

**1 MINIMUM STANDARDS**

- .1 Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the National Building Code of Canada 2010 (NBC) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy the most stringent requirement shall apply.

**2 SHOP DRAWINGS**

- .1 Submit for the Departmental Representative's review, eight (8) copies of each shop drawing.
- .2 The review is for the sole purpose of ascertaining conformance with the general design concept, and does not mean approval of the design details inherent in the shop drawings, responsibility for which shall remain with the Contractor. Such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents.
- .3 Do not commence manufacture or order materials before shop drawings are reviewed.

**3 SAMPLES**

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Where colour, pattern or texture is criterion, submit full range of samples.
- .3 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

**4 PRODUCT DATA**

- .1 Product data: manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .2 Submit five (5) copies of product data.
- .3 Delete information not applicable to project.
- .4 Cross-reference product data information to applicable portions of Contract Documents.

**5 TAXES**

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

**6 FEES, PERMITS, AND CERTIFICATES**

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

**7 MEETINGS**

- .1 Attend bi-weekly meetings throughout the progress of the Work at the call of the Departmental Representative.

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- .2 Representatives of the Contractor, Subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.
  - .3 Coordination Meetings
    - .1 Prior to commencement of construction work convene a meeting with affected trades and the Departmental Representative to review Contractor's proposed methodology for staging the construction, the removal of existing services, and installation of new services.
    - .2 Prior to commencement of construction work and the preparation interference drawings, convene a coordination meeting with all major trades and the Departmental Representative to review the integration of the building systems, their interrelationships, potential conflict areas, and strategies for their resolution.
    - .3 Convene a meeting with mechanical and electrical trades to review the placement of exposed wall and ceiling mounted devices, sensors, switches, and other similar items to plan a coordinated approach to arranging these items on walls and ceilings.
    - .4 During course of work attend regularly scheduled progress meetings.
    - .5 Contractor, major subcontractors involved in work and the Departmental Representative are to be in attendance.

## **8 FIRE SAFETY REQUIREMENTS**

- .1 Comply with the National Building Code of Canada 2010 (NBC) for fire safety in construction and the National Fire Code of Canada 2010 (NFC) for fire prevention, fire fighting and life safety in building in use.
- .2 Welding and cutting:
  - .1 Before welding, soldering, grinding and/or cutting work, obtain a permit from the Building Facilities Personnel as directed by the Departmental Representative. Store flammable liquids in approved CSA containers. No open flame shall be used unless authorized by the Departmental Representative.
  - .2 Ensure that smoke eaters and all other required safety equipment is provided by the related trade prior to commencing work.
  - .3 Provide one (1) week's notice prior to commencing cutting, welding or soldering procedure, provide to the Departmental Representative:
    - .1 Notice of intent, indicating devices affected, time and duration of isolation or bypass.
    - .2 Completed site Hot Work Permit.
    - .3 Return welding permit to the Departmental Representative immediately upon completion of procedures for which permit was issued. A fire watcher shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 10m may be ignited by conduction or radiation. All work is to be coordinated with the Departmental representative in conjunction with onsite Security.

- .3 Where work requires interruption of fire alarms or fire suppression, extinguishing or protection systems:
  - .1 Complete form supplied by the Departmental Representative which describes the reason for isolation, location of work and anticipated duration of work. Contractor will sign document identifying request for fire protection/ alarm system isolation. Upon completion of work, the Contractor will indicate that all work is completed and will sign off and request reinstatement of the fire protection/ alarm system. Isolation of the fire protection/ alarm system shall not exceed eight (8) hours.
  - .2 Provide watchman service as required by the Departmental Representative. In general, watchman service is defined as an individual conversant with Fire Emergency Procedures, performing fire picket duty within an unprotected and unoccupied (no workers) area once per hour.
  - .3 Retain services of manufacturer for fire protection systems on daily basis to isolate and protect all devices relating to:
    - .1 modification of fire alarms, fire suppression, extinguishing or protection systems; and/or
    - .2 Cutting, welding, soldering or other construction activities which might activate fire protection systems.
- .4 Immediately upon completion of work, restore fire protection systems to normal operation and verify that all devices are fully operational.
- .5 Inform fire alarm system monitoring agency and local Fire Department immediately prior to isolation and immediately upon restoration of normal operation.

## **9 FIELD QUALITY CONTROL**

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

## **10 HAZARDOUS MATERIALS**

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS) acceptable to Departmental Representative.
- .2 For work in occupied buildings give the Departmental Representative one (1) week notice for work involving designated substances (Ontario Bill 208) and before painting, caulking, installing carpet or using adhesives.

## **11 TEMPORARY UTILITIES**

- .1 Existing services required for the work, excluding power required for space heating, may be used by the Contractor without charge. Ensure capacity is adequate prior to imposing additional loads. Connect and disconnect at own expense and responsibility.

- .2 Notify the Departmental Representative and utility companies of intended interruption of services, obtain requisite permission.
- .3 Give the Departmental Representative four (4) weeks notice related to each necessary interruption of any mechanical or electrical service throughout the course of the work. Keep duration of these interruptions to a minimum. Carry out all interruptions after normal working hours of the occupants or on weekends as required by the contract schedule.
- .4 The Contractor shall include in the contract, tender value, a cash allowance of \$150,000. for the supply, installation, connection and removal of a temporary generator as detailed on drawing E4 and E12.

## **12 REMOVED MATERIALS**

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

## **13 PROTECTION**

- .1 Protect finished work against damage until take-over.
- .2 Protect adjacent work against the spread of dust and dirt beyond the work areas. Refer to articles 26-Clean Up and 30-Dust Control for related requirements.
- .3 Protect operatives and other users of site from all hazards.

## **14 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to the normal use of premises. Make arrangements with the Departmental Representative to facilitate work as stated. Refer to article 32 Scheduling below for work that must be done during "off hours".
- .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. Openings of any size in exterior wall of the building shall be filled with structural steel, 150 mm studs, R20 insulation and 20 mm fire rated plywood on each side of the framing construction.
- .4 Where elevators, dumbwaiters, conveyors or escalators exist Contractor may use these at the Departmental Representative's discretion. Protect from damage, safety hazards and overloading of existing equipment.
- .5 Sanitary facilities will be assigned to the Contractor personnel, others shall be not be used. The Contractor will be responsible for maintaining the cleanliness of the facilities. The Department Representative will inspect the facilities on a regular basis, if found to be in disorder, the Departmental Representative will restrict use.
- .6 Closures: Protect work temporarily until permanent enclosures completed.
- .7 Construction site area to be well-delineated, fenced, and marked to prevent public and employees entering construction areas and traffic zones.

- .8 Provide temporary office for Contractor and the Departmental Representative's use for meetings in lunch room located adjacent to the construction area. Arrange and pay for temporary power & telephone connection to the site trailer.
- .9 Limited parking is available on site for Contractor and Sub-trades' vehicles. The Departmental Representative will designate five (5) parking spots for the Contractor's use. The Contractor will provide and maintain detailed description of vehicles including, make, colour, licence plate number and driver's name to the Departmental Representative
- .10 Delivery of equipment, materials etc. required to facilitate the work shall be scheduled 48 hours in advance of delivery. The Contractor will be required to notify the Departmental Representative at which time the Departmental Representative will provide the Contractor with appropriate access number.

**15 SITE STORAGE**

- .1 There is no storage space available on the site for the Contractor.
- .2 Do not unreasonably encumber site with materials or equipment.
- .3 Move stored products or equipment which interferes with operations of the Departmental Representative or other contractors.
- .4 Obtain and pay for use of storage containers as needed for operations.

**16 CUT, PATCH AND MAKE GOOD**

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove all items so shown or specified.
- .3 Patch and make good surfaces cut, damaged or disturbed, to the Departmental Representative's approval. Match existing material, colour, finish and texture.
- .4 Install firestops and smoke seals in accordance with CAN/ULC-S115-05, Standard Method of Fire Tests of Firestop, around pipe, ductwork, cables, and other objects penetrating fire separations to provide fire resistance not less than the fire resistance rating of surrounding floor, ceiling, and wall assembly.
- .5 Refer to Section 02 41 13 - Selective Site Demolition for related requirements.

**17 SLEEVES, HANGERS AND INSERTS**

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

**18 EXAMINATION**

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

**19 SIGNS**

- .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, etcetera, in both official languages or by the use of commonly-understood graphic symbols to the Departmental Representative's approval.
- .2 No advertising will be permitted on this project.

**20 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.
- .2 The Contractor shall agree to install proper site separation and identification in order to maintain "Time and Space" at all times throughout the life of the project and when PWGSC Building Operations staff requires access to equipment in order to operate the building, proper coordination and communication must exist between all parties involved.

**21 SCAFFOLDS AND WORK PLATFORMS**

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

**22 WASTE MANAGEMENT**

- .1 Comply with the Environmental Protection Act, Ontario Regulations O.Reg. 102/94 and O. Reg. 103/94 for waste management program on construction and demolition projects.
- .2 Conduct "waste audit" to determine waste generated during demolition or construction operations, prepare written "waste reduction work plan" and implement procedures to reduce, reuse and recycle materials to the extent possible.
- .3 Provide a "source separation program" to disassemble and collect in an orderly fashion the following "materials designated for alternative disposal" from the "general waste" stream.
  - .1 brick and Portland cement concrete.
  - .2 cardboard (corrugated).
  - .3 gypsum board (unfinished).
  - .4 steel.
  - .5 wood (not including treated or laminated wood).
- .4 Submit complete records to the Departmental Representative of all removals from site for both "materials designated for alternative disposal" and "general waste" including:
  - .1 Time and date of removal
  - .2 Description of material and quantities.

- .3 Proof that materials have been received at an Approved Waste Processing Site or certified Waste Disposal Site as required.

## 23 OPERATIONS AND MAINTENANCE MANUALS

- .1 Two (2) weeks prior to any scheduled training, submit to the Departmental Representative six (6) copies of approved Operations Data and Maintenance Manual in both official languages, compiled as follows:
  - .1 Bind data in vinyl hard cover 3 "D" ring type loose leaf binders for 212 x 275 mm size paper. Binders must not exceed 75 mm thick or be more than 2/3 full.
  - .2 Enclose title sheet labelled "Operation Data and Maintenance Manual," Project Name, Project Number, Date and List of Contents. Project name must appear on binder face and spine.
  - .3 Organize contents into applicable sections of work to parallel project specifications breakdown. Mark each section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .2 Include following information plus data specified.
  - .1 Maintenance instruction for finished surface and materials.
  - .2 Copy of hardware and paint schedules.
  - .3 Description: Operation of the equipment and systems defining start-up, shut-down and emergency procedures, and any fixed or adjustable set points that affect the efficiency of the operation. Include nameplate information such as make, size, capacity and serial number.
  - .4 Maintenance: Use clear drawings, diagrams or manufacturers' literature which specifically apply and detail the following:
    - .1 lubrication products and schedules.
    - .2 trouble shooting procedures.
    - .3 adjustment techniques.
    - .4 operational checks.
    - .5 Suppliers' names, addresses and telephone numbers and components supplied by them must be included in this section. Components must be identified by a description and manufacturers part number.
  - .5 Guarantees showing:
    - .1 Name and address of projects.
    - .2 Guarantee commencement date (date of Interim Certificate of Completion).
    - .3 Duration of guarantee.
    - .4 Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.
    - .5 Signature and seal of Guarantor.
  - .6 Additional material used in project listed under various sections showing name of manufacturer and source of supply.
- .3 Spare parts: List all recommended spares to be maintained on site to ensure optimum efficiency. List all special tools appropriate to unique application. All parts/tools detailed must be identified as to manufacturer, manufacturer part number and supplier (including address).

- .4 Include one complete set of final shop drawings (bound separately) indicating corrections and changes made during fabrication and installation.
- .5 Provide a soft copy of all manuals.

**24 RECORDS**

- .1 As work progresses, maintain accurate records to show deviations from contract drawings. Just prior to the Departmental Representative's inspection for issuance of final certificate of completion, supply to the Departmental Representative one (1) set of white prints with all deviations neatly inked in. The Departmental Representative will provide two sets of clean white prints for this purpose.

**25 GUARANTEES AND WARRANTIES**

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

**26 CLEAN UP**

- .1 Clean up work area as work progresses. At the end of each work day and more often if ordered by the Departmental Representative, remove debris from site, neatly stack material for use, and clean up generally.
- .2 Sweep work area on a daily basis. Use sweeping compound to minimize and limit spread of dust. Vacuum all areas using HEPA type unit.
- .3 Upon completion remove scaffolding, temporary protection and surplus materials. Make good defects noted at this stage.
- .4 Clean areas under contract to a condition at least equal to that previously existing and to approval of the Departmental Representative.

**27 SECURITY CLEARANCES**

- .1 All personnel employed on this project will be subject to security check.
- .2 Prior to commencing their work, each trade and associated personnel required for the project must be cleared to the level identified in the Project SRCL prior to commencing their work.
- .3 Personnel will be checked daily at start of work shift, required to sign in and given a pass which must be worn at all times. Pass must be returned at end of work shift and personnel checked out.

**28 SECURITY ESCORTS**

- .1 All personnel employed on this project shall be escorted when executing work in non-public areas during normal working hours. Personnel shall be escorted in all areas after normal working hours.

- .2 Submit an escort request to Departmental Representative at least 14 days before the service is needed. For requests submitted within the time mentioned above, the costs of the security escort will be paid for by the Departmental Representative. The cost incurred by a late request will be charged to the Contractor.
- .3 Any escort request may be cancelled free of charge if notification of cancellation is given at least 24 hours before the scheduled time of the escort. The cost incurred by a late cancellation will be charged to the Contractor.
- .4 The calculation of costs will be based on the average hourly rate of a security officer for a minimum of eight hours per day for a late service request and of four hours for late cancellations.

## **29 BUILDING SMOKING ENVIRONMENT**

- .1 Smoking is not permitted in the Building. Obey smoking restrictions on building property.

## **30 DUST CONTROL**

- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public. Refer to Article 26 Clean up. Ensure that HEPA vacuums are used to clean areas.
- .2 Maintain and relocate protection until such work is complete.
- .3 Protect all furnishings within work area with 0.102 mm thick polyethylene film during construction. Remove film during non- construction hours and leave premises in clean, unencumbered and safe manner for normal daytime function.

## **31 TESTING LABORATORY SERVICES**

- .1 The Departmental Representative will appoint and pay for costs of inspection and testing services, unless indicated otherwise.
- .2 Provide safe working areas and assist with testing procedures, including provisions for materials or services and co-ordination, as required by testing agency and as authorized by the Departmental Representative.
- .3 Where tests indicate non-compliance with specifications, contractor to pay for initial test and all subsequent testing of work to verify acceptability of corrected work.

## **32 SCHEDULING**

- .1 On award of contract submit a construction schedule for work, indicating anticipated progress stages within time of completion. Refer to Section 01 32 16.07 Construction Progress Schedule – Bar (GANTT) Chart.
- .2 Carry out work during "regular hour" Monday to Friday from 07:00 to 18:00 hours and on Saturdays, Sundays and statutory holidays.
- .3 Carry out work in occupied areas during "off hours" Monday to Friday from 18:00 to 07:00 hours and on Saturdays, Sundays, and statutory holidays. Thoroughly ventilate areas painted during "off hours".

- .4 Give the Departmental Representative 14 days notice for work to be carried out during "off hours".
- .5 Carry out the all noise generating work during "off hours" Monday to Friday from 18:00 to 07:00 hours and on Saturdays, Sundays, and statutory holidays. Noise generating work includes:
  - .1 Core drilling.
  - .2 Drilling for equipment anchors.
  - .3 Saw cutting of structure.
- .6 Use of a crane on site to place and deliver any equipment must be scheduled 14 days in advance with the Departmental Representative.
- .7 Electrical system shutdown for purposes of installing new equipment and modification to existing components or equipment as defined on drawings will be limited to 12 hours.
- .8 Carry out work that will require a partial power shutdown in the building during 'Off Hours' Monday to Friday from 18:00 to 04:00 and on Saturdays, Sundays and statutory holidays. Coordinate power shutdown(s) with the Departmental Representative. Indicate planned power shutdowns on the project schedule. A minimum of 6 weeks notice is required to arrange any equipment shutdown or isolation.
- .9 Refer to electrical drawings for required project staging for project implementation.

### **33 COST BREAKDOWN**

- .1 Before submitting first progress claim submit breakdown of Contract Amount in detail as directed by the Departmental Representative and aggregating the Contract Amount. After approval by the Departmental Representative cost breakdown will be used as the basis of progress payments.

### **34 GENERATOR AND ENCLOSURE SUPPLY BY DEPARTMENTAL REPRESENTATIVE**

- .1 The Departmental Representative will supply a generator (G2) complete with environmental enclosures and onboard fuel system. The Contractor will be responsible to disconnect the unit from the existing site distribution system, dismantle specific enclosures and systems and transport from the present site to new location. Refer to drawing E10 for all associated work.
- .2 Contractor will be responsible for all related reassembly of the components.

### **35 TRAFFIC PLAN**

- .1 During construction, the Contractor shall maintain access and fire routes around the existing complex and maintain parking to the north of the construction area to ensure maximum number of parking spots.
- .2 Provide and maintain signs and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .3 Supply and erect signs, delineators, barricades and miscellaneous warning devices in accordance with Temporary Workplace Traffic Control Manual.

- .4 Place signs and other devices in locations recommended in Temporary Workplace Traffic Control Manual.
- .5 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.
- .6 Continually maintain traffic control devices in use:
  - .1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
- .7 Remove or cover signs which do not apply to conditions existing from day to day

**36**

**PRECEDENCE**

- .1 For Federal Government projects, Division 01 sections take precedence over technical specification sections in other Divisions of this Project Manual.

**END OF SECTION**