

**PART 1 GENERAL**

**1.01 MINIMUM STANDARDS**

- .1 Materials to be new and work to conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the most recent edition of the National Building Code of Canada (NBC) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy, the most stringent requirement apply.

**1.02 TAXES**

- .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).

**1.03 FEES, PERMITS, AND CERTIFICATES**

- .1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificates. Provide inspection certificates as evidence that work conforms to requirements of Authority having jurisdiction.

**1.04 FIRE SAFETY REQUIREMENTS**

- .1 Comply with most recent editions of the National Building Code of Canada (NBC) for fire safety in construction and the National Fire Code of Canada (NFC) for fire prevention, firefighting and life safety in building in use.
- .2 Hoarding and temporary delimitation of construction site, or area of work, must not contravene the NFC.
- .3 Contractors must adhere to the PSPC and HoC Fire Prevention Hot Work Permit procedures in order to reduce potential fire hazards on grounds and reduce false fire evacuation of building occupants.

**1.05 FIELD QUALITY CONTROL**

- .1 Carry out Work using qualified licenced workers or apprentices in accordance with the Provincial Act respecting manpower vocational training and qualification.
- .2 Permit employees registered in a Provincial apprenticeship program to perform specific tasks only if under direct supervision of qualified licenced workers.
- .3 Determine permitted activities and tasks by apprentices, based on level of training attended and demonstration of ability to perform specific duties.

**1.06 HEALTH AND SAFETY**

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and the provision of Material Safety Data Sheets (MSDS) acceptable to Human Resources Development Canada, Labour Program.
- .2 Designated substance abatement procedures and scope of abatement work to be provided to Departmental Representative minimum 10 days in advance of all work. Similarly, for all work involving designated substances and/or hazardous materials, submit abatement procedures and

scope of work to Departmental Representative minimum 15 days in advance of all work. Contractor to coordinate with Departmental Representative to mitigate impacts to occupants in advance of start of work. Work cannot start until impacts have been mitigated.

**.3 Product and Chemical Listing**

- .1** A product and chemical listing to be provided to Departmental Representative, minimum 72 hours, before the start of any construction work.
- .2** All products and chemicals to be used in the work to be identified in this listing.
- .3** Product sheets and MSDS of the identified products and chemicals to be provided at the same time as the listing.
- .4** On the product and chemical listing, Departmental Representative to indicate the products and chemicals which will require Contractor to inform Departmental Representative minimum 5 days in advance of usage.
- .5** Once work is started, any subsequent additions of products or chemicals will require submission of MSDS minimum 72 hours in advance of usage.

**1.07 REMOVED MATERIALS**

- .1** Unless otherwise specified, materials for removal become Contractor's property and must be taken from site.

**1.08 PROTECTION**

- .1** Protect finished work against damage until take-over.
- .2** Protect adjacent work against the spread of dust and dirt beyond the work areas.
- .3** Protect operatives and other users of site from all hazards.

**1.09 USE OF SITE AND FACILITIES**

- .1** Execute work with least possible interference or disturbance to the normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated. Refer to article "SCHEDULING" for work that must be done during "off hours".
- .2** Maintain existing services and provide for personnel and vehicle access.
- .3** Where security is reduced by work, provide temporary means to maintain security. Provide security services contact information where applicable to Departmental Representative.
- .4** Protect work temporarily until permanent closures completed.
- .5** Keep within limits of approved construction site, including avenues of access and egress.
- .6** Keep access to site area closed after movement of materials or personnel.

**1.10 CUT, PATCH, AND MAKE GOOD**

- .1** Cut existing surfaces as required to accommodate new work.
- .2** Remove all items so shown or specified.
- .3** Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture.

**1.11 SLEEVES, HANGERS, AND INSERTS**

- .1 Co-ordinate setting and packing of sleeves and supply and installation of hangers and inserts. Obtain Departmental Representative's approval before cutting into structure.

**1.12 EXAMINATION**

- .1 Examine site and conditions likely to affect work and be familiar and conversant with existing conditions.
- .2 Provide photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims.

**1.13 SIGNS**

- .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, etcetera, in both official languages or by the use of commonly-understood graphic symbols to Departmental Representative's approval.
- .2 No advertising will be permitted on this project.
- .3 Visible signage which identifies the company(ies) of the general contractor, sub-contractors, or service providers is prohibited.
- .4 Contractor to ensure that a construction safety board is be placed immediately adjacent to each construction access/egress point.
- .5 Proposed locations, contents, and material composition of signage must be presented minimum 15 days in advance of work, to Departmental Representative for approval.
- .6 Signage to be supplied and installed to appropriately manage pedestrians and vehicular traffic.

**1.14 ACCESS AND EGRESS**

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders, and scaffolding, independent of finished surfaces and safe separation of work areas from non-work areas in accordance with relevant municipal, provincial and other regulations.
- .2 Maintain one of two, or more, adjacent pedestrian gates during the work, with exception of the Sappers' gate which can be closed to pedestrian traffic to allow for work. Design signage for review of Departmental Representative to direct pedestrians to adjacent point(s) of access.
- .3 Vehicular gates can remain closed during the work with exception of the Elgin gate which can only be closed to vehicular traffic during parliamentary recess(es) to allow for work. Design signage for review of Departmental Representative to direct vehicles to adjacent point(s) of access.

**1.15 SCAFFOLDS AND WORK PLATFORMS**

- .1 Design, install, and inspect scaffolds and work platforms required for work in accordance with relevant municipal, provincial and other regulations.
- .2 Provide design drawings, signed and sealed by qualified Professional Engineer licensed in the province of Ontario, where prescribed.
- .3 Additions or modifications to scaffolding must be approved by Professional Engineer in writing.

**1.16 PUBLIC WAY PROTECTION**

- .1 Design, erect and maintain hoarding and fencing to support all loads including wind-loads and provide protection, complete with signs and electrical lighting as required by authority having jurisdiction.
- .2 Provide lockable truck entrance gates and pedestrian access gates as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with keyed locks. Paint public side of site enclosure in colour selected by Departmental Representative.

**1.17 DELIVERIES AND REMOVAL OF MATERIALS AND EQUIPMENT**

- .1 Schedule deliveries and removals to minimize vehicle waiting time on site or adjacent areas.
- .2 Materials to be delivered and unloaded within hoarded areas. If this is not possible, unloading should be carried out close to the entry point of the construction zone in order to minimize disruption to operations. Minimize the time spent unloading and do not allow materials or equipment to remain outside hoarded areas.
- .3 Delivery or removals using articulated tractor trailers or vehicles with large or heavy items to be scheduled and agreed with Departmental Representative minimum 48 hours in advance.

**1.18 WASTE MANAGEMENT**

- .1 Comply with the Environmental Protection Act, Ontario Regulations O.Reg. 102/94 and O. Reg. 103/94 for waste management program on construction and demolition projects.
- .2 Conduct "waste audit" to determine waste generated during demolition or construction operations, prepare written "waste reduction work plan" and implement procedures to reduce, reuse and recycle materials to the extent possible.
- .3 Provide a "source separation program" to disassemble and collect in an orderly fashion the following "materials designated for alternative disposal" from the "general waste" stream.
  - .1 Brick and Portland cement concrete.
  - .2 Cardboard (corrugated).
  - .3 Steel.
  - .4 Wood (not including treated or laminated wood).
- .4 Submit complete records of all removals from site for both "materials designated for alternative disposal" and "general waste" including:
  - .1 Time and date of removal
  - .2 Description of material and quantities.
  - .3 Proof that materials have been received at an Approved Waste Processing Site or certified Waste Disposal Site as required.

**1.19 GUARANTEES AND WARRANTIES**

- .1 Before completion of work, collect all manufacturer's guarantees and warranties and deposit with Departmental Representative.

**1.20 SECURITY**

- .1 All personnel employed on this project will be subject to security screening. Obtain requisite security clearance, as instructed, for each individual required to enter the premises.
- .2 All contractors (including service providers) entering any HoC or Senate building will require an approved Authorization for Building Access (ABA). The completed ABA must be submitted to Departmental Representative minimum 72 hours in advance.
- .3 Personnel will be checked daily at the start of work shift and given a pass which must be worn at all times. Pass must be returned at the end of the work shift and personally checked out.
- .4 When conducting work in any HoC or Senate building it may be necessary to request a Parliamentary Protective Services (PPS) security escort. Contractor is to confer with Departmental Representative.
  - .1 Submit an escort request to Departmental Representative minimum 72 hours before the service is needed. For requests submitted within the time mentioned above, the costs of the security escort will be paid for by Departmental Representative. The cost incurred by a late request will be charged to Contractor.
  - .2 Any escort request may be cancelled free of charge if notification of cancellation is given minimum 4 hours before the scheduled time of the escort. The cost incurred by a late cancellation will be charged to Contractor.
  - .3 The calculation of costs will be based on the average hourly rate of a security officer for minimum 8 hours per day for a late service request and of four hours for late cancellations.
- .5 All vehicles entering the Parliament Hill grounds require an approved Authorization for Vehicular Access (AVA). The completed AVA must be submitted to Departmental Representative minimum 96 hours in advance.
- .6 A building entry point that is temporarily created for a given project or an existing controlled entry point bypassed for a given project require review by Departmental Representative. Information to be communicated through Departmental Representative. Continuous security monitoring, surveillance, and/or physical security presence may be required until the entry point is permanently secured.

**1.21 VEHICLES AND DRIVERS**

- .1 An authorization for Vehicular Access (AVA) must be submitted and approval obtained for all vehicles entering Parliament Hill grounds or other parking areas in the Parliamentary Precinct. Refer to article "SECURITY" for details.
- .2 Roads in front of Centre Block, East Block, and West Block are off limits to all construction vehicles.
- .3 Shut down vehicles and machinery when inactive to reduce noise and generation of fumes.
- .4 Vehicles must not be left unattended.

**1.22 PARKING**

- .1 Unless performing deliveries or removal work, vehicles must park in designated public parking spaces.

- .2 Construction vehicles are not permitted to park in the following areas unless performing deliveries or removal work:
  - .1 Parliament Precinct and Grounds
  - .2 HoC parking spaces and Senate parking spaces
  - .3 HoC and Senate grounds
- .3 Any vehicle in violation to be ticketed and/or towed.

**1.23 BUILDING SMOKING ENVIRONMENT**

- .1 Smoking is not permitted in the work area. Obey smoking restrictions on the property.

**1.24 DUST CONTROL**

- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public.
- .2 Maintain and relocate protection until such work is complete.

**1.25 SCHEDULING**

- .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed by Departmental Representative, take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
  - .1 In the event of phase completion, complete Work from East to West.
- .2 Contractor can carry out work Monday to Sunday and statutory holidays from 0:00 to 24:00 hours. There is an expectation that the Contractor will work multiple shifts per day, as required, to meet the schedule.
- .3 Give Departmental Representative advanced notice for work performed during "off hours" as indicated below and outlined in article "COMMUNIQUE PROCEDURES".
- .4 Carry out the following work during "off hours" Monday to Friday from 18:00 to 06:00 hours and on Saturdays, Sundays, and statutory holidays from 0:00 to 24:00 hours.
  - .1 Exterior construction activities, regardless of location of grounds, where work is likely to create a disturbance to the building occupants. A disturbance is caused by disruptive work creating vibrations, impacts, noise, dust, fumes, or unsightly condition perceptible to building occupants. Contractor may be required to cease work for limited periods of time as outlined in article "WORK STOPPAGES".
  - .2 Work requiring the use of a crane including delivery and removal of materials. Give Departmental Representative 20 day notice in accordance with Communiqué Procedures.
  - .3 Work requiring the obstruction of roads, sidewalks or building access/egress. Give Departmental Representative 20 day notice in accordance with Communiqué Procedures.
- .5 During the dates and times listed below, deliveries or removal of materials are not permitted. Also, site construction lighting must be shut down, booms lowered to horizontal position, and audible equipment such as compressors, generators, excavation or hoisting equipment, and

other noise-producing equipment must be shut off. Note dates and times shown below are subject to change.

- .1 Sound and Light event: daily, from July 5 through the first Monday of September, from 20:30 to 23:00 hours.
- .2 Remembrance Day: November 11, from 10:45 to 11:15 hours.
- .3 Canada Day: July 1, 6:00 hours to July 2, 01:00 hours.
- .4 Christmas Light Ceremony: first Thursday in December from 17:00 to 23:00 hours.
- .5 Police Memorial Service: last Sunday of September from 08:30 to 12:30 hours.
- .6 Fire-fighter Memorial Service: second Sunday of September from 08:30 to 12:30 hours.
- .7 Changing of the Guard Ceremony: daily, starting on the Friday prior to Canada Day (July 1) to last Friday in August, from 10:00 to 10:30 hours.
- .8 Budget Day.
- .9 State Visits, other special events, demonstrations.

#### **1.26 WORK STOPPAGE**

- .1 Work stoppages fall under 3 categories:
  - .1 Special Events
  - .2 Project Related (Construction, Building Operations, and Maintenance)
  - .3 Late Sitzings
- .2 At the start of the project, a Work Stoppage Procedure will be set in place which clearly defines lines of communication with contact names, backups, and complete contact information.
- .3 Special Events are listed in article "SCHEDULING ". In addition to the Special Events listed, Contractor to allow for 5 days of unscheduled work stoppages during the project.
- .4 Work can create a disturbance to building occupants and/or disrupt Parliamentary operations. A request for stoppage of disruptive work may be raised by HoC occupants, Senate occupants, or Departmental Representative who will manage the requests.
- .5 When the HoC and Senate have late sittings, all work that creates a disturbance to cease until minimum 1 hour after the adjournment. Late sittings may come at short notice and may be decided the day of the event.

#### **1.27 COMMUNIQUÉ PROCEDURES**

- .1 PSPC provides a surprise-free environment to its occupants and stakeholders.
- .2 Give Departmental Representative advanced notice for work to be carried out during "off hours", in order to facilitate issuance of a Communiqué.

#### **1.28 COST BREAKDOWN**

- .1 Before submitting first progress claim submit breakdown of Contract Amount in detail as directed by Departmental Representative and aggregating the Contract Amount. After approval by Departmental Representative cost breakdown will be used as the basis of progress payments.
- .2 Divide cost breakdown items by division and according to the following mandatory and recommended items:

- .1 Mandatory: mobilization.
- .2 Mandatory: cleaning method.
- .3 Mandatory: investigation type.
- .4 Mandatory: de-mobilization.
- .5 Mandatory: closeout documentation.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**PART 3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**



## **PART 1 – GENERAL**

### **1.1 REFERENCES**

1. Federal Legislation
  1. *Canada Labour Code, Part II, section 124 and 125. Canada Occupational Health and Safety Regulations*
  2. *Transportation of Dangerous Goods Act, 1992 (TDGA)*
  3. *Canada Consumer Product Safety Act*
    1. *Surface Coating Materials Regulations SOR/2005-109.*
  4. *Canadian Environmental Protection Act, 1999 (CEPA)*
    1. *PCB Regulations (SOR/2008-273)*
    2. *Federal Halocarbon Regulations, 2003 (SOR/2003-289)*
2. Provincial Legislation
  1. *Ontario Occupational Health and Safety Act, R.S.O. 1990, 2010 edition.*
    1. *Ontario Regulation 490/09 – Designated Substances (O.Reg. 490/09).*
    2. *Ontario Regulation 278/05 – Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, (O.Reg. 278/05).*
    3. *Ontario Regulation 213/91 for Construction Projects (O.Reg. 213/91)*
  2. *Ontario Environmental Protection Act, R.R.O. 1990,*
    1. *Ontario Regulation 347/09, General – Waste Management (O.Reg. 347/09).*
    2. *Ontario Regulations 362/90 – Waste Management, PCBs (O.Reg. 362/90)*
    3. *Ontario Regulation 463/10, Ozone Depleting Substances and Other Halocarbons (O.Reg. 463/10).*
3. *Canadian General Standards Board (CGSB).*
4. *Canadian Standards Association (CSA International). CAN/CSA-Z94.4-11 Respiratory Protection*
5. Underwriters' Laboratories of Canada (ULC).

### **1.2 DEFINITIONS**

HEPA vacuum: High Efficiency Particulate Arrestor filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

Time-weighted average exposure limit (TWael): the time-weighted average airborne concentration of a biological or chemical agent to which a worker may be exposed in a work day or work week as prescribed by O.Reg. 490/09 Designated Substances, as amended.

### 1.3 RELATED SECTIONS

Section 02 89 00 – Silica Precautionary Measures

Section 02 83 20 – Lead Precautionary Measures

### 1.4 DESIGNATED SUBSTANCES

The scope of work consists of performing masonry cleaning of the Wellington Wall at the Parliament Hill, Ottawa, Ontario.

Confirm with the Departmental Representative that no additional designated substances have been brought to the project area prior to beginning work.

Additional designated substances and hazardous materials may exist outside the accessible survey area but are beyond the scope of this project.

Should any additional material, suspected to be a designated substance, be encountered within the project area, any disturbance of such material must be stopped, precautionary measures taken, and the Departmental Representative must be notified immediately. Do not proceed until written instructions have been received.

1. ACRYLONITRILE: Not Identified

2. ARSENIC: Not Identified

3. ASBESTOS: Not Identified

Bulk sampling and subsequent laboratory analysis have determined that the following materials do not contain regulated concentrations of asbestos:

- Jahn mortar from the wall on the east side of Queen's Gate;
- Black mortar from the wall on the east side of Queen's Gate;
- White mortar from the wall on the east side of Queen's Gate; and
- Yellow mortar from the east side of Queen's Gate.

4. BENZENE: Not Identified

5. COKE OVEN EMISSIONS: Not Identified

6. ETHYLENE OXIDE: Not Identified

7. ISOCYANATES: Not Identified

**8. LEAD: Identified**

Bulk sampling and subsequent laboratory analysis have determined that the black paint from the decoration gate on the east side of the Queen's gate has regulated lead content above the 90 ppm threshold as outlined in the *Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109 (as amended)* within the project areas. This paint is therefore considered to be a lead-based paint.

9. MERCURY: Not Identified

**10. SILICA: Identified**

Free crystalline silica is present in concrete and mortar in the project area.

11. VINYL CHLORIDE MONOMER: Not Identified

12. POLYCHLORINATED BIPHENYLS (PCBS): *Not Identified*
13. OZONE DEPLETING SUBSTANCES (ODS): *Not Identified*

## 1.5 RECOMMENDATIONS

### 1. LEAD

1. Comply with Ontario Regulations *O. Reg. 490/09 (as amended)* while performing works that may disturb lead-containing materials.
2. Follow recommendations provided in the Ontario Ministry of Labour (MoL) Guideline entitled "*Guideline: Lead on Construction Projects*". This document classifies all disturbances of lead-containing materials as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, based on presumed airborne concentrations of lead generated during the work each of which will have defined work practices. Although this document is not a regulation, Ministry of Labour Inspectors uses it as guidance during site inspections.
3. Disposal of construction waste containing lead must be done in accordance with "General – Waste Management" *O.Reg. 347/90 (as amended)* under the *Ontario Environmental Protection Act* and the federal *Transportation of Dangerous Goods Act*.

### 4. SILICA

1. Comply with Ontario Regulations *O.Reg. 490/09* when performing works that may disturb silica-containing materials.
2. Follow recommendations provided in the Ontario Ministry of Labour Guideline entitled "*Guideline: Silica on Construction Projects*". This document classifies all silica disturbances as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification.

**END OF SECTION**

**PART 1 GENERAL****1.01 REFERENCES****.1 Definitions:**

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (Gantt chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars.
- .3 Baseline: original approved plan (for Project, work package, or activity), plus or minus approved scope changes.
- .4 Cash Flow: projection of progress payment requests based on cash loaded construction schedule.
- .5 Completion Milestones: they are firstly Interim Certificate and secondly Final Certificate.
- .6 Constraint: applicable restriction or limitation, either internal or external to project, that will affect performance of Project. Factors that affect activities can be scheduled.
- .7 Control: process of comparing actual performance with planned performance, analyzing variances, evaluating possible alternatives, and taking appropriate corrective action as needed.
- .8 Critical Activity: any activity on a critical path.
  - .1 Most commonly determined by using critical path method.
- .9 Critical Path: sequence of activities that determines duration of Project. Generally, it is the longest path through Project.
  - .1 Usually defined as those activities with float less than or equal to specified value, often zero.
- .10 Critical Path Method (CPM): network analysis technique used to determine the amount of scheduling flexibility (amount of float) on various logical network paths in Project schedule network, and to determine the minimum total Project duration.
- .11 Data Date: date through which project status and progress were last determined and reported for analyses, such as scheduling and performance measurements.
- .12 Duration: total number of work periods (not including holidays or other non-working periods) required to complete activity or other Project element.
  - .1 Usually expressed as workdays or work weeks.
- .13 Early Finish Date (EF): in critical path method, earliest possible point in time on which uncompleted portions of activity (or Project) can finish, based on network logic and schedule constraints.
  - .1 Early finish dates can change as Project progresses and changes are made to Project plan.

- .14 Early Start Date (ES): in critical path method, earliest possible point in time on which uncompleted portions of activity (or Project) can start, based on network logic and schedule constraints.
  - .1 Early start dates can change as Project progresses and changes are made to Project Plan.
- .15 Finish Date: point in time associated with activity's completion.
  - .1 Usually qualified by one of following: actual, planned, estimated, scheduled, early, late, baseline, target, or current.
- .16 Float: amount of time that activity may be delayed from its early start without delaying Project finish date.
  - .1 This resource is available to both PWGSC and Contractor.
- .17 Impact Analysis: schedule analysis technique that adds a modeled delay to an accepted construction schedule to determined possible outcome of that delay on project completion.
- .18 Lag: modification of logical relationship that directs delay in successor activity.
- .19 Late Finish Date (LF): in critical path method, latest possible point in time that activity may be completed without delaying specified milestone (usually Project finish date).
- .20 Late Start Date (LS): in critical path method, latest possible point in time that activity may begin without delaying specified milestone (usually Project finish date).
- .21 Lead: modification of logical relationship that allows acceleration of successor task.
- .22 Logic Diagram: see Project network diagram.
- .23 Master Schedule: summary-level schedule that identifies major deliverable; work breakdowns structure and key milestones.
- .24 Milestone: significant point or event in Project, usually completion of major deliverable.
- .25 Monitoring: capture, analysis, and reporting of Project performance, usually as compared to plan.
- .26 Non-Critical Activities: activities which when delayed, do not affect specified Contract duration.
- .27 Project Control System: fully computerized system utilizing commercially available software packages.
- .28 Project Network Diagram: schematic display of logical relationships of Project activities.
  - .1 Always drawn from left to right to reflect Project chronology.
- .29 Project Plan: formal, approved document used to guide both Project execution and Project control.
  - .1 Primary uses of Project plan are to document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope, cost, and schedule baselines.
  - .2 Project plan may be summary or detailed.
- .30 Project Planning: development and maintenance of Project Plan.
- .31 Project Planning, Monitoring and Control System: overall system operated to enable monitoring of Project Work in relation to established milestones.

- .32 Project Schedule: planned dates for performing activities and planned dates for meeting milestones.
- .33 Quantified days duration: working days based on 7 day work week, discounting statutory holidays.
- .34 Risk: uncertain event or condition that, if it occurs, has positive or negative effect on Project's objectives.
- .35 Start Date: point in time associated with activity's start, usually qualified by one of following: actual, planned, estimated, scheduled, early, late, target, baseline, or current.
- .36 Work Breakdown Structure (WBS): deliverable-oriented hierarchical decomposition of Work to be executed by contractor to accomplish project objectives and create required deliverables. It organizes and defines total scope of Project. Each descending level represents an increasingly detailed definition of Project Work. WBS is decomposed into Work packages.
- .2 Reference Standards:
  - .1 Project Management Institute (PMI Standards)
    - .1 A Guide to the Project Management Body of Knowledge (PMBOK Guide) - Fourth Edition.
    - .2 Practice Standard for Scheduling - 2011.

## 1.02 ADMINISTRATIVE REQUIREMENTS

- .1 Project Meeting:
  - .1 Meet with Departmental Representative within 5 working days of Award of Contract date, to establish Work requirements and approach to project construction operations.
  - .2 Participate in project progress meetings, every other week, with Departmental Representative specifically intended to discuss update of detailed schedule and contract changes.
- .2 Scheduling:
  - .1 Planning: ensure that planning process is iterative and results in generally top-down processing with more detail being developed as planning progresses, and decisions concerning options and alternatives are made.
  - .2 Ensure project schedule efficiencies through monitoring of Project in detail to ensure integrity of Critical Path, by comparing actual completions of individual activities with their scheduled completions, and review progress of activities that has started but are not yet completed.
  - .3 Monitor sufficiently often so that causes of delays can immediately be identified and removed.
- .3 Project monitoring and reporting:
  - .1 Keep team aware of changes to schedule, and possible consequences as project progresses.
  - .2 Use narrative reports to provide advice on seriousness of difficulties and measures to overcome them.

- .3 Begin narrative reporting with statement on general status of Project followed by summarization of delays, potential problems, corrective measures and Project status criticality.
- .4 Critical Path Method (CPM) Requirements:
  - .1 Ensure Master Schedule and Detail Schedule are practical and remain within specified Contract duration.
  - .2 Revise Master Schedule and Detail Schedule deemed impractical by Departmental Representative and resubmit for approval.
  - .3 Change to Contract Duration:
    - .1 Acceptance of Master Schedule and Detail Schedule showing scheduled Contract duration shorter than specified Contract duration does not constitute change to Contract.
    - .2 Duration of Contract may only be changed through bilateral Agreement.
  - .4 Consider Master Schedule and Detail Schedule deemed practical by Departmental Representative, showing Work completed in less than specified Contract duration, to have float.
  - .5 First Milestone on Master Schedule and Detail Schedule will identify start Milestone with an "ES" constraint date equal to Award of Contract date.
  - .6 Calculate dates for completion milestones from Plan and Schedule using specified time periods for Contract.
  - .7 Interim Certificate with "LF" constraint equal to calculated date.
  - .8 Calculations on updates to be such that if early finish of Interim Certificate falls later than specified Contract duration then float calculation to reflect negative float.
  - .9 Delays to non-critical activities, those with float may not be basis for time extension.
  - .10 Do not use float suppression techniques such as software constraints, preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates other than required by Contract.
  - .11 Allow for and show Master Schedule and Detail Schedule adverse weather conditions normally anticipated.
    - .1 Specified Contract duration has been predicated assuming normal amount of adverse weather conditions.
  - .12 Provide necessary crews and manpower to meet schedule requirements for performing Work within specified Contract duration.
    - .1 Simultaneous use of multiple crews on multiple fronts on multiple critical paths may be required.
  - .13 Arrange participation on and off site of subcontractors and suppliers, as required by Departmental Representative, for purpose of network planning, scheduling, updating and progress monitoring.
    - .1 Approvals by Departmental Representative of original networks and revisions do not relieve Contractor from duties and responsibilities required by Contract.

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

### 1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative Project Control System for planning, scheduling, monitoring and reporting of project progress.
- .3 Submit Project Control System to Departmental Representative for approval.
  - .1 Failure to comply with each required submission may result in progress payment being withheld.
- .4 Include costs for execution, preparation and reproduction of schedule submittals in bid documents.
- .5 Submit letter ensuring that schedule has been prepared in co-ordination with major sub-contractors.
- .6 Refer to article "PROGRESS MONITORING AND REPORTING" of this specification Section for frequency of Project control system submittals.
- .7 Submit impact analysis of schedule for changes that result in extension of contract duration.
  - .1 Include draft schedule update and report as outlined in article "PROGRESS MONITORING AND REPORTING".
- .8 Submit Project planning, monitoring and control system data as part of initial schedule submission and monthly status reporting as required by Departmental Representative in following form.
  - .1 Files in original scheduling software and in PDF format containing schedule and cash flow information, labelled with data date, specific update, and person responsible for update.
  - .2 Master Schedule Bar Chart.
  - .3 Construction Detail schedule Bar Chart.
  - .4 Listing of project activities including milestones and logical connectors, networks (sub-networks) from Project start to end. Sort activities by activity identification number and accompany with descriptions. List early and late start and finish dates together with durations, codes and float.
  - .5 Criticality report listing activities and milestones with zero total float used as first sort for ready identification of critical paths through entire project. List early and late starts and finishes dates, together with durations, codes and float for critical activities.
  - .6 Progress report in early start sequence, listing for each trade, activities due to start, underway, or finished within 2 months from monthly update date. List activity identification number, description and duration. Provide columns for entry of actual start and finish dates, duration remaining and remarks concerning action required.



**1.04 QUALITY ASSURANCE**

- .1 Use experienced personnel, fully qualified in planning and scheduling to provide services from start of construction to Final Certificate, including Commissioning.

**1.05 WORK BREAKDOWN STRUCTURE (WBS)**

- .1 Prepare construction Work Breakdown Structure (WBS) within 5 working days of Award of Contract date.
  - .1 Develop WBS through at least five levels: project, stage, element, sub-element and work package.

**1.06 PROJECT MILESTONES**

- .1 Completion of the work shall not extend beyond December 31, 2016.
- .2 Mandatory and recommended project milestones form targets for both Master Schedule and Detail Schedule of CPM construction network system.
  - .1 Mandatory: mobilization.
  - .2 Mandatory: cleaning mock-up completed.
  - .3 Mandatory: exploratory work completed.
  - .4 Mandatory: cleaning completed, by staining type.
  - .5 Mandatory: de-mobilization.
  - .6 Mandatory: interim Certificate (substantial completion).
  - .7 Mandatory: final Certificate completion.

**1.07 MASTER SCHEDULE**

- .1 Structure and base CPM construction networks system on WBS coding in order to ensure consistency throughout Project.
- .2 Prepare comprehensive construction Master Schedule (CPM logic diagram) and dependent Cash Flow Projection within 5 working days of finalizing Agreement to confirm validity or alternates of identified milestones.
  - .1 Master Schedule will be used as baseline.
    - .1 Revise baseline as conditions dictate and as required by Departmental Representative.
    - .2 Departmental Representative as Project progresses will review and return revised baseline within 5 working days.
- .3 Reconcile revisions to Master Schedule and Cash Flow Projections with previous baseline to provide continuous audit trail.
- .4 Initial and subsequent Master Schedule will include:
  - .1 Schedule and cash flow information, clearly labelled with data date, specific update, and person responsible for update.
  - .2 Bar chart identifying coding, activity durations, early/late and start/finish dates, total float, completion as percentile, current status and budget amounts.

- .3 Network diagram showing coding, activity sequencing (logic), total float, early/late dates, current status and durations.
- .4 Actual/projected monthly cash flow: expressed monthly and shown in both graphical and numerical form.

#### 1.08 DETAIL SCHEDULE

- .1 Provide detailed project schedule (CPM logic diagram) within 5 working days of Award of Contract date showing activity sequencing, interdependencies and duration estimates. Include listed activities as follows:
  - .1 Submittals.
  - .2 Samples.
  - .3 Mock-ups.
  - .4 Approvals.
  - .5 Removals.
  - .6 Construction.
  - .7 Installation.
  - .8 Site works.
  - .9 Acceptance.
- .2 Detail CPM schedule to cover in detail minimum period of 4 months beginning from Award of Contract date.
  - .1 Show remaining activities for CPM construction network system up to Final Certificate and develop complete detail as project progresses.
  - .2 Detail activities completely and comprehensively throughout duration of project.
- .3 Relate Detail Schedule activities to basic activities and milestones developed and approved in Master Schedule.
- .4 Clearly show sequence and interdependence of construction activities and indicate:
  - .1 Start and completion of all items of Work, their major components, and interim milestone completion dates.
  - .2 Activities for procurement, delivery, installation and completion of each major piece of equipment, materials and other supplies, including:
    - .1 Time for submittals, resubmittals and review.
    - .2 Time for fabrication and delivery of manufactured products for Work.
    - .3 Interdependence of procurement and construction activities.
  - .3 Include sufficient detail to assure adequate planning and execution of Work.
- .5 Provide level of detail for project activities such that sequence and interdependency of Contract tasks are demonstrated and allow co-ordination and control of project activities. Show continuous flow from left to right.
- .6 Ensure activities with no float are calculated and clearly indicated on logical CPM construction network system as being, whenever possible, continuous series of activities throughout length

of Project to form "Critical Path". Increased number of critical activities is seen as indication of increased risk.

- .7 Insert Change Orders in appropriate and logical location of Detail Schedule. After analysis, clearly state and report to Departmental Representative for review effects created by insertion of new Change Order.

#### **1.09 REVIEW OF THE CONSTRUCTION DETAIL SCHEDULE**

- .1 Allow 5 working days for review by Departmental Representative of proposed construction Detail Schedule.
- .2 Upon receipt of reviewed Detail Schedule make necessary revisions and resubmit to Departmental Representative for review within 3 working days.
- .3 Promptly provide additional information to validate practicability of Detail Schedule as required by Departmental Representative.
- .4 Submittal of Detail Schedule indicates that it meets Contract requirements and will be executed generally in sequence.

#### **1.10 COMPLIANCE WITH DETAIL SCHEDULE**

- .1 Comply with reviewed Detail Schedule.
- .2 Proceed with significant changes and deviations from scheduled sequence of activities that cause delay, only after written receipt of approval by Departmental Representative.
- .3 Identify activities that are behind schedule and causing delay. Provide measures to regain slippage.
  - .1 Corrective measures may include:
    - .1 Increase of personnel on site for effected activities or work package.
    - .2 Increase in equipment.
    - .3 Overtime work and additional work shifts.
- .4 Submit to Departmental Representative, justification, project schedule data and supporting evidence for approval of extension to Contract completion date or interim milestone date when required. Include as part of supporting evidence:
  - .1 Written submission of proof of delay based on revised activity logic, duration and costs, showing time impact analysis illustrating influence of each change or delay relative to approved contract schedule.
  - .2 Prepared schedule indicating how change will be incorporated into the overall logic diagram. Demonstrate perceived impact based on date of occurrence of change and include status of construction at that time.
  - .3 Other supporting evidence requested by Departmental Representative.
  - .4 Do not assume approval of Contract extension prior to receipt of written approval from Departmental Representative.
- .5 In event of Contract extension, display in Detail Schedule that scheduled float time available for work involved has been used in full without jeopardizing earned float.

- .1 Departmental Representative will determine and advise Contractor number of allowable days for extension of Contract based on project schedule updates for period in question, and other factual information.
- .2 Construction delays affecting project schedule will not constitute justification for extension of contract completion date.

#### **1.11 PROGRESS MONITORING AND REPORTING**

- .1 On ongoing basis, Detail Schedule on job site must show "Progress to Date". Arrange participation on and off site of subcontractors and suppliers, as, and when necessary, for purpose of network planning, scheduling, updating and progress monitoring. Inspect Work with Departmental Representative at least once monthly to establish progress on each current activity shown on applicable networks.
- .2 Update and reissue project Work Breakdown Structure and relevant coding structures as project develops and changes.
- .3 Perform Detail Schedule update monthly with status dated (Data Date) on last working day of month. Update to reflect activities completed to date, activities in progress, logic and duration changes.
- .4 Do not automatically update actual start and finish dates by using default mechanisms found in project management software.
- .5 Submit to Departmental Representative copies of updated Detail Schedule.
- .6 Requirements for monthly progress monitoring and reporting are basis for progress payment request.
- .7 Submit monthly written report based on Detail Schedule, showing Work to date performed, comparing Work progress to planned, and presenting current forecasts. Report must summarize progress, defining problem areas and anticipated delays with respect to Work schedule, and critical paths. Explain alternatives for possible schedule recovery to mitigate any potential delay. Include in report:
  - .1 Description of progress made.
  - .2 Pending items and status of: permits, shop drawings, change orders, and possible time extensions.
  - .3 Status of Contract completion date and milestones.
  - .4 Current and anticipated problem areas, potential delays and corrective measures.
  - .5 Review of progress and status of Critical Path activities.

#### **PART 2 PRODUCTS**

##### **2.01 NOT USED**

- .1 Not used.

**PART 3            EXECUTION**

**3.01            NOT USED**

.1            Not used.

**END OF SECTION**

**PART 1 GENERAL**

**1.01 ADMINISTRATIVE**

- .1 Submit to Departmental Representative a log of submittals for review prior to the start of work. Update submittal log and submit to Departmental Representative 24 hours before each Project Meeting.
- .2 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .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.

**1.02 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Ontario, Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 10 working days for Departmental Representative's review of each submission.

- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Wiring diagrams.
    - .9 Single line and schematic diagrams.
    - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit 4 prints and one electronic PDF format copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

- .11 Submit 4 prints and one electronic PDF format copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit 4 prints and one electronic PDF format copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit 4 prints and one electronic PDF format copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit 4 prints and one electronic PDF format copy of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit 4 prints and one electronic PDF format copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit 4 prints and one electronic PDF format copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and



such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

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

### **1.03 SAMPLES**

- .1 Submit for review samples in triplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

### **1.04 MOCK-UPS**

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

### **1.05 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic copy of colour digital photography in JPG format, fine resolution, organized by date and location, monthly with progress statement and as directed by Departmental Representative.
  - .1 Quality: well-illuminated, appropriate exposure, sharply focused, free of glare and motion blur.
  - .2 Identification: location, wall bay/pier number, orientation and date of exposure.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: locations as requested in specification Sections.
  - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: daily as directed by Departmental Representative.
  - .1 Minimum of twenty (20) daily photographs of the progress of work.

**PART 2            PRODUCTS**

**2.01            NOT USED**

.1            Not Used.

**PART 3            EXECUTION**

**3.01            NOT USED**

.1            Not Used.

**END OF SECTION**

**PART 1 GENERAL**

**1.01 REFERENCES**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Ontario
  - .1 Occupational Health and Safety Act for Construction Projects, R.S.O. 1990, c. 0.1, as amended and O. Reg. 213/91, as amended.

**1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan in an indexed three ring binder: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit 4 prints and one electronic copy of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative and or authority having jurisdiction, weekly.
- .4 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 working days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative. The revised Health and Safety Plan binder will be returned to the Contractor for site use.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
- .11 Submit proof of training and qualifications of personnel, and alternates, responsible for site health and safety including, but not limited to, the following:
  - .1 Requirements for hazards present on site.

- .2 Training for use of personal protective equipment.

**1.03 FILING OF NOTICE**

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

**1.04 SAFETY ASSESSMENT**

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

**1.05 MEETINGS**

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

**1.06 PROJECT/SITE CONDITIONS**

- .1 Work at site, in accordance with Section 01 14 25 - Designated Substances, will involve contact with:
  - .1 Lead.
  - .2 Silica.

**1.07 GENERAL REQUIREMENTS**

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

**1.08 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

**1.09 COMPLIANCE REQUIREMENTS**

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 and Ontario Regulations for Construction Projects, O. Reg. 213/91.

**1.10 UNFORSEEN HAZARDS**

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

**1.11 HEALTH AND SAFETY CO-ORDINATOR**

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator; site supervisor can assume this role. Health and Safety Co-ordinator must:
  - .1 Have site-related working experience specific to activities associated with hazardous materials.
  - .2 Have working knowledge of occupational safety and health regulations.
  - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
  - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
  - .5 Be on site during execution of Work and report directly to and be under direction of site supervisor, where not the site supervisor.

**1.12 POSTING OF DOCUMENTS**

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

**1.13 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 may stop Work if non-compliance of health and safety regulations is not corrected.

**1.14 BLASTING**

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

**1.15 POWDER ACTUATED DEVICES**

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

**1.16 WORK STOPPAGE**

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

**PART 2            PRODUCTS**

**2.01            NOT USED**

.1            Not used.

**PART 3            EXECUTION**

**3.01            NOT USED**

.1            Not used.

**END OF SECTION**

**PART 1 GENERAL**

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

**1.02 INDEPENDENT INSPECTION AGENCIES**

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .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 will 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 Departmental Representative. Pay costs for retesting and re-inspection.

**1.03 ACCESS TO WORK**

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

**1.04 PROCEDURES**

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

**1.05 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

**1.06 REPORTS**

- .1 Submit 4 prints and one electronic copy of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested.

**1.07 MOCK-UPS**

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct in locations acceptable to Departmental Representative as specified in specific Section.
- .3 Prepare mock-ups for Departmental Representative's review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Departmental Representative will assist in preparing schedule fixing dates for preparation.
- .6 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.



**PART 3            EXECUTION**

**3.01            NOT USED**

.1            Not Used.

**END OF SECTION**

**PART 1 GENERAL**

**1.01 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.02 INSTALLATION AND REMOVAL**

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

**1.03 DEWATERING**

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

**1.04 WATER SUPPLY**

- .1 Provide continuous supply of potable water for construction use.
- .2 Use portable units and pay costs for installation, maintenance and removal. Size and number of units as required to perform work.

**1.05 TEMPORARY HEATING AND VENTILATION**

- .1 Provide temporary heating required during construction period, including attendance and maintenance.
- .2 Construction heaters must be non-flameless type. Solid fuel salamanders are not permitted. Propane cannot be used due to security concerns; diesel fuel is recommended.
- .3 Provide temporary heat and ventilation in enclosed areas as required to:
  - .1 Facilitate progress of Work.
  - .2 Protect Work and products against dampness and cold.
  - .3 Prevent moisture condensation on surfaces.
  - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
  - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .4 Maintain temperatures in areas where construction is in progress.
- .5 Ventilating:
  - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
  - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
  - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
  - .4 Ventilate storage spaces containing hazardous or volatile materials.

- .5 Ventilate temporary sanitary facilities.
- .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .6 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
  - .1 Conform with applicable codes and standards.
  - .2 Enforce safe practices.
  - .3 Prevent abuse of services.
  - .4 Prevent damage to finishes.
  - .5 Vent direct-fired combustion units to outside.
- .7 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

**1.06 TEMPORARY POWER AND LIGHT**

- .1 Provide and pay for temporary power during construction for temporary lighting, and operating of power tools and equipment.
- .2 Source of power to be low-noise type with maximum rating of 90dB.
- .3 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all surfaces mimics the colour and intensity of daylight.

**1.07 TEMPORARY COMMUNICATION FACILITIES**

- .1 Provide and pay for temporary data hook up, lines, and equipment necessary for own use.

**1.08 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**PART 3 EXECUTION**

**3.01 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

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

**END OF SECTION**

**PART 1 GENERAL**

**1.01 REFERENCES**

- .1 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-S269.2, Access Scaffolding for Construction Purposes.
  - .2 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

**1.02 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.03 INSTALLATION AND REMOVAL**

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

**1.04 SCAFFOLDING**

- .1 Scaffolding in accordance to CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ramps, temporary stairs, ladders, cranes and aerial man-lifts.

**1.05 HOISTING**

- .1 Provide, operate and maintain hoists required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Lifting devices to be operated by qualified operator.

**1.06 SITE STORAGE/LOADING**

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

**1.07 CONSTRUCTION PARKING**

- .1 Parking will not be permitted on site.
- .2 Provide and maintain adequate access to project site.

**1.08 OFFICES**

- .1 Provide office heated to 22 degrees C, lighted and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.

- .2 Provide marked and fully stocked first-aid case in a readily available location.

**1.09 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof chests for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof chests on site in manner to cause least interference with work activities.

**1.10 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances; locate in laydown area.
- .2 Post notices and take precautions as required by local health authorities. Keep facilities and premises in sanitary condition.

**1.11 CONSTRUCTION SIGNAGE**

- .1 No signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction in both official languages; graphic symbols to CAN/CSA-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose off-site on completion of project or earlier if directed by Departmental Representative.

**1.12 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs.
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .8 Dust control: adequate to ensure safe operation at all times.
- .9 Lighting: to assure full and clear visibility for work areas during night work operations.
- .10 Provide snow removal during period of Work.

**1.13 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**PART 3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

**PART 1 GENERAL**

**1.01 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
  - .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978(R2003), Douglas Fir Plywood.

**1.02 INSTALLATION AND REMOVAL**

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Raise tarps, lowered for performing work, at the end of each work day. The wall must be fully visible for security reasons when work is not in progress such that there is no hiding place.
- .3 Remove from site all such work after use.

**1.03 HOARDING**

- .1 Laydown area:
  - .1 Erect temporary site enclosures using 38 x 89 mm construction grade lumber framing at 600 mm centres and 1200 x 2400 x 13 mm exterior grade fir plywood to CSA O121.
  - .2 Apply plywood panels vertically flush and butt jointed.
  - .3 Paint public side of site enclosure in selected colours with one coat primer to CAN/CGSB 1.189 and one coat exterior paint to CGSB 1.59. Maintain public side of enclosure in clean condition.
  - .4 Provide lockable truck entrance gates as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gate with lock and keys.
- .2 Work area(s):
  - .1 Erect temporary site enclosure using new 2.4 m high portable modular galvanized steel fence, welded 16 gauge tubing and welded 6 gauge mesh, with fence posts generally spaced at 2.4 m on centre; provide accessories as required (weighted blocks, base plates, etc.) Maintain fence in good repair.
- .3 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.
- .4 Submit drawings with details and procedures for site enclosures and other barriers, in accordance with Section 01 33 00 - Submittal Procedures.

**1.04 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open edges of floors and roofs.
- .2 Provide as required by governing authorities.

**1.05 WEATHER ENCLOSURES**

- .1 Provide weather tight closures to openings.
- .2 Enclose work areas as required for temporary heat and safety related to the work; use new white tarps. Provide roofs as required to allow for work during inclement weather while maintaining ambient conditions.
- .3 Design enclosures to withstand wind pressure and snow loading.

**1.06 DUST TIGHT SCREENS**

- .1 Provide dust tight screens to localize dust generating activities, and for protection of workers, finished areas of work and public.
- .2 Maintain and relocate protection until such work is complete.

**1.07 ACCESS TO SITE**

- .1 Maintain vehicle and pedestrian gates as outlined in article "ACCESS AND EGRESS" of Section 01 00 10 – General Instructions.
- .2 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.
- .3 Maintain pedestrian walkways, complete with signs.

**1.08 PUBLIC TRAFFIC FLOW**

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

**1.09 FIRE ROUTES**

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

**1.10 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

**1.11 PROTECTION OF BUILDING FINISHES**

- .1 Provide protection for finished and partially finished wall finishes during performance of Work.
- .2 Provide necessary temporary screens and covers to protect interventions during the progress of work. Install to allow easy access to perform work.
- .3 Select appropriate material, and leave in place no longer than required.
- .4 Secure protections such that fasteners do not damage the historic fabric. Anchor into existing joints at discretion of the Departmental Representative.
- .5 Be responsible for damage incurred due to lack of or improper protection.



**1.12 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling as outlined in article "WASTE MANAGEMENT" of Section 01 00 10 – General Instructions.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**PART 3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

**PART 1 GENERAL**

**1.01 REFERENCES**

- .1 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

**1.02 QUALITY**

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout Work.
- .6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

**1.03 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 finished parts 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.

**1.04 TRANSPORTATION**

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Transportation cost of products supplied by Owner will be paid for by Departmental Representative. Unload, handle and store such products.

**1.05 MANUFACTURER'S INSTRUCTIONS**

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

**1.06 QUALITY OF WORK**

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

**1.07 CO-ORDINATION**

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

**1.08 REMEDIAL WORK**

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

**1.09 FASTENINGS**

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive stainless steel fasteners and anchors for securing exterior work, unless other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable unless otherwise noted.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

**1.10 PROTECTION OF WORK IN PROGRESS**

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

**1.11 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

PART 3            EXECUTION

3.01            NOT USED

.1            Not Used.

END OF SECTION

**PART 1 GENERAL**

**1.01 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
- .2 Remove waste materials and debris from site daily at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice from access to Work, bank pile snow in designated areas only, remove from site.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris; locate in the laydown area.
- .6 Provide and use marked separate bins for recycling as outlined in article "WASTE MANAGEMENT" of Section 01 00 10 – General Instructions.
- .7 Dispose of waste materials and debris off site.
- .8 Clean work areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly finished surfaces.
- .13 Remove from work area, and place in designated laydown area, weatherproof chests, as well as tools, equipment and materials not required to be stored in weatherproof chests, when workers are not present and/or at end of shift.

**1.02 FINAL CLEANING**

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

- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 Remove stains, spots, marks and dirt from decorative work.
- .7 Clean lighting reflectors, lenses, and other lighting surfaces.
- .8 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .9 Broom clean and wash exterior walks, steps and surfaces. Rake clean other surfaces of grounds.
- .10 Remove dirt and other disfiguration from exterior surfaces.
- .11 Sweep and wash clean paved areas.
- .12 Clean drainage systems.

**1.03 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling as outlined in article "WASTE MANAGEMENT" of Section 01 00 10 – General Instructions.

**PART 2 PRODUCTS**

**2.01 NOT USED**

**PART 3 EXECUTION**

**3.01 NOT USED**

**END OF SECTION**

**PART 1 GENERAL**

**1.01 ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-warranty Meeting:
  - .1 Convene meeting one week prior to contract completion with contractor's representative and Departmental Representative, in accordance with Section 01 32 16.06 – Construction Progress Schedule Critical Path Method (CPM) to:
    - .1 Verify Project requirements.
    - .2 Review manufacturer's installation instructions and warranty requirements.
  - .2 Departmental Representative to establish communication procedures for:
    - .1 Notifying construction warranty defects.
    - .2 Determine priorities for type of defects.
    - .3 Determine reasonable response time.
  - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
  - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

**1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, 4 final printed copies of operating and maintenance manuals in contract language.
- .3 Provide evidence, if requested, for type, source and quality of products supplied.

**1.03 FORMAT**

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
  - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by 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.



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

.9 Provide 1:1 scaled CAD files in DWG format on CD or USB key with other documentation described herein.

#### **1.04 CONTENTS - PROJECT RECORD DOCUMENTS**

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

.1 Date of submission; names.

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

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

.2 For each product or system:

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

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

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

.5 Typewritten Text: as required to supplement product data.

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

#### **1.05 AS -BUILT DOCUMENTS AND SAMPLES**

.1 Maintain, at site for Departmental Representative one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to Contract.

.5 Reviewed shop drawings, product data, and samples.

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store record documents and samples in field office apart from documents used for construction.

.1 Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.

.1 Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition.

.1 Do not use record documents for construction purposes.

- .5 Keep record documents and samples available for inspection by Departmental Representative.

**1.06 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS**

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
  - .1 Base Drawings, including elevations of each bay and pier, to be provided by Departmental Representative following contract award for recording work.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
  - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
  - .1 Measured depths of elements of foundation in relation to sea level.
  - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements, and in relation to sea level.
  - .3 Field changes of dimension and detail.
  - .4 Changes made by change orders.
  - .5 Details not on original Contract Drawings.
  - .6 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
  - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.
- .7 Provide digital photos, requested as part of Photographic Documentation, for site records on a CD or USB key with other documentation described herein.

**1.07 MATERIALS AND FINISHES**

- .1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
  - .1 Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional requirements: as specified in individual specifications sections.

**1.08 WARRANTIES AND BONDS**

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Departmental Representative approval.
- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
  - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
  - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within 10 days after completion of applicable item of work.
  - .4 Verify that documents are in proper form, contain full information, and are notarized.
  - .5 Co-execute submittals when required.
  - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Include information contained in warranty management plan as follows:
  - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
  - .2 Provide list for each warranted equipment, item, feature of construction or system indicating:
    - .1 Name of item.
    - .2 Model and serial numbers.
    - .3 Location where installed.
    - .4 Name and phone numbers of manufacturers or suppliers.
    - .5 Names, addresses and telephone numbers of sources of spare parts.
    - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
    - .7 Cross-reference to warranty certificates as applicable.
    - .8 Starting point and duration of warranty period.

- .9 Summary of maintenance procedures required to continue warranty in force.
- .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .11 Organization, names and phone numbers of persons to call for warranty service.
- .12 Typical response time and repair time expected for various warranted equipment.
- .3 Procedure and status of tagging of equipment covered by extended warranties.
- .4 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .9 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .10 Written verification to follow oral instructions.
- .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

**PART 2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**PART 3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**