing Specification Manual and Provincial Roofing Association Manual, particularly for fire safety precautions.

.2 Do priming in accordance with manufacturers written recommendations.

.3 The interface of the walls and roof assemblies will be fitted with durable rigid material plywood providing connection point for continuity of air barrier.

.4 Assembly, component and material connections will be made in consideration of appropriate design loads.

3.2 EXAMINATION OF ROOF DECKS

.1 Verification of Conditions:

.1 Inspect with Departmental Representative deck conditions including parapets, construction joints, roof drains, plumbing vents and ventilation outlets to determine readiness to proceed.

.2 Evaluation and Assessment:

.1 Prior to beginning of work ensure:

.1 Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris. Do not use calcium or salt for ice or snow removal.

.2 Curbs have been built.

.3 Roof drains have been installed at proper elevations relative to finished roof surface.

.4 Plywood and lumber nailer plates have been installed to deck, walls and parapets as indicated.

.3 Do not install roofing materials during rain or snowfall.

3.3 PROTECTION OF IN-PLACE CONDITIONS

.1 Cover walls, walks, slopped roofs and adjacent work where materials hoisted or used.

.2 Use warning signs and barriers. Maintain in good order until completion of Work.

.3 Clean off drips and smears of bituminous material immediately.

.4 Dispose of rain water off roof and away from face of building until roof drains or hoppers installed and connected.

.5 Protect roof from traffic and damage. Comply with precautions deemed necessary by Departmental Representative.

.6 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed Work and materials out of storage.

3.4 PRIMING DECK

.1 Apply deck primer to wood roofing deck at the rate recommended by manufacturer.

3.5 CONVENTIONAL MEMBRANE ROOFING APPLICATION

.1 Insulation: fully adhered, adhesive application:

- .1 Adhere insulation to the tapered insulation layer4 using the specified adhesive.
- .2 Place boards in parallel rows with ends staggered, and in firm contact with one another.
- .3 Cut end pieces to suit.
- .4 Apply adhesive in continuous ribbons at 300 mm on centre.

.2 Tapered insulation application:

- .1 Adhere insulation to the vapour barrier using the specified adhesive
- .2 Install tapered insulation as first insulation layer, in accordance with shop drawings. Stagger joints between layers 150 mm minimum.
- .3 Apply adhesive in continuous ribbons at 300 mm on centre

.3 Overlay Board: adhesive application:

- .1 Adhere overlay board to insulation with vulcanized adhesive at the rate of one litre per m^2.
- .2 Place boards in parallel rows with end joints staggered. Cap joints approximately 25 mm.
- .3 Cut ends to suit and apply adhesive in continuous ribbons at 300 mm on centre.

.4 Base sheet application:

- .1 Starting at low point of roof, perpendicular to slope, unroll base sheet, align and reroll from both ends.
- .2 Lap sheets 100 mm minimum for side and 150 mm minimum for end laps.
- .3 Adhere the first 75 mm of the self-adhesive side laps using a roller then heat-weld the last 25 mm

.4 Seal end joint by welding a 300 mm wide protection band centred on the joint. Base sheet joint can be aligned to facilitate the installation of the band

.5 Application to be free of blisters, wrinkles and fishmouths.

.6 Install gussets at every angle, on inside and outside corners.

.5 Cap sheet application (torch-applied membrane):

.1 Starting at low point on roof, perpendicular to slope, unroll doule-selvedge starter roll cap sheet, align and reroll from both ends.

.2 Unroll and torch cap sheet onto base sheet taking care not to burn membrane or its reinforcement.

.3 Lap sheets 75 mm minimum for side laps and 150 mm minimum for end laps. Offset joints in cap sheet 300 mm minimum from those in base sheet.

.4 Application to be free of blisters, fishmouths and wrinkles.

.5 Do membrane application in accordance with manufacturer's recommendations.

.6 Base sheet flashing installation

.1 Apply base sheet flashing only after primer coat is dry.

.2 Position the pre-cut membrane piece. Peel back 100 to 150 mm. of the silicone release paper to hold the membrane in place at the top of the parapet.

.3 Peel back the remaining silicone release paper, pressing down on the membrane with an aluminum applicator to ensure good adhesion. Use the aluminum applicator to ensure a proper transition between the upstand and the field surface. Smooth the entire membrane surface with a roller for full adhesion.

.4 Install a 150 mm. strip of self-adhesive membrane overlapping the base of the parapets and the field surface. Use additional adhesive at the base of the parapet as recommended by the manufacturer

.5 Complete installation of flashing base sheet stripping prior to installing membrane cap sheet.

.6 Provide 75 mm minimum side lap and seal.

.7 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.

.8 Do work in accordance with manufacturer's recommendations.

.9 The cap sheet should be installed in one-metre-wide strips. The side joints should be overlapped by 75 mm. and must be staggered by at least 100 mm. with respect to the joints of the cap sheet on the field surface, to avoid areas of excessive membrane thickness. The overlaps on the field surface are to be 50 mm. wider than those of the base sheet membrane on the upstands and parapets. At end laps, angle-cut the corners that will be covered by the following roll.

.10 Use a chalk line to draw a straight line on the field surface 150 mm. from the upstands and parapets.

.11 Use a propane torch and round-nose trowel to embed the surface granules in the layer of hot bitumen starting from the chalk line on the field surface to the bottom edge of the upstand or parapet as well as on the granulated vertical surfaces that are to be overlapped.

.12 This cap sheet will be heat-welded directly to the base sheet membrane, proceeding from bottom to top. T

.13 During installation, be careful not to overheat the membrane or to create excessive bitumen bleeding at the joints.

.7 Roof penetrations:

.1 Install roof drain pans, vent stack covers and other roof penetration flashings and seal to membrane in accordance with [manufacturer's recommendations.

3.6 CANTS

.1 Install wood cants over rigid insulation.

.2 Angle cut cants to fit tightly on back and bottom where roof to wall angle varies from 90 degrees.

3.7 WALKWAYS

.1 Install walkway membrane in accordance with manufacturer's instructions.

.2 Install pavers, where indicated.

3.8 FIELD QUALITY CONTROL

.1 Inspections:

.1 Inspection and testing of roofing application will be carried out by testing laboratory designated by Departmental Representative.

.2 Departmental Representative will pay for tests as specified in Section 01 45 00 - Quality Control.

3.9 CLEANING

.1 Remove bituminous markings from finished surfaces.

.2 In areas where finished surfaces are soiled caused by work of this section, consult manufacturer of surfaces for cleaning advice and complying with their instructions.

.3 Repair or replace defaced or disfigured finishes caused by work of this section.

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

.1 Place materials defined as hazardous or toxic in designated containers.

.2 Ensure emptied containers are sealed and stored safely.

.3 Unused coating material must be disposed of at official hazardous material collections site as reviewed by Departmental Representative

.4 Unused adhesive and sealant materials must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

.5 Dispose of unused adhesive and sealant material at official hazardous material collections site approved by Departmental Representative.

END OF SECTION

Part 1 General

1.1 RELATED WORK

.1 Fire stopping and smoke seals within mechanical assemblies (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) are specified in Division 22, 23, 26 and 27 respectively.

1.2 REFERENCES

.1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.2 Underwriter's Laboratories of Canada (ULC)

.1 ULC-S115-1995, Fire Tests of Fire stop Systems.

1.3 DEFINITIONS

.1 Fire Stop Material: device intended to close off opening or penetration during fire or materials that fill openings in wall or floor assembly where penetration is by cables, cable trays, conduits, ducts and pipes and poke-through termination devices, including electrical outlet boxes along with their means of support through wall or floor openings.

.2 Single Component Fire Stop System: fire stop material that has Listed Systems Design and is used individually without use of high temperature insulation or other materials to create fire stop system.

.3 Multiple Component Fire Stop System: exact group of fire stop materials that are identified within Listed Systems Design to create on site fire stop system.

1.4 SUBMITTALS

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

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets.

.3 Shop Drawings:

.1 Submit shop drawings to show location, proposed material, reinforcement, anchorage, fastenings and method of installation.

.2 Construction details should accurately reflect actual job conditions.

.4 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.

.1 Test reports: in accordance with CAN-ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.

.1 Submit certified test reports from approved independent testing laboratories, indicating compliance of applied fire stopping with specifications for specified performance characteristics and physical properties.

.2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.

.4 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.

1.5 QUALITY ASSURANCE

.1 Qualifications:

.1 Installer: company specializing in fire stopping installations with 5 years documented experience.

.2 Pre-Installation Meetings: convene pre-installation meeting one week prior to beginning work of this Section, with contractor's representative and Departmental Representative

.1 Verify project requirements.

.2 Review installation and substrate conditions.

.3 Co-ordination with other building sub-trades.

.4 Review manufacturer's installation instructions and warranty requirements.

.3 Site Meetings: as part of Manufacturer's Services described in PART 3 - FIELD QUALITY CONTROL, schedule site visits, to review Work, at stages listed.

.1 After delivery and storage of products, and when preparatory Work is complete, but before installation begins.

.2 Twice during progress of Work at 25% and 60% complete.

.3 Upon completion of Work, after cleaning is carried out.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Packing, shipping, handling and unloading:

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

.2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.3 Deliver materials to the site in undamaged condition and in original unopened containers, marked to indicate brand name, manufacturer, ULC markings.

.2 Storage and Protection:

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

.2 Replace defective or damaged materials with new.

.3 Waste Management and Disposal:

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

Part 2 Products

2.1 MATERIALS

.1 Fire stopping and smoke seal systems: in accordance with CAN-ULC-S115.

.1 Asbestos-free materials and systems capable of maintaining effective barrier against flame, smoke and gases in compliance with requirements of CAN-ULC-S115 and not to exceed opening sizes for which they are intended.

.2 Fire stop system rating: to match wall/floor assembly rating indicated

.2 Service penetration assemblies: systems tested to CAN-ULC-S115.

.3 Service penetration fire stop components: certified by test laboratory to CAN-ULC-S115.

.4 Fire-resistance rating of installed fire stopping assembly in accordance with NBC.

.5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.

.6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.

.7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.

.8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.

.9 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

.10 Sealants for vertical joints: non-sagging.

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 PREPARATION

.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials.

.1 Ensure that substrates and surfaces are clean, dry and frost free.

.2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.

.3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.

.4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.3 INSTALLATION

.1 Install fire stopping and smoke seal material and components in accordance with manufacturer's certified tested system listing.

.2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

.3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool or trowel exposed surfaces to neat finish.

.5 Remove excess compound promptly as work progresses and upon completion.

3.4 SEQUENCES OF OPERATION

.1 Proceed with installation only when submittals have been reviewed by Departmental Representative.

.2 Install floor fire stopping before interior partition erections.

.3 Metal deck bonding: fire stopping to precede spray applied fireproofing to ensure required bonding.

.4 Mechanical pipe insulation: certified fire stop system component.

.1 Ensure pipe insulation installation precedes fire stopping.

3.5 FIELD QUALITY CONTROL

.1 Inspections: notify Departmental Representative when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.

.2 Manufacturer's Field Services:

.1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.

.2 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 Schedule site visits, to review Work, as directed in PART 1 - QUALITY ASSURANCE.

3.6 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 Remove temporary dams after initial set of fire stopping and smoke seal materials.

3.7 SCHEDULE

.1 Fire stop and smoke seal at:

.1 Penetrations through fire-resistance rated masonry, concrete, and gypsum board partitions and walls.

.2 Edges of fire rated floors

.3 Top of fire-resistance rated masonry and gypsum board partitions.

.4 Intersection of fire-resistance rated masonry and gypsum board partitions.

.5 Control and sway joints in fire-resistance rated masonry and gypsum board partitions and walls.

.6 Penetrations through fire-resistance rated floors, slabs and ceilings

.7 Around mechanical and electrical assemblies penetrating fire separations.

.8 Rigid ducts: greater than 129 cm^2: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Materials, preparation and application for caulking and sealants.

.2 Text to complete other various Sections containing sealant or caulking specifications, including Section 07 52 00 - Modified Bituminous Membrane Roofing.

1.2 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM C919-02, Standard Practice for Use of Sealants in Acoustical Applications.

.2 Canadian General Standards Board (CGSB)

.1 CGSB 19-GP-5M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).

.2 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.

.3 CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).

.4 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.

.5 CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.

.3 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.4 General Services Administration (GSA) - Federal Specifications (FS)

.1 FS-SS-S-200-E(2)1993, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.

.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.6 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

1.3 SUBMITTALS

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

.2 Manufacturer's product to describe.

.1 Caulking compound.

.2 Primers.

.3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.

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

.4 Submit duplicate samples of each type of material and colour.

.5 Cured samples of exposed sealants for each color where required to match adjacent material.

.6 Submit manufacturer's instructions in accordance with Section 01 33 00 - Submittal Procedures.

.1 Instructions to include installation instructions for each product used.

1.4 QUALITY ASSURANCE/MOCK-UP

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

.2 Construct mock-up to show location, size, shape and depth of joint complete with back-up material, primer, caulking and sealant.

.3 Mock-up will be used:

.1 To judge workmanship, substrate preparation, operation of equipment and material application.

.4 Locate where directed

.5 Allow 48 hours for inspection of mock-up by Departmental representative before proceeding with sealant work.

.6 When accepted, mock-up will demonstrate minimum standard of quality required for this Work. Approved mock-up may not remain as part of finished Work. Remove mock-up and dispose of materials when no longer required and when directed by Departmental representative.

1.5 DELIVERY, STORAGE, AND HANDLING

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

.2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.6 WASTE MANAGEMENT AND DISPOSAL

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

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material for recycling in accordance with Waste Management Plan.

.4 Place materials defined as hazardous or toxic in designated containers and remove from the site to an official hazardous material collections site approved by Departmental representative.

.5 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.6 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

.7 Divert unused joint sealing material from landfill to an official hazardous material collections site approved by Departmental representative.

.8 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.

.9 Fold up metal banding, flatten, and place in designated area for recycling.

1.7 PROJECT CONDITIONS

.1 Environmental Limitations:

.1 Do not proceed with installation of joint sealants under following conditions:

.1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.

.2 When joint substrates are wet.

.2 Joint-Width Conditions:

.1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

.3 Joint-Substrate Conditions:

.1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.8 ENVIRONMENTAL REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

.3 Departmental representative will arrange for ventilation system to be operated on maximum outdoor air and exhaust during installation of caulking and sealants.

Part 2 Products

2.1 SEALANT MATERIALS

.1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

.2 When low toxicity caulks are not possible, confine usage to areas which offgas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize offgas time.

.3 Where sealants are qualified with primers use only these primers.

2.2 SEALANT MATERIAL DESIGNATIONS

.1 Urethanes Two Part.

.1 Non-Sag to CAN/CGSB-19.24, Type 2, Class B, colour as selected.

.2 Urethanes One Part.

.1 Self-Leveling to CAN/CGSB-19.13, Type 1, colour as selected.

.3 Urethanes One Part.

.1 Non-Sag to CAN/CGSB-19.13, Type 2, MCG-2-40, colour as selected.

.4 Silicones One Part.

.1 To CAN/CGSB-19.13.

.2 Sealant type: one-part, acetoxy silicone sealant, cures to a flexible rubber when exposed to moisture present in the air, containing a fungicide, suitable for use in bathrooms, high humidity areas and similar applications where joints need protection against fungi and bacteria.

.5 Acrylic Latex One Part.

.1 To CAN/CGSB-19.17.

.6 Acoustical Sealant.

.1 To ASTM C919, single component, non-skinning, non-hardening synthetic rubber, dark gray colour, designed for use in gypsum board partitions to inhibit air movement and buffer vibration.

.7 Preformed Compressible and Non-Compressible back-up materials.

.1 Polyethylene, Urethane, Neoprene or Vinyl Foam.

.1 Extruded closed cell foam backer rod.

.2 Size: oversize 30 to 50 %.

.2 Neoprene or Butyl Rubber.

.1 Round solid rod, Shore A hardness 70.

.3 High Density Foam.

.1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa,

extruded polyolefin foam, 32 kg/m^3 density, or neoprene foam backer, size as recommended by manufacturer.

.4 Bond Breaker Tape.

.1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 SEALANT SELECTION

.1 Perimeters of exterior openings where frames meet exterior facade of building (i.e. brick, block, precast masonry): Sealant type: two-part urethane, non-sag

.2 Expansion and control joints in exterior surfaces of poured-in-place concrete walls: Sealant type: two-part urethane, non-sag.

.3 Control and expansion joints in exterior surfaces of unit masonry walls: Sealant type: two-part urethane, non-sag.

.4 Coping joints and coping-to facade joints: Sealant type: two-part urethane, non-sag.

.5 Seal interior perimeters of exterior openings as detailed on drawings: Sealant type: one-part urethane, non-sag.

.6 Control and expansion joints on the interior of exterior poured-in place concrete walls: Sealant type: two-part urethane, non-sag.

.7 Control and expansion joints on the interior of exterior surfaces of unit masonry walls: Sealant type: two-part urethane, non-sag .

.8 Interior control and expansion joints in floor surfaces: Sealant type: one-part urethane, self-leveling.

.9 Perimeters of interior frames, as detailed and itemized: Sealant type: acrylic latex.

.10 Interior masonry vertical control joints (block-to-block, block-to-concrete, and intersecting masonry walls): Sealant type: one-part urethane, non-sag.

.11 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, waterclosets, basins, vanities): Sealant type: one-part, acetoxy silicone sealant.

.12 Exposed interior control joints in drywall: Sealant type: acrylic latex.

.13 Concealed joints in sound attenuated walls and ceilings: acoustic sealant

.14 Colour of sealants: selected by Departmental representative from manufacturer’s standard range to match adjacent surfaces.

2.4 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

Part 3 Execution

3.1 PROTECTION

.1 Protect installed Work of other trades from staining or contamination.

3.2 SURFACE PREPARATION

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

.2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

3.3 PRIMING

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.4 BACKUP MATERIAL

.1 Apply bond breaker tape where required to manufacturer's instructions.

.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.6 APPLICATION

.1 Sealant.

.1 Apply sealant in accordance with manufacturer's written instructions.

.2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.

.3 Apply sealant in continuous beads.

.4 Apply sealant using gun with proper size nozzle.

.5 Use sufficient pressure to fill voids and joints solid.

.6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

.7 Tool exposed surfaces before skinning begins to give slightly concave shape.

.8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing.

.1 Cure sealants in accordance with sealant manufacturer's instructions.

.2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup.

.1 Clean adjacent surfaces immediately and leave Work neat and clean.

.2 Remove excess and droppings, using recommended cleaners as work progresses.

.3 Remove masking tape after initial set of sealant.

END OF SECTION