

Part 1 General**1.1 TAXES**

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

1.2 FEES, PERMITS and CERTIFICATES

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

1.3 CONSTRUCTION PROGRESS SCHEDULE

- .1 Schedule and execute work with least possible interference or disturbance to the normal use of premises.
- .2 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When the Departmental Representative has reviewed schedule, take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
- .3 Carry out work during "regular hour", Monday to Friday from 07:00 to 18:00 hours and on Saturdays, Sundays and statutory holidays.
- .4 Give the Departmental Representative 48 hours notice for work to be carried out during "off hours".

1.4 SUBMITTAL PROCEDURES

- .1 Submit promptly to Departmental Representative submittals listed for review, in orderly sequence to not cause delay in work.
- .2 Do not proceed with work affected by submittals until review is complete.
- .3 Shop Drawings:
 - .1 Submit five (5) copies of shop drawings: bearing stamp and signature of qualified Professional Engineer registered or licensed in Province of Ontario.
 - .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.
- .4 Product Data:
 - .1 Submit five (5) copies of product data: manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.

- .2 Cross reference product data information to applicable portions on Contract Documents.
- .5 Samples:
 - .1 Submit samples: examples of materials, equipment, quality, finishes and workmanship.
 - .2 Where colour, pattern or texture is criterion, submit full range of samples.
 - .3 Reviewed and accepted samples will become standard of material and workmanship, against which installed work will be verified.
- .6 Submit photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims.

1.5 REGULATORY REQUIREMENTS

- .1 References and Codes:
 - .1 Materials shall be new and work shall conform to the minimum applicable standards of the "References" indicated in the specification sections, the National Building Code of Canada 2005 (NBC) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy the most stringent requirement shall apply.
- .2 Building Smoking Environment:
 - .1 Smoking is not permitted in the Building. Obey smoking restrictions on building property.
- .3 Hazardous Material Discovery:

1.6 FIRE SAFETY REQUIREMENTS

- .1 Comply with both the National Building Code of Canada 2005 and the National Fire Code of Canada 2005 for safety of persons in buildings in the event of a fire and the protection of buildings from the effects of fire, as follows;
 - .1 The National Building Code (NBC): for fire safety and fire protection features that are required to be incorporated in a building during construction.
 - .2 The National Fire Code (NFC):
 - .1 The on-going maintenance and use of the fire safety and fire protection features incorporated in buildings.
 - .2 The conduct of activities that might cause fire hazards in and around buildings.
 - .3 Limitations on hazardous contents in and around buildings.
 - .4 The establishment of fire safety plans.
 - .5 Fire safety at construction and demolition sites.
- .2 Comply with Human Resources and Skills Development Canada (HRSDC), Fire Commissioner of Canada Standards:
 - .1 FC 301, Standard for Construction Operations - Standards
 - .2 FC 302, Standard for Welding and Cutting - Standards
 - .3 FC 374, Fire Protection Standard for General Storage (Indoor and Outdoor).

- .4 Retain all fire safety documents and standards on site.
- .3 Welding and cutting:
 - .1 Before welding, soldering, grinding and/or cutting work, obtain a permit from the Fire Prevention Unit as directed by the Departmental Representative. Store flammable liquids in approved CSA containers inspected by the Fire Prevention Unit. No open flame shall be used unless authorized by the Fire Prevention Unit.
 - .2 At least 48 hours prior to commencing cutting, welding or soldering procedure, provide to Departmental Representative:
 - .1 Notice of intent, indicating devices affected, time and duration of isolation or bypass.
 - .2 Completed welding permit as defined in FC 302.
 - .3 Return welding permit to Departmental Representative immediately upon completion of procedures for which permit was issued.
 - .3 "Fire Watchers" as described in FC 302 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.
- .4 Where work requires interruption or cause activation of fire alarms or fire suppression, extinguishing or protection systems:
 - .1 Provide "Watchman Service" as described in FC 301; 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.
 - .2 Retain services of manufacturer for fire protection systems on daily basis or as approved by Departmental Representative, 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 that might activate fire protection systems.
 - .3 Immediately upon completion of work, restore fire protection systems to normal operation and verify that all devices are fully operational.
 - .4 Inform fire alarm system monitoring agency and local Fire Department immediately prior to isolation and immediately upon restoration of normal operation.

1.7 QUALITY CONTROL

- .1 Testing Laboratory Services:
 - .1 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 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.

1.8 HAZARDOUS MATERIALS

- .1 Hazardous Materials: product, substance, or organism that may cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .2 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 Human Resources and Skills Development Canada (HRSDC), Labour Program.
- .3 For work in occupied buildings, give the Department Representative 48 hours notice for work involving designated substances (Ontario Bill 208), hazardous substances (Canada Labour Code Part II Section 10).

1.9 TEMPORARY UTILITIES

- .1 Existing services required for work, excluding power required for space temporary 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 and obtain requisite permission.
- .3 Give the Departmental Representative 48 hours 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, preferably on weekends.

1.10 CONSTRUCTION FACILITIES

- .1 Access Scaffold:
 - .1 Scaffolding: in accordance with CSA Z797-09 – Code of Practice for Access Scaffold.
 - .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.
- .2 Designated elevators: to be used by construction personnel and transporting of materials.
 - .1 Co-ordinate with Departmental Representative.
 - .2 Protect from damage, safety hazards and overloading of existing equipment.
- .3 Site Storage:
 - .1 The Departmental Representative will assign storage space that shall be equipped and maintained by the Contractor.
 - .2 Do not unreasonably encumber site with materials or equipment.
 - .3 Move stored products or equipment that interfere with operations of Departmental Representative or other contractors.
 - .4 Obtain and pay for use of additional storage or work areas needed for operations.

- .5 Do not load or permit to load any part of work with weight or force that will endanger work.
- .4 Where security is reduced by work provide temporary means to maintain security.
- .5 Sanitary facilities: will be assigned for Contractor's personnel. Others shall not be used. Keep facilities clean.
- .6 Signage:
 - .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 and to approval of the Departmental Representative.
 - .2 No advertising will be permitted on this project.
 - .3 Maintain approved signs and notices in good condition for duration of project and dispose of off site, on completion of project or earlier, as directed by Departmental Representative.
- .7 Existing structural beams:
 - .1 The contractor shall be permitted to use the existing structural beams located directly above Chiller #2 for the removal and replacement of the motor. The beams are rated at 5 tons each.
 - .2 The contractor shall retain the services of an independent third party structural engineer licensed in the Province of Ontario to provide an inspection report and certificate addressed to the contractor under the applicable codes for the duration of the project and provide proof of such to the departmental representative before the use of the beams are permitted.
- .8 Existing chiller room floor:
 - .1 No heavy equipment such as forklifts are permitted in the plant.
 - .2 Contractor shall submit a complete rigging plan showing methods for removal and replacement of the motor for review by the departmental representative before any work can proceed.

1.11 TEMPORARY BARRIERS AND ENCLOSURES

- .1 Maintain existing services to building and provide for personnel and vehicle access.
- .2 Hoarding:
 - .1 Design, erect and maintain temporary site enclosure as required by authority having jurisdiction.
- .3 Dust Control:

- .1 Provide dust tight screens or partitions to localize dust-generating activities, and for protection of workers, finished areas of work and public.
- .2 Maintain and relocate protection until such work is complete.
- .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.
- .4 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.
- .5 Protection:
 - .1 Protect work against damage until take-over.
 - .2 Protect adjacent work against the spread of dust and dirt beyond the work areas.
 - .3 Protect operatives and other users of site from all hazards.

1.12 COMMON PRODUCT REQUIREMENTS

- .1 Quality of Work:
 - .1 Carry out work using qualified licenced 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 licenced workers.
 - .3 Determine permitted activities and tasks by apprentices, based on level of training attended and demonstration of ability to perform specific duties.
- .2 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.
 - .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove packaging or bundling until required in work.
- .3 Manufacturer's Instructions: 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

1.13 EXAMINATION and PREPARATION

- .1 Examine site and conditions likely to affect work and be familiar and conversant with existing conditions.
- .2 Before commencing work, establish location and extent of services lines in area of work and notify Departmental Representative of findings.

1.14 EXECUTION

- .1 Cut, Patch and Make Good:
 - .1 Cut existing surfaces as required to accommodate new work.

- .2 Remove all items so shown or specified.
- .3 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture.
- .2 Firestop and smoke seal systems: in accordance with CAN-ULC-S115-05 – Standard Method of Fire Test of Firestop Systems. Install 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.
- .3 Sleeves, Hangers and Inserts: co-ordinate setting and packing of sleeves and supply and installation of hangers and inserts. Obtain Departmental Representative's approval before cutting into structure.
- .4 Unless otherwise specified, materials for removal become the Contractor's property and shall be taken from site.

1.15 WASTE MANAGEMENT

- .1 Comply with Environmental Protection Act, Ontario Regulations: O. Reg. 102/94 – Waste Audits and Waste Reduction Work Plans; and O. Reg. 103/94 – Industrial, Commercial and Institutional Source Separation Programs; for waste management on construction and demolition projects.
- .2 Conduct "waste audit" to determine what waste will be generated during construction and demolition operations. Prepare written "waste reduction work plan" and implement the principles to reduce, reuse and recycle materials to the extent that is 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; and
 - .5 wood (not including painted, treated or laminated wood).
- .4 Submit complete records of all removals from site for both "materials designated for alternative disposal" and "general waste" including:
 - .1 time and date of removal;
 - .2 description of material and quantities; and
 - .3 proof that materials have been received at an approved Waste Processing Site or certified Waste Disposal Site as required.

1.16 CLOSEOUT SUBMITTALS

- .1 Operational and Maintenance Manuals:
 - .1 Two (2) weeks prior to any scheduled training, submit to Departmental Representative six (6) copies of approved Operations Data and Maintenance Manual in both official languages, compiled as follows:

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- .1 Bind data in vinyl hard cover 3 "D" ring type loose-leaf binders for 212 x 275mm size paper. Binders must not exceed 75mm thick or be more than 2/3 full.
 - .2 Enclose title sheet labelled "Operation Data and Maintenance Manual," project name, 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; and
 - .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.
 - .6 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; and
 - .5 signature and seal of Guarantor.
 - .7 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.
 - .2 Records:
 - .1 As work progresses, maintain accurate records to show deviations from contract drawings. Just prior to 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.

.3 Guarantees and Warranties:

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

1.17 CLEANING

- .1 Clean up as work progresses. At the end of each work period, and more often if ordered by the Departmental Representative, remove debris from site, neatly stack material for use, and clean up generally.
- .2 Upon completion remove scaffolding, temporary protection and surplus materials. Make good defects noted at this stage.
- .3 Clean and polish glass, mirrors, ceramic tile, aluminum, chrome, stainless steel, baked or porcelain enamel, plastic laminate and other plastic surfaces, floors, hardware and washroom fixtures. Clean manufactured articles in accordance with manufacturer's written instructions.
- .4 Clean areas under contract to a condition equal to what previously existed and to approval of Departmental Representative.

1.18 SECURITY CHECK

- .1 All personnel employed on this project will be subject to security check. Obtain requisite clearance, as instructed, for each individual required to enter the premises.
- .2 Personnel will be checked daily at start of work shift and given a pass, which must be worn at all times. Pass must be returned at end of work shift and personnel checked out.

1.19 SECURITY ESCORT

- .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 Departmental Representative will pay for the costs of the security escort. 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 4 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 8 hours per day for a late service request and 4 hours for late cancellations.

1.20 COST BREAKDOWN

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

1.21 PRECEDENCE

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

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Part 3 Execution**3.1 NOT USED**

- .1 Not used.

END OF SECTION