

1 Description
Of Work

- .1 Work under this contract consists of masonry and concrete repairs of the Carleton Martello Tower, a National Historic Site and Federally Designated Building operated by Parks Canada, located in Saint John, NB. The work is generally described as follows:
- .1 Systematic repointing, repair and/or rebuilding of selected areas of exterior masonry walls.
 - .2 Identification with respect to location, storage and protection of removed stone masonry units.
 - .3 Reconstruction of stone masonry outer wythe in dismantled area, estimated area 27 m², bonded and tied to masonry back up construction as follows:
Except where otherwise directed by Departmental Representative, existing units to be reinstalled in their original locations.
 - .4 Salvage and turnover to Departmental Representative of selected existing items, including but not limited to stone units deemed unsuitable for re use in reassembly work.
 - .5 Execution of in-depth exploratory openings, to be executed under guidance of Departmental Representative
 - .1 Two locations requiring disassembly and reconstruction up to 50% of wall depth and one location requiring disassembly and reconstruction up to 1000 mm where indicated on drawings.
 - .6 Dismantling bulged areas to a depth of +/- 460 mm (measured from face of stone).
 - .1 Estimated volume for dismantling bulged area is 12 m³.
 - .2 Only dismantle deteriorated portions (E.g., if area is not deteriorated to 460 mm, do not disassemble to that depth).
 - .7 Core drilling of six - 100 mm diameter holes, exterior to interior, to a depth of 80% of wall thickness. Remove exterior stone prior to coring and replace exterior stone after coring complete. Locations to be determined onsite by Departmental Representative.
 - .8 Core drilling one - 100 mm diameter hole, interior to exterior in the vaulted brick ceiling to a depth of 80% of vault thickness and one - 100 mm diameter hole, interior to exterior in the brick wall to a depth of 80% of wall thickness. Remove and salvage first wythe of brick masonry prior to coring and restate after coring is complete. Location to be determined onsite by Departmental Representative.
 - .9 Sound interior brick masonry ceiling with rubber or wooden mallet. Detach loose pieces in risk of falling or separating from face of brick masonry. Record, catalogue and store detached brick pieces.
 - .10 Rebuilding core of wall where work was completed.
 - .1 Rebuild core holes with rubble and stone and fill with mortar. Do not use sandstone or rounded stone in reconstruction of core holes.
 - .1 Estimated volume of core holes is 0.0855 m³.
 - .2 Rebuild bulged areas with new flat rough cut limestone or granite or approved similar. Do not use rounded stone or sandstone in reconstruction of bulged areas.
 - .1 Estimated volume for rebuilding core of bulged areas is 12 m³ (estimated new material in core of wall is 6 m³).

1 Description
Of Work

(Continued)

- .11 Joint sealing of cracks and recessed joints in concrete.
- .12 Repairing concrete surface with cementitious mortar.

.2 As a National Historic Site and Designated Building, the importance of retaining and protecting existing features of both the site and the building cannot be overstated.

.3 Site of Work is at 454 Whipple Street, Saint John, New Brunswick.

2 Familiarization
With Site

.1 Before submitting their tender, it is recommended that tenderers inspect and examine the site and its surroundings and satisfy themselves as to the form and nature of the work and materials necessary for the completion of the work, the means of access to the site, the accommodation they may require, and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.

3 Codes
And Standards

.1 Perform work in accordance with the 2010 National Building Code of Canada and any other code of provincial or local application including all amendments up to project tender closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 Materials and workmanship must meet requirements of specified standards, codes and referenced documents.

.4 Quality Assurance –
Masonry Contractor
Qualifications

.1 The work of the Contact involves successful documented experience in specialized techniques and procedures for historic masonry repair and conservation work. Refer to Section 04 50 00 "Common Work Results for Masonry", Section 1.3 - Quality Assurance - Masonry Contractor Qualifications, for qualifications and submission requirements for same.

5 Setting Out Work

.1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.

.2 Provide devices needed to lay out and construct work.

.3 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.

.4 Supply stakes and other survey markers required for laying out work.

6 Interpretation
Of Documents

.1 The Division 01 sections of the Specifications take precedence over technical specifications in other Divisions of the Specifications.

- 7 Cost Breakdown .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price. Required forms will be provided for application of progress payment.
- 8 Documents Required .1 Maintain at job site, one copy each of the following:
- .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Reviewed Shop Drawings
 - .5 Change Orders
 - .6 Other modifications to Contract
 - .7 Field Test Reports
 - .8 Copy of Approved Work Schedule
 - .9 Health and Safety Plan and other safety related documents
 - .10 Other documents as stipulated elsewhere in the Contract Documents.
- 9 Permits .1 In accordance with the General Conditions, obtain and pay for building permit, certificates, licenses and other permits as required by municipal, provincial and federal authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.
- 10 Alterations, Additions Or Repairs to Existing Building .1 The Tower is open to the public and will be fully operational in the open season. Open season is June 1st to October 2nd, 10:00h to 17:30h, 7 days a week, and by arrangement October 3rd to 31st. A barrier fence is in place, restricting access around the base of the building. The public are not restricted from site access during the off season. Execute the work with least possible interference or disturbance to building occupants, the public and normal use of the premises and adjacent areas. Arrange with the Departmental Representative to facilitate execution of the work.
- .2 Include in the site-specific Health and Safety Plan specified in Section 01 35 29 "Health and Safety Requirements", provisions for protecting building users and the public from all potential hazards caused by the Work, including, but not limited to, protection against falling objects, overhead protection for pedestrians at walkways and sidewalks, hoarding around hoisting equipment and other provisions as necessary to provide complete protection from all potential hazards. Refer to Section 01 50 00 "Temporary Facilities".

10 Alterations, Additions
Or Repairs to Existing Building

(Continued)

- .3 Provide weather barriers and enclosures as necessary to ensure the complete weather tightness of the exterior envelope at all times. Refer to Section 01 50 00 "Temporary Facilities".
- .4 Where security is reduced by work provide, for the approval of the Departmental Representative, the proposed means to maintain security.
- .5 Provide dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas which will be operative during such work. All warning signs shall be provided in English, French and gender-neutral language.

11 Pedestrian
Overhead Protection

- .1 The Contractor will be responsible to maintain pedestrian overhead protection along the pathway leading up to the building entrance, including but not limited to the stairway and above the entrance door, for the full duration of time that masonry work on the related facades is underway.

12 Roughing-In

- .1 Be responsible for obtaining manufacturer's literature and for correct roughing-in and hook-up of equipment, fixtures and appliances.

13 Cutting, Fitting
And Patching

- .1 The General Contractor shall ensure that cutting and patching for all trades is included in his tender price bid for the work.
- .2 Execute cutting, fitting and patching required to make work fit properly.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work. This includes patching of openings in existing work resulting from removal of existing services.
- .4 Do not cut, bore, or sleeve load-bearing members.
- .5 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .6 Fit work airtight to pipes, sleeves ducts and conduits.

14 Existing
Services

- .1 Maintain existing services to the building.
- .2 Notify the Departmental Representative and utility companies of intended interruption of services and obtain the required permission.

14 Existing Services

(Continued)

- .3 Where work involves breaking into or connecting to existing services, give the Departmental Representative 48 hours notice for each necessary interruption of mechanical or electrical service throughout the course of the work. Minimize the duration of interruptions. Carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian, vehicular traffic, and building users.
- .4 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .5 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 Protect, relocate or maintain existing active services as required. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service.
- .8 Record locations of maintained, re-routed and abandoned service lines.

15 Works Coordination

- .1 The Contractor is responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
- .2 The Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
- .3 Shop drawing review and material ordering shall only commence after this coordination has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
- .4 Ensure coordination and cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
- .5 Ensure that each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays, cutting, patching and the need to remove and replace completed work.

15 Works
Coordination

(Continued)

- .6 Public Works and Government Services Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interfaces work shall be the sole responsibility of the Contractor and shall be resolved by him at no extra cost to the Contract.

16 Building
Smoking Environment

- .1 Comply with smoking restrictions. Smoking is not allowed in any part of the building or on jobsite, including roof areas.

17 Asbestos
Discovery

- .1 Demolition of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of work, stop and notify Departmental Representative immediately. Do not proceed until written instructions have been received from Departmental Representative.

END OF SECTION

- 1 Definitions
- .1 Bar Chart (GANTT Chart). A 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 or spread sheet.
 - .2 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
 - .3 Milestone: A significant event in Project, usually completion of major deliverable.
 - .4 Project Schedule: identify all tasks, with start and completion dates indicated, and all critical event milestones such as but not limited to, core drilling and test openings, in clear bar chart format.
 - .5 Project Planning, Monitoring and Control System: Overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.
- 2 Submittals
- .1 Upon award of contract and prior to commencement of work, submit to Departmental Representative the following work management documents:
 - .1 Project Schedule as specified herein.
 - .2 Shop Drawing Submittal Schedule specified in Section 01 33 00 "Shop Drawings and Other Submittal Procedures".
 - .3 Health and Safety Plan specified in Section 01 35 29 "Health and Safety Requirements".
 - .4 Dust Control Plan specified in Section 01 50 00 "Temporary Facilities".
- 3 Project Schedule
- .1 Upon notification of tender acceptance, submit a Project Schedule, submitted within 5 working days of receipt of contract award.
 - .1 The Departmental Representative will review and return the revised Project Schedule within 7 calendar days.
 - .2 Revise the schedule as directed by the Departmental Representative and resubmit within 7 calendar days.
 - .3 The accepted revised schedule will become the Project Schedule.
 - .2 Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted bid.
 - .3 Plan to complete the Work in accordance with the prescribed milestones and time frame.
 - .4 Provide sufficient details in the schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.

**SCHEDULING AND MANAGEMENT
OF WORK**

3 Project Schedule (continued)

- .5 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.
- .6 It is the Contractor's responsibility to ensure all subtrades and subcontractors are made aware of the work restraints and operational restrictions specified.
- .7 Project Schedule Updates:
 - .1 Submit on a weekly basis and when requested by the Departmental Representative.
 - .2 Provide information and pertinent details explaining reasons for necessary changes to implementation plan.
 - .3 Identify problem areas, anticipated delays, impact on schedule and proposed corrective measures to be taken.
- .8 Departmental Representative will make interim reviews and evaluate progress of work based on approved schedule. Frequency of such reviews will be as decided by Departmental Representative. Address and take corrective measures on items of work as identified by reviews and as directed by Departmental Representative. Update schedule accordingly.
- .9 In every instance, change or deviation from work scheduling, no matter how minimal the risk or impact on safety or inconvenience to tenant or public might appear, will be subject to prior review and approval by the Departmental Representative.
- .10 Maintain original schedule as a baseline for changes in the schedule during the project.

4 Operational
Restrictions

- .1 Be aware that the Tower facility must be kept operational during the "on season". Building services to areas under use by the user must also be maintained at all times during the facility's operational hours and as specifically defined in these operational restrictions specified in this section.
- .2 The Contractor must recognize that building visitors will be affected by implementation of this contract. The Contractor must perform the work with utmost regard to the safety and convenience of building occupants and users. All work activities must be planned and scheduled with this in mind. The Contractor will not be permitted to disturb any portion of the building without providing temporary facilities as necessary to ensure safe and direct passage through disturbed or otherwise affected areas.
- .3 Contractor to meet with the Departmental Representative on a weekly basis to identify intended work areas, activities and scheduling for the coming week.

4 Operational
Restrictions (continued)

- .4 To assure that construction work may proceed productively without risk to safety of building occupants and the public, and due to the nature of the tenant's operation, be aware that certain work of this contract must be carried out during "Off-Hours".
- .5 Off Hours: for the purposes of this contract, "off-hours" are defined as follows:
 - .1 Between the hours of 17:30 and 10:00 for each day, June 1st to October 31st inclusive, except when required by special events. Departmental Representative to provide schedule for special events.
 - .2 Scheduling of "off-hours" work will be subject to approval by the Departmental Representative.
- .6 The following work shall be performed during Off-Hours:
 - .1 Work which requires the temporary disconnection of power and communication services to occupied areas.
 - .2 Work which creates excessive noise, fumes, odours, dust or vibration creating interference with park operations.
 - .3 Interior work including, but not limited to, sounding brick masonry, detaching loose pieces, recording, cataloguing and storing of brick masonry, coring vaulted ceiling and reconstruction of interior associated with Work.
 - .4 Contractor to be aware of local municipal By-Laws restricting noise after certain hours of the evening and/or on weekends. Work which creates excessive noise and is scheduled, or re-scheduled, to take place during Off-Hours must also comply with local municipal By-Laws on noise.
- .7 The Departmental Representative reserves the right to stop certain daytime work activity if the nature of that activity generates excessive noise or dust and to have Contractor re-schedule that particular work to be performed during the Off-Hour period at no additional cost to the contract.
- .8 Ensure that all trades are aware of the "Off-Hour" requirements of this contract and ensure that any extra costs incurred as a result are included in the Contractor's bid price for the work. No extra cost will be paid by PWGSC due to failure by General Contractor or his sub-contractors to recognize the off-hour requirements and other restrictions specified herein and to include all necessary allowances within their prices.
- .9 See Section 01 10 10 "General Instructions" for restrictions on the use of the site and the existing facilities.
- .10 Limited Manoeuvring Space on Site:
 - .1 Restrict demolition and repair work, and storage of materials and equipment to the area of contractor's operations, which will be determined on-site by Departmental Representative.
 - .2 Obey municipal traffic regulations with regard to the operation of vehicles.

4 Operational
Restrictions (continued)

- .11 Facility and site circulation maintained:
 - .1 Ensure that entrances, stairwells, exits and other circulation routes are maintained free and clear providing safe and uninterrupted passage for facility users and public at all times for duration of work.
 - .2 Maintain those areas clean and free of construction materials and equipment during operational hours of Facility. Provide temporary and adequate devices to ensure users are not exposed to construction hazardous conditions and are protected from exposure to dust, noise and hazardous materials.
 - .3 Provide temporary walkways, passageways, etc. when required due to nature of work. Such circulation routes must be constructed to barrier-free requirements unless approved otherwise by the Departmental Representative.
 - .4 Maintain fire escape routes accessible and fire fighting access open at all times for the duration of the project. Do not under any circumstances block fire exit doors and do not leave construction materials or debris blocking building entrances and exits.
 - .5 Maintain site circulation and access to parking lot from Whipple Street and Fundy Drive open at all times for the duration of the project.

- .12 Safety Signage:
 - .1 Provide on site, and erect as required during progress of work, proper bilingual signage, mounted on self-supporting stands, warning the public and building occupants of construction activities in progress and alerting need to exercise caution in proceeding through disturbed areas of the facility, and directing building occupants through any detours which may be required.
 - .2 Signage to be professionally printed and mounted on wooden backing, coloured and to express messages as directed by the Departmental Representative.
 - .3 Generally maximum size of sign should be in the order of 1.0 square meter. Number of signs required will be dependent on number of areas in facility under renovation at any one time.
 - .4 Include costs for the supply and installation of these signs in the tender price.

- .13 Dust and Dirt Control:
 - .1 Do not allow demolition debris and construction waste to accumulate and contribute to the propagation of dust. Review all measures with the Departmental Representative before undertaking work, especially for major dust generating activities.
 - .2 As work progresses, maintain construction areas in a tidy condition at all times. Remove gross dust accumulations by cleaning immediately following the completion of any major dust generating activity.
 - .3 Avoid situations and practises which result in dust and dirt being brought from the construction areas or from the exterior and tracked inside the building into occupied areas used by tenants or public.

4 Operational
Restrictions (.13 continued)

.4 Inform workers and make them aware of the need for dust and dirt control. Stringently enforce rules and regulations, immediately address non-compliance.

.14 Ensure that all sub-trades are made aware of and abide by the contents of this section and in particular the work restrictions specified herein due to tenant operational requirements.

5 Project Meetings

.1 Schedule and administer project meetings, held on a minimum bi-weekly basis, for entire duration of work and more often when directed by Departmental Representative as deemed necessary due to progress of work or particular situation.

.2 Prepare agenda for meetings

.3 Notify participants in writing 4 calendar days in advance of meeting date.
.1 Ensure attendance of all subcontractors.
.2 Departmental Representative will provide list of other attendees to be notified.

.4 Hold meetings at project site or where approved by Departmental Representative.

.5 Preside at meetings and record minutes.
.1 Indicate significant proceedings and decisions. Identify action items by parties in a format approved by the Departmental Representative.
.2 Distribute to participants by mail or by facsimile within 3 calendar days after each meeting.
.3 Make revisions as directed by Departmental Representative.
.4 Departmental Representative will advise whether submission of minutes by e-mail is acceptable. Decision will be based on compatibility of software among participants.

END OF SECTION

1 Submittal

General Requirements

- .1 Submit to Departmental Representative for review requested submittals specified in various sections of the specifications including shop drawings, samples, permits, compliance certificates, test reports, work management plans and other data required as part of the work.
- .2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with work until relevant submissions are reviewed by Departmental Representative
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information are not produced in SI Metric units, provide soft converted values.
- .6 Review submittals prior to submission to Departmental Representative. Ensure during review that necessary requirements have been determined and verified that required field measurements or data have been taken, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.
 - .1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.
- .7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent Work are coordinated.
- .9 Contractor's responsibility for errors, omissions or deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .10 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and will be returned for resubmission.

General Requirements

(Continued)

- .11 Make changes or revisions to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .12 Keep one reviewed copy of each submittal document on site for duration of Work.

2 Shop Drawings
and Product Data

- .1 The term "shop drawings" means fabrication drawings, erection drawings, diagrams, illustrations, schedules, performance charts, technical product data, brochures, specifications, test reports installation instructions and other data which are to be provided by Contractor to illustrate compliance with specified materials and details of a portion of work.
- .2 Number of Shop Drawings: submit 1 electronic copy plus 1 paper copy which will be retained by Departmental Representative. Ensure one complete set of reviewed shop drawings to be included in the maintenance manuals specified in 01 78 00 "Closeout Submittals".
- .3 Shop Drawing Submittal Schedule:
 - .1 Submit, within 5 working days of contract award, in format acceptable to Departmental Representative, a submittal schedule listing all shop drawings to be submitted for project as specified in various sections of the Specifications.
 - .2 Schedule to indicate proposed submission date of each shop drawing, status of review and anticipated product delivery date to site. Track all submissions for entire project.
 - .3 As work progresses, revise schedule identifying those items which have been reviewed and finalized and indicating list of outstanding shop drawings.
 - .4 Submit schedule updates at stipulated dates or project time intervals as predetermined and agreed upon between Contractor and Departmental Representative at commencement of Work.
- .4 Shop Drawings Content and Format:
 - .1 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where items or equipment attach or connect to other items or equipment, confirm that all interrelated work has been coordinated, regardless of section or trade from which the adjacent work is being supplied and installed.

**SHOP DRAWINGS AND OTHER
SUBMITTAL PROCEDURES**

and Product Data

(Continued)

- .2 Shop Drawings Format:
 - .1 Electronic (pdf) format of original drawings or standard drawings which clearly illustrate work specific to project requirements.
 - .2 Product Data from manufacturer's standard catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products, to be original full colour brochures, clearly marked indicating applicable data and deleting information not applicable to project.
 - .3 Non or poorly legible drawings, photocopies or pdfs will not be accepted and will be returned not reviewed.
- .3 Supplement manufacturer's standard drawings and literature with additional information to provide details applicable to project.
- .4 Delete information not applicable to project on all submittals.
- .5 Allow 7 calendar days for Departmental Representative's review of each submission.
- .6 Adjustments or corrections made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative in writing prior to proceeding with Work.
- .7 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If shop drawings are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected shop drawings, through same submission procedures indicated above.
- .8 Costs and expenses incurred by Departmental Representative to conduct more than one review of incorrectly prepared shop drawing submittal for a particular material, equipment or component of work will be assessed against the Contractor in the form of a financial holdback to the Contract.
- .9 Accompany each submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and project number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.

(Continued)

**SHOP DRAWINGS AND OTHER
SUBMITTAL PROCEDURES**

- .10 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and project 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 Cross references to particular details of contract drawings and specifications section number for which shop drawing submission addresses.
 - .6 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.
- .11 After Departmental Representative's review, distribute copies.
- .12 The review of shop drawings by Public Works and Government Services Canada (PWGSC) or its authorized Consultant is for sole purpose of ascertaining conformance with general concept. This review shall not mean that PWGSC approves the detail design inherent in the shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of the construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

3 Samples

- .1 Submit for review samples as specified in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples to PWGSC Project Manager's office or to other address as directed by Departmental Representative. Do not drop off samples at construction site except for special circumstances previously approved by

**SHOP DRAWINGS AND OTHER
SUBMITTAL PROCEDURES**

Departmental Representative.

- .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.

4 Mock-Ups

- .1 Erect mock-ups in accordance with Section 01 45 00 "Testing and Quality Control" and Section 04 05 00 "Common Work Results for Masonry".

5 Schedules,
Permits and
Certificates

- .1 Upon award of contract, submit to Departmental Representative copy of Work Schedule and various other schedules, permits, certification documents and project management plans as specified in other sections of the Specifications.
- .2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.
- .3 Submission of above documents to be in accordance with Submittal - General Requirements procedures specified in this section.

END OF SECTION

1 Definitions

- .1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
- .2 Competent person: means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and:
 - .2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and,
 - .3 Knowledgeable about potential or actual risks to health or safety associated with the work.
- .3 Medical aid injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
- .4 PPE: personal protective equipment.
- .5 Work Site: where used in this Section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

2 Submittals

- .1 Make submittals in compliance with requirements of Section 01 33 00.
- .2 Submit Site Specific Health and Safety Plan prior to commencement of Work, and within 5 working days of notification of Bid Acceptance.
 - .1 Submit in electronic format and 1 hard copy.
 - .2 Departmental Representative will review Health and Safety Plan and provide comments.
 - .3 Revise plan as required and resubmit within 5 days of receipt of comments.
 - .4 Departmental Representative's review and comments shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Health and Safety of the Work.
 - .5 Submit revisions and updates made to the Plan during the course of the Work.
- .3 Submit name of designated Health & Safety site representative and support documentation specified in Safety Plan.
- .4 Submit copy of Letter of Good Standing from Provincial Workers Compensation or other department of labour organization.
- .5 Submit copies of reports or directions issued by Federal and Provincial Inspectors and other Authorities having jurisdiction.
- .6 Submit copies of incident reports.
- .7 Submit WHMIS MSDS – Material Safety Data Sheets.

3 Compliance Requirements

- .1 Comply with the Occupational Health and Safety Act for the Province of New Brunswick, and General Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .3 Observe and enforce construction safety measures required by:
 - .1 National Building Code of Canada;
 - .2 Municipal statutes and ordinances.
- .4 In event of conflict or discrepancy between above noted requirements, the most stringent provision will apply.
- .5 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter of Good Standing.

4 Responsibility

- .1 Be responsible for health and safety of persons on site, of property and for protection of persons and public circulating adjacent to work operations to extent that they may be affected by conduct of the Work.
- .2 Enforce compliance by all workers, sub-contractors and other persons granted access to work site with safety requirements of Contract Documents, applicable Federal, Provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

5 Site Control and Access

- .1 Control work site and entry points to construction areas.
- .2 Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
 - .1 Departmental Representative will provide names of persons authorized by Departmental Representative to enter Work Site and will ensure that such authorized persons have the requisite Health & Safety knowledge and training.
 - .2 Notwithstanding item .1 above, the Contractor remains responsible for the Health and Safety of authorized persons while at the Work Site.
- .2 Isolate Work Site from other areas of the Facility by use of appropriate means. Refer to requirements of Section 01 50 00 "Temporary Facilities".
 - .1 Post signage at entry points and at other strategic locations indicating restricted access and conditions for access.
 - .2 Signage must be professionally made, bilingual in both official languages or display internationally understood graphic symbols.

5 Site Control
and Access

(continued)

- .3 Provide safety orientation session to persons granted access to Work site. Advise of hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate personal protective equipment (PPE).
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm.

6 Protection

- .1 Give precedence to health and safety of persons and protection of environment over cost and schedule considerations for Work.
- .2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

7 Filing of Notice

- .1 File Notice of Project with relevant Provincial health and safety authorities prior to commencement of Work.
 - .1 Departmental Representative will assist in locating address for Filing Notice of Project if needed.

8 Permits

- .1 Post permits, licenses, compliance certificates specified in Section 01 10 10 "General Instructions".
- .2 Where particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out that portion of work.

9 Hazard Assessments

- .1 Conduct site specific health and safety hazard assessment of the Work and site.
- .2 Carry out initial assessment prior to commencement of Work with further assessment as needed during progress of work.
- .3 Record results and address in Health and Safety Plan.
- .3 Keep documentation on site for entire duration of the Work.

10 Project / Site
Conditions

- .1 The following are potential project related health, environmental and safety hazards at the site with which Work of this Contract may involve contact.

10 Project / Site
Conditions

(continued)

- .1 Safety hazards due to existing site conditions and work inside Facility are:
 - .1 uneven site terrain,
 - .2 work at height (ie. areas of masonry repair work are at height)
 - .3 Public access, (ie. Tower open to visit by general public during designated months of the year).
- .2 Above list shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work. Include above items into hazard assessment process.
- .3 Include above items in the hazard assessment of the Work.
- .3 MSDS Data sheets of relevant hazardous and controlled products stored on site can be obtained from Departmental Representative.

11 Meetings

- .1 Attend pre-construction health and safety meeting, convened and chaired by Departmental Representative, prior to commencement of Work at time, date and location as determined by Departmental Representative. Ensure attendance of:
 - .1 Site Superintendent.
 - .2 Designated health and safety site representative.
 - .3 Subcontractors.
- .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with occupational health and safety regulations.
- .3 Keep documents on site.

12 Health and
Safety Plan

- .1 Prior to commencement of work, develop written site-specific Health and Safety Plan for entire duration of work and until final demobilization.
 - .1 Submit Departmental Representative for review and comments.
 - .2 Submit updates to plan as work progresses.
- .2 Health and Safety Plan shall with include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment process.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On site contingency and emergency response plan as specified below.
 - .4 On site communications plan as specified below.
 - .5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.

12 Health and Safety Plan

(continued)

- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operating procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation plan: to show escape routes, marshaling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and other related data.
 - .3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
 - .4 Emergency Contacts: name and telephone number of:
 - .1 General Contractor and subcontractors.
 - .2 Relevant Federal and Provincial Departments and Authorities Having Jurisdiction.
 - .3 Local emergency resource organizations.
 - .5 Harmonize plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide relevant data including name of PWGSC and Facility Management contacts.
- .4 On-Site Communications Plan: Procedures for sharing of work related safety information to workers, subcontractors, including emergency and evacuation measures.
 - .1 List of critical tasks and work activities to be communicated with the Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of subcontractors.
- .6 Review Health and Safety Plan and update regularly during the Work as conditions warrant.
- .7 Departmental Representative will respond in writing where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.
- .8 Post copy of Plan and updates on site.

13 Safety Supervision

- .1 Employ Health & Safety Site Representative responsible for daily supervising health and safety of the Work.
- .2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:
 - .1 Implement, monitor and enforce daily compliance of health & safety requirements of the Work.
 - .2 Monitor and enforce Contractor's site-specific Health & Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.

13 Safety Supervision (continued)

- .2 (continued)
- .4 Ensure that persons allowed site access are knowledgeable and trained in Health and Safety relative to their activities at site or are escorted by a competent person while on the Work Site.
- .5 Stop the Work as deemed necessary for reasons of health and safety.
- .3 Health & Safety Site Representative must:
 - .1 Be qualified and competent in Occupational Health and Construction Safety.
 - .2 Have site related working experience relating to activities of the Work.
 - .3 Be on Work Site at all times during execution of Work.
- .4 All assigned supervisory personnel shall also be competent persons.
- .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum (bi-weekly) basis. Record deficiencies and remedial action taken.

14 Training

- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned tasks.
- .2 Maintain employee records and evidence of training received. Make data available to Departmental Representative when requested.
- .3 When unforeseen or safety related hazard or condition occur during performance of work, follow procedures for Employee's Right to Refuse Work in accordance with provincial Acts and Regulations. Advise Departmental Representative verbally and in writing.

15 Minimum Site Safety Rules

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
 - .1 Wear personnel protective equipment (PPE) appropriate to Work or assigned task; the minimum requirements being hard hat, safety footwear and safety glasses and hearing protection.
 - .2 Immediately report unsafe activity or condition at site, near-miss accident, injury and damage.
 - .3 Maintain site and storage areas in tidy condition, free of hazards causing injury.
 - .4 Obey warning signs and safety tags.
- .2 Brief persons of disciplinary protocols for non-compliance. Post rules on site.

16 Correction of
Non-Compliance

- .1 Immediately address Health and Safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative will stop work if non-compliance is not corrected in a timely manner.

17 Incident Reporting

- .1 Investigate and report the following incidents to Departmental Representative:
 - .1 Injury requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory agency.
 - .1 Medical Aid Injury.
 - .3 Property damage in excess of \$ 10,000.00,
 - .4 Interruption to Facility operations resulting in an operational loss to a Federal Dept. in excess of \$5000.00,
- .2 Submit report in writing.

18 Hazardous
Products

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets for all products delivered to site.
 - .1 Post on site.
 - .2 Submit copy to Departmental Representative upon receipt.

19 Blasting

- .1 Blasting or other use of explosives is not permitted.

20 Powder
Actuated Devices

- .1 Use of powder actuated fastening devices is not permitted.

21 Site Records

- .1 Maintain on Work Site a copy of all health and safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
- .2 Upon request, make available to Departmental Representative or other authorized Safety Officer for review..

22 Posting
of Documents

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province of New Brunswick.
- .2 Post other documents as specified herein, including:
 - .1 Site specific Health and Safety Plan.
 - .2 WHMIS data sheets.

END OF SECTION

-
- 1 Definitions .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- 2 Fires .1 Fires and burning of rubbish on site not permitted.
- 3 Hazardous Material Handling
- .1 Store and handle hazardous materials in accordance with applicable federal and provincial laws, regulations, codes and guidelines. Store in location that will prevent spillage into the environment
- .2 Label containers to WHMIS requirements and keep MSDS data sheets on site for all hazardous materials.
- .3 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.
- .4 Store and handle flammable and combustible materials in accordance with National Fire Code.
- .5 Transport hazardous materials in accordance with federal Transportation of Dangerous Goods Regulations and applicable Provincial regulations.
- 4 Management and Disposal of Wastes
- .1 Do not bury rubbish and waste materials on site.
- .2 Separate waste materials into designated streams for recycling and disposal of those materials which cannot be recycled.
- .3 Collect and separate for recycling: paper, plastic, polystyrene, corrugated cardboard, pallets and packaging material. Remove from site and dispose of at appropriate recycling facilities.
- .4 Divert unused or damaged masonry materials from landfill to a local facility acceptable to DCC Representative.
- .5 Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or sanitary sewers or waste landfill sites.
- .6 Store, handle and dispose of hazardous materials and hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.
- 5 Site Protection
- .1 The site is a National Historic Site. Take all necessary care and precautions to prevent disturbing or damaging existing site conditions.
- .2 At the completion of the Work, make good any damage to disturbed grassy areas by installing new field sod.

5 Site Protection

(continued)

- .3 Make good any damage to existing walkways and stairs.
- .4 Re-instate protective fencing as required to maintain separation between building and public walkways.

6 Pollution Control

- .1 Control emissions from equipment and plant to local authorities emission requirements.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control around entire construction area.
- .3 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.
- .4 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for clean-up.
- .5 Report, to Federal and Provincial Department of the Environment, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment. Also notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.

7 Unforeseen Hazards

- .1 Should any material containing Asbestos be encountered during work, immediately notify Departmental Representative for directives to be followed.

END OF SECTION

1 Inspection

- .1 Facilitate Departmental Representative's access to Work. If part of Work is being fabricated at locations other than construction site, make preparations to allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection of Work designated for special tests, inspections or approvals by Departmental Representative or by inspection authorities having jurisdiction.
- .3 If Contractor covers or permits to be covered Work designated for special tests, inspections or approvals before such are made, uncover Work until particular inspections or tests have been fully and satisfactorily completed and until such time as Departmental Representative gives permission to proceed. Pay costs to uncover and make good such Work.
- .4 In accordance with the General Conditions, Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.
- .5 Pay costs to uncover and make good work disturbed by inspections and tests

.2 Testing

- .1 Tests on materials, equipment and building systems as specified in various sections of the Specifications is the responsibility of the Contractor except where stipulated otherwise.
 - .1 Provide all necessary instruments, equipment and qualified personnel to perform tests.
- .2 At completion of tests, turn over 2 sets of fully documented tests reports to the Departmental Representative. Submit in accordance with Section 01 33 00 "Shop Drawings and Other Submittal Procedure."
 - .1 Obtain additional copies for inclusion of a complete set in each of the maintenance manuals specified in Section 01 78 00 "Closeout Submittals."
- .3 Unspecified tests may also be made by Departmental Representative, at the discretion of the Departmental Representative. The costs of these tests will be paid for by the Departmental Representative.
- .4 Where tests or inspections reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests and inspections incurred by Departmental Representative as required to verify acceptability of corrected work.

4 Independent Inspection Agencies

- .1 Departmental Representative will engage and pay for service of Independent Inspection and Testing Agencies for purpose of inspecting and testing portions of Work except for the following which remain part of Contractor's responsibilities:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.

4 Independent
Inspection Agencies

(Continued)

- .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
- .4 Mill tests and certificates of compliance.
- .5 Tests as specified within various sections designated to be carried out by Contractor under the supervision of Departmental Representative.
- .6 Additional tests specified in Clause 4.2 above.

.2 Where tests or inspections by designated Testing Agency reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests or inspections as Departmental Representative may require to verify acceptability of corrected work.

.3 Provide sufficient advance notice to Departmental Representative of time when the Work will be ready for testing by designated Testing Agency in order for Departmental Representative to make attendance arrangements with such Agency. When directed by Departmental Representative notify the Agency directly.

.4 When specified or directed, submit Representative samples of materials, in required quantities, to Testing Agency for testing purposes. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.

.5 Provide labour and facilities to obtain, handle and deliver samples.

.6 Provide sufficient space on site for Testing Agency's exclusive use to store equipment and cure test samples.

.7 Employment of inspection and testing agencies by Departmental Representative does not relax responsibility to perform Work in accordance with Contract Documents.

5 Access to Work

.1 Facilitate Departmental Representative's access to Work. If part of Work is being fabricated at locations other than construction site, make preparations to allow access to such Work whenever it is in progress

.2 Co-operate to facilitate such inspections and tests.

.3 Make good work disturbed by inspections and tests.

6 Procedures

.1 Notify Departmental Representative sufficiently in advance of when work is ready for tests, in order for Departmental Representative to make attendance arrangements with Testing Agency. When directed by Departmental Representative, notify such Agency directly.

.2 Submit representative samples of materials specified to be tested. Deliver in required quantities to Testing Agency. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.

6 Procedures

(Continued)

.3 Provide labour and facilities to obtain and handle samples on site. Provide sufficient space on site for Testing Agency's exclusive use to store equipment and cure test samples.

7 Rejected Work

.1 Remove and replace defective Work, whether result of poor workmanship, use of defective or damaged products and whether incorporated in Work or not, which has been identified by Departmental Representative as failing to conform to Contract Documents.

.2 Make good damages to existing or new work resulting from removal or replacement of defective work.

8 Testing
by Contractor

.1 Provide all necessary instruments, equipment and qualified personnel to perform tests designated as Contractor's responsibilities herein or elsewhere in the Contract Documents.

.2 At completion of tests, turn over 2 copies of fully documented test reports to Departmental Representative. Additionally, obtain other copies in sufficient quantities to enable one complete set of test reports to be placed in each of the maintenance manuals specified in Section 01 78 00 "Closeout Submittals".

.3 Submit mill test certificates and other certificates as specified in various sections.

.4 Furnish test results and mix designs as specified in various sections.

9 Mock-Ups

.1 Prepare mock-ups for Work specifically requested in various trade sections. Include in each mock-up all related work components representative of final assembly.

.2 Construct in locations acceptable to Departmental Representative.

.3 Prepare mock-ups for Departmental Representative's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an 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 a schedule fixing dates for preparation.

.6 Remove mock-up at conclusion of Work or when directed by Departmental Representative unless approval is given to remain as part of Work.

END OF SECTION

1 Site Access
and Parking

- .1 The Departmental Representative will designate Contractor's access to project site for equipment and storage. On-site parking for Contractor's employees is limited to 3 parking spaces at Fundy Drive end of parking lot, to be designated by Departmental Representative.
- .2 Limit the use of the premises and adjacent public property for the Work, for storage to:
 - .1 allow normal operation for all floors of the building;
 - .2 conform to the requirements of the City of Saint John with respect to the municipal streets and property;
 - .3 conform to the Departmental Representative's requirements with respect to the use of the site; and
 - .4 maintain clear access to all building and site entrances and exits for the entire duration of the Work.
- .3 Co-ordinate use of premises under direction of the Departmental Representative.
- .4 Provide for building personnel pedestrian traffic on property. Provide for vehicle access on property.
- .5 Provide snow removal and dust control during period of work.
- .6 Maintain existing roads and parking areas at site, where used by Contractor, for duration of contract.
 - .1 Keep clean and free of mud and dirt by washing on a regular basis.
 - .2 Provide snow removal in areas located within construction site or enclosed by work.
 - .3 Make good and repair damage resulting from Contractor's use of existing roads, asphalted areas and lawns on site.

2 Building Access

- .1 The majority of the work of this contract will not require interior access to the building. However, when access is required, and approved by the Departmental Representative, use only access doors, circulation routes within building as designated by Departmental Representative to access interior work.
- .2 Install an exterior temporary hoist for the transportation of personnel, construction materials and equipment.

3 Contractor's Site Office

- .1 Be responsible for and provide own site office, if required, including electricity, heat, lights, telephone and water. Locate site office as directed by Departmental Representative.
- .2 The site office is considered a "No Smoking" area.

4 Material Storage

- .1 The site is in an inner city urban area. Material storage space on site is limited. Coordinate deliveries to minimize storage period on site before being needed for incorporation into work.

4 Material Storage

(continued)

- .2 Obtain and pay for use of additional storage or work areas needed for
- .3 Be responsible for security of material stored on site. Provide secure enclosure around material storage area to a minimum standard as outlined in sentence 5 – Site Enclosures.
- .4 No materials are permitted to be stored in building or roof areas.

5 Site Enclosures

- .1 Erect temporary enclosures around construction hoists, stairs or scaffolding access, and in other locations where necessary to protect building users and the public from hazards caused by the work.
- .2 Erect wire mesh construction fence around perimeter of work areas and secure from public access.
- .3 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.
- .4 Make all gates lockable and provide keyed padlocks.
- .5 Obtain Departmental Representative's approval beforehand of location and layout of all temporary fence enclosures.
- .6 Provide warning signs affixed to all fenced areas, identifying those enclosed areas as "Construction Zones" with access restricted to only those persons so authorized by General Contractor.
- .7 Do not construe fencing as an acceptable replacement for pedestrian walkway and hoarding requirements specified below.

6 Pedestrian Walkways and Hoarding

- .1 Ensure maximum safety and security to facility users during the course of work.
- .2 Maintain access and egress to building entrances and fire exits indicated on drawings and designated by Departmental Representative to remain in use. Provide enclosed walkways when work is adjacent to such doors as follows:
 - .1 Erect wooden pedestrian walkway complete with roof and side covers.
 - .2 Install walkways as soon as work is in the vicinity of entrance and exit doors and poses a potential danger to facility users.
 - .3 Construct to approximate size of 2.0 metre wide x 2.1 metre high x length as required to fully clear danger zone.
 - .4 Provide signage and lighting. Lighting to utilize energy efficient bulbs only.
 - .5 Submit details of walkway size, location, layout and construction to Departmental Representative beforehand and obtain approval.

6 Pedestrian Walkways
and Hoarding

(continued)

- .3 Adequately frame and brace hoarding and walkways to resist wind, and other weather or site conditions.
- .4 Erect such protective devices during Facility's non-operational off hour periods.
- .5 Obtain Departmental Representative's concurrence prior to removal of hoarding and walkways.

7 Sanitary
Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Washrooms in existing building are not permitted for use by construction work force.

8 Power and Lighting

- .1 Contractor to provide meter and arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.
- .2 Perform work and make all connections in accordance with the Canadian Electrical Code, in compliance with the federal and provincial Occupational Health and Safety Regulations as specified in Section 01 35 29 "Health and Safety Requirements."
- .3 Provide and maintain temporary lighting to conduct work. Ensure illumination level is not less than 162 lx in all locations.

9 Water Supply

- .1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances. Existing building water supply is not available for construction use.
- .2 Make arrangements for the use and transportation of such services to work area through the Departmental Representative. Allow for cold weather operation and ensure that water supply lines do not freeze.
- .3 Contractor will be responsible for any damage caused to building interior by water leakage.

10 Scaffolding

- .1 Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CAN/CSA-S269.2-M87(R2003). "Fraco" type moving scaffolding is not acceptable.

10 Scaffolding

(continued)

- .2 Erect scaffolding independent of walls wherever feasible. Where attachment to walls is unavoidable, use fully removable anchors. Submit samples of anchors to the Departmental Representative for review, 10 days prior to the start of installation of scaffolding. Anchors will only be permitted through masonry joints.
- .3 In advance of erection of scaffolding, submit to the Departmental Representative a scaffolding plan for the entire project which has been prepared by a Structural Engineer licensed to practise in the Province of New Brunswick. Each drawing submitted shall bear the stamp and signature of the aforesaid Structural Engineer
- .4 Design scaffolding to allow for use of insulated coverings as required for maintaining minimum temperatures for temperature sensitive work performed during cold weather. Ensure scaffolding is designed to withstand wind loading against insulated coverings.
- .5 Remove scaffolding when no longer required.

11 Temporary Shoring and Bracing Support

- .1 Wherever vertical or lateral support for existing stone or brick masonry is modified or removed temporarily, Contractor shall provide adequate temporary support.
- .2 Temporary support shall be adequate to safely resist all applicable loads including the weight of masonry, live loads, wind loads, and any other loads as required by the National Building Code.
- .3 Contractor shall submit to Departmental Representative a detailed drawing, description, etc. adequately describing the proposed method of temporary support, for review, a minimum of five days before start of Work.
- .4 Proposed method of temporary support submittal to the Departmental Representative shall be stamped by a professional engineer, licensed to practice in the Province of New Brunswick.

12 Heating and Ventilating

- .1 Supply, install and pay for costs of temporary heat used during construction, including costs of installation, fuel, operation, maintenance and removal of equipment. Use of direct-fired heaters discharging waste products into work areas will not be permitted.
- .2 Provide temporary heat as required to:
 - .1 Facilitate progress of work.
 - .2 Protect work and products against dampness, cold and freezing.
 - .3 Prevent freezing of mortars used in the work.
 - .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.

12 Heating and Ventilating

(continued)

- .3 Maintain minimum temperature of 10°C, or higher where specified, as soon as temperature sensitive work, such as (but not limited to) use of masonry mortar, is commenced and maintain minimum temperature until completion of temperature sensitive work is accepted by Departmental Representative.

- .4 Maintain strict supervision of operation of temporary heating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.

- .5 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
 - .1 Conform to 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.

13 Construction Sign and Notices

- .1 Upon request by Departmental Representative, erect a self supporting project sign in location indicated.

- .2 Departmental Representative will provide a vinyl sign facing for installation by Contractor on sign framework. Sign frame to be plywood face of approximately 1200 x 2400 mm in size complete with required wood framing at 400 mm o.c and support posts.

- .3 Install sign plumb and level in neat wood framework and securely anchor in ground by posts to withstand wind pressure of 160 km/h.

- .4 Contractor or subcontractor advertisement signboards are not permitted on site.

- .5 Safety and Instruction Signs and Notices: Signs and notices for safety and instruction shall be in both official languages or commonly understood graphic symbols conforming to CAN/CSA-Z321-96(R2001).

- .6 Maintenance and Disposal of Site Signs: Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative.

14 Removal of Temporary Facilities

- .1 Remove temporary facilities from site upon completion of the work and when directed by Departmental Representative.

END OF SECTION

- 1 General
- .1 Use new material and equipment unless otherwise specified.
 - .2 Within 7 days of written request by Departmental Representative, submit following information for any materials and products proposed for supply:
 - .1 name and address of manufacturer;
 - .2 trade name, model and catalogue number;
 - .3 performance, descriptive and test data;
 - .4 manufacturer's installation or application instructions;
 - .5 evidence of arrangements to procure.
 - .6 evidence of manufacturer delivery problems or unforeseen delays.
 - .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
 - .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
 - .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.
- 2 Product Quality and Referenced Standards
- .1 Contractor shall be solely responsible for submitting relevant technical data and independent test reports to confirm whether a product or system proposed for use meets contract requirements and specified standards.
 - .2 Final decision as to whether a product or system meets contract requirements rest solely with the Departmental Representative in accordance with the General Conditions Document "C".
- 3 Acceptable Materials and Alternatives
- .1 Where materials are specified by trade names, trade marks or manufacturers, when so listed in the various sections of the Specification or added into the Contract Documents by addendum, select one of the names listed for use on project.
 - .2 In accordance with Clause 17 of the General Instructions to Tenderers, Document No. R0001T, submission of alternative materials to those trade names or manufacturers listed in the Contract Documents as Acceptable Materials must be done during the tendering period following procedures indicated therein.
 - .3 Note that Document R0001T is incorporated by reference into, and forms part of the Tender and Contract Documents.

4 Manufacturers
Instructions

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods to be used. Do not rely on labels or enclosure provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing of any conflict between these specifications and manufacturers' instructions, so that Departmental Representative will designate which document is to be followed.

5 Availability

- .1 Immediately notify Departmental Representative in writing of unforeseen or unanticipated material delivery problems by manufacturer. Provide support documentation as per clause 1.2 above.

6 Workmanship

- .1 Ensure quality of work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed.
- .2 Remove unsuitable or incompetent workers from site as stipulated in General Conditions document "C".
- .3 Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.
- .4 Coordinate work between trades and subcontractors. See Section 01 14 10 "Scheduling and Management of Work" in this regard.
- .5 Coordinate placement of openings, sleeves and accessories.

7 Fastenings
General

- .1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work and in humid areas.
- .2 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood or organic material plugs not acceptable.
- .3 Keep exposed fastenings to minimum, space evenly and lay out neatly.
- .4 Fastenings which cause spalling or cracking of material to which anchorage is made, are not acceptable.
- .5 Do not use explosive actuated fastening devices unless approved by Departmental Representative. See Section 01 35 29 "Health and Safety Requirements" in this regard.

8 Storage, Handling
and Protection

- .1 Deliver, handle and store materials in manner to prevent deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled materials in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work. Provide additional cover where manufacturer's packaging is insufficient to provide adequate protection.
- .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 and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Immediately remove damaged or rejected materials from site.
- .8 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

9 Construction
Equipment and Plant

- .1 Maintain construction equipment and plant in good operating order.

END OF SECTION

1 General

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .3 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

2 Materials

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

3 Cleaning During Construction

- .1 Maintain work site and areas in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
- .2 Keep building entrances clean and in a dust-free condition at all times. Conduct thorough cleaning of these areas at end of each workshift when used by workers or affected by the Work.
- .3 Provide on-site containers for collection of waste materials and debris.
- .4 Use separate collection bins, clearly marked as to purpose, for source separation and recycling of waste and debris in accordance with good waste management procedure.
- .5 Remove waste materials, and debris from site on a daily basis.
- .6 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on newly repaired surfaces or contaminate building interior.
- .7 Provide dust barriers, seals on doors and/or other openings and employ other dust control measures as required to ensure that dust and dirt, as generated by work, are not transmitted to other areas of building.
- .8 Should dust migrate into areas of the building, employ such means as may be necessary to immediately clean all surfaces to the satisfaction of the Departmental Representative.

4 Final Cleaning

- .1 Perform final cleaning in preparation for acceptance of the completed work.
- .2 Remove promptly from site, all equipment, devices and accessories provided in accordance with requirements of Section 01 50 00 "Temporary Facilities".

4 Final Cleaning

(continued)

- .3 Remove dust, dirt, stains, marks and other foreign materials, from exterior finished surfaces.
- .4 Broom clean and/or wash exterior surfaces and walkways; rake clean other surfaces of grounds.
- .5 Remove all debris and surplus materials from site.

END OF SECTION

**1 Inspection and
Declaration**

- .1 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete work in conformance with Contract Documents.
 - .1 Notify Departmental Representative in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be complete and ready for Departmental Representative's inspection of the completed work.
- .2 Departmental Representative's Inspection: Accompany Departmental Representative during all substantial and final inspections of the Work.
 - .1 Address defects, faults and outstanding items of work identified by such inspections.
 - .2 Advise Departmental Representative when all deficiencies identified have been rectified.
- .3 Note that Departmental Representative will not issue a Certificate of Substantial Performance of the work until such time that Contractor performs following work and turns over the specified documents:
 - .1 Project record as-built documents;
 - .2 Final Operations and Maintenance manuals;
 - .3 Maintenance materials, parts and tools;
 - .4 Compliance certificates from applicable authorities;
 - .5 Reports resulting from designated tests;
 - .6 Manufacturer's Guarantee certificates.
- .4 Correct all discrepancies before Departmental Representative will issue the Certificate of Completion.

END OF SECTION

1 Project Record
Documents

- .1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications Manual specifically for "as-built" purposes.
- .2 Maintain at site one set of the contract drawings and specifications to record actual as-built site conditions.
- .3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Departmental Representative at any time during construction.
- .4 As-Built Drawings:
 - .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to interim inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets to Departmental Representative. All drawings of both sets shall be stamped "As-Built Drawings" and be signed and dated by Contractor.
 - .2 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
 - .3 Record following information:
 - .1 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure;
 - .2 Field changes of dimension and detail;
 - .3 Location of all capped or terminated services and utilities.
 - .4 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document;
 - .5 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.
- .5 As-built Specifications: legibly mark in red each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from that specified.
 - .2 Changes made by Addenda and Change Orders.
 - .3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.

1 Project Record Documents

(Continued)

- .6 Maintain As-built documents current as the contract progresses. Departmental Representative will conduct reviews and inspections of the documents on a regular basis. Frequency of reviews will be subject to Departmental Representative's discretion. Failure to maintain as-builts current and complete to satisfaction of the Departmental Representative shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.

3 Reviewed Shop Drawings

- .1 Compile full set of shop drawings and product data reviewed on project and incorporate into Operation and Maintenance Manual. Supply number of shop drawing sets equal to the required number of final Operation and Maintenance manuals.
- .2 Submit shop drawing sets at same time and as part of the contents of the Operation and Maintenance manuals specified in this section.

4 Progress Photographs

- .1 Submit a complete set of progress photographs in digital format on a CD. Organize the photographs under a file name system that facilitates easy retrieval. Include an explanation of the file name system.

5 Operation and Maintenance Manual

- .1 Definition: an organized compilation of information and data relating to the Work including detailed technical information, documents and records describing individual products or materials as specified in individual sections of the specifications.
- .2 Manual Language: English.
- .3 Number of copies required:
 - .1 Submit 2 interim copies of the manual for review by Departmental Representative. Make revisions and additions as directed and resubmit.
 - .2 Upon review and acceptance by Departmental Representative, submit 2 final copies.
 - .3 Initial copies are not to be considered as part of the final copies unless they have been fully revised and are identical to the final approved version.
- .4 Submission Date: submit complete operation and maintenance manual to Departmental Representative 3 weeks prior to application for Interim Certificate of Completion of project.

5 Operation and
Maintenance Manual

(continued)

- .5 Binding:
 - .1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual.
 - .2 Use vinyl, hard covered, 3 "D" ring binders, loose leaf, sized for 215 x 280 mm paper, with spine pocket.
 - .3 Where multiple binders are needed, correlate data into related consistent groupings.
 - .4 Identify contents of each binder on spine.
 - .5 Organize and divide data into sections same as the Division numerical order of contract specifications.
 - .6 Material: separate each section by use of cardboard dividers and labels. Provide tabbed fly leaf for each separate product or system within each section and with typed description of product and major component parts of equipment.
 - .7 Type lists and notes. Do not hand write.
 - .8 Drawings, diagrams and manufacturers' literature must be legible. Provide with reinforced, punched binder tab. Bind in with text; fold larger drawings to size of text pages.

- .6 Manual Contents:
 - .1 Cover sheet containing:
 - .1 Date submitted.
 - .2 Project title, location and project number.
 - .3 Names and addresses of Contractor, and all Sub-contractors.
 - .2 Table of Contents: provide full table of contents in each binder(s), clearly indicate which contents are in each binder.
 - .3 Shop drawings:
 - .1 Bind one complete set of reviewed shop drawings into each copy of operation and maintenance manual.
 - .4 Materials Data:
 - .1 Building Products: include product data, such as but not limited to: size, composition, colour and other designations.
 - .2 Material mix designs.
 - .3 Material test results.
 - .4 Material curing information.
 - .5 Archival as-Built restoration and repair details indicating site condition changes to reflect design details, such as but not limited to:
 - .1 anchor types, dowel sizes,
 - .2 locations and types of repairs
 - .3 depth of repair work,
 - .4 and all other pertinent data to accurately record building interventions and new work.
 - .5 Copies of approvals, and certificates issued by Inspection Authorities.
 - .6 Copies of reports and results from tests designated as Contractor's responsibilities.

5 Operation and
Maintenance Manual

(continued)

.6 (continued)

- .7 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .8 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.
- .9 Additional Requirements: as specified in individual specifications sections.

END OF SECTION