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**Part 1            General**

**1.1                DESCRIPTION OF WORK**

- .1        In general, work under this contract consist of:
  - .1        Demolition of interior assemblies and finishes as indicated.
  - .2        Construction of new tenant fit-up including but not limited to gypsum board partitions, flooring (polished concrete & carpet tile), suspended ceiling system, painting, millwork, metal, glass & aluminum doors & frames and relocating an existing HD file system from the 4th floor.
  - .3        Furniture will be procured through PSPC. Workstations will be installed prior to completion of this contract and will require Power connection under the contract and coordination of Communications with PSPC (Shared Services) service providers.
  - .4        HD file Room requires strengthening of the u/s of the existing concrete slab and this work must be done after hours. The 3rd floor space below is occupied, so a clean up each night/morning prior to the tenant hours of operation must be done.
  - .5        Fire Protection, Plumbing, Ventilation and Controls have been modified and supplemented to suit the tenant fit-up.
  - .6        Power & Communications have been modified and supplemented to suit new tenant fit-up. Existing recessed light fixtures are to be removed and temporarily stored for reinstallation in new suspended ceiling grid along with additional feature lighting as indicated. Modifications and upgrades to Electrotonic Safety and Security systems.
- .2        Site of Work is at: Government of Canada Building at 1045 Main Street, 4th floor, Moncton, NB. This is a secured building requiring the supervision of prescribed security personal as indicated.

**1.2                FAMILIARIZATION WITH SITE**

- .1        Before submitting a bid, it is recommended that bidders visit the site to review and verify the form, nature and extent of the work, materials needed, the means of access and the temporary facilities required to perform the Work.

**1.3                CODES AND STANDARDS**

- .1        Perform work in accordance with the 2010 National Building Code of Canada and any other code of provincial or local application, including all amendments up to bid closing date, provided that in any case of conflict or discrepancy, the more stringent requirement shall apply.
- .2        Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

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#### **1.4 INTERPRETATION OF DOCUMENTS**

- .1 Supplementary to the Order of Precedence article of the General Conditions of the Contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.

#### **1.5 TERM ENGINEER**

- .1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative as defined in the General Conditions of the Contract.

#### **1.6 SETTING OUT WORK**

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.
- .3 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.

#### **1.7 COST BREAKDOWN**

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price. Required forms will be provided for application of progress payment.
- .2 List items of work numerically following the same division/section number system of the specification manual and thereafter sub-divide into major work components and building systems as directed by Departmental Representative.
- .3 Upon approval, cost breakdown will be used as basis for progress payment.

#### **1.8 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each of the following:
  - .1 Contract Drawings
  - .2 Specifications
  - .3 Addenda
  - .4 Reviewed Shop Drawings
  - .5 List of outstanding shop drawings
  - .6 Change Orders
  - .7 Other modifications to Contract
  - .8 Field Test Reports
  - .9 Copy of Approved Work Schedule
  - .10 Health and Safety Plan and other safety related documents
  - .11 Other documents as stipulated elsewhere in the Contract Documents.

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**1.9 PERMITS**

- .1 In accordance with the the General Conditions, obtain and pay for building permit, certificates, licenses and other permits as required by municipal, provincial and federal authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application forms and approval documents received from above referenced authorities.

**1.10 PERFORMANCE OF THE WORK**

- .1 Substantial Performance of the Work is required before date established by the Departmental Representative.

**1.11 RESPONSIBILITY**

- .1 Division of the Work among Trade Contractors, suppliers or vendors is solely the General Contractor's responsibility.
- .2 The Departmental Representative assumes no responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of Work.

**1.12 COMPLEMENTARY DOCUMENTS**

- .1 Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all.
- .2 Should any discrepancy appear between documents which leaves doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the departmental representative.
- .3 Drawings indicate general location and routing of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.
- .4 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.
- .5 Locate devices with primary regard for convenience of operation and usage.
- .6 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed.

- .1 Conflicts or additional work beyond work described to be brought to attention of the departmental representative.

### **1.13 PRECEDENCE OF DOCUMENTS**

- .1 In the event of conflict within the between the Contract Documents, the order of priority within specifications and drawings are - from highest to lowest:
  - .1 Agreement
  - .2 Supplementary Conditions (if any),
  - .3 General Conditions of the Contract,
  - .4 Sections of Division 1 of the specifications,
  - .5 Specifications:
    - .1 Sections of Division 2 through 49 of the specifications, and
    - .2 Specifications specifically indicated on drawings.
  - .6 Schedules and notes:
    - .1 Schedules within the specifications, then
    - .2 Schedules on drawings.
  - .7 Drawings:
    - .1 Drawings of larger scale shall govern over those of smaller scale of the same date, then
    - .2 Dimensions shown on drawings shall govern over dimensions scaled from drawings, then
    - .3 Location of utility outlets indicated on Department Representative detail drawings takes precedence over positions or mounting heights located on mechanical or electrical drawings.
  - .8 In the event of conflict between documents, the decision of the departmental representative shall be final.

### **1.14 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

- .1 Execute work with least possible interference or disturbance to building operations, occupants, public and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.
- .2 Where security has been reduced by work of Contract, provide temporary means to maintain security.
- .3 Where elevators exist in building, only those assigned for Contractor's use may be used for moving workers within building. Protect walls of passenger elevators, to approval of Departmental Representative prior to use. accept liability for damage, safety of equipment and overloading of existing equipment.
- .4 Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas which will be operative during such work.

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**1.15 ROUGHING-IN**

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

**1.16 CUTTING, FITTING AND PATCHING**

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

**1.17 CONCEALMENT**

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

**1.18 LOCATION OF FIXTURES**

- .1 Location of equipment, fixtures and outlets, shown or specified shall be considered as approximate. Actual location shall be as required to suit conditions at time of installation and as is reasonable.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative when impending installation conflicts with other new or existing components. Follow directives for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

**1.19 EXISTING SERVICES**

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian, vehicular traffic and tenant operations.

- .2 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. This includes disconnection of electrical power and communication services to tenant's operational areas. Adhere to approved schedule and provide notice to affected parties.
- .4 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems.
- .5 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 Protect, relocate or maintain existing active services as required. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.

#### **1.20 BILINGUAL NOTATIONS**

- .1 Any items supplied and installed under this contract which have operating instructions on them such as door hardware, washroom accessories, push button activation controls powered hand dryers, mechanical equipment such as water coolers, etc., and which can be expected to be used by the public and building tenants, must have such operating instructions in bilingual format - English and French.
- .2 Factory embossed or recessed symbols illustrating equipment operation is an acceptable alternate to lettering.
- .3 Items supplied with factory - embossed or recessed lettering in one official language with an applied sticker or decal representing the second official language is not acceptable unless the Departmental Representative gives prior approval before any such items are ordered.
- .4 Internationally recognized colour coding such as red and blue center pieces for plumbing brass is acceptable.
- .5 No extra costs will be paid for re-stocking or re-ordering of materials and equipment due to Contractor's failure to fully meet bilingual signage requirements specified herein.
- .6 Ensure that all trades are made aware of above requirements.

#### **1.21 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions.

**1.22 ASBESTOS DISCOVERY**

- .1 Should material resembling asbestos be encountered in course of work, stop work and notify Departmental Representative immediately. Do not proceed with relevant work until written instructions have been received from Departmental Representative.
- .2 Existing Conditions:
  - .1 Asbestos-containing-materials are known to be present in the stairwell wall assemblies and the exterior wall assemblies (not including gypsum board finished bulkheads) within the work area.
  - .2 Prior to commencing work that will require disassembly, penetration or otherwise disturb the assemblies having asbestos-containing-materials, ask for approval and follow instructions provided by the Departmental Representative.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

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**Part 1            General**

**1.1                ACCESS AND EGRESS**

- .1     Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations. Maintain Building management (BGIS) access to service rooms 4499 at all times during construction.

**1.2                USE OF SITE AND FACILITIES**

- .1     Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2     Maintain existing services to building and provide for personnel and vehicle access.
- .3     Where security is reduced by work provide temporary means to maintain security.
- .4     Departmental Representative will assign sanitary facilities for use by Contractor's personnel. Keep facilities clean.
- .5     Use only elevators existing in building for moving workers and material.
  - .1     Protect walls of passenger elevators, to approval of Departmental Representative prior to use.
  - .2     Accept liability for damage, safety of equipment and overloading of existing equipment.
- .6     Closures: protect work temporarily until permanent enclosures are completed.

**1.3                ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

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

**1.4                EXISTING SERVICES**

- .1     Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2     Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
- .3     Provide for personnel, pedestrian and vehicular traffic.
- .4     Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

**1.5 SPECIAL REQUIREMENTS**

- .1 Paint and carpet public or Departmental Representative occupied areas Monday to Friday from 18:00 to 07:00 hours only and on Saturdays, Sundays, and statutory holidays.
- .2 Carry out noise generating Work Monday to Friday from 18:00 to 07:00 hours and on Saturdays, Sundays, and statutory holidays.
- .3 Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedule - Bar (GANNT) Chart.
- .4 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .5 Keep within limits of work and avenues of ingress and egress.
- .6 Ingress and egress of Contractor vehicles at site is to be arranged with Departmental Representative.
- .7 Deliver materials outside of peak traffic hours 17:00 to 07:00 and 13:00 to 15:00 unless otherwise approved by Departmental Representative.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**Part 1            General**

**1.1                SUBMITTALS**

- .1        Upon acceptance of bid and prior to commencement of work, submit to Departmental Representative the following work management documents:
  - .1        Work Schedule as specified herein.
  - .2        Shop Drawing Submittal Schedule specified in section 01 33 00
  - .3        Waste Management Plan specified in section 01 74 21
  - .4        Health and Safety Plan specified in section 01 35 29.06
  - .5        Dust Control Plan specified in section 01 56 00.
  - .6        List of workers requiring security clearance and those to be placed on Site Security Control list as specified in section 01 35 54.

**1.2                WORK SCHEDULE**

- .1        Upon acceptance of bid submit:
  - .1        Preliminary work schedule within 7 calendar days of contract award.
  - .2        Detailed work schedule within 21 calendar days of contract award.
- .2        Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted bid.
- .3        Provide sufficient details in preliminary schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .4        Preliminary work schedule content to include as a minimum the following:
  - .1        Bar (GANTT) Charts, indicating all work activities, tasks and other project elements, their anticipated durations, planned dates for achieving key activities and major project milestones supported with;
  - .2        Written narrative on key elements of work illustrated in bar chart, providing sufficient details to demonstrate a reasonable implementation plan for completion of project within designated time.
  - .3        Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.
- .5        Schedule work in cooperation with the Departmental Representative. Incorporate within Detailed Work Schedule, items identified by Departmental Representative during review of preliminary schedule.
- .6        Completed schedule shall be approved by Departmental Representative. When approved, take necessary measures to complete work within scheduled time. Do not change schedule without Departmental Representative's approval.

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

### **1.3 OPERATIONAL RESTRICTIONS**

- .1 Contractor to meet with the Departmental Representative on a weekly basis to identify intended work areas, activities and scheduling for the coming week.
- .2 Departmental Representative reserves the right to stop certain daytime work activities, if the nature of that activity generates excessive noise or dust and have Contractor re-schedule that particular work to be performed during the Off-Hour period.
- .3 Safety Signage:
  - .1 Provide on site, and erect as required during progress of work, proper bilingual signage, mounted on self-supporting stands, warning the public of construction activities in progress.
  - .2 Signage to be professionally printed and mounted on wooden backing, coloured and to express messages as directed by the Departmental Representative.
  - .3 Generally maximum size of sign should be in the order of 1.0 square meters. Number of signs required will be dependent on number of areas in facility under renovation at any one time.
  - .4 Include costs for the supply and installation of these signs in the bid price.
- .4 Dust and Dirt Control:
  - .1 See section 01 56 00 and 01 74 11 for dust control and cleaning requirements.
  - .2 Effectively plan and implement dust control measures and cleaning activities as an integral part of all construction activities. Review all measures with the Departmental Representative before undertaking work, especially for major dust generating activities.
  - .3 Do not allow demolition debris and construction waste to accumulate on site and contribute to the propagation of dust.

- .4 As work progresses, maintain construction areas in a tidy condition at all times. Remove gross dust accumulations by cleaning and vacuuming immediately following the completion of any major dust generating activity.
  - .5 Immediately remove all debris and dust from within occupied areas as generated by work therein during a given workshift.
  - .6 Disconnect and seal-off ductwork of HVAC servicing the construction area to stop spread of dust into other areas of Facility.
  - .7 Avoid situations and practices which results in dust and dirt being brought from the construction areas or from the exterior and tracked inside the building.
  - .8 Stop workers with soiled footwear from entering building.
  - .9 Inform workers and make them sensitive to the need for dust and dirt control. Stringently enforce rules and regulations, immediately address non-compliance.
  - .10 Keep access doors to work areas closed at all times. Use only designated doors for entry or egress.
- .5 Off-Hours: means a period of time which is outside the daily operational hours of the tenants of the Facility. For the purposes of this contract, Off-Hours are defined as follows:
- .1 Weeknight Off-Hours: between the hours of 17:00 and 7:00 for each weekday Monday to Thursday inclusive.
  - .2 Weekend Off-Hours: between the hours of 17:00 Friday evening to 7:00 Monday morning.
- .6 Facility circulation maintained:
- .1 Ensure that entrances, fire exits and other circulation routes are maintained free and clear providing safe and uninterrupted passage for Facility users and public at all times during the entire work.
  - .2 Maintain those areas clean and free of construction materials and equipment. Provide temporary protection and other suitable enclosures as required to ensure users are not exposed to construction activities and are protected from exposure to dust, noise and hazardous conditions.
  - .3 Maintain fire escape routes accessible and firefighting access open all times for the duration of the project.
  - .4 Do not under any circumstances block fire exit doors. Do not leave construction materials or debris at building entrances and exits.
- .7 Work in Occupied Areas:
- .1 Where work must be carried out in an occupied area, perform such work during the non-operational off-hour periods of the Facility.
  - .2 Ensure that all dust, dirt, debris, construction waste, materials, tools and equipment are completely removed at the end of each workshift. Clean and reinstate area ready for daytime use by tenant.
  - .3 Provide temporary dust barriers around immediate work areas and place fabric drop sheets over workstations, equipment and other furnishings located immediately adjacent to such work.

- .4 Minimize the creation of dust and to avoid contaminating areas beyond the immediate location.
- .5 Discuss and obtain Departmental Representative's approval beforehand on the type and extent of dust barriers, protective devices and measures needed.
- .6 Be responsible for temporarily moving office furnishings, workstations, computer equipment and other objects as needed to gain access and conduct work. Reinstall all dislocated items at end of each workshift making the area operational again. General Contractor is to submit a furniture-equipment moving plan for PSPC and tenant review to ensure appropriate trades and technicians are consulted and engaged.
- .7 Disconnect and reconnect any power and communications systems feeding workstations as required.
- .8 Clean such areas as well as those corridors and routes used to gain entry and access.
- .8 Cleaning of tenant occupied areas used by Contractor:
  - .1 Clean lobbies, corridors, stairs and other circulation routes used by workers to gain access to work by conducting cleaning, vacuuming and washing of floors, walls and other soiled surfaces.
  - .2 Meager attempts at controlling dust and ineffective unprofessional cleaning procedures will not be tolerated.
  - .3 Failure to provide effective dust control, allowing construction dust and dirt to escape beyond construction areas and contaminate occupied areas and building circulation areas will result in Contractor being ordered to immediately provide professional cleaning services without delay to remedy the situation and conduct all cleaning to the extent as determined by Departmental Representative. Alternatively, Departmental Representative may, at certain times and at own discretion, obtain the services of an independent building cleaning agency when cleaning being provided by Contractor is ineffective or tardy in response. Costs of such services will be charged against Contractor in the form of financial penalties or holdback assessments against the Contract.

#### **1.4 PROJECT MEETINGS**

- .1 Schedule and administer project meetings, held on a minimum bi-weekly basis, for entire duration of work and more often when directed by Departmental Representative as deemed necessary due to progress of work or particular situation.
- .2 Prepare agenda for meetings.
- .3 Notify participants in writing 7 days in advance of meeting date.
  - .1 Ensure attendance of all subcontractors.
  - .2 Departmental Representative will provide list of other attendees to be notified.
- .4 Hold meetings at project site or where approved by Departmental Representative.
- .5 Preside at meetings and record minutes.
  - .1 Indicate significant proceedings and decisions. Identify action items by parties.

- .2 Distribute to participants by mail or by facsimile within 3 calendar days after each meeting.
- .3 Make revisions as directed by Departmental Representative.
- .4 Departmental Representative will advise whether submission of minutes by Email is acceptable. Decision will be based on compatibility of software among participants.

## **1.5 WORK COORDINATION**

- .1 The General Contractor is responsible for coordinating the work of the various trades and predetermining where the work of such trades interfaces with each other.
  - .1 Designate one person from own employ having overall responsibility to review contract documents and shop drawings, plan and manage such coordination.
- .2 The General Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required.
  - .1 Provide each trade with the plans and specs of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
  - .2 Develop coordination drawings illustrating potential interference between work of various trades and distribute to all affected parties including structural trade.
    - .1 Pay particularly close attention to overhead work above ceilings and within or near to building structural elements.
    - .2 Coordination drawings to identify all building elements, services lines, rough-in points and indicate from where various services are coming.
  - .3 Review coordination drawings at purposely called meetings. Have subcontractors sign-off on drawings and publish minutes of each meeting.
  - .4 Plan and coordinate work in such a way to minimize quantity of service line offsets.
  - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submission of shop drawings and ordering of prefabricated equipment or prebuilt components shall only occur once coordination meeting for such items has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
- .4 Work Cooperation:
  - .1 Ensure cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
  - .2 Ensure that each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays, cutting, patching and the need to remove and replace completed work.
- .5 No extra costs to the Contract will be considered by the Departmental Representative as a result of Contractor's failure to effectively coordinate all portions of the Work. Disputes between the various trades as a result of their not being informed of the areas and extent

of interface work shall be the sole responsibility of the General Contractor to be resolved at own cost.

- .6 The General Contractor shall send out a formal request to the Departmental Representative to receive approval to proceed prior to any mechanical or electrical shutdowns. A 24 hour notice to the user shall be required prior to any mechanical or electrical shutdowns.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**Part 1 General**

**1.1 DEFINITIONS**

- .1 Bar Chart (GANTT Chart): graphic display of schedule related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date- placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .2 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

**1.2 REQUIREMENTS**

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

**1.3 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within 7 working days of Award of Contract, a Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

**1.4 PROGRESS MILESTONES**

- .1 Provide project milestones forming interim targets for Project Schedule within 10 working days of Award of Contract date.
  - .1 Start and completion of Demolition
  - .2 Interior finishing and fitting, mechanical, and electrical work.
  - .3 Interim Certificate (Substantial Completion)

## **1.5 MASTER PLAN**

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

## **1.6 PROJECT SCHEDULE**

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follow.
  - .1 Award.
  - .2 Shop drawings, Samples.
  - .3 Permits.
  - .4 Mobilization.
  - .5 Demolition
  - .6 Interiors (Walls, Floors and Ceiling).
  - .7 Plumbing.
  - .8 Lighting.
  - .9 Electrical.
  - .10 Piping.
  - .11 Controls.
  - .12 Heating, Ventilating, and Air Conditioning.
  - .13 Millwork.
  - .14 Fire Systems.
  - .15 Testing and Commissioning.
  - .16 Supplied equipment long delivery items.

## **1.7 PROJECT SCHEDULE REPORTING**

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

## **1.8 PROJECT MEETINGS**

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule

are those with projected start or completion dates later than current approved dates shown on baseline schedule.

**Part 2 Products**

**2.1 NOT USED**

.1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

.1 Not used.

**END OF SECTION**

**Part 1            General**

**1.1                ADMINISTRATIVE**

- .1    Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative.
- .2    Prepare agenda for meetings.
- .3    Distribute written notice of each meeting four days in advance of meeting date to Departmental Representative.
- .4    Provide physical space and make arrangements for meetings.
- .5    Preside at meetings.
- .6    Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7    Reproduce and distribute copies of minutes within three days after meetings and transmit to meeting participants and affected parties not in attendance.
- .8    Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

**1.2                PRECONSTRUCTION MEETING**

- .1    Within 10 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2    Senior representatives of Departmental Representative, Consultant, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3    Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4    Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5    Agenda to include:
  - .1    Appointment of official representative of participants in the Work.
  - .2    Schedule of Work: in accordance with Section 01 31 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
  - .3    Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .4    Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
  - .5    Delivery schedule of specified equipment.
  - .6    Site security.
  - .7    Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.

- .8 Owner provided products.
- .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.

### **1.3 PROGRESS MEETINGS**

- .1 During course of Work, schedule progress meetings bi-weekly.
- .2 Contractor, major Subcontractors involved in Work, Consultant, Departmental Representative are to be in attendance.
- .3 Notify parties minimum four days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within three days after meeting.
- .5 Agenda to include the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.
  - .3 Field observations, problems, conflicts.
  - .4 Problems which impede construction schedule.
  - .5 Review of off-site fabrication delivery schedules.
  - .6 Corrective measures and procedures to regain projected schedule.
  - .7 Revision to construction schedule.
  - .8 Progress schedule, during succeeding work period.
  - .9 Review submittal schedules: expedite as required.
  - .10 Maintenance of quality standards.
  - .11 Review proposed changes for affect on construction schedule and on completion date.
  - .12 Other business.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**

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**Part 1            General**

**1.1                ADMINISTRATIVE**

- .1        Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2        Do not proceed with Work affected by submittal until review is complete.
- .3        Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4        Where items or information is not produced in SI Metric units converted values are acceptable.
- .5        Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6        Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7        Verify field measurements and affected adjacent Work are co-ordinated.
- .8        Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9        Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10      Keep one reviewed copy of each submission on site.

**1.2                CONTRACTOR'S REQUEST FOR INFORMATION (RFI)**

- .1        Contractor's Request For Information (RFI's) will be processed and used for clarification and information purposes only.
- .2        All requests in the form of an RFI are considered exclusively as a tool to help the contractor in the clarification of any questions in regards to the tender contract documents. The purpose of all items submitted in the form of an RFI is considered solely to help the contractor maintain the construction schedule and for guidance and direction. Submit all RFI's 2 weeks minimum prior the required response.
- .3        Any RFI's requested by the Contractor that are clearly noted within the contract documents, will have Departmental Representative's time associated with said RFI back charged to the Contractor.

### **1.3 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 New Brunswick, 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 four 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.

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- .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 electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
  - .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
  - .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
    - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
    - .2 Testing must have been within 3 years of date of contract award for project.
  - .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
    - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
    - .2 Certificates must be dated after award of project contract complete with project name.
  - .14 Submit electronic copies 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 electronic copies 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 6 copies 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 (PSPC) is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that PSPC 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.

#### **1.4 SAMPLES**

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where 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.

#### **1.5 MOCK-UPS**

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

#### **1.6 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution with monthly with progress statement and as directed by Departmental Representative .
- .2 Number of viewpoints: 4 locations.
  - .1 Viewpoints and their location as determined by Departmental Representative.
- .3 Frequency of photographic documentation: weekly.

**1.7 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**Part 1 General**

**1.1 REFERENCE STANDARDS**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of New Brunswick
  - .1 Occupational Health and Safety Act, S.N.B.- Updated 2009.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit two copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 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 five days.
- .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.

**1.3 FILING OF NOTICE**

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award. Contractor to submit written acknowledgement to CSST along with Ouverture de Chantier Notice.

- .3 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

#### **1.4 SAFETY ASSESSMENT**

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

#### **1.5 MEETINGS**

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

#### **1.6 REGULATORY REQUIREMENTS**

- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

#### **1.7 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - .1 Asbestos-containing-materials: Refer to Section 02 41 99.

#### **1.8 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.

#### **1.9 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 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

#### **1.10 COMPLIANCE REQUIREMENTS**

- .1 Comply with Occupational Health and Safety Act.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

#### **1.11 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.
- .2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety co-ordinator and follow procedures in

accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

#### **1.12 HEALTH AND SAFETY CO-ORDINATOR**

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
  - .1 Have site-related working experience specific to activities associated with Work of this Project.
  - .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.

#### **1.13 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.

#### **1.14 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.

#### **1.15 BLASTING**

- .1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Departmental Representative.

#### **1.16 POWDER ACTUATED DEVICES**

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

#### **1.17 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**

**2.1 NOT USED**

.1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

.1 Not used.

**END OF SECTION**

**Part 1            General**

**1.1                FIRE DEPARTMENT BRIEFING**

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

**1.2                REPORTING FIRES**

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

**1.3                INTERIOR AND EXTERIOR FIRE PROTECTION AND ALARM SYSTEMS**

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

**1.4                FIRE EXTINGUISHERS**

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

**1.5                INSTALLATION AND/OR REPAIR OF ROOF TO INCLUDE CONTRACTORS PHYSICAL PLANT AT SITE**

- .1        Notify Fire Chief of location of asphalt kettles and dates that kettles will be in use. Ensure personnel use and take precautions as follows:
  - .1        Use kettles equipped with thermometers or gauges in good working order.
  - .2        Locate kettles in safe place outside of building or, if approved by Fire Chief, on non-combustible roof. Locate to avoid danger of igniting combustible material below.
  - .3        Maintain continuous supervision while kettles are in operation and provide metal covers for kettles to smother flames in case of fire. Provide fire extinguishers as required in 1.4.
  - .4        Prior to start of work, demonstrate container capacities to Fire Chief.

- .5 Use only glass fibre roofing mops.
- .6 Do not leave used roofing mops unattended on roof. Store mops away from building and combustible materials.
- .7 Store roofing materials no closer than 3 m to structures.

## **1.6 BLOCKAGE OF ROADWAYS**

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

## **1.7 SMOKING PRECAUTIONS**

- .1 Observe smoking regulations.

## **1.8 RUBBISH AND WASTE MATERIALS**

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

## **1.9 FLAMMABLE AND COMBUSTIBLE LIQUIDS**

- .1 Handling, storage and use of flammable and combustible liquids governed by current National Fire Code of Canada 2015 (NFC).
- .2 Keep flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Fire Chief.
- .3 Transfer of flammable and combustible liquids is prohibited within buildings or jetties.
- .4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.
- .5 Do not use flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents.
- .6 Store flammable and combustible waste liquids, for disposal, in approved containers located in safe ventilated area. Keep quantities minimum and Fire Department is to be notified when disposal is required.

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**1.10 HAZARDOUS SUBSTANCES**

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

**1.11 QUESTIONS AND/OR CLARIFICATION**

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

**1.12 FIRE INSPECTION**

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

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1        General**

**1.1            GENERAL**

- .1 Due to nature of this Facility, and client operations therein, security regulations pertaining to site will be in place during the work resulting in need for:
  - .1 Continuous escort of workers by security personnel;
  - .2 Workers must undergo a security clearance process;
  - .3 Specific rules and regulations as specified in this section and as directed by Departmental Representative to be stringently followed.
- .2 It is the Contractor's responsibility to:
  - .1 Submit necessary documentation required and obtain security clearances for all workers;
  - .2 Become familiar with and abide by security rules and regulations;
  - .3 Brief all workers and sub-contractors in respect of the security regulations and ensure that they abide by all rules and directives.
- .3 The Departmental Representative will coordinate pre-construction meeting between Contractor, Building Management and Security Personnel who will provide details and directives on control and movement on site.
- .4 Any infraction of site security regulations on the part of the Contractor, members of work force or any Subcontractor in his employ, could result in:
  - .1 Financial penalties in the form of progress payment reduction or holdback assessments being levied against the Contractor and;
  - .2 Demand immediate removal of offending party from the site.

**1.2            SECURITY PERSONNEL**

- .1 Obtain and pay for the services of security personnel, employed by the Canadian Corps of Commissionaires to provide escort and security supervision of all workers during the work of this contract.
- .2 Commissionaires employed on this project must have a current Enhanced Security Clearance status issued by PWGSC.
- .3 Provide minimum of two (2) Commissionaires to be on site at all times when work is carried out, having the following responsibilities:
  - .1 Limit movement of workers to within the boundaries established by Departmental Representative for each work phase;
  - .2 Maintain security control list of workers authorized to be on site as determined by Contractor and Departmental Representative;
  - .3 Manage the distribution and control of worker ID tags;

- .4 Escort workers who need to circulate on site beyond the established boundaries of work, including the corridors, stairwells and elevators used for access to and from work areas.
- .5 Escort and supervise short term visitors who need access to the work site such as for material deliveries or to conduct inspections.
- .4 Provide additional commissionaires when required to perform supervision or escort function as may be needed due to Contractor's work operations in order that no worker is left unsupervised on premises.
- .5 Ensure Commissionaire(s) are present on site for entire work shift including work breaks and time period after work shifts until all workers have left site.
- .6 Commissionaire must stay within the actual construction area and provide surveillance of all workers ensuring that security rules and requirements are obeyed and to limit movement to approved work areas of site.
- .7 Escort and supervision of workers by Commissionaire is required at all times regardless as to whether work shifts are in the daytime or during off hours.
- .8 Commissionaire shall report directly to Departmental Representative and to the Facility security personnel and ensure that site security directives are obeyed by all workers.
  - .1 Empower Commissionaire with authority to remove any worker deemed non-compliant with security directives.
- .9 Ensure Commissionaire is fitted and wears approved safety hard hat, safety footwear and other personnel protective equipment appropriate to work in accordance with applicable Occupational Health and Safety Regulations specified in Section 01 35 29.06.

### **1.3 SECURITY CLEARANCE REQUIREMENTS**

- .1 All persons employed by Contractor or by subcontractors who will be working on site must undergo the following check:
  - .1 Apply for PWGSC personnel security clearance screening and obtain a Reliability Status.
- .2 Individuals who do not have security clearance, as specified in clause 3.1, will not be allowed to circulate freely in restricted areas of site and must be under constant escort and surveillance by security personnel.
  - .1 Restricted areas: all interior areas of building beyond the public lobby.
- .3 Departmental Representative will advise when worker security clearance has been received and whether escort is no longer needed for a particular individual.
- .4 Within one (1) week following notification of contract award, submit applications for PWGSC Reliability Status security clearance.
  - .1 Make application for all workers as one submission to facilitate processing and minimize delays.

- .5 To obtain the PWGSC Reliability Status clearance, the following information is required for each applicant:
  - .1 "Personnel Screening, Consent and Authorization Form" (Form No. TBS/SCT #330-23E (Rev. 2002/07)) completed by each worker.
  - .2 Contractor Declaration to Public Works & Government Services Canada (PWGSC Security Form "A") completed by Contractor attesting to having conducted an assessment of reliability for each worker applicant verifying employment and other reference data.
  - .3 Proof of applicant's identity consisting of a picture ID such as a Canadian Motor Vehicle Driver's License or other similar official ID card.
  - .4 Proof of applicant's Canadian citizenship consisting of a provincial issued birth certificate, baptismal certificate, citizenship certificate or passport.
  - .5 Include both forms along with a clear legible photocopy of the citizenship and identity documents submitted as one complete package for each applicant.
- .6 A sample of the above mentioned forms are included at the end of this Specification Section for reference purposes and marked Appendix "A".
  - .1 Information on filling out form TBS/SCT # 330-23E are as follows:
    - .1 Part A: by PWGSC Project Manager;
    - .2 Part B: by applicant. Provide full name, including middle name (not simply and initial). Ensure addresses listed represent last five (5) years of residence and each address is fully completed including postal code. Print data in clear, legible manner.
    - .3 Part C: only boxes 1, 2 & 3 need to be completed, requiring applicant's initials. Name of official requested here can be PWGSC Project Manager or PWGSC Regional Security Agent provided that Contractor submits the PWGSC Security Form "A" identified in clause 3.5.2 above.
- .7 Fingerprinting will also be required if:
  - .1 Applicant indicates that he/she has a previous criminal conviction on Form #330-23E;
  - .2 Security clearance search process results in two persons with same identity, such as having the same name.
- .8 Departmental Representative will provide details as to what procedures, location and time where workers must go should fingerprints are needed.
- .9 Processing Time:
  - .1 The PWGSC departmental processing time to obtain all security clearances is estimated to be 3 weeks from date of receipt of required documentation.
  - .2 To avoid delays, prepare worker documentation as soon as possible, however submit documentation for each applicant as one package and send information for entire workforce as one submission. Ensure forms are fully completed, signed and that all information and photo identification is clear and legible.
  - .3 Be aware that processing time for applicants with criminal convictions may take longer and could extend to 6 months duration.

- .1 An interview with such applicant may also be required as part of the security clearance process.
- .10 Facilitate workers security clearance process as follows:
  - .1 Prepare comprehensive list of workers who will require security clearance throughout project, including those of sub-contractors.
  - .2 Provide copy of list to Departmental Representative.
  - .3 Coordinate and expedite submission of various subcontractors.
  - .4 Brief and assist applicants in preparing and submitting documentation.
  - .5 Review documentation of each applicant for completeness before submission.
  - .6 Have each worker keep a copy of their completed application form in case the initial submission gets lost.
  - .7 Submit documentation in an organized manner with transmittal letter clearly identifying project for which worker clearance is required.
- .11 Send submission(s) directly to Departmental Representative or to the approved mailing address as directed by Departmental Representative.
- .12 Persons who have not been successful in obtaining security clearance, upon documentation review by PWGSC, will not be allowed further access on site and cannot work on project any longer.

#### **1.4 SECURITY PASSES**

- .1 Visitor Tags are required for all personnel requiring access inside the building beyond the main public lobby.
- .2 Tags will be provided by Facility Security to Contractor for distribution to authorized workers which are placed on the Security Control List specified below.
- .3 All persons while on site, must wear the ID tag issued to him regardless of daytime or nighttime work hours.
- .4 The Contractor is responsible to obtain visitor tags before work commences, including those required by his sub-contractors, and to continually control their distribution and use by workers. Submit request for tags as early as possible prior to commencement of work.
- .5 For the duration of this contract, anyone not in possession of the visitor tag will not be allowed access on site.
- .6 At end of project, return to Departmental Representative all tags issued to workers and to subcontractors. Departmental Representative will deduct from final contract payment, \$100.00 for each pass not returned regardless of the reason the pass is not returned.
- .7 Immediately report any lost, stolen or destroyed passes to the Departmental Representative.

## **1.5 SECURITY CONTROL LIST**

- .1 Provide a list of employee names from workforce and from sub-contractors who will be present at site during the course of work.
- .2 List to include names, addresses and telephone number of all persons.
- .3 Submit copy to Departmental Representative and to Security Commissionaire for control of workers.
- .4 Update list as work progresses.
- .5 Ensure that each worker can provide proof of identity upon demand, when requested by Facility Security Personnel, Departmental Representative or Facility Management.

## **1.6 BUILDING ACCESS**

- .1 Keys and door security access cards necessary for access to restricted areas may be issued at the discretion of the Building Manager and the Departmental Representative. Follow all instructions in regards to use, care and disposition of all keys and access cards so issued.
- .2 Keys and security access cards given to the Commissionaire for his sole possession, as determined by Departmental Representative, shall not under any circumstances be given to any worker or sub-contractor.
- .3 Do not, under any circumstances, make or allow workers to make duplicates of keys issued.
- .4 At end of project, return to Departmental Representative all keys and access cards issued. Departmental Representative will deduct from final contract payment, \$25.00 for each item not returned, regardless of the reason.
- .5 Immediately report to Departmental Representative any lost, stolen or destroyed keys and door security access cards.

## **1.7 SITE SECURITY**

- .1 Where work of this contract requires use of a permanently locked door, it is Contractor's responsibility to ensure that door is unlocked and locked after each use or provide a competent security guard, posted at door, when door must remain open for an elongated period of time during a particular work shift.
  - .1 Notify Building Security when security doors will be used and stringently follow all directives to ensure building security is effectively maintained.
- .2 When work must be carried out during "off-hours" or beyond the work hours previously agreed upon at start of work, provide notice as soon as possible in order to minimize the impact on Building Security.

**Part 2          Products**

**2.1            NOT USED**

**Part 3          Execution**

**3.1            NOT USED**

**END OF SECTION**



**PERSONNEL SCREENING, CONSENT AND AUTHORIZATION FORM**

OFFICE USE ONLY		
Reference number	Department/Organization number	File number

NOTE: For Privacy Act Statement refer to Section C of this form and for completion instructions refer to attached instructions. Please typewrite or print in block letters.

**A ADMINISTRATIVE INFORMATION (To be completed by the Authorized Departmental/Agency/Organization Official)**

New   
  Update   
  Upgrade   
  Transfer   
  Supplemental   
  Re-activation

The requested level of reliability/security check(s)

Reliability Status   
  Level I (CONFIDENTIAL)   
  Level II (SECRET)   
  Level III (TOP SECRET)

Other \_\_\_\_\_

**PARTICULARS OF APPOINTMENT/ASSIGNMENT/CONTRACT**

Indeterminate   
  Term   
  Contract   
  Industry   
  Other (specify secondment, assignment, etc.) \_\_\_\_\_

Justification for security screening requirement

Position/Competition/Contract number	Title	Group/Level (Rank if applicable)	
Employee ID number/PRI/Rank and Service number (if applicable)	If term or contract, indicate duration period ▶	From	To
Name and address of department / organization / agency	Name of official	Telephone number ( ) - [ ]	Facsimile number ( ) -

**B BIOGRAPHICAL INFORMATION (To be completed by the applicant)**

Surname (Last name)	Full given names (no initials) underline or circle usual name used	Family name at birth		
All other names used (i.e. Nickname)	Sex <input type="checkbox"/> Male <input type="checkbox"/> Female	Date of birth Y M D	Country of birth	Date of entry into Canada if born outside Canada Y M D

RESIDENCE (provide addresses for the last five years, starting with the most current)  
Home Address

Daytime telephone number ( ) - [ ]

E-mail address

1	Apartment number	Street number	Street name	Civic number (if applicable)	From Y M -	To present
	City		Province or state	Postal code	Country	Telephone number ( ) -
2	Apartment number	Street number	Street name	Civic number (if applicable)	From Y M -	To Y M -
	City		Province or state	Postal code	Country	Telephone number ( ) -

Have you previously completed a Government of Canada security screening form?  Yes  No

If yes, give name of employer, level and year of screening. Y

**CRIMINAL CONVICTIONS IN AND OUTSIDE OF CANADA (see instructions)**

Have you ever been convicted of a criminal offence for which you have not been granted a pardon?  Yes  No

If yes, give details. (charge(s), name of police force, city, province/state, country and date of conviction) ▼

Charge(s)	Name of police force	City
Province/State	Country	Date of conviction ▶ Y M D



Surname and full given names	Date of birth	Y	M	D
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**C CONSENT AND VERIFICATION (To be completed by the applicant and authorized Departmental/Agency/Organizational Official)**

Checks Required (See instructions)	Applicant's initials	Name of official (print)	Official's initials	Official's telephone number
1. <input type="checkbox"/> Date of birth, address, education, professional qualifications, employment history, personal character references				( ) - [ ]
2. <input type="checkbox"/> Criminal record check				( ) - [ ]
3. <input type="checkbox"/> Credit check (financial assessment, including credit records check)				( ) - [ ]
4. <input type="checkbox"/> Loyalty (security assessment only)				
5. <input type="checkbox"/> Other (specify, see instructions)				( ) - [ ]

**The Privacy Act Statement**

The information on this form is required for the purpose of providing a security assessment. It is collected under the authority of subsection 7(1) of the *Financial Administration Act* and the Government Security Policy (GSP) of the Government of Canada, and is protected by the provisions of the *Privacy Act* in institutions that are covered by the *Privacy Act*. Its collection is mandatory. A refusal to provide information will lead to a review of whether the person is eligible to hold the position or perform the contract that is associated with this Personnel Screening Request. Depending on the level of security screening required, the information collected by the government institution may be disclosed to the Royal Canadian Mounted Police (RCMP) and the Canadian Security Intelligence Service (CSIS), which conduct the requisite checks and/or investigation in accordance with the GSP and entities outside the federal government (e.g. credit bureaus). It is used to support decisions on individuals working or applying to work through appointment, assignment or contract, transfers or promotions. It may also be used in the context of updating, or reviewing for cause, the reliability status, site access or security clearance, both of which may lead to a reassessment of the applicable type/level of security screening. Information collected by the government institution, and information gathered from the requisite checks and/or investigation, may be used to support decisions, which may lead to discipline and/or termination of employment or contractual agreements. The personal information collected is described in Standard PIB PSU 917 (Personnel Security Screening) which is used by all government agencies, except the Department of National Defense PIB DND/PPE 834 (Personnel Security Investigation File), RCMP PIB CMP PPU 065 (Security/Reliability Screening Records), CSIS PIB SIS PPE 815 (Employee Security), and PWGSC PIB PWGSC PPU 015 (Personnel Clearance and Reliability Records) used for Canadian Industry Personnel. Personal information related to security assessments is also described in the CSIS PIB SIS PPU 005 (Security Assessments/Advice).

I, the undersigned, do consent to the disclosure of the preceding information including my photograph for its subsequent verification and/or use in an investigation for the purpose of providing a security screening assessment. By consenting to the above, I acknowledge that the verification and/or use in an investigation of the preceding information may also occur when the reliability status, security clearance or site access are updated or otherwise reviewed for cause under the Government Security Policy. My consent will remain valid until I no longer require a reliability status, a security clearance or a site access clearance, my employment or contract is terminated, or until I otherwise revoke my consent, in writing, to the authorized security official.

\_\_\_\_\_  
Signature Date (Y/M/D)

**D REVIEW (To be completed by the authorized Departmental/Agency/Organizational Official responsible for ensuring the completion of sections A, B and C)**

Name and title	Telephone number ( ) - [ ]
Address	Facsimile number ( ) -

**E APPROVAL (To be completed by authorized Departmental/Agency/Organizational Security Official only)**

**I, the undersigned, as the authorized security official, do hereby approve the following level of screening.**

Reliability Status

Approved Reliability Status       Not approved

\_\_\_\_\_  
Name and title

\_\_\_\_\_  
Signature      \_\_\_\_\_  
Date (Y/M/D)

Security Clearance (if applicable)

Level I       Level II       Level III       Not recommended

\_\_\_\_\_  
Name and title

\_\_\_\_\_  
Signature      \_\_\_\_\_  
Date (Y/M/D)

Comments

**PHOTO**  
(for Level III T.S.,  
and/or upon request  
- see instructions)



## INSTRUCTIONS FOR PERSONNEL CONSENT AND AUTHORIZATION FORM TBS/SCT 330-23E (Rev. 2002/07)

Once completed, this form shall be safeguarded and handled at the level of Protected A.

### General:

If space allotted in any portion is insufficient please use separate sheet using same format.

### 1. Section A (Administrative Information) Authorized Departmental/Agency/Organizational Official

The Official, based on instructions issued by the Departmental Security Officer, may be responsible for determining, based on five year background history, what constitutes sufficient verification of personal data, educational and professional qualifications, and employment history. References are to be limited to those provided on the application for employment or equivalent forms.

### SUPPLEMENTAL INFORMATION REQUIREMENTS

Persons who presently hold a SECURITY CLEARANCE and subsequently marry, remarry or commence a common-law partnership, in addition to having to update sections of the *Security Clearance Form* (TBS/SCT 330-60), are required to submit an original *Personnel Screening, Consent and Authorization Form*, with the following parts completed:

Part A - As set forth in each question

Part B - As set forth in each question, excluding CRIMINAL CONVICTIONS IN AND OUTSIDE OF CANADA.

Part C - Applicant's signature and date only are required

"Other". This should be used to identify if the security screening is for Site Access, NATO, SIGINT etc.

### 2. Section B (Biographical Information)

To be completed by the **applicant**. If more space is required use a separate sheet of paper.

Each sheet must be signed.

**Country of Birth - For "NEW" requests, if born abroad of Canadian parents, please provide a copy of your Certificate of Registration of Birth Abroad. If you arrived in Canada less than five years ago, provide a copy of the Immigration Visa, Record of Landing document or a copy of passport.**

- List only criminal convictions for which a pardon has NOT been granted. Include on a separate attached sheet of paper, if more than one conviction. Applicant must include those convictions outside Canada.
- Offences under the National Defence Act are to be included as well as convictions by courts-martial are to be recorded.

### 3. Section C (Consent and Verification)

A copy of Section "C" may be released to institutions to provide acknowledgement of consent.

Criminal record checks (fingerprints may be required) and credit checks are to be arranged through the Departmental Security Office or the delegated Officer.

Consent: may be given only by an applicant who has reached the age of majority, otherwise, the signature of a parent or guardian is mandatory.

The age of majority is:

19 years in NFLD., N.S., N.B., B.C., Yukon, Northwest Territories and Nunavut;

18 years in P.E.I., Que., Ont., Man., Sask. and Alta.

The applicant will provide initials in the "applicant's initials box".

The official who carried out the verification of the information will print their name, insert their initials and telephone number in the required space.

- Reliability Screening (for all types of screening identified within Section A): complete numbers 1 and 2 and 3 if applicable.
- Security Clearance (for all types of screening identified within Section A): complete numbers 1 to 4 and 5 where applicable.
- Other: number 5 is used only where prior Treasury Board of Canada Secretariat approval has been obtained.

### 4. Section D (Review)

To be completed by authorized Departmental/Agency/Organizational Official who is responsible for ensuring the completion of sections A to C as requested.

### 5. Section E (Approval)

**Authorized Departmental/Agency/Organizational Security Official** refers to the individuals as determined by departments, agencies, and organizations that may verify reliability information and/or approve/not approve reliability status and/or security clearances. Approved Reliability Status and Level I, II and III, as well as the signature of the authorized security official or manager are added for Government of Canada use only. Applicants are to be briefed, acknowledge, and be provided with a copy of the "Security Screening Certificate and Briefing Form (TBS/SCT 330-47)".

**Note: Private sector organizations do not have the authority to approve any level of security screening.**

Photographs: Departments/Agencies/Organizations are responsible for ensuring that three colour photographs of passport size are attached to the form for the investigating agency. Maximum dimensions are 50mm x 70mm and minimum are 43mm x 54mm. The face length from chin to crown of head must be between 25mm x 35mm. The photographs must be signed by the applicant and an authorized security official. The photographs must have been taken within the last six months. It is required for new or upgrade Level III security clearances for identification of the applicant during the security screening investigation by the investigating agency. The investigating agency may in specific incidents request a photograph for a Level I or II clearances when an investigation is required.

## RESIDENCE (Additional Information)

3	Apartment number	Street Number	Street Name		Civic Number (if applicable)	From Y      M	To Y      M
	City		Province or state	Postal code	Country	Telephone number	
4	Apartment number	Street Number	Street Name		Civic Number (if applicable)	From Y      M	To Y      M
	City		Province or state	Postal code	Country	Telephone number	
5	Apartment number	Street Number	Street Name		Civic Number (if applicable)	From Y      M	To Y      M
	City		Province or state	Postal code	Country	Telephone number	
6	Apartment number	Street Number	Street Name		Civic Number (if applicable)	From Y      M	To Y      M
	City		Province or state	Postal code	Country	Telephone number	

CRIMINAL CONVICTIONS IN AND OUTSIDE OF CANADA (Additional Information)			
Charge(s)	Name of Police Force		City
Province/State	Country	Date of Conviction ▶ Y      M      D	
Charge(s)	Name of Police Force		City
Province/State	Country	Date of Conviction ▶ Y      M      D	
Charge(s)	Name of Police Force		City
Province/State	Country	Date of Conviction ▶ Y      M      D	
Charge(s)	Name of Police Force		City
Province/State	Country	Date of Conviction ▶ Y      M      D	

**CONTRACTOR DECLARATION**  
**To**  
**Public Works & Government Services Canada**

**PROTECTED STATUS ( When completed )**

**Date issued:** \_\_\_\_\_  
D / M / Y

**Addressed to** \_\_\_\_\_  
(PWGSC Project / Property Manager)

**In Reference to PWGSC:**

Project Number \_\_\_\_\_

Contract Number \_\_\_\_\_

Lease Number \_\_\_\_\_

**For the Dates:** From \_\_\_\_\_ To \_\_\_\_\_  
D / M / Y D / M / Y

This is to advise that in accordance with the requirements of the Government Security Policy, the following information concerning employee

\_\_\_\_\_ whose date of birth is \_\_\_\_\_  
(individual's full name) D / M / Y

has been checked as part of this Company's assessment of reliability:

- verification of personal data( ie: date of birth)
- verification of address
- verification of relevant education and professional qualifications
- verification of employment data and
- an assessment of reliability, by checking with previous employers and identified references

The employment data and reference checks have been verified for the previous five years, where applicable. Based on the information collected, the undersigned verifies that the individual is an employee of this company, has been reliable in current and previous employment and is honest and trustworthy.

\_\_\_\_\_  
(Name of Authorized Company Official) (Title)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company Name)

**Part 1        General**

**1.1            SUMMARY**

- .1        This Section references to laws, by laws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction, and other legally enforceable requirements applicable to Work and that are; or become, in force during performance of Work.

**1.2            REFERENCES TO REGULATORY REQUIREMENTS**

- .1        Perform Work in accordance with 2010 National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2        Specific design and performance requirements listed in the specifications or indicated on the Drawings may exceed the minimum requirements established by the referenced Building Code; these requirements will govern over the minimum requirements listed in the Building Code
  - .1        Meet or exceed requirements of:
    - .1        Contract documents.
    - .2        Specified standards, codes and referenced documents.

**1.3            HAZARDOUS MATERIAL DISCOVERY**

- .1        Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Departmental Representative.
- .2        PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Departmental Representative.
- .3        Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

**1.4            QUALITY ASSURANCE**

- .1        Regulatory Requirements: Except as otherwise specified, Constructor shall apply for, obtain, and pay all fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:
  - .1        Regulatory requirements and fees in force on date of Bid submission, and
  - .2        Any change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission.

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**1.5 EASEMENTS AND NOTICES**

- .1 Owner will obtain permanent easements and rights of servitude that may be required for performance of Work.
- .2 Constructor shall give notices required by regulatory requirements.

**1.6 PERMITS**

- .1 Building Permit:
  - .1 Constructor shall apply for, obtain and pay for building permit on behalf of Owner, and other permits required for Work and its various parts.
  - .2 Constructor will require that specific Subcontractor's obtain and pay for permits required by authorities having jurisdiction, where their Work is affected by Work requiring permits.
  - .3 Constructor will display building permit and other permits in a conspicuous location at Place of Work.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                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.

**1.2                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     Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .3     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 reinspection.

**1.3                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.

**1.4                PROCEDURES**

- .1     Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2     Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in 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.

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**1.5 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, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

**1.6 REPORTS**

- .1 Submit 4 copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to manufacturer or fabricator of material being inspected or tested or subcontractor of work being inspected or tested.

**1.7 MOCK-UPS**

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

**1.8 EQUIPMENT AND SYSTEMS**

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

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**

---

**Part 1            General**

**1.1                INSTALLATION AND REMOVAL**

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

**1.2                WATER SUPPLY**

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

**1.3                TEMPORARY HEATING AND VENTILATION**

- .1    Provide temporary 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.
- .2    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.
- .3    Permanent heating system of building, to be used when available. Be responsible for damage to heating system if use is permitted.
- .4    Departmental Representative will pay utility charges when temporary heat source is existing building equipment.
- .5    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.
- .6 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

#### **1.4 TEMPORARY POWER AND LIGHT**

- .1 Departmental Representative will pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 30 amps.
- .2 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.
- .3 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Departmental Representative provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

#### **1.5 FIRE PROTECTION**

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

#### **Part 2 Products**

##### **2.1 NOT USED**

- .1 Not Used.

#### **Part 3 Execution**

##### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**Part 1      General**

**1.1      REFERENCE STANDARDS**

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

**1.2      INSTALLATION AND REMOVAL**

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

**1.3      SCAFFOLDING**

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

**1.4      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 Hoists to be operated by qualified operator.

**1.5      ELEVATORS**

- .1 Designated existing elevators to be used by construction personnel and transporting of materials with Departmental Representative approval only.

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

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

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

#### **1.7 CONSTRUCTION PARKING**

- .1 Parking will not be permitted on site.

#### **1.8 OFFICES**

- .1 Mobile construction offices are not permitted on site.

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

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

#### **1.10 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Permanent facilities may be used on approval of Departmental Representative.

#### **1.11 CONSTRUCTION SIGNAGE**

- .1 Contractor signboards not 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 of off site on completion of project or earlier if directed by Departmental Representative.

#### **1.12 CLEAN-UP**

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

**Part 2            Products**

**2.1                NOT USED**

.1            Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**

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**Part 1            General**

**1.1                REFERENCE STANDARDS**

- .1    Public Works Government Services Canada (PSPC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

**1.2                INSTALLATION AND REMOVAL**

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

**1.3                GUARD RAILS AND BARRICADES**

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

**1.4                WEATHER ENCLOSURES**

- .1    Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2    Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.

**1.5                DUST TIGHT SCREENS**

- .1    Provide dust tight partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2    Refer to Drawings for locations and details.
- .3    Maintain and relocate protection until such work is complete.

**1.6                FIRE ROUTES**

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

**1.7                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.

**1.8                PROTECTION OF BUILDING FINISHES**

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

- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule 3 days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1.1            QUALITY**

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

## **1.2            AVAILABILITY**

- .1      Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2      In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

## **1.3            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 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.

#### **1.4            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.

#### **1.5            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.

#### **1.6            QUALITY OF WORK**

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

#### **1.7            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.

**1.8                    CONCEALMENT**

- .1      In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2      Before installation inform Departmental Representative if there is interference. Install as directed by Departmental Representative.

**1.9                    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.

**1.10                  LOCATION OF FIXTURES**

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

**1.11                  FASTENINGS**

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

**1.12                  FASTENINGS - EQUIPMENT**

- .1      Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2      Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3      Bolts may not project more than one diameter beyond nuts.
- .4      Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

**1.13            PROTECTION OF WORK IN PROGRESS**

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

**1.14            EXISTING UTILITIES**

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

**Part 2           Products**

**2.1            NOT USED**

- .1      Not Used.

**Part 3           Execution**

**3.1            NOT USED**

- .1      Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                EXISTING SERVICES**

- .1      Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.

**1.2                LOCATION OF EQUIPMENT AND FIXTURES**

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

**Part 2            Products**

**2.1                NOT USED**

- .1      Not Used.

**Part 3            Execution**

**3.1                NOT USED**

- .1      Not Used.

**END OF SECTION**

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**Part 1      General**

**1.1      ACTION AND INFORMATIONAL SUBMITTALS**

- .1      Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2      Submit written request in advance of cutting or alteration which affects:
  - .1      Structural integrity of elements of project.
  - .2      Integrity of weather-exposed or moisture-resistant elements.
  - .3      Efficiency, maintenance, or safety of operational elements.
  - .4      Visual qualities of sight-exposed elements.
  - .5      Work of Owner or separate contractor.
- .3      Include in request:
  - .1      Identification of project.
  - .2      Location and description of affected Work.
  - .3      Statement on necessity for cutting or alteration.
  - .4      Description of proposed Work, and products to be used.
  - .5      Alternatives to cutting and patching.
  - .6      Effect on Work of Owner or separate contractor.
  - .7      Written permission of affected separate contractor.
  - .8      Date and time work will be executed.

**1.2      MATERIALS**

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

**1.3      PREPARATION**

- .1      Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2      After uncovering, inspect conditions affecting performance of Work.
- .3      Beginning of cutting or patching means acceptance of existing conditions.
- .4      Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5      Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

**1.4      EXECUTION**

- .1      Execute cutting, fitting, and patching to complete Work.

- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Remove samples of installed Work for testing.
- .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .8 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .9 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .10 Restore work with new products in accordance with requirements of Contract Documents.
- .11 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .12 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, full thickness of the construction element.
- .13 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.
- .14 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

**1.5 WASTE MANAGEMENT AND DISPOSAL**

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

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**Part 1            General**

**1.1                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 from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3      Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4      Provide on-site containers for collection of waste materials and debris.
- .5      Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .6      Dispose of waste materials and debris off site.
- .7      Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .8      Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9      Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .10     Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .11     Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

**1.2                FINAL CLEANING**

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

- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .11 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .13 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .14 Remove dirt and other disfiguration from exterior surfaces.
- .15 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .16 Sweep and wash clean paved areas.
- .17 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .18 Clean roofs, downspouts, and drainage systems.
- .19 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .20 Remove snow and ice from access to building.

**1.3 WASTE MANAGEMENT AND DISPOSAL**

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

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**Part 1            General**

**1.1                WASTE MANAGEMENT GOALS**

- .1    Prior to start of Work conduct meeting with Departmental Representative to review and discuss PSPC's waste management goal and Contractor's proposed Waste Reduction Workplan for Construction, Renovation and /or Demolition (CRD) waste to be project generated.
- .2    PSPC's waste management goal: to divert Project Waste from landfill sites. Prior to project completion provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.
- .3    Minimize amount of non-hazardous solid waste generated by project and accomplish maximum source reduction, reuse and recycling of solid waste produced by CRD activities.
- .4    Protect environment and prevent environmental pollution damage.

**1.2                REFERENCE STANDARDS**

- .1    Canadian Construction Association (CCA)
  - .1    CCA 81-2001: A Best Practices Guide to Solid Waste Reduction.
- .2    Public Works and Government Services Canada (PSPC)
  - .1    2002 National Construction, Renovation and Demolition Non-Hazardous Solid Waste Management Protocol.
  - .2    CRD Waste Management Market Research Report (available from PSPC's Environmental Services).

**1.3                DEFINITIONS**

- .1    Approved/Authorized recycling facility: waste recycler approved by applicable provincial authority or other users of material for recycling approved by the Departmental Representative.
- .2    Class III: non-hazardous waste - construction renovation and demolition waste.
- .3    Construction, Renovation and/or Demolition (CRD) Waste: Class III solid, non-hazardous waste materials generated during construction, demolition, and/or renovation activities
- .4    Inert Fill: inert waste - exclusively asphalt and concrete.
- .5    Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .6    Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.

- .7 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .8 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .9 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .10 Separate Condition: refers to waste sorted into individual types.
- .11 Source Separation: act of keeping different types of waste materials separate beginning from the point they became waste.
- .12 Waste Diversion Report: detailed report of final results, quantifying cumulative weights and percentages of waste materials reused, recycled and landfilled over course of project. Measures success against Waste Reduction Workplan (WRW) goals and identifies lessons learned.
- .13 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as co-ordinating required submittal and reporting requirements.
- .14 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials generated by project. Specifies diversion goals, implementation and reporting procedures, anticipated results and responsibilities.

#### **1.4 DOCUMENTS**

- .1 Post and maintain in visible and accessible area at job site, one copy of following documents:
  - .1 Waste Reduction Workplan.

#### **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare and submit following prior to project start-up:
  - .1 1 electronic copy of completed Waste Reduction Workplan (WRW).
- .3 Prepare and submit on monthly basis, throughout project or at intervals agreed to by Departmental Representative the following:
  - .1 Receipts, scale tickets, waybills, and/or waste disposal receipts that show quantities and types of materials reused, recycled, or disposed of.
  - .2 Written monthly summary report detailing cumulative amounts of waste materials reused, recycled and landfilled, and brief status of ongoing waste management activities.

- .4 Submit prior to final payment the following:
  - .1 Waste Diversion Report, indicating final quantities in tonnes by material types salvaged for reuse, recycling or disposal in landfill and recycling centres, re-use depots, landfills and other waste processors that received waste materials.
  - .2 Provide receipts, scale tickets, waybills, waste disposal receipts that confirm quantities and types of materials reused, recycled or disposed of and destination.

## **1.6 WASTE REDUCTION WORKPLAN (WRW)**

- .1 Prepare and submit WRW at least 10 days prior to project start-up.
- .2 WRW identifies strategies to optimize diversion through reduction, reuse, and recycling of materials and comply with applicable regulations, based on information acquired from WA.
- .3 WRW should include but not limited to:
  - .1 Applicable regulations.
  - .2 Specific goals for waste reduction, identify existing barriers and develop strategies to overcome them.
  - .3 Destination of materials identified.
  - .4 Deconstruction/disassembly techniques and schedules.
  - .5 Methods to collect, separate, and reduce generated wastes.
  - .6 Location of waste bins on-site.
  - .7 Security of on-site stock piles and waste bins.
  - .8 Protection of personnel, sub-contractors.
  - .9 Clear labelling of storage areas.
  - .10 Training plan for contractor and sub-contractors.
  - .11 Methods to track and report results reliably.
  - .12 Details on materials handling and removal procedures.
  - .13 Recycler and reclaimer requirements.
  - .14 Quantities of materials to be salvaged for reuse or recycled and materials sent to landfill.
  - .15 Requirements for monitoring on-site wastes management activities.
- .4 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.
- .5 Post WRW or summary where workers at site are able to review content.
- .6 Monitor and report on waste reduction by documenting total volume (in tonnes) and cost of actual waste removed from project.

## **1.7 USE OF SITE AND FACILITIES**

- .1 Execute Work with minimal interference and disturbance to normal use of premises.
- .2 Maintain security measures established by facility provide temporary security measures approved by Departmental Representative.

- .3 Waste Containers and Dumpsters:
  - .1 Provide wheeled carts and other suitable equipment to move out and remove demolition debris and waste off site.
  - .2 Debris chutes are not allowed.
  - .3 Permanent dumpsters are not permitted.

## **1.8 WASTE PROCESSING SITES**

- .1 Contractor is responsible to research and locate waste diversion resources and service providers. Salvaged materials are to be transported off site to approved and/or authorized recycling facilities or to users of material for recycling.

## **1.9 QUALITY ASSURANCE**

- .1 After award of Contract, a mandatory site examination will be held for this Project for Contractor and/or sub-contractors responsible for construction, renovation demolition/deconstruction waste management.
- .2 Waste Management Meeting: Waste Management Co-ordinator is to provide an update on status of waste diversion and management activities at each meeting. Written monthly Waste Diversion Report summary to be provided by Waste Management Coordinator (refer to the Waste Diversion Report form and Waste Materials Tracking form).

## **1.10 STORAGE, HANDLING AND PROTECTION**

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect structural components not removed and salvaged materials from movement or damage.
- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Provide on-site facilities and containers for collection and storage of reusable and recyclable materials.
- .9 Separate and store materials produced during project in designated areas.
- .10 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated processing facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off site processing facility for separation.

- .3 Obtain waybills, receipts and/or scale tickets for separated materials removed from site.
- .4 Materials reused on-site are considered to be diverted from landfill and as such are to be included in all reporting.

### **1.11 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of oil, volatile materials, mineral spirits, paint thinner waste into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
  - .1 Number and size of bins.
  - .2 Waste type of each bin.
  - .3 Total tonnage generated.
  - .4 Tonnage reused or recycled.
  - .5 Reused or recycled waste destination.
- .4 Remove materials on-site as Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in the waste audit.

### **1.12 SCHEDULING**

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

## **Part 3 Execution**

### **3.1 APPLICATION**

- .1 Do Work in compliance with WRW.
- .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

### **3.2 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.3 WASTE DIVERSION REPORT**

- .1 At completion of Project, prepare written Waste Diversion Report indicating quantities of materials reused, recycled or disposed of as well as the following:
  - .1 Identify final diversion results and measure success against goals from Waste Reduction Workplan.
  - .2 Supporting documentation.
  - .3 Waybills and tracking forms.

**END OF SECTION**

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**Part 1            General**

**1.1                ADMINISTRATIVE REQUIREMENTS**

- .1    Acceptance of Work Procedures:
  - .1    Contractor's Inspection: Contractor to conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1    Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2    Request Departmental Representative inspection.
  - .2    Departmental Representative Inspection:
    - .1    Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
    - .2    Contractor to correct Work as directed.
  - .3    Completion Tasks: submit written certificates in English and French that tasks have been performed as follows:
    - .1    Work: completed and inspected for compliance with Contract Documents.
    - .2    Defects: corrected and deficiencies completed.
    - .3    Equipment and systems: tested, balanced and fully operational.
    - .4    Certificates required by Authorities having jurisdiction: submitted.
    - .5    Operation of systems: demonstrated to Owner's personnel.
    - .6    Commissioning of mechanical systems: completed in accordance with 01 91 13 - General Commissioning (Cx) Requirements and copies of final Commissioning Report submitted to Departmental Representative.
    - .7    Work: complete and ready for final inspection.
  - .4    Final Inspection:
    - .1    When completion tasks are done, request final inspection of Work by Departmental Representative], and Contractor.
    - .2    When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

**1.2                FINAL CLEANING**

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

**Part 2            Products**

**2.1                NOT USED**

.1                Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                ADMINISTRATIVE REQUIREMENTS**

- .1    Pre-warranty Meeting:
  - .1    Convene meeting one week prior to contract completion with Consultant, contractor's representative and Departmental Representative, in accordance with Section 01 31 19 - Project Meetings to:
    - .1    Verify Project requirements.
    - .2    Review warranty requirements and manufacturer's instructions.
  - .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.

**1.2                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, four final copies of operating and maintenance manuals in English and French.
- .3    Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.
- .4    Provide evidence, if requested, for type, source and quality of products supplied.

**1.3                FORMAT**

- .1    Organize data as instructional manual.
- .2    Binders: vinyl, hard covered, 3 'D' ring, loose leaf 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 Section numbers and sequence of Table of Contents.
- .6    Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab.
  - .1 Bind in with text; fold larger drawings to size of text pages.

#### **1.4 CONTENTS - PROJECT RECORD DOCUMENTS**

- .1 Table of Contents for Each Volume: provide title of project;
  - .1 Date of submission; names.
  - .2 Addresses, and telephone numbers of 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.
- .6 Training: refer to Section 01 79 00 - Demonstration and Training.

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

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
  - .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.

- .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
  - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

## **1.6 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS**

- .1 Record information on set of black line opaque drawings, provided by Departmental Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
  - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum.
  - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - .4 Field changes of dimension and detail.
  - .5 Changes made by change orders.
  - .6 Details not on original Contract Drawings.
  - .7 Referenced Standards 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 field test records, manufacturer's certifications, inspection certifications, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

## **1.7 EQUIPMENT AND SYSTEMS**

- .1 For each item of equipment and each system include description of unit or system, and component parts.
  - .1 Give function, normal operation characteristics and limiting conditions.
  - .2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
  - .1 Include regulation, control, stopping, shut-down, and emergency instructions.
  - .2 Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01 91 13 - General Commissioning (Cx) Requirements.
- .15 Additional requirements: as specified in individual specification sections.

## **1.8 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.

## **1.9 MAINTENANCE MATERIALS**

- .1 Spare Parts:

- .1 Provide spare parts, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items.
  - .1 Submit inventory listing to Departmental Representative.
  - .2 Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.
- .2 Extra Stock Materials:
  - .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
  - .2 Provide items of same manufacture and quality as items in Work.
  - .3 Deliver to location as directed; place and store.
  - .4 Receive and catalogue items.
    - .1 Submit inventory listing to Departmental Representative.
    - .2 Include approved listings in Maintenance Manual.
  - .5 Obtain receipt for delivered products and submit prior to final payment.
- .3 Special Tools:
  - .1 Provide special tools, in quantities specified in individual specification section.
  - .2 Provide items with tags identifying their associated function and equipment.
  - .3 Deliver to location as directed; place and store.
  - .4 Receive and catalogue items.
    - .1 Submit inventory listing to Departmental Representative.
    - .2 Include approved listings in Maintenance Manual.

#### **1.10 DELIVERY, STORAGE AND HANDLING**

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

#### **1.11 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.

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- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
  - .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
  - .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
    - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
    - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
    - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
    - .4 Verify that documents are in proper form, contain full information, and are notarized.
    - .5 Co-execute submittals when required.
    - .6 Retain warranties and bonds until time specified for submittal.
  - .7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
  - .8 Conduct joint 4 month and 9 month warranty inspection, measured from time of acceptance, by Departmental Representative.
  - .9 Include information contained in warranty management plan as follows:
    - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
    - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include HVAC balancing, commissioned systems, sprinkler systems, fire protection, alarm systems, lighting systems.
    - .3 Provide list for each warranted equipment, item, feature of construction or system indicating:
      - .1 Name of item.
      - .2 Model and serial numbers.
      - .3 Location where installed.
      - .4 Name and phone numbers of manufacturers or suppliers.
      - .5 Names, addresses and telephone numbers of sources of spare parts.
      - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
      - .7 Cross-reference to warranty certificates as applicable.
      - .8 Starting point and duration of warranty period.
      - .9 Summary of maintenance procedures required to continue warranty in force.

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

## **1.12 WARRANTY TAGS**

- .1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Departmental Representative.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of acceptance until project is accepted for occupancy.
- .4 Indicate following information on tag:
  - .1 Type of product/material.
  - .2 Model number.
  - .3 Serial number.
  - .4 Contract number.
  - .5 Warranty period.
  - .6 Inspector's signature.
  - .7 Construction Contractor.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**

**Part 1      General**

**1.1      ADMINISTRATIVE REQUIREMENTS**

- .1      Demonstrate operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of interim completion.
- .2      Owner: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed-upon times.
- .3      Preparation:
  - .1      Verify conditions for demonstration and instructions comply with requirements.
  - .2      Verify designated personnel are present.
  - .3      Ensure equipment has been inspected and put into operation.
  - .4      Ensure testing, adjusting, and balancing has been performed and equipment and systems are fully operational.
- .4      Demonstration and Instructions:
  - .1      Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times, at the equipment location.
  - .2      Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.
  - .3      Review contents of manual in detail to explain aspects of operation and maintenance.
  - .4      Prepare and insert additional data in operations and maintenance manuals when needed during instructions.

**1.2      ACTION AND INFORMATIONAL SUBMITTALS**

- .1      Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2      Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative's approval.
- .3      Submit reports within [one week] after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
- .4      Give time and date of each demonstration, with list of persons present.
- .5      Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

**1.3      QUALITY ASSURANCE**

- .1      When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:
  - .1      Instruct Owner's personnel.
  - .2      Provide written report that demonstration and instructions have been completed.

**Part 2 Products**

**2.1 NOT USED**

.1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

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**Part 1            General**

**1.1                SUMMARY**

- .1    Section Includes:
  - .1        General requirements relating to commissioning of project's components and systems, specifying general requirements to PV of components, equipment, sub-systems, systems, and integrated systems.
- .2    Acronyms:
  - .1        AFD - Alternate Forms of Delivery, service provider.
  - .2        BMM - Building Management Manual.
  - .3        Cx - Commissioning.
  - .4        EMCS - Energy Monitoring and Control Systems.
  - .5        O&M - Operation and Maintenance.
  - .6        PI - Product Information.
  - .7        PV - Performance Verification.
  - .8        TAB - Testing, Adjusting and Balancing.

**1.2                GENERAL**

- .1    Cx is a planned program of tests, procedures and checks carried out systematically on systems and integrated systems of the finished Project. Cx is performed after systems and integrated systems are completely installed, functional and Contractor's Performance Verification responsibilities have been completed and approved. Objectives:
  - .1        Verify installed equipment, systems and integrated systems operate in accordance with Contract Documents and design criteria and intent.
  - .2        Ensure appropriate documentation is compiled into the BMM.
  - .3        Effectively train O&M staff.
- .2    Contractor assists in Cx process, operating equipment and systems, troubleshooting and making adjustments as required.
  - .1        Systems to be operated at full capacity under various modes to determine if they function correctly and consistently at peak efficiency. Systems to be interactively with each other as intended in accordance with Contract Documents and design criteria.
  - .2        During these checks, adjustments to be made to enhance performance to meet environmental or user requirements.
- .3    Design Criteria: as per client's requirements or determined by designer. To meet Project functional and operational requirements.
- .4    AFD managed projects the term Departmental Representative in Cx specifications to be interpreted as AFD Service Provider.

### **1.3 COMMISSIONING OVERVIEW**

- .1 Cx to be a line item of Contractor's cost breakdown.
- .2 Cx activities supplement field quality and testing procedures described in relevant technical sections.
- .3 Cx is conducted in concert with activities performed during stage of project delivery. Cx identifies issues in Planning and Design stages which are addressed during Construction and Cx stages to ensure the built facility is constructed and proven to operate satisfactorily under weather, environmental and occupancy conditions to meet functional and operational requirements. Cx activities includes transfer of critical knowledge to facility operational personnel.
- .4 Departmental Representative will issue Interim Acceptance Certificate when:
  - .1 Completed Cx documentation has been received, reviewed for suitability and approved by Departmental Representative.
  - .2 Equipment, components and systems have been commissioned.
  - .3 O&M training has been completed.

### **1.4 NON-CONFORMANCE TO PERFORMANCE VERIFICATION REQUIREMENTS**

- .1 Should equipment, system components, and associated controls be incorrectly installed or malfunction during Cx, correct deficiencies, re-verify equipment and components within the unfunctional system, including related systems as deemed required by Departmental Representative, to ensure effective performance.
- .2 Costs for corrective work, additional tests, inspections, to determine acceptability and proper performance of such items to be borne by Contractor. Above costs to be in form of progress payment reductions or hold-back assessments.

### **1.5 PRE-CX REVIEW**

- .1 Before Construction:
  - .1 Review Contract Documents, confirm by writing to Departmental Representative.
    - .1 Adequacy of provisions for Cx.
    - .2 Aspects of design and installation pertinent to success of Cx.
- .2 During Construction:
  - .1 Co-ordinate provision, location and installation of provisions for Cx.
- .3 Before start of Cx:
  - .1 Have completed Cx Plan up-to-date.
  - .2 Ensure installation of related components, equipment, sub-systems, systems is complete.
  - .3 Fully understand Cx requirements and procedures.
  - .4 Have Cx documentation shelf-ready.

- .5 Understand completely design criteria and intent and special features.
  - .6 Submit complete start-up documentation to Departmental Representative.
  - .7 Have Cx schedules up-to-date.
  - .8 Ensure systems have been cleaned thoroughly.
  - .9 Complete TAB procedures on systems, submit TAB reports to Departmental Representative for review and approval.
  - .10 Ensure "As-Built" system schematics are available.
- .4 Inform Departmental Representative in writing of discrepancies and deficiencies on finished works.

## **1.6 CONFLICTS**

- .1 Report conflicts between requirements of this section and other sections to Departmental Representative before start-up and obtain clarification.
- .2 Failure to report conflict and obtain clarification will result in application of most stringent requirement.

## **1.7 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit no later than 4 weeks after award of Contract:
    - .1 Name of Contractor's Cx agent.
    - .2 Draft Cx documentation.
    - .3 Preliminary Cx schedule.
  - .2 Request in writing to Departmental Representative for changes to submittals and obtain written approval at least 8 weeks prior to start of Cx.
  - .3 Submit proposed Cx procedures to Departmental Representative where not specified and obtain written approval at least 8 weeks prior to start of Cx.
  - .4 Provide additional documentation relating to Cx process required by Departmental Representative.

## **1.8 COMMISSIONING DOCUMENTATION**

- .1 Departmental Representative to review and approve Cx documentation.
- .2 Provide completed and approved Cx documentation to Departmental Representative.

## **1.9 COMMISSIONING SCHEDULE**

- .1 Provide detailed Cx schedule as part of construction schedule in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
- .2 Provide adequate time for Cx activities prescribed in technical sections and commissioning sections including:
  - .1 Approval of Cx reports.
  - .2 Verification of reported results.
  - .3 Repairs, retesting, re-commissioning, re-verification.

.4 Training.

#### **1.10 COMMISSIONING MEETINGS**

- .1 Convene Cx meetings following project meetings: Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart and as specified herein.
- .2 Purpose: to resolve issues, monitor progress, identify deficiencies, relating to Cx.
- .3 Continue Cx meetings on regular basis until commissioning deliverables have been addressed.
- .4 At 60 % construction completion stage, Departmental Representative to call a separate Cx scope meeting to review progress, discuss schedule of equipment start-up activities and prepare for Cx. Issues at meeting to include:
  - .1 Review duties and responsibilities of Contractor and subcontractors, addressing delays and potential problems.
  - .2 Determine the degree of involvement of trades and manufacturer's representatives in the commissioning process.
- .5 Thereafter Cx meetings to be held until project completion and as required during equipment start-up and functional testing period.
- .6 Meeting will be chaired by Contractor, who will record and distribute minutes.
- .7 Ensure subcontractors and relevant manufacturer representatives are present at 60 % and subsequent Cx meetings and as required.

#### **1.11 STARTING AND TESTING**

- .1 Contractor assumes liabilities and costs for inspections. Including disassembly and re-assembly after approval, starting, testing and adjusting, including supply of testing equipment.

#### **1.12 WITNESSING OF STARTING AND TESTING**

- .1 Provide 14 days notice prior to commencement.
- .2 Departmental Representative to witness of start-up and testing.
- .3 Contractor's Cx Agent to be present at tests performed and documented by sub-trades, suppliers and equipment manufacturers.

#### **1.13 MANUFACTURER'S INVOLVEMENT**

- .1 Factory testing: manufacturer to:
  - .1 Coordinate time and location of testing.
  - .2 Provide testing documentation for approval by Departmental Representative.
  - .3 Arrange for Departmental Representative to witness tests.
  - .4 Obtain written approval of test results and documentation from Departmental Representative before delivery to site.

- .2 Obtain manufacturers installation, start-up and operations instructions prior to start-up of components, equipment and systems and review with Departmental Representative
  - .1 Compare completed installation with manufacturer's published data, record discrepancies, and review with manufacturer.
  - .2 Modify procedures detrimental to equipment performance and review same with manufacturer before start-up.
- .3 Integrity of warranties:
  - .1 Use manufacturer's trained start-up personnel where specified elsewhere in other divisions or required to maintain integrity of warranty.
  - .2 Verify with manufacturer that testing as specified will not void warranties.
- .4 Qualifications of manufacturer's personnel:
  - .1 Experienced in design, installation and operation of equipment and systems.
  - .2 Ability to interpret test results accurately.
  - .3 To report results in clear, concise, logical manner.

#### **1.14 PROCEDURES**

- .1 Verify that equipment and systems are complete, clean, and operating in normal and safe manner prior to conducting start-up, testing and Cx.
- .2 Conduct start-up and testing in following distinct phases:
  - .1 Included in delivery and installation:
    - .1 Verification of conformity to specification, approved shop drawings and completion of PI report forms.
    - .2 Visual inspection of quality of installation.
  - .2 Start-up: follow accepted start-up procedures.
  - .3 Operational testing: document equipment performance.
  - .4 System PV: include repetition of tests after correcting deficiencies.
  - .5 Post-substantial performance verification: to include fine-tuning.
- .3 Correct deficiencies and obtain approval from Departmental Representative after distinct phases have been completed and before commencing next phase.
- .4 Document require tests on approved PV forms.
- .5 Failure to follow accepted start-up procedures will result in re-evaluation of equipment by an independent testing agency selected by Departmental Representative. If results reveal that equipment start-up was not in accordance with requirements, and resulted in damage to equipment, implement following:
  - .1 Minor equipment/systems: implement corrective measures approved by Departmental Representative.
  - .2 Major equipment/systems: if evaluation report concludes that damage is minor, implement corrective measures approved by Departmental Representative.
  - .3 If evaluation report concludes that major damage has occurred, Departmental Representative shall reject equipment.

- .1 Rejected equipment to be remove from site and replace with new.
- .2 Subject new equipment/systems to specified start-up procedures.

#### **1.15 START-UP DOCUMENTATION**

- .1 Assemble start-up documentation and submit to Departmental Representative for approval before commencement of commissioning.
- .2 Start-up documentation to include:
  - .1 Factory and on-site test certificates for specified equipment.
  - .2 Pre-start-up inspection reports.
  - .3 Signed installation/start-up check lists.
  - .4 Start-up reports,
  - .5 Step-by-step description of complete start-up procedures, to permit Departmental Representative to repeat start-up at any time.

#### **1.16 OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEMS**

- .1 After start-up, operate and maintain equipment and systems as directed by equipment/system manufacturer.
- .2 With assistance of manufacturer develop written maintenance program and submit Departmental Representative for approval before implementation.
- .3 Operate and maintain systems for length of time required for commissioning to be completed.
- .4 After completion of commissioning, operate and maintain systems until issuance of certificate of interim acceptance.

#### **1.17 TEST RESULTS**

- .1 If start-up, testing and/or PV produce unacceptable results, repair, replace or repeat specified starting and/or PV procedures until acceptable results are achieved.
- .2 Provide manpower and materials, assume costs for re-commissioning.

#### **1.18 START OF COMMISSIONING**

- .1 Notify Departmental Representative at least 21 days prior to start of Cx.
- .2 Start Cx after elements of building affecting start-up and performance verification of systems have been completed.

#### **1.19 INSTRUMENTS / EQUIPMENT**

- .1 Submit to Departmental Representative for review and approval:
  - .1 Complete list of instruments proposed to be used.
  - .2 Listed data including, serial number, current calibration certificate, calibration date, calibration expiry date and calibration accuracy.
- .2 Provide the following equipment as required:

- .1 2-way radios.
- .2 Ladders.
- .3 Equipment as required to complete work.

#### **1.20 COMMISSIONING PERFORMANCE VERIFICATION**

- .1 Carry out Cx:
  - .1 Under actual operating conditions, over entire operating range, in all modes.
  - .2 On independent systems and interacting systems.
- .2 Cx procedures to be repeatable and reported results are to be verifiable.
- .3 Follow equipment manufacturer's operating instructions.
- .4 EMCS trending to be available as supporting documentation for performance verification.

#### **1.21 WITNESSING COMMISSIONING**

- .1 Departmental Representative to witness activities and verify results.

#### **1.22 AUTHORITIES HAVING JURISDICTION**

- .1 Where specified start-up, testing or commissioning procedures duplicate verification requirements of authority having jurisdiction, arrange for authority to witness procedures so as to avoid duplication of tests and to facilitate expedient acceptance of facility.
- .2 Obtain certificates of approval, acceptance and compliance with rules and regulation of authority having jurisdiction.
- .3 Provide copies to Departmental Representative within 5 days of test and with Cx report.

#### **1.23 COMMISSIONING CONSTRAINTS**

- .1 Since access into secure or sensitive areas will be very difficult after occupancy it is necessary to complete Cx of occupancy, weather, and seasonal sensitive equipment and systems in these areas before issuance of the Interim Certificate, using, if necessary, simulated thermal loads.

#### **1.24 EXTRAPOLATION OF RESULTS**

- .1 Where Cx of weather, occupancy, or seasonal-sensitive equipment or systems cannot be conducted under near-rated or near-design conditions, extrapolate part-load results to design conditions when approved by Departmental Representative in accordance with equipment manufacturer's instructions, using manufacturer's data, with manufacturer's assistance and using approved formulae.

#### **1.25 EXTENT OF VERIFICATION**

- .1 Laboratory areas:
  - .1 Provide manpower and instrumentation to verify up to 100 % of reported results.
- .2 Elsewhere:

- .1 Provide manpower and instrumentation to verify up to 30 % of reported results, unless specified otherwise in other sections.
- .3 Number and location to be at discretion of Departmental Representative.
- .4 Conduct tests repeated during verification under same conditions as original tests, using same test equipment, instrumentation.
- .5 Review and repeat commissioning of systems if inconsistencies found in more than 20 % of reported results.
- .6 Perform additional commissioning until results are acceptable Departmental Representative.

#### **1.26 REPEAT VERIFICATIONS**

- .1 Assume costs incurred by Departmental Representative for third and subsequent verifications where:
  - .1 Verification of reported results fail to receive Departmental Representative's approval.
  - .2 Repetition of second verification again fails to receive approval.
  - .3 Departmental Representative deems Contractor's request for second verification was premature.

#### **1.27 SUNDRY CHECKS AND ADJUSTMENTS**

- .1 Make adjustments and changes which become apparent as Cx proceeds.
- .2 Perform static and operational checks as applicable and as required.

#### **1.28 DEFICIENCIES, FAULTS, DEFECTS**

- .1 Correct deficiencies found during start-up and Cx to satisfaction of Departmental Representative.
- .2 Report problems, faults or defects affecting Cx to Departmental Representative in writing. Stop Cx until problems are rectified. Proceed with written approval from Departmental Representative.

#### **1.29 COMPLETION OF COMMISSIONING**

- .1 Upon completion of Cx leave systems in normal operating mode.
- .2 Except for warranty and seasonal verification activities specified in Cx specifications, complete Cx prior to issuance of Interim Certificate of Completion.
- .3 Cx to be considered complete when contract Cx deliverables have been submitted and accepted by Departmental Representative.

#### **1.30 ACTIVITIES UPON COMPLETION OF COMMISSIONING**

- .1 When changes are made to baseline components or system settings established during Cx process, provide updated Cx form for affected item.

**1.31 MAINTENANCE MATERIALS, SPARE PARTS, SPECIAL TOOLS**

- .1 Supply, deliver, and document maintenance materials, spare parts, and special tools as specified in contract.

**1.32 OCCUPANCY**

- .1 Cooperate fully with Departmental Representative during stages of acceptance and occupancy of facility.

**1.33 INSTALLED INSTRUMENTATION**

- .1 Use instruments installed under Contract for TAB and PV if:
  - .1 Accuracy complies with these specifications.
  - .2 Calibration certificates have been deposited with Departmental Representative.
- .2 Calibrated EMCS sensors may be used to obtain performance data provided that sensor calibration has been completed and accepted.

**1.34 PERFORMANCE VERIFICATION TOLERANCES**

- .1 Application tolerances:
  - .1 Specified range of acceptable deviations of measured values from specified values or specified design criteria. Except for special areas, to be within +/- 10% of specified values.
- .2 Instrument accuracy tolerances:
  - .1 To be of higher order of magnitude than equipment or system being tested.
- .3 Measurement tolerances during verification:
  - .1 Unless otherwise specified actual values to be within +/- 2% of recorded values.

**1.35 OWNER'S PERFORMANCE TESTING**

- .1 Performance testing of equipment or system by Departmental Representative will not relieve Contractor from compliance with specified start-up and testing procedures.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**