

## **1 General**

### **1.1 SCOPE OF WORK**

- .1 The Contractor is to provide each item, and properly execute all work as specified herein, indicated by drawings, addenda, or change orders issued with respect to this project.
- .2 The Contractor shall coordinate, administer, and supervise all work, material acquisition and labour.
- .3 Contractor to embrace the safety culture mandatory on this project. Failure to comply 100% will result in removal of workers and/or Contractor from site. Refer in particular to Sections 01 35 24 - Special Procedures on Fire Safety Requirements, Section 01 35 25 - Special Procedures on Lockout Requirements and Section 01 35 29 - Health, Safety and Emergency Response Procedures.
- .4 The Contractor shall complete the following:
  - .1 Construct a temporary exterior scaffold access and temporary fenced enclosure.
  - .2 Remove existing wood deck and dispose of off site.
  - .3 Remove existing planters and dispose of off site.
  - .4 Disconnect and store existing light bollards. Reinstall and reconnect.
  - .5 Remove sleepers and deck support and dispose of off site.
  - .6 Remove ballast and insulation and dispose of off site.
  - .7 Remove existing modified bitumen roof system down to deck and to roof perimeter and dispose of off site.
  - .8 Install new modified bitumen roof assembly as detailed.
  - .9 Install new roof deck assembly as detailed.
  - .10 Remove scaffolding and temporary fence enclosure.
  - .11 Reinstall and reconnect existing light bollards after installation of new roofing and roof deck assembly systems.
  - .12 Reinststate site to original condition.
- .5 The work onsite cannot begin before September 01, 2016.

### **1.2 FAMILIARIZATION WITH SITE**

- .1 Before submitting their tender, it is recommended that bidders 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.

### **1.3 COST BREAKDOWN**

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price. Departmental Representative will provide the required forms for application of progress payment.
- .2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components or building systems as directed by Departmental Representative.
- .3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.

### **1.4 PERMITS**

- .1 Provide appropriate notifications of project to municipal and provincial inspection

authorities.

- .2 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of Work.
- .3 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

## **1.5 BILINGUAL NOTATIONS**

- .1 Any items supplied and installed under this contract which have operating instructions on them and which can be expected to be used by the public and building tenants, must have such operating instructions in bilingual format - English and French.
- .2 Factory embossed or recessed symbols illustrating equipment operation is an acceptable alternate to lettering.
- .3 Items supplied with factory - embossed or recessed lettering in one official language with an applied sticker or decal representing the second official language is not acceptable unless the Departmental Representative give prior approval before any such items are ordered.
- .4 Internationally recognized colour coding such as red and blue center pieces for plumbing brass is acceptable.
- .5 Public Works and Government Services Canada will not be responsible for re-stocking or re-ordering costs incurred by the Contractor as a result of his failure to ensure bilingual designation on such items.
- .6 The Contractor is responsible for ensuring that all trades are made aware of these requirements.

## **1.6 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions. The building and grounds are non-smoking.

## **1.7 COORDINATION**

- .1 All Trades on site are responsible to co-operate and co-ordinate with each other.
- .2 Coordination prior to installation of all building components is mandatory.
- .3 Where work must be modified or reinstalled to be properly coordinated, the cost to do so will be paid by the Contractor. The Owner will not pay for uncoordinated work nor will the Owner pay to resolve uncoordinated work.

## **1.8 EMERGENCIES**

- .1 The Departmental Representative has authority in an emergency to stop the progress of the work whenever in his or her opinion, such stoppage may be necessary to ensure the safety of life, or of the structure. This includes authority to make such changes and to order, access and award the cost of such work extra to the Contract or otherwise as may in his or her opinion be necessary.

## **1.9 EXECUTION**

- .1 Execute work with least possible interference or disturbance to building operations, public and normal use of premises.

## **1.10 MITIGATION OF IMPACT ON EXISTING BUILDING**

- .1 This Contractor will recognize that the existing facility must remain fully functional with minimal disruption during the course of the Work. Any planned disruption in services must be brought to the attention of the Departmental Representative and receive prior approval before commencement.
- .2 This Contractor is responsible to ensure that the existing building is kept free from any contamination that may result from any of the Work.
- .3 The life safety and security systems in the existing building are required to remain

functional during construction. This Contractor is responsible to ensure that such systems are not inadvertently activated or deactivated during construction.

#### **1.11 DOCUMENTS**

- .1 The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all.
- .2 Descriptions of materials or work which have well known technical or trade meanings shall be held to refer to such recognized standards.
- .3 Should the specifications conflict with the drawings, the specifications shall govern.
- .4 In the case of discrepancies between drawings, those of larger scale, or if the scale are the same, those of later date shall govern.
- .5 All drawings and specifications shall be interpreted in conformity with the agreement.

#### **1.12 PROTECTION OF WORK AND PROPERTY**

- .1 The Contractor shall maintain continuously adequate protection of all his or her work from damage and shall take reasonable precautions to protect the Owner's property from all injury arising in connection with this Contract. He or she shall make good any damage or injury to his or her work and shall make good any damage or injury to the property of the Owner resulting from the lack of reasonable protective precautions.

#### **1.13 COMMUNICATION**

- .1 All submissions and inquiries shall be directed to the Departmental Representative for review.
- .2 All direction will be transmitted to the Contractor by the Departmental Representative.

#### **1.14 CODES AND REGULATIONS**

- .1 Perform work in accordance with National Building Code of Canada (NBC) 2010 and any other code of provincial or local application, provided that in any case of conflict or discrepancy the more stringent requirements shall apply.
- .2 Meet or exceed requirements of contract documents and specified standards.
- .3 References to standards, including manufacturer's direction for installation shall be the latest edition.
- .4 All materials, components and equipment as well as construction methods shall comply with the latest edition of the National Building Code and all other applicable Provincial codes or regulations.
- .5 The latest edition of the Canadian Electrical Code shall govern all electrical work, whether pre-wired an/or assembled remote from the site or not.
- .6 All equipment supplied or installed shall be CSA approved for the intended use.
- .7 The latest edition of the PEI Occupational Health and Safety Act and Regulations shall govern safe construction practices.
- .8 Provide a copy of all certificates of acceptance issued by Provincial or local authorities.

#### **1.15 WORK SCHEDULE AND PROGRESS REPORTS**

- .1 The Contractor will prepare and maintain a consolidated schedule in weekly increments showing scheduled work versus actual work. The schedule shall indicate the contract commencement and completion date for the total project.
- .2 The Contractor is to develop a detailed schedule identifying specific components of the carpentry, roofing and metal trades. A single line items for each is not acceptable.
- .3 Provide updated schedule information from time to time as the progress of the work or Departmental Representative may require.
- .4 The Contractor shall furnish monthly progress reports from the date of commencement. These reports shall show the percentage of completion of the various divisions of work and contain comments on the general progress of the project.

#### **1.16 CRA ACTIVITIES**

- .1 The Contractor is not to negatively impact CRA activities in any way. The building is to remain fully functional.

#### **1.17 WORK PLAN**

- .1 The Contractor is to prepare and submit a weekly work plan by end of business Thursdays to Departmental Representative.
- .2 Work plan to identify work for the coming week, interruptions, deliveries, use of loading dock, updated schedule, CRA schedule requirements.
- .3 Work plan to be submitted through from Award to Final Completion for all aspects of the project.

#### **1.18 CONTRACTOR'S USE OF SITE**

- .1 Do not unreasonably encumber site with materials or equipment.
- .2 Move stored products or equipment, which interfere with operations of Departmental Representative or other Contractors.
- .3 Obtain and pay for use of additional off site storage or work areas needed for operations.

#### **1.19 PROJECT MEETINGS**

- .1 Hold weekly project meetings at the site, in the Contractor's site office and at a time approved by Departmental Representative. In addition hold any additional meetings as the need arises or as directed by the Departmental Representative.
- .2 Notify all parties concerned of such meetings.
- .3 The Contractor will record minutes of meetings and distribute to all parties within three (3) days of meeting.
- .4 Failure of the Contractor to accurately record minutes or distribute the minutes in a timely manner will result in the Departmental Representative taking over the duties and deducting an equal amount from the progress claims as compensation.

#### **1.20 SITE INSPECTOR**

- .1 No work is to be covered without having received approval from the Departmental Representative. The Departmental Representative will have the authority to cause any part of the work to cease, should, in his or her opinion, there be cause to do so.
- .2 This work shall be examined by the Departmental Representative and approval granted to resume when a satisfactory solution has been found out.

#### **1.21 SETTING OUT OF WORK**

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations.
- .2 Provide all equipment, materials and 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.

#### **1.22 LOCATION OF EQUIPMENT AND FIXTURES**

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain his approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

### **1.23 EXISTING SERVICES**

- .1 Before commencing work, establish the location and extent of service lines and notify Departmental Representative of findings if in conflict with information or intent shown.
- .2 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .3 Contractor shall pay for any or all repairs to existing services that have been damaged due to the Contractor's negligence in the course of his work.
- .4 Notify Departmental Representative and utilities of intended interruption of services and obtain permission.
- .5 Where Work involves breaking into or connecting to existing services, give Departmental Representative 24 hours notice for necessary interruption. Minimize duration of interruptions. Carry out Work at times as directed by governing authorities or Owner with minimum disturbance.
- .6 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems.

### **1.24 ADDITIONAL DRAWINGS**

- .1 The Departmental Representative may furnish as necessary for the execution of the work, additional instructions, by means of drawings or otherwise. All such additional instructions shall be consistent with the contract documents. In giving such additional instructions the Departmental Representative shall have authority to make minor changes in the work, consistent with the Contract.

**End Of Section**

## **1 General**

### **1.1 APPOINTMENT AND PAYMENT**

- .1 The Contractor will arrange and pay for the services of an independent Consultant to carry out the following tests:
  - .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.
  - .3 Testing, adjustment and balancing of conveying systems, electrical equipment and systems.
  - .4 Mill tests and certificates of compliance.
  - .5 Where tests or inspections 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.

### **1.2 CONTRACTOR'S RESPONSIBILITIES**

- .1 Provide labour, equipment and facilities to:
  - .1 Provide access to Work for inspection and testing.
  - .2 Facilitate inspections and tests.
  - .3 Make good Work disturbed by inspection and test.
  - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.
- .5 Provide Departmental Representative with two (2) sets of fully documented test reports, submitted immediately following the testing operations.

### **1.3 FINAL REPORT**

- .1 Submit to the Departmental Representative at completion of job, three (3) bound copies of inspection report. This report to include:
  - .1 All copies of test results, indexed to correspond with testing requirements of this Section.
- .2 Written report from the testing firm carrying out the work of this Contract stating that the work as itemized under Par. 4 of this Section has been performed in strict accordance with the requirements of the Contract documents.
- .3 The report will be signed and sealed by a Professional Engineer registered to practice in the Province of Prince Edward Island and practicing in the field of materials testing.

**End Of Section**

## **1 General**

### **1.1 SUBMITTALS**

- .1 10 working days after award of contract and prior to commencement of Work, submit to Departmental Representative the following work management documents:
  - .1 Work Schedule as specified herein.
  - .2 Shop Drawing Submittal Schedule specified in Section 01 33 00 - Submittal Procedures.
  - .3 Health and Safety Plan specified in Section 01 35 29 - Health, Safety, and Emergency Response Procedures.
  - .4 List of workers requiring security clearance and those to be placed on Site Security Control list as specified in Section 01 35 53 - Security Procedures.

### **1.2 WORK SCHEDULE**

- .1 Upon notification of tender acceptance submit:
  - .1 Work schedule submitted within 7 calendar days of contract award.
- .2 Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted tender.
- .3 Provide sufficient details in 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.
- .4 Work schedule content to include as a minimum the following:
  - .1 Bar (GANTT) Charts, indicating all work activities, tasks and other project elements, their anticipated durations, planned dates for achieving key activities and major project milestones supported with;
  - .2 Written narrative on key elements of work illustrated in bar chart, providing sufficient details to demonstrate a reasonable implementation plan for completion of project within designated time.
  - .3 Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.
- .5 Work schedule must take into consideration and reflect the required sequence of Work, special conditions and operational restrictions as specified below.
- .6 Schedule Work in cooperation with the Departmental Representative. Departmental Representative's decision is final in regards to time and order of Work. Incorporate within Work Schedule, items identified by Departmental Representative during review of preliminary schedule.
- .7 Completed schedule shall be to the Departmental Representative's approval. When schedule has been approved by Departmental Representative, take necessary measures to complete work within scheduled time. Do not change schedule without Departmental Representative's approval.
- .8 It is the Contractor's responsibility to ensure all subtrades and subcontractors are made aware of the work restraints and operational restriction specified.
- .9 Schedule Updates:
  - .1 Submit when requested by 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.
- .10 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.

- .11 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.

### 1.3 PROJECT PHASING

- .1 Be aware that Building must be kept operational for the full duration of work of this contract. Building services to areas under use by tenants must also be maintained at all times during the Facility's operational hours and as specifically defined in operational restrictions specified in this section.

### 1.4 OPERATIONAL RESTRICTIONS

- .1 The Contractor must recognize that building occupants will be affected by implementation of this contract. The Contractor must perform the work with utmost regard to the safety and conscience 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 other portion of the building without providing temporary facilities as necessary to ensure safe and direct passage through disturbed or affected areas
- .2 Contractor to meet with the Departmental Representative on a weekly basis to identify intended work areas, activities and scheduling for the coming week.
- .3 See Section 01 35 53 - Security Procedures in regards to:
  - .1 Special security requirements which must be observed in the course of work.
  - .2 Provisions of security personnel by Contractor as part of the work.
- .4 Limited Maneuvering Space on Site:
  - .1 Coordinate with Departmental Representative for loading/off loading. Parking is not available on-site.
- .5 Facility circulation maintained:
  - .1 Ensure that entrances, corridors, 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 Maintain free escape routes accessible and fire fighting access open 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 in corridors, stairwells and in building entrances and exits.
- .6 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, colored 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 cost for the supply and installation of these signs in the tender price.

### 1.5 PROJECT MEETINGS



- .1 Schedule and administer project meetings, held on a minimum weekly basis, for entire duration of work and more often when directed by Departmental Representative as deemed necessary due to progress of work of particular situation.
- .2 Prepare agenda for meetings.
- .3 Notify participants in writing 4 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.
  - .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 email is acceptable. Decision will be based on compatibility of software among participants.

#### **1.6 WORK COORDINATION**

- .1 The General Contractor is responsible for coordinating the work of the various trades and predetermining where the work of such trades interfaces with each other.
  - .1 Designate one person from own employ having overall responsibility to review contract documents and shop drawings, plan and manage such coordination.
- .2 The General 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.
  - .1 Provide each trade with the plans and specs of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
  - .2 Develop coordination drawings when deemed required illustrating potential interference between work of various trades and distribute to all affected parties including structural trade.
    - .1 Pay particularly close attention to overhead work above ceilings and within or near to building structural elements.
    - .2 Coordination drawings to identify all building elements, service lines, rough-in points and indicate from where various services are coming.
  - .3 Review coordination drawings at purposely called meetings. Have subcontractors sign-off on drawings and publish minutes of each meeting.
  - .4 Plan and coordinate work in such a way to minimize quantity of service line offsets.
  - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submission of shop drawings and ordering of prefabricated equipment or prebuilt components shall only occur once coordination meeting for such items has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
- .4 Work Cooperation:
  - .1 Ensure cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
  - .2 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.

#### **End Of Section**

## **1 General**

### **1.1 GENERAL**

- .1 All submittals are to be delivered within 30 days of award of Contract.
- .2 Make specified submittals to the Departmental Representative at commencement of Contract, before beginning work on site, and no later than 10 days after award. Include:
  - .1 Workers' Compensation clearance letter
  - .2 Cost Breakdown
  - .3 Permits as required
  - .4 Construction schedule
  - .5 Corporate Safety Plan
  - .6 Site specific safety plan
  - .7 Shop drawing schedule
- .3 During Construction provide:
  - .1 Updated trade construction schedule
  - .2 Shop drawings as required
  - .3 Inspection and test reports
  - .4 Request for Information
  - .5 Submission required for payment purposes
- .4 At completion of Work provide:
  - .1 Submission at completion of work as specified in Project Close Out, Commissioning, and Operations and Maintenance Data Sections.

### **1.2 ADMINISTRATIVE**

- .1 Refer to GC 3.10 Shop Drawings
- .2 Submit to Departmental Representative submittals listed for review. Submit 10 working days after award of contract 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.
- .3 Do not proceed with Work affected by submittal until review is complete.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, converted values are acceptable.
- .6 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.
- .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 co-ordinated.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .11 Keep one reviewed copy of each submission on site.

### **1.3 SUBMITTAL SCHEDULES:**

- .1 Within 10 days following award of contract, prepare and submit a summary of all submittals required by the Contract.

- .2 Submittal schedule shall be formatted as follows:

SECTION NUMBER	ITEM/ EQUIP	SHOP DWG DEL DATE	ORDER DATE	ITEM DEL DATE
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- .3 The initial submission shall include completion of the first 3 columns of the above table example. Once approved shop drawings are received by the Contractor, the balance of the summary shall be updated and submitted accordingly.

#### 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 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow 10 days for Departmental Representative's review of each submission.
- .4 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.
- .5 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.
- .6 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.
- .7 After Departmental Representative's review, distribute copies.
- .8 Submit one transparency of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

- .9 Submit 6 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.
- .10 Submit 3 copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .11 Submit 3 copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .12 Submit 3 copies of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .13 Submit 3 copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .14 Submit 3 copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .15 Delete information not applicable to project.
- .16 Supplement standard information to provide details applicable to project.
- .17 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, transparency will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

## 1.5 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 business address.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where color, 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.

**End Of Section**

## **1 General**

### **1.1 SECTION INCLUDES**

- .1 Fire Safety Requirements.
- .2 Hot Work Permit.
- .3 Existing Fire Protection and Alarm Systems.

### **1.2 RELATED SECTIONS**

- .1 Section 01 35 29 - Health, Safety and Emergency Response Procedures.

### **1.3 REFERENCES**

- .1 National Fire Code 2010.
- .2 National Building Code 2010.

### **1.4 DEFINITIONS**

- .1 Hot Work defined as:
  - .1 Welding work.
  - .2 Cutting of materials by use of torch or other open flame devices.
  - .3 Grinding with equipment which produces sparks.
  - .4 Use of open flame torches such as for roofing work.

### **1.5 SUBMITTALS**

- .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental Representative for review, within 14 calendar days of acceptance of bid.
- .2 Submit in accordance with Section 01 33 00 - Submittal Procedures.

### **1.6 FIRE SAFETY REQUIREMENTS**

- .1 Implement and follow fire safety measures during Work. Comply with following:
  - .1 National Fire Code 2010.
  - .2 National Building Code 2010.
  - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

### **1.7 HOT WORK AUTHORIZATION**

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot Work on site.
- .2 To obtain authorization submit to Departmental Representative:
  - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
  - .2 Description of the type and frequency of Hot Work required.
  - .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented and followed during performance of hot work, Departmental Representative will give authorization to proceed as follows:
  - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
  - .2 Subdivide the work into pre-determined, individual activities, each activity requiring a separately written authorization to proceed.
- .4 Requirement for individual authorization will be based on:

- .1 Nature or phasing of work;
- .2 Risk to Facility operations;
- .3 Quantity of various trades needing to perform hot work on project or;
- .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.
- .5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.
- .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the Departmental Representative. When directed, perform Hot Work only during non-operative hours of the Facility. Follow Departmental Representative's directives in this regard.
- .7 Submit requests in sufficient time so as not to delay work.

### **1.8 HOT WORK PROCEDURES**

- .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Hot Work Procedures to include:
  - .1 Requirement to perform hazard assessment of site and immediate work area beforehand for each hot work event in accordance with Safety Plan specified in Section 01 35 29 - Health and Safety Requirements.
  - .2 Use of a Hot Work Permit system with individually issued permit by Contractor's Superintendent to worker or subcontractor granting permission to proceed with Hot Work.
  - .3 Permit required for each Hot Work event.
  - .4 Designation of a person on site as a Fire Safety Watcher responsible to conduct a fire safety watch for a minimum duration of 30-60 minutes immediately following the completion of the Hot Work.
  - .5 Compliance with fire safety codes, standards and occupational health and safety regulations specified.
  - .6 Site specific rules and procedures in force at the site as provided by the Facility Manager.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Label document as being the Hot Work Procedures for this contract.
- .4 Procedures shall clearly establish responsibilities of:
  - .1 Worker performing hot work,
  - .2 Person issuing the Hot Work Permit,
  - .3 Fire Safety Watcher,
  - .4 Subcontractor(s) and Contractor.
- .5 Brief all workers and subcontractors on Hot Work Procedures and of Permit system. Stringently enforce compliance.

### **1.9 HOT WORK PERMIT**

- .1 Hot Work Permit to include the following:
  - .1 Project name and project number;
  - .2 Building name and specific room or area where hot work will be performed;
  - .3 Date of issue;
  - .4 Description of hot work type needed;
  - .5 Special precautions to be followed, including type of fire extinguisher needed;
  - .6 Name and signature of permit issuer.
  - .7 Name of worker to which the permit is issued.

- .8 Permit validity period not to exceed 8 hours. Indicate start time/date and termination time/date.
- .9 Worker's signature with time/date of hot work completion.
- .10 Stipulated time period of safety watch.
- .11 Fire Safety Watcher's signature with time/date.
- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
- .3 Each Hot Work Permit to be completed in full, signed and returned to Contractor's Superintendent for safe keeping on site.

#### **1.10 FIRE PROTECTION AND ALARM SYSTEMS**

- .1 Fire protection and alarm systems shall not be:
  - .1 Obstructed.
  - .2 Shut-off, unless approved by Departmental Representative.
  - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Costs incurred, from the fire department, Facility owner and tenants, resulting from negligently setting off false alarms will be charged to the Contractor in the form of financial progress payment reductions and holdback assessments against the Contract.

#### **1.11 DOCUMENTS ON SITE**

- .1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.
- .2 Upon request, make available to Departmental Representative or to authorized safety Representative for inspection.

**End Of Section**



## **1 General**

### **1.1 SECTION INCLUDES**

- .1 Procedures to isolate and lockout electrical facility and other equipment from energy sources.

### **1.2 RELATED SECTIONS**

- .1 Section 01 35 29 - Health, Safety and Emergency Response Procedures.
- .2 Section 01 35 53 - Security Procedures.

### **1.3 REFERENCES**

- .1 CSA C22.1-12, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
- .2 CAN/CSA-C22.3 No.1-06, Overhead Systems.
- .3 CSA C22.3 No.7-06, Underground Systems.
- .4 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

### **1.4 DEFINITIONS**

- .1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.
- .2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment has been isolated.
- .3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).
- .4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.
- .5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.
- .6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

### **1.5 COMPLIANCE REQUIREMENTS**

- .1 Comply with the following in regards to isolation and lockout of electrical facilities and equipment:
  - .1 Canadian Electrical Code.
  - .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
  - .3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
  - .4 Procedures specified herein.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply.

### **1.6 SUBMITTALS**

- .1 Submit copy of lockout procedures, sample of lockout permit and lockout tags proposed for use in accordance with Section 01 33 00 - Submittal Procedures.. Submit within 14

calendar days of acceptance of bid.

## **1.7 ISOLATION OF EXISTING SERVICES**

- .1 Obtain Departmental Representative's written authorization prior to working on existing live or active electrical facilities and equipment and before proceeding with isolation of such item.
- .2 To obtain authorization, submit to Departmental Representative the following documentation:
  - .1 Written request to isolate the particular service or facility and;
  - .2 Copy of Contractor's Lockout Procedures.
- .3 Make a Request for Isolation for each event, unless directed otherwise by Departmental Representative, as follows:
  - .1 Fill-out standard form in current use at the Facility as provided by Departmental Representative or;
  - .2 Where no form exist, make written request indicating:
    - .1 The equipment, system or service to be isolated and it's location;
    - .2 Duration of isolation period (ie: start time & date and completion time & date).
    - .3 Voltage of service feed to system or equipment being isolated.
    - .4 Name of person making the request.
- .4 Do not proceed with isolation until receipt of written notification from Departmental Representative granting the Isolation Request and authorizing to proceed with the work.
  - .1 Note that Departmental Representative may designate another person at the Facility being authorized to grant the Isolation Request.
- .5 Conduct safe, orderly shut down of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.
- .6 Determine in advance, as much as possible, in cooperation with the Departmental Representative, the type and frequency of situations which will require isolation of existing services.
- .7 Plan and schedule shut down of existing services in consultation with the Departmental Representative and the Facility Manager. Minimize impact and downtime of Facility operations. Follow Departmental Representative's directives in this regard.
- .8 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 01 35 29 - Health and Safety Requirements.

## **1.8 LOCKOUTS**

- .1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from all potential sources of energy prior to working on such items.
- .2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.
- .3 Prepare typed written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workforce to safely isolate an active piece of equipment or electrical facility and effectively lockout and tagout it's sources of energy.
- .4 Include as part of the Lockout Procedures a system of lockout permits managed by Contractor's Superintendent or other qualified person designated by him/her as being "in-charge" at the site.
  - .1 A lockout permit shall be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.
  - .2 Duties of person managing the permit system to include:
    - .1 Issuance of permits and lockout tags to workers.

- .2 Determining permit duration.
- .3 Maintaining record of permits and tags issued.
- .4 Making a Request for Isolation to Departmental Representative when required as specified above.
- .5 Designating a Safety Watcher, when one is required based on type of work.
- .6 Ensuring equipment or facility has been properly isolated.
- .7 Collecting and safekeeping lockout tags returned by workers as a record of the event.
- .5 Clearly establish, describe and allocate responsibilities of:
  - .1 Workers.
  - .2 Person managing the lockout permit system.
  - .3 Safety Watcher.
  - .4 Subcontractor(s) and General Contractor.
- .6 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect specific project requirements.
  - .1 Incorporate site specific rules and procedures in force at site as provided by Facility Manager through the Departmental Representative.
  - .2 Clearly label the document as being the Lockout procedures applicable to work of this contract.
- .7 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
- .8 Use industry standard lockout tags.
- .9 Provide appropriate safety grounding and guards as required.

#### **1.9 CONFORMANCE**

- .1 Brief all workers and subcontractors on requirements of this section. Stringently enforce use and compliance.

#### **1.10 DOCUMENTS ON SITE**

- .1 Post Lockout Procedures on site in common location for viewing by workers.
- .2 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers on site for full duration of Work.
- .3 Upon request, make available to Departmental Representative or to authorized safety representative for inspection.

**End Of Section**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 35 24 - Special Procedures on Fire Safety Requirements.
- .2 Section 01 35 25 - Special Procedures on Lockout Requirements.

### **1.2 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 danger 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.

### **1.3 SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
  - .1 Submit within 10 work days of notification of Bid Acceptance. Allow for 5-10 days for Department review and recommendations prior to the commencement of work. Provide 3 copies.
  - .2 Departmental Representative will review Health and Safety Plan and provide comments.
  - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
  - .4 Departmental Representative's review and comments made of the Plan 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 Occupational Health and Safety of the Work.
  - .5 Submit revisions and updates made to the Plan during the course of Work.
- .3 Submit name of designated Health and Safety Site Representative and support documentation specified in the Safety Plan.
- .4 Submit building permit, compliance certificates and other permits obtained.
- .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other Department of Labour organization.
  - .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
- .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .7 Submit copies of incident reports.
- .8 Submit WHMIS MSDS - Material Safety Data Sheets.

### **1.4 COMPLIANCE REQUIREMENTS**

- .1 Comply with Occupational Health and Safety Act for Province of Nova Scotia, and Regulations made pursuant to the Act.

- .2 Comply with Occupational Health and Safety Act for Province of New Brunswick, and General Regulations made pursuant to the Act.
- .3 Comply with Occupational Health and Safety Act for Province of Prince Edward Island, and Occupational Health and Safety Regulations made pursuant to the Act.
- .4 Comply with Occupational Health and Safety Act for Province of Newfoundland and Labrador, and Occupational Health & Safety Regulations made pursuant to the Act.
- .5 Comply with Canada Labour Code - Part II (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations as well as any other regulations made pursuant to the Act.
  - .1 The Canada Labour Code can be viewed at: [www.http://laws-lois.justice.gc.ca/eng/acts/L-2\\_fulltext.html](http://laws-lois.justice.gc.ca/eng/acts/L-2_fulltext.html).
  - .2 Canadian Occupational Health and Safety Regulations can be viewed at: <http://laws-lois.justice.gc.ca/eng/regulations/SOR-86-304/index.html>.
  - .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: 819-956-4800 or 1-800-635-7943 Publication No. L31-85/2000 (E or F).
- .6 Treasury Board of Canada Secretariat (TBS):
  - .1 Treasury Board, Fire Protection Standard April 1, 2010 [www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316&section=text](http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316&section=text).
- .7 Canadian Standards Association (CSA):
  - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- .8 Observe construction safety measures of:
  - .1 NBC 2010, Division B, Part 8.
  - .2 Municipal by-laws and ordinances.
- .9 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
- .10 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.
- .11 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

## **1.5 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.
- .2 Comply with and 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 by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.

## **1.6 SITE CONTROL AND ACCESS**

- .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
  - .1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, 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 premises by use of appropriate means.
  - .1 Erect fences, hoarding, barricades and temporary lighting as required to

effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment. See Section 01 50 00 - Facilities and Controls, for minimum acceptable requirements.

- .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
- .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 PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

## **1.7 PROTECTION**

- .1 Give precedence to safety and health 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 situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

## **1.8 FILING OF NOTICE**

- .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.
  - .1 Departmental Representative will assist in locating address if needed.

## **1.9 PERMITS**

- .1 Post permits, licenses and compliance certificates, specified in Section 01 35 29 - Health and Safety Requirements, Section 01 52 00 - Construction Facilities and Section 01 56 00 - Temporary Barriers and Enclosures.
- .2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out applicable portion of work.

## **1.10 HAZARD ASSESSMENTS**

- .1 Perform site specific health and safety hazard assessment of the Work and its site.
- .2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.
- .3 Record results and address in Health and Safety Plan.
- .4 Keep documentation on site for entire duration of the Work.

## **1.11 PROJECT/SITE CONDITIONS**

- .1 Following are potential health, environmental and safety hazards at the site for which Work may involve contact with:
  - .1 Facility on-going operations:
    - .1 Workers and operational activities at parking and loading docks..
    - .2 Interior workers and operational activities at interior of building in path to work site.
- .2 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered during Work.
- .3 Include above items in the hazard assessment of the Work.

- .4 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from Departmental Representative.

#### 1.12 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 determined by Departmental Representative. Ensure attendance of:
  - .1 Superintendent of Work.
  - .2 Designated Health & 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.

#### 1.13 HEALTH AND SAFETY PLAN

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
  - .1 List of health risks and safety hazards identified by hazard assessment.
  - .2 Control measures used to mitigate risks and hazards identified.
  - .3 On-site Contingency and Emergency Response Plan as specified below.
  - .4 On-site Communication 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.
- .3 On-site Contingency and Emergency Response Plan shall include:
  - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
  - .2 Evacuation Plan: site and floor plan layouts showing escape routes, marshalling areas. Details on alarm notification methods, fire drills, location of firefighting 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 officials from:
    - .1 General Contractor and subcontractors.
    - .2 Pertinent 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 pertinent data including name of PWGSC and Facility Management contacts.
- .4 On-site Communication Plan:
  - .1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.
  - .2 List of critical work activities to be communicated with 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 regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor

- arrive at Work Site.
- .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 the Plan, and updates, prominently on Work Site.

#### **1.14 SAFETY SUPERVISION**

- .1 Employ Health & Safety Site Representative responsible for daily supervision of 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 with health and safety requirements of the Work
  - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
  - .3 Conduct site safety orientation session to persons granted access to Work Site.
  - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the 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 person in occupational health and safety.
  - .2 Have site-related working experience specific to activities of the Work.
  - .3 Be on Work Site at all times during execution of the Work.
- .4 All supervisory personnel assigned to the Work 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.
  - .2 Conduct Formal Inspections on a minimum [monthly] basis. Use standardized safety inspection forms. Distribute to subcontractors.
  - .3 Follow-up and ensure corrective measures are taken.
- .6 Cooperate with Facility's Occupational Health and Safety representative should one be designated by Departmental Representative.
- .7 Keep inspection reports and supervision related documentation on site.

#### **1.15 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 task.
- .2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.
- .3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

#### **1.16 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 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:



- .2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
- .3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
- .4 Obey warning signs and safety tags.
- .2 Brief persons of disciplinary protocols to be taken for noncompliance. Post rules on site.

#### **1.17 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 of health and safety regulations is not corrected in a timely manner.

#### **1.18 INCIDENT REPORTING**

- .1 Investigate and report the following incidents to Departmental Representative:
  - .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
  - .2 Medical aid injuries.
  - .3 Property damage in excess of \$10,000.00,
  - .4 Interruptions to Facility operations resulting in an operational lost to a Federal department in excess of \$5,000.00.
- .2 Submit report in writing.

#### **1.19 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.
  - .3 For interior work in an occupied Facility, post additional copy in one or more publically accessible locations.

#### **1.20 BLASTING**

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

#### **1.21 POWDER ACTUATED DEVICES**

- .1 Use powder actuated fastening devices only after receipt of written permission from Departmental Representative.

#### **1.22 CONFINED SPACES**

- .1 Abide by occupational health and safety regulations regarding work in confined spaces.
- .2 Obtain an Entry Permit in accordance with Part XI of the Canada Occupational Health and Safety Regulations for entry into an existing identified confined space located at the Facility or premises of Work.
  - .1 Obtain permit from Facility Manager.
  - .2 Keep copy of permit issued.
- .3 Safety for Inspectors:
  - .1 Provide PPE and training to Departmental Representative and other persons who require entry into confined space to perform inspections.
  - .2 Be responsible for efficacy of equipment and safety of persons during their entry and occupancy in the confined space.

**1.23 SITE RECORDS**

- .1 Maintain on Work Site copy of 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 authorized Safety Officer for inspection.

**1.24 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 having jurisdiction.
- .2 Post other documents as specified herein, including:
  - .1 Site specific Health and Safety Plan.
  - .2 WHMIS data sheets.
  - .3 Notices for safety as per paragraph 1.9, this Section.

**End Of Section**

**1 General**

**1.1 FIRES**

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

**1.2 DISPOSAL OF WASTES**

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

**1.3 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 beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

**1.4 SMOKING RESTRICTIONS**

- .1 Smoking is not permitted inside the building or on site, at any time or at any stage of construction.

**1.5 ENVIRONMENTAL PERMIT APPROVAL**

- .1 Comply with requirements contained in the Transportation and Public Works Environmental Management Division environmental approval permit for the project.

**End Of Section**

## **1 General**

### **1.1 GENERAL**

- .1 General access for the work site will be from the exterior. As such Commissionaires will NOT be required for day to day operations. The Contractor will not be permitted inside the building, except to de-energize and re-energize the deck lights.
- .2 Obtain and pay for the services of security personnel, employed by the Canadian Corps of Commissionaires to de-energize and re-energize the deck lights.
  - .1 When escorting the Contractor inside building to de-energize and re-energize the deck lights, the Commissionaire must stay with the Contractor at all times.
  - .2 Commissionaire shall report directly to the Departmental Representative. All worker(s) shall follow security directives given by Commissionaire.
- .3 Personal Protective Equipment (PPE) will be as required by the facility safety regulations for all Commissionaires and the Contractor.
- .4 Due to the nature of this facility, and client operations therein, security regulations pertaining to site will be in place during the work resulting in need for:
  - .1 Control and limit of movement of construction workers inside building;
  - .2 Continuous escort and supervision of workers by security personnel;
  - .3 Specific rules and regulations as specified in this section and as directed by Departmental Representative to be stringently followed.
  - .4 All additional requirements found in the annex "Security Requirements Check List".
  - .5 Workers are required to sign at main entry daily, then proceed to loading bay for access to the work site. Passes to be returned at end of daily work.
- .5 It is the Contractor's responsibility to:
  - .1 Become familiar with and abide by security rules and regulations;
  - .2 Brief all workers and sub-contractors in respect of the security regulations and ensure that they abide by all rules and directives.
- .6 The Departmental Representative will coordinate a pre-construction meeting between Contractor, Facility Management and Security Personnel who will provide details and directives on control and movement on site.
- .7 Any infraction of site security regulations on the part of the Contractor, members of work force or any Sub-contractor in his employee, could result in:
  - .1 A fine, to a maximum of \$1,000.00, being levied against the General Contractor.
  - .2 Demand immediate removal of offending party from site.

### **1.2 SECURITY CONTROL LIST**

- .1 Provide to Departmental Representative a list of employee names from workforce and from Sub-contractors who will be present at site during course of work.
- .2 List to include names, addresses and telephone number of all persons.
- .3 Update list as work progresses.
- .4 Ensure that each worker can provide proof of identity upon demand, when requested by Security Personnel, Departmental Representative or Facility Management.
- .5 Contractor's Security Personnel shall not allow access onto site of persons not identified on security control list.

## **End Of Section**

## **1 General**

### **1.1 REFERENCES AND CODES**

- .1 Perform Work in accordance with National Building Code of Canada (NBC) 2010 including all 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.

### **1.2 HAZARDOUS MATERIAL DISCOVERY**

- .1 Asbestos: Demolition of spray or trowel-applied asbestos is hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of demolition work, immediately stop work and notify Departmental Representative.
- .2 Should material suspected of containing PCB's be encountered in the course of demolition work, immediately stop work and notify Departmental Representative.

**End Of Section**

## 1 General

### 1.1 ABBREVIATION SCHEDULE

- .1 See Room Finish Schedule Abbreviations and Door Schedule Abbreviation attached to the respective Schedules for abbreviations specific to those schedules.

AFL	Access Flooring
ACI	Acoustical Coated Insulation
ACRYL	Acrylic Coating
ACT	Acoustical Ceiling Tile
AGG	Aggregate
AHU	Air Handling Unit
ALUM	Aluminum
ANOD	Anodized
ARCH	Architect(ural)
ASPH	Asphalt
AUTO	Automatic
AV	Audio Visual
AWP	Acoustic Wall Panel
AWT	Acoustical Wall Type
A-RSF	Anti-Static Resilient Flooring
BL	Bed Locator
BD	Board
BLDG	Building
BR	Bumper Rail
BRK	Brick
BULK	Bulkhead
C	Conduit
C/A	Cash Allowance
CARP(CPT)	Carpet
CARP-T	Carpet Tile
CB	Catch Basin
CBD	Chalkboard
CBP	Concrete Block Pier
C/BLK	Concrete Block
C/C	Center to Center
CEIL	Ceiling
CEM	Cement
CEM/P	Cement Plaster
CG	Corner Guard
CGSB	Can Gov't Standards Board
CH.R	Chair Rail
CH	Ceiling Height
CI	Cast Iron
CJ	Control Joint
CL	Ceiling Mounted
C/L	Centerline
CLAD	Cladding
CLR	Clear
CLRD	Colored
CM	Construction Manager
CNTR	Counter

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COL	Column
COMM	Communications
CONC	Concrete
CONC-H	Concrete Hardener
CONC-S	Concrete Sealer
CONSTR	Construction
CONT	Continuous
CORR	Corridor
CS	Carpet Sheet
CSA	Canadian Standard Association
CT	Ceramic Tile
CUH	Cabinet Unit Heater
C/W	Complete With
C/WB	Cabinet Whiteboard
DEM	Demountable
DET	Detail
DF	Double Faced
DIAM	Diameter
DICT	Dictation
DIM	Dimension
DR	Door
DS	Door Schedule
DTL	Detail
DWG	Drawing
EBB	Existing Baseboard Heater
EC	Epoxy Coating
ELECT	Electrical
ELEV	Elevator
EQ	Equal
ETCH	Etched Glass
EXIST	Existing (Material)
EXP	Exposed
EXT	Exterior
FAB	Fabricated
FCB	Flash Cove Base
FCL	Finish Ceiling Level
FDN	Foundation
FF	Force Flow Heater
FFL	Finish Floor Level
FILM	Glass Film
FIN	Finish
FIN SCH	Finish Schedule
FL	Floor
FP	Fireproof(ing)
FG	Footgrille
FR	Frame
FRP	Fiber Reinforced Plastic
FRR	Fire Resistant Rating
FS	Fire Separation
FUT	Future
FXT	Fixture

FC	Flash Cove Base
GA	Gauge
GALV	Galvanized
GB (GWB)	Gypsum Board
GB-IR	Gypsum Board - Impact Resistant
GGB-MR	Gypsum Board - Moisture Resistant
GL/BK	Glass Block
GL	Glass or Glazing
GL-T	Glass - Tempered
GL-W	Glass - Wired (and WG)
H/C	Handicapped
HD	Hard
HDWE	Hardware
HM	Hollow Metal
HR	Handrail
HT	Height
HP	Horsepower
ICP	Insulated Ceiling Panel
INCL	Include(d) or Including
INSUL	Friction Fit Batt Insulation
INT	Interior
IWP	Insulated Wall Panel
JAN	Janitor
JT	Joint
LL	Lead Lined
LFI	Loose Insulation Inside Concrete Block Cores
LINO	Linoleum
LNTRN	Lantern
LP	Liner Panel
LSG	Laminated Safety Glass
LVR	Louvre
M	Meters
MAX	Maximum
MCC	Motor Control Centre
MECH	Mechanical
MFCB	Melamine Faced Composition Board
MFR	Manufacturer
MH	Manhole
MH/CB	Manhole / Catch Basin
MIN	Minimum
MIR	Mirror
MISC	Miscellaneous
MLC	Metal Liner Ceiling
MM	Millimeters
MR	Moisture Resistant
MS	Millwork Schedule
MTL	Metal



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NBCC	National Building Code of Canada
NIC	Not In Contract
NO	Number
NOM	Nominal
N/S	Non-Slip
O/C	On Centre
O/H	Overhead
OHS	Occupational Health and Safety
OWSJ	Open Web Steel Joist
PAV	Paving
PB	Peg Board
PLAM	Plastic Laminate
PLAST	Plaster
PLY	Plywood
PLWP	Plastic Laminate Wood Panel
PM	Project Manager
PNL	Panel
PP	Plastic Paint
PS	Projection Screen
PSS	Polished Stainless Steel
PT	Paint
PT-E	Paint-Epoxy
P.T.	Pressure Treated
PTN	Partition
PTS	Pneumatic Tube Station
PVC	Polyvinyl Chloride
PRT	Porcelain Tile
P.WR	Public Washroom
Q-RND	Quarter Round
QT	Quarry Tile
R	Radius
RBR (RUB)	Rubber / Rubber Base
R/C	Reinforced Concrete
REQT	Requirement
REV	Revise, Revision
RES	Resilient
RFC	Resilient Flash Cove
RFT	Rubber Floor Tile
RM	Room
RMO	Rough Masonry Open
RND	Round
RSF	Resilient Sheet Flooring
REINF	Reinforced
RWL	Rainwater Leader
RT	Resilient Tile
RS	Resilient Sheet
RS-N	Resilient Sheet Non-Slip
SAN	Sanitary
SAP	Sound Absorbing Panels

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SB	Sound Blast
SC	Special Coating
SCH	Schedule
SHT-RBR	Sheet Rubber
SCI	Sound Control Insulation
SCRN	Screen
SDG	Sealed Double Glazing
SHT	Sheet
SHV	Sheet Vinyl
SHT-S	Sheet Vinyl Safety
SHT-SR	Sheet Vinyl Slip Resistant
SHT-WG	Sheet Vinyl Wood Grain
SIM	Similar
SLDG	Sliding
SR	Seamless Resin
SLR	Sealer
SP	Special
SPEC	Specification(s)
SPKLR	Sprinkler
SQ	Square
SRF	Studded Rubber Flooring
SS	Stainless Steel
STLD	Steel Deck
STR	Structural or Structure
SV	Stone Veneer
STOR	Storage
S.WR	Staff Washroom
TB	Tackboard
TBR	To Be Removed
TEL	Telephone
T&F	Taped and Filled
T&G	Tongue and Groove
TORG	Torginol
TOS	Top of Structure
TERR	Terrazzo
TERR-E	Terrazzo - Epoxy
TS	Tackboard Schedule
U/C	Undercut
U/G	Underground
U/S	Underside
ULS	Underwriters Laboratory of Canada
UNO	Unless Noted Otherwise
URET	Urethane
UWS	Upholstered Wall System
VB	Vapor Barrier
VCT	Vinyl Composite Tile
VEST	Vestibule
VF	Vinyl Fabric
VM	Vinyl Molding
VWC	Vinyl Wall Covering
VWP	Vinyl Wall Protection

WB	White Board
WC	Wood Closet
WCH	Wheelchair
WD	Wood
WR	Washroom
WS	Wainscoting
W/	With
WVP	Wood Veener Panel

**End Of Section**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 78 00 - Closeout Submittals.

### **1.2 INSPECTION**

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 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.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative may order any 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, Owner shall pay cost of examination and replacement.

### **1.3 INDEPENDENT INSPECTION AGENCIES**

- .1 Independent Inspection/Testing Agencies are to be engaged by Contractor for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Contractor.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of Inspection/Testing Agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency may request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Owner. Pay costs for retesting and re inspection.

### **1.4 PROCEDURES**

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

### **1.5 REPORTS**

- .1 Submit 3 copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to Subcontractor of work being inspected or tested.

### **1.6 TESTS AND MIX DESIGNS**

- .1 Furnish test results and mix designs as may be requested.
- .2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Departmental Representative and may be authorized as recoverable.

**1.7 MILL TESTS**

- .1 Submit mill test certificates as requested.

**1.8 EQUIPMENT AND SYSTEMS**

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

**End Of Section**

## **1 General**

### **1.1 SITE ACCESS AND PARKING**

- .1 The Departmental Representative will designate Contractor's access to project site as well as parking facilities for equipment.
- .2 The Contractor will maintain asphalt surfaces and sidewalks free from mud and debris tracked from construction site, on a daily basis, at no cost to Owner.
- .3 The Contractor will provide and maintain signs, barricades and other devices required to indicate construction activities or other temporary and unusual conditions resulting from project work, at no cost.

### **1.2 SNOW REMOVAL**

- .1 All snow removal to access Contractor's construction trailers and storage, and to perform own work by the Contractor.

### **1.3 BUILDING ACCESS**

- .1 Use only access doors, and circulation routes and elevators within building as designated by Departmental Representative to access interior work.

### **1.4 CONTRACTOR'S SITE OFFICE**

- .1 Be responsible for and provide own site office, including electricity, heat, lights and communications as listed below. Locate site office as directed by Departmental Representative.
- .2 The Contractor will provide, at no cost to the Owner, an office heated to 22 C, lighted 750 Lx and ventilated, one space of sufficient size to accommodate site meetings for Contractor, Trades, Departmental Representative and Owner. Site office to be furnished with meeting table and chairs, drawing laydown table, desk and storage space to accommodate documents required to be maintained on site. The use of the existing building is not acceptable.
- .3 The Contractor will provide telephone and fax machine on separate line independent of telephone for use by Contractor, subcontractors and other persons in the Contractor's employ.
- .4 The Contractor will provide a cellular phone line for the site supervisor.

### **1.5 STORAGE SHEDS**

- .1 Provide adequate weather tight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather.
- .2 Provide heat when materials being stored are subject to frost damage.
- .3 Under no circumstances will Departmental Representative accept materials damaged due to exposure to weather elements, for incorporation into construction. Departmental Representative will determine what constitutes damaged material.

### **1.6 LAYOUT**

- .1 Contractor shall be responsible for detailed setting out of his work.

### **1.7 MATERIAL STORAGE**

- .1 Locate site storage trailers where directed by Departmental Representative. Place in location of least interference with existing facility operations.
- .2 Material storage space on site is limited. Coordinate delivery to minimize storage period on site before being needed for incorporation into work.
- .3 Make arrangements elsewhere in the City as deemed required and pay all costs for storage of materials not ready for incorporation into work.

**1.8 REMOVAL OF TEMPORARY FACILITIES**

- .1 Remove temporary facilities from site when directed by Departmental Representative.

**1.9 WASTE REMOVAL**

- .1 The Contractor will provide bins as required. Contractor responsible for placement and sorting of waste in the collection bins and removal of waste from site.

**End Of Section**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 35 53 - Security Procedures.
- .2 Section 01 50 00 - Facilities and Controls.
- .3 Section 01 52 00 - Construction Facilities.
- .4 Section 01 56 00 - Temporary Barriers and Enclosures.

### **1.2 INSTALLATION AND REMOVAL**

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

### **1.3 WATER SUPPLY**

- .1 Water supply is available on site and will be provided for construction usage at no cost. Make arrangements for the use and transportation of such services to work area through the Departmental Representative.

### **1.4 SANITARY FACILITIES**

- .1 The Contractor will provide, at no cost to the Owner, sanitary facilities for work force in accordance with governing regulations and ordinances for entire duration of project. Facilities within the existing building are not available to the Contractor's work force.
- .2 The Contractor will post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Sanitary facilities must be located as directed by Departmental Representative.

### **1.5 POWER**

- .1 Power supply is available and will be provided for construction usage at no cost.
  - .1 Make arrangements for the use of such services through the Departmental Representative.
  - .2 Departmental Representative will designate and approve each location of existing power source to which connections can be made to obtain temporary power service.
  - .3 Connect to existing power supply in accordance with Canadian Electrical Code.
- .2 Provide and pay all costs to supply and install temporary cabling, panel boards, switching devices and other equipment as required to connect into power source, provide adequate ground fault protection and extend power supply from existing source to work areas. 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 and to lockout requirements specified in Section 01 35 29 - Health, Safety and Emergency Response Procedures.
- .3 Electrical power and lighting systems installed under this Contract can be used for construction requirements provided that guarantees are not affected thereby. Make good damage.

### **1.6 FIRE PROTECTION**

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

**End Of Section**



## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 50 00 - Facilities and Controls.
- .2 Section 01 51 00 - Temporary Utilities.
- .3 Section 01 56 00 - Temporary Barriers and Enclosures.

### **1.2 REFERENCES**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2008, Stipulated Price Contract.
- .2 Canadian General Standards Board (CGSB)
  - .1 CGSB 1-GP-189M-84, Primer, Alkyd, Wood, Exterior.
  - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .3 Canadian Standards Association (CSA International)
  - .1 CAN3-A23.1-/A23.2-94, Concrete Materials and Methods for Concrete Construction/Method of Test for Concrete.
  - .2 CSA-0121-M1978, Douglas Fir Plywood.
  - .3 CAN/CSA-Z321-96, Signs and Symbols for the Occupational Environment.

### **1.3 INSTALLATION AND REMOVAL**

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

### **1.4 SCAFFOLDING**

- .1 Provide and maintain scaffolding.
- .2 Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CAN/CSA-S269.2-M87(R1998).
- .3 Erect scaffolding independent of walls. Remove when no longer required.
- .4 Provide scaffolding, with steps, to the roof level and including over the top of the existing stainless steel rail. Scaffolding to be complete with an 2400mm high plywood enclosure at bottom, including a lockable door. Scaffolding to serve as the only access to work site.
- .5 Ladders are not an acceptable means of access.

### **1.5 HOISTING**

- .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
- .2 Hoists and cranes shall be operated by qualified operator.

### **1.6 SITE STORAGE/LOADING**

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

### **1.7 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.
- .3 Provide adequate weather tight, heat and ventilation appropriate for the use and storage

of equipment, tools and materials.

**End Of Section**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 50 00 - Facilities and Controls.
- .2 Section 01 51 00 - Temporary Utilities.
- .3 Section 01 52 00 - Construction Facilities.

### **1.2 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.189M-84, Primer, Alkyd, Wood, Exterior.
  - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978, 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 SITE SAFETY FENCING**

- .1 Contractor to provide site safety fencing around entire construction site to separate construction zone from public.
- .2 Size of compound to be determined by Contractor and generally as shown on site plan, but must contain all construction and construction related activities within the compound, except parking for workers.
- .3 Contractor to provide 1800mm high page wire fence supported by steel "T" bars driven into the ground. Space at 2400mm maximum.
- .4 Contractor to provide double gates at entrance complete with lock.
- .5 Contractor to lock gate after every days activities are completed.
- .6 Contractor to post notices for both construction zone and personal protective equipment requirements.
- .7 Remove fence when directed.

### **1.5 DUST CONTROL BARRIERS**

- .1 Provide tack mats at access points between construction zone and entrance to building. Replace when ineffective.

### **1.6 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs, and other areas where a change in elevation of greater than 900mm exists.
- .2 Provide as required by governing authorities.

### **1.7 ACCESS TO EXITS**

- .1 Maintain access to all existing exits at all times.

### **1.8 FIRE ROUTES**

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

### **1.9 PROTECTION OF BUILDING FINISHES**

- .1 Provide protection for finished building components and equipment during demolition and construction. Protect stainless steel rails, flashings, windows, sky lights, wall panels, trees and landscaping elements which may be affected or damaged by the

- 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.

**1.10 PROTECTION OF LANDSCAPE ELEMENT**

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Be responsible for damage incurred due to lack of or improper protection.

**End Of Section**

## **1 General**

### **1.1 GENERAL**

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Departmental Representative, submit following information for materials and products proposed for supply:
  - .1 Name and address of manufacturer.
  - .2 Trade name, model and catalog number.
  - .3 Performance, descriptive and test data.
  - .4 Manufacturer's installation or application instructions.
  - .5 Evidence of arrangements to procure.
- .3 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.

### **1.2 REFERENCE STANDARDS**

- .1 Conform to reference standards, in whole or in part as specifically requested in specifications.
- .2 If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .3 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.

### **1.3 CONFORMANCE**

- .1 When material or equipment is specified by standard or performance specifications, upon request of Departmental Representative, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.

### **1.4 SUBSTITUTION OF MATERIAL**

- .1 Proposals for substitution may be submitted only after award of Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.
- .2 Proposals will be considered by Departmental Representative if:
  - .1 Products selected by tenderer from those specified, are not available, or
  - .2 Delivery date of products selected from those specified would unduly delay completion of Contract.
  - .3 Alternative products to those specified, which are brought to attention of, and considered by Departmental Representative as equivalent to those specified and will result in credit to Contract amount.
  - .4 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as a result of substitution.
  - .5 Amounts of all credits arising from approval of substitutions will be determined by Departmental Representative and Contract price will be reduced accordingly. No substitutions will be permitted without prior written approval of Departmental Representative.

### **1.5 QUALITY OF PRODUCTS**

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

evidence as to type, source and quality of products provided.

- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

#### **1.6 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 of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

#### **1.7 AVAILABILITY**

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any 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.

#### **1.8 TRANSPORTATION**

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

#### **1.9 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 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.

#### **1.10 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

#### **1.11 CO-ORDINATION**

- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

#### **1.12 FASTENINGS - GENERAL**

- .1 Provide metal fastenings and accessories in same texture, color and finish as base metal in which they occur.
- .2 Prevent electrolytic action between dissimilar metals.
- .3 Use non-corrosive fasteners, anchors and spacers for securing exterior work.
- .4 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood plugs not acceptable.
- .5 Keep exposed fastenings to minimum, space evenly and lay out neatly.
- .6 Fastenings which cause spalling or cracking are not acceptable.
- .7 Obtain Departmental Representative's approval before using explosive actuated fastening devices. If approval is obtained comply with CSA Z166-1975, and observe restrictions in Section 01 35 29 - Health, Safety and Emergency Response Procedures.

#### **1.13 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 and resilient washers with stainless steel.

#### **1.14 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.

#### **1.15 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.

#### **1.16 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

**1.17 CONSTRUCTION EQUIPMENT AND PLANT**

- .1 On request, prove to the satisfaction of Departmental Representative that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .2 Maintain construction equipment and plant in good operating order.

**End Of Section**



**1 General**

**1.1 EXISTING SERVICES**

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .2 Remove abandoned service lines within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative.

**1.2 LOCATION OF EQUIPMENT AND FIXTURES**

- .1 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .2 Inform Departmental Representative of impending installation and obtain approval for actual location.
- .3 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.
- .4 Record locations of maintained, re-routed and abandoned service lines.

**End Of Section**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 10 00 - Summary
- .2 Section 01 33 00 - Submittal Procedures.

### **1.2 MATERIALS**

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

### **1.3 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 may be exposed by uncovering work; maintain excavations free of water.

### **1.4 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 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .9 Restore work with new products in accordance with requirements of Contract Documents.
- .10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .11 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, full thickness of the construction element.
- .12 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
- .13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

**End Of Section**

## **1 General**

### **1.1 RELATED SECTION**

- .1 Section 01 77 00 - Closeout Procedures.
- .2 All Sections

### **1.2 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .3 Provide on-site containers for collection of waste materials and debris. Coordinate location of waste bins with Departmental Representative.
- .4 Provide and use clearly marked separate bins.
- .5 Remove waste and debris from site and deposit in waste container at end of each working day.
- .6 Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each day.
- .8 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .9 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .10 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

### **1.3 CLEANING DURING CONSTRUCTION**

- .1 Maintain work site in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
- .2 Keep existing building entrances, corridors and stairwells used by workers in clean dust free condition at all times. Conduct thorough cleaning of these areas at end of each work shift.
- .3 See Section 01 56 00 - Temporary Barriers and Enclosures for requirements on dust control and for erection of dust partitions.

### **1.4 FINAL CLEANING**

- .1 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .2 Remove waste products and debris.
- .3 Broom clean deck.
- .4 Remove dirt and other disfiguration from exterior surfaces.
- .5 Remove debris and surplus materials from site.

## **End Of Section**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 78 00 - Closeout Submittals.

### **1.2 INSPECTION AND DECLARATION**

- .1 Contractor's Inspection:
  - .1 Contractor and all Subcontractors shall conduct an 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 that corrections have been made.
    - .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection:
  - .1 Departmental Representative, Owner and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
  - .1 Work has been completed and inspected for compliance with Contract Documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Equipment and systems have been tested, adjusted and are fully operational.
  - .4 Systems have been commissioned.
  - .5 Operation of systems have been demonstrated to Owner's personnel.
  - .6 Work is complete and ready for Final Inspection.
- .4 Final Inspection:
  - .1 When items noted above are completed, request final inspection of Work by Owner and Departmental Representative. If Work is deemed incomplete by Departmental Representative complete outstanding items and request re inspection.
  - .2 When Departmental Representative consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Certificate of Substantial Performance.
  - .3 Date of Owner's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
  - .4 When Departmental Representative consider final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. If Work is deemed incomplete by Owner, complete outstanding items and request re-inspection. Cost of re-inspection will be deducted from final payment.

### **1.3 TOTAL PERFORMANCE**

- .1 The Contractor shall inspect the work to establish its completion in accordance with the Contract Documents and when satisfied of this completion request of the Departmental Representative a final inspection.
- .2 The Departmental Representative will compile a final deficiency list at this inspection and issue it to the Contractor and Owner.
- .3 The Contractor shall correct final deficiencies before a date agreed upon by the Contractor and Departmental Representative.
- .4 When the Contractor has satisfied himself that these corrections have been completed in a satisfactory manner by his inspection, he shall schedule a re-inspection by the

- Departmental Representative, and the Owner if required, within five working days of the Contractor's request.
- .5 When the Departmental Representative is satisfied that all deficiencies have been rectified and the work is complete, the Contractor shall submit an application for the final progress payment.
- .6 When "seasonal deficiencies", as determined by the Owner and/or Departmental Representative exist, a sum of money will be withheld.

#### **1.4 WARRANTY PERIOD**

- .1 The Owner will advise the Departmental Representative of defects observed during Warranty periods.
- .2 The Departmental Representative will notify the Contractor of these defects and request him to remedy the defects in accordance with the Contract Documents.
- .3 Thirty days before expiration of Warranties the Owner, the Departmental Representative and the Contractor will review the work as arranged by the Contractor noting defects of products and workmanship.
- .4 The Contractor shall immediately remedy such noted defects.

**End Of Section**

## **1 General**

### **1.1 SECTION INCLUDES**

- .1 Project Record Documents as follows:
  - .1 As-Built drawings;
  - .2 As-Built specifications;
  - .3 Reviewed shop drawings.
- .2 Operations and Maintenance data as follows:
  - .1 Operations and Maintenance Manual;
  - .2 Maintenance Materials;
  - .3 Spare Parts;
  - .4 Special Tools.

### **1.2 RELATED SECTIONS**

- .1 Section 01 45 00 - Quality Control.
- .2 Section 01 77 00 - Closeout Procedures.

### **1.3 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 Chases for mechanical, electrical and other services;
    - .5 Ceiling and floor elevations;
    - .6 Reflected ceiling plan condition showing finished layout of all ceiling-mounted services and devices;
    - .7 Plumbing, heating, air conditioning and ventilation, sprinkler and electrical service installation locations; all to be dimensioned and referenced to building columns or load bearing walls;
    - .8 All design elevations, sections, floor plans and details dimensioned and marked-up to consistently report finished installation conditions;
    - .9 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;

- .10 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.
- .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.

#### **1.4 REVIEWED SHOP DRAWINGS**

- .1 Compile full set of shop drawings and product data reviewed on project and incorporate into Operations and Maintenance Manual. Supply number of shop drawing sets equal to the required number of final Operations 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.

#### **1.5 OPERATIONS AND MAINTENANCE MANUALS**

- .1 Definition: an organized compilation of operating and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems as specified in individual sections of the specifications.
- .2 Manual Language: final manuals to be in English language.
- .3 Number of copies required:
  - .1 Submit 2 interim copies of the manual for review and inspection by Departmental Representative. Make revisions and additions as directed and resubmit.
  - .2 Upon review and acceptance by Departmental Representative, submit 3 final copies. 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 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 16 division numerical order of contract specifications and thereafter subdivided into various equipment or building systems.
  - .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 List of maintenance materials.
  - .4 List of spare parts.
  - .5 List of special tools.
  - .6 Original or certified copy of Warranties and Guarantees.
  - .7 Copies of approvals, and certificates issued by Inspection Authorities.
  - .8 Copies of reports and results from tests designated as Contractor's responsibilities.
  - .9 Product Information Data on all materials, equipment and systems as specified in individual sections of the specifications to include:
    - .1 List of equipment including manufacturer's name, supplier, local source of supplies and service depot(s). Provide full addresses and telephone numbers.
    - .2 Nameplate information including equipment number, make, size, capacity, model number and serial number.
    - .3 Parts list.
    - .4 Installation details.
    - .5 Operating instructions.
    - .6 Maintenance instructions for equipment.
    - .7 Maintenance instructions for finishes.
- .7 Shop drawings:
  - .1 Bind one complete set of reviewed shop drawings into each copy of operations and maintenance manual.
  - .2 Bind the shop drawings in a manner such that they correspond with the specification section they relate to.
  - .3 Where large quantity of data is supplied due to size of project, fold and bind professionally into separate correctly sized binder.
- .8 Equipment and Systems Data: the following list indicates the type of data and extent of information required to be included for each item of equipment and for each system:
  - .1 Description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
  - .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
  - .3 Include installed color coded wiring diagrams.
  - .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.



- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Servicing and lubrication schedule, and list of lubricants required.
- .7 Manufacturer's printed operation and maintenance instructions.
- .8 Sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's coordination drawings, with installed color coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports.
- .15 Additional requirements as specified in individual specification sections.
- .9 Materials and Finishes Maintenance Data:
  - .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and color and texture designations.
  - .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
  - .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
  - .4 Additional Requirements: as specified in individual specifications sections.

## 1.6 SUBMISSION

- .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned after final inspection, with Departmental Representative's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, three final copies of operating and maintenance manuals in English.
- .5 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .6 If requested, furnish evidence as to type, source and quality of products provided.
- .7 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .8 Pay costs of transportation.
- .9 Failure to deliver maintenance materials, spare parts, special tools and as-builts will delay progress payments.

## 1.7 FORMAT

- .1 Organize data in the form of an instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify

- contents of each binder on spine.
- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: Manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

## **1.8 CONTENTS - EACH VOLUME**

- .1 Table of Contents: provide title of project;
  - .1 date of submission; names,
  - .2 addresses, and telephone numbers of Departmental Representative, 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 clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control and Section 01 77 00 - Closeout Procedures.

## **1.9 RECORDING ACTUAL SITE CONDITIONS**

- .1 Record information on 2 sets of blue line opaque drawings, and in copy of Project Manual.
- .2 Provide felt tip marking pens, maintaining separate colors for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly 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: legibly mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalog 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.

**1.10 STORAGE, HANDLING AND PROTECTION**

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

**1.11 WARRANTIES AND BONDS**

- .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 where specifically requested by individual specification sections, within ten days after completion of the applicable item of work.
- .4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

**End Of Section**