

**Part 1 General****1.1 Related Sections**

- .1 01 14 25 - Designated Substances
- .2 01 35 29.06 - Health and Safety Requirements
- .3 01 41 00 - Regulatory Requirements
- .4 01 45 00 - Quality Control

**1.2 References**

- .1 N/A

**1.3 TAXES**

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

**1.4 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.

**1.5 CONSTRUCTION PROGRESS SCHEDULE**

- .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed by the Departmental Representative, take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
- .2 Other projects may be in construction on site at the same time as this project. Departmental Representative will define work areas on site. Do not trespass to other working areas.
- .3 Carry and work during "regular hours", Monday to Friday from 7:00 to 18:00 hours. Allow for after hour/weekend work for steam and condensate shutdowns for steam and condensate expansion joint replacement. Allow for continuous shifts (around the clock) to complete the work during scheduled shutdowns. Scheduled shutdown duration: from Friday 18:00 to Sunday 24:00 hour. Weekend shutdown can be extended by a day if it falls on a long weekend.
- .4 Give the Departmental Representative 48 hours' notice for work to be carried out during "off hours".

**1.6 REGULATORY REQUIREMENTS**

- .1 References and Codes:
  - .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 case of conflict or discrepancy, notify the authority having jurisdiction for clarification.

- .2 Building Smoking Environment:
  - .1 Smoking is not permitted in the Building. Obey smoking restrictions on building property.
- .3 Construction activities related to other projects may restrict access to the parking area and in particular to the designated storage areas for five (5) random days during the execution of this project. For each such restriction the contractor will be provided with 48 hrs. notice. Accommodate this access restriction in the overall schedule.

## **1.7 FIRE SAFETY REQUIREMENTS**

- .1 Comply with both the National Building Code of Canada 2010 and the National Fire Code of Canada 2010 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 Welding and cutting:
  - .1 Welding in Public areas:
    - .1 Requires hot work permit.
    - .2 Protective screens
    - .3 Smoke eaters.
  - .2 At least 1 week 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 NFC 2010 and NBC 2010.
    - .3 Return welding permit to Departmental Representative immediately upon completion of procedures for which permit was issued.
  - .3 "Fire Watchers" as described in NFC 2010 and NBC 2010. shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 10 m may be ignited by conduction or radiation.

**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).
- .3 For work in occupied buildings, give the Department Representative 1 week notice for work involving designated substances, and before painting, caulking or using adhesives and other materials, that cause off gassing.
- .4 **Contractor to be responsible for removal of lead based paint, silica and asbestos for demolition and new work. Refer to Section 01 14 25 - Designated Substances Report for safety procedures.**

**1.9 TEMPORARY UTILITIES**

- .1 Existing services required for the work, 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 at least 1 week prior of intended interruption of services, obtain requisite permission.
- .3 Give the Departmental Representative 1 week 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 - 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 Site Storage:
  - .1 No site storage available.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Execute work with least possible interference or disturbance to the normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .5 Maintain existing services to building and provide for personnel and vehicle access.
- .6 Do not block exterior access routes and emergency exits. If the access route and/or emergency exits have to be temporarily blocked for the purpose of moving materials,

provide a written notice to Departmental Representative and obtain appropriate written approval at least 72 hours in advance.

- .7 Closures: Protect work temporarily until permanent enclosures completed.
- .8 Construction Parking:
  - .1 All parking in NAC garage must be paid for by the contractor on a daily basis.
- .9 Sanitary Facilities:
  - .1 The use of the building's sanitary facilities shall not be accessible to the contractor, his workers as well as his subcontractors. The contractor shall provide his own facilities.
  - .2 Keep area and premises in sanitary condition.

#### **1.11 TEMPORARY BARRIERS AND ENCLOSURES**

- .1 Maintain existing services to building and provide for personnel and vehicle access. 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 Building Operations staff requires access to equipment in order to operate the building, proper coordination and communication must exist between all parties involved.
- .2 Hoarding:
  - .1 Provide hoarding for wall opening as indicated on architectural drawings.
- .3 Weather Enclosures: protect work temporarily until permanent enclosures completed.
- .4 Dust Control:
  - .1 Provide dust tight screens or partitions to localize and contain dust generating activities, and for protection of workers and other areas of work.
  - .2 Maintain and relocate protection until such work is complete.
  - .3 Protect all immediately adjacent equipment (chillers, control panels, motors, etc.) 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.
- .5 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.
- .6 Protection:
  - .1 Contractor to provide protection plan for new work. Protection plan to include hoarding details, materials uses, access and execution. Hoarding shall not disrupt operation and access to the existing systems. Departmental Representative to review and approve protection plan prior to commencement of work.
  - .2 Protect work against damage until take-over.
  - .3 Protect adjacent work against the spread of dust and dirt beyond the work areas.
  - .4 Protect operatives and other users of site from all hazards

**1.12 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.
- .3 Provide photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims.

**1.13 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 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.

**1.14 REMOVED MATERIALS**

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

**1.15 CUT, PATCH AND MAKE GOOD**

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove all items so shown or specified.
- .3 Repair existing surfaces as detailed in drawings.

**1.16 SIGNS**

- .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, etc., 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,

**1.17 WORK ZONE LOCATIONS & IDENTIFICATION**

- .1 Work zone locations include: refer to drawings scope of work.
- .2 The contractor shall agree to install proper site separation and identification.

**1.18 GUARANTEES AND WARRANTIES**

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

**1.19 CLEANING**

- .1 Clean up work area 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 areas under contract to a condition at least equal to that previously existing and to approval of Departmental Representative

**1.20 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.

**1.21 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.

**1.22 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**

**PART 1 – GENERAL****1.1 RELATED SECTIONS**

1. Section 02 82 00.01 – Asbestos Abatement: Minimum Precautions
2. Section 02 82 00.02 – Asbestos Abatement: Intermediate Precautions
3. Section 02 82 00.03 – Asbestos Abatement: Maximum Precautions
4. Section 02 83 20 – Lead Precautionary Measures
5. Section 02 89 00 – Silica Precautions

**1.2 REFERENCES**

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

**1.3 DEFINITIONS**

Asbestos-Containing Materials (ACMs): means material that contains 0.5 per cent or more asbestos by dry weight as per Ontario Regulation 278/05.

Friable Material: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

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

6.

#### 1.4 DESIGNATED SUBSTANCES

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

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

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

1. ACRYLONITRILE: Not Identified

2. ARSENIC: Not Identified

3. ASBESTOS: **Identified**

1. The following friable Asbestos-Containing Materials have been identified and/or suspected in the project areas:

a. Magnesia block piping insulation under a layer of fiberglass.

4. BENZENE: Not Identified

5. COKE OVEN EMISSIONS: Not Identified

6. ETHYLENE OXIDE: Not Identified

7. ISOCYANATES: Not Identified

8. LEAD: Identified

1. The following paints are suspected to contain lead higher than the 90 part per million (ppm) limit established by the Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109:

a. Paint on pipe supports

9. MERCURY: Not Identified

10. SILICA: Identified



Free crystalline silica is expected to be present in concrete in the project area.

11. VINYL CHLORIDE MONOMER: Not Identified

12. Polychlorinated Biphenyls (PCBs): Not Identified

13. Ozone Depleting Substances (ODS): Not Identified

14. Other hazardous materials: Not Identified

## 1.5 RECOMMENDATIONS

### 1. ASBESTOS

1. All work must be done in accordance with O.Reg 278/05 (as amended).
  1. Identified friable magnesia block piping insulation require a minimum of Type 2 abatement procedures when disturbing, removing or repairing one (1) square metre or less of the material, provided that it is wetted and non-powered hand tools are used. Demolition, disturbance or repair of more than one (1) square metre of friable ACM requires Type 3 abatement procedures. Asbestos-containing pipe insulation and pipe fitting insulation can be removed using Type 2 glovebag procedures, provided the materials is in good condition, and the glovebag seal can be maintained throughout the removal process.
2. Disposal of asbestos waste must be done in accordance with "General – Waste Management" O.Reg 347/90 (as amended) under the Ontario Environmental Protection Act and the federal Transportation of Dangerous Goods Act. The waste must be disposed at a licensed waste disposal site. Proper notification must be issued to the Departmental Representative prior to transportation of waste.

### 2. LEAD

1. All work involving disturbance of lead-containing materials must be done in accordance with O.Reg 490/09.
2. Follow recommendations provided in the Ontario Ministry of Labour (MoL) Guideline entitled "Guideline: Lead on Construction Projects". This guideline classifies all lead disturbances as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, and assigns different levels of respiratory protection and work procedures for each classification.
  1. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne lead levels that exceed the TWAEL of 0.05 milligram per cubic metre (mg/m<sup>3</sup>) prescribed by O.Reg 490/09.
  2. The use of mechanically-powered tools or torches on lead-containing materials increases the concentration of airborne lead dust or fumes requiring more stringent respiratory protection and controlled work procedures.

3. Disposal of construction waste containing lead must be done in accordance with "General – Waste Management" O.Reg 347/90 (as amended) under the Ontario Environmental Protection Act and the federal Transportation of Dangerous Goods Act.

3. SILICA

1. Comply with Ontario Regulations O.Reg 490/09 when performing works that may disturb silica-containing materials.
2. Silica dust can be produced during works such as blasting, crushing, grinding and sand-blasting materials containing silica. As silica is presumed to be present in select materials in the project area, appropriate respiratory protection and ventilation must be provided during the demolition and modification of these structures.
3. Follow recommendations provided in the MoL Guideline entitled "Guideline: Silica on Construction Projects". This document classifies all silica disturbances as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification.

**END OF SECTION**

## **Part 1            General**

### **1.1                RELATED SECTIONS**

.1                N/A

### **1.2                REFERENCES**

- .1                Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2                Province of Ontario
  - .1                Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. – Updated.

### **1.3                ACTION AND INFORMATIONAL SUBMITTALS**

- .1                Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2                Submit as specified Health and Safety Plan: 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 one copy of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative and authority having jurisdiction daily.
- .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 and Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within five days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative and Consultant within five days after receipt of comments from Departmental Representative and Consultant.
- .8                Departmental Representative's and Consultant'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 and Consultant.

- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergencies.

#### **1.4 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.
- .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.

#### **1.5 SAFETY ASSESSMENT**

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

#### **1.6 MEETINGS**

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

#### **1.7 REGULATORY REQUIREMENTS**

- .1 Do Work in accordance with Regulatory Requirements.

#### **1.8 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - .1 Refer to Designated Substances Report (Section 01 14 25)

#### **1.9 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.

#### **1.10 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.
- .3 Contractor shall be the Principal Contractor as described in the Ontario Act Respecting Health and Safety code for the Construction for only their scope and areas of work as defined and described this project specification.
- .4 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.

**1.11 COMPLIANCE REQUIREMENTS**

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 and Ontario Regulations for Construction Projects, O. Reg. 213/91.
- .2 Comply with R.S.Q., c. S-2.1, an Act respecting Health and Safety, and c. S-2.1, r.4 Safety Code for the Construction Industry.
- .3 Comply with Occupational Health and Safety Regulations, 1996.
- .4 Comply with Occupational Health and Safety Act, General Safety Regulations, O.I.C.
- .5 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

**1.12 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 and Consultant 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 and Consultant verbally and in writing.

**1.13 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.
  - .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 Registered Occupational Hygienist, Certified Industrial Hygienist, and site supervisor.

**1.14 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 and Consultant.

**1.15 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative and Consultant.
- .2 Provide Departmental Representative and Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

- .3 Departmental Representative and Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

**1.16 WORK STOPPAGE**

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

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1 General****1.1 RELATED SECTIONS**

- .1 N/A

**1.2 REFERENCES**

- .1 Perform Work in accordance with 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 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 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

**1.4 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions and municipal by-laws.

**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 RELATED SECTIONS**

- .1 Section 23 05 17 - Welding.

**1.2 REFERENCES**

- .1 N/A

**1.3 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.

**1.4 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.

**1.5 PROCEDURES**

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

**1.6 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 Repair other Contractor's work damaged by such removals or replacements promptly.

**1.7 REPORTS**

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

**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 RELATED SECTIONS**

- .1 N/A

**1.2 REFERENCES**

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

**1.3 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.

**1.4 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 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .5 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

## **1.5 TRANSPORTATION**

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

## **1.6 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.

## **1.7 QUALITY OF WORK**

- .1 Ensure Work is of highest standard, executed by workers 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.

## **1.8 CO-ORDINATION**

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

## **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 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.

**1.11 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.

**1.12 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.

**1.13 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           RELATED SECTIONS**

- .1        Section 01 00 10 – General Instructions.

**1.2           REFERENCES**

- .1        N/A

**1.3           ACTION AND INFORMATIONAL SUBMITTALS**

- .1        Submit written request in advance of cutting or alteration which affects:
  - .1        Structural integrity of elements of project.
  - .2        Efficiency, maintenance, or safety of operational elements.
- .2        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        Date and time work will be executed.

**1.4           MATERIALS**

- .1        Required for original installation.
- .2        Change in Materials: Request for substitution must be submitted to Departmental Representative.

**1.5           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.

**1.6           EXECUTION**

- .1        Execute cutting, fitting, and patching, to complete Work.
- .2        Remove and replace defective and non-conforming Work.
- .3        Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

- .4 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .5 Restore work with new products in accordance with requirements of Contract Documents.
- .6 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping.
- .7 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

**1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for recycling 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**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

**1.2                REFERENCES**

- .1        N/A

**1.3                PROJECT CLEANLINESS**

- .1        Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2        Remove waste materials from site daily regularly related to the execution of the work under this contract .
- .3        Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4        Dispose of waste materials and debris off site.
- .5        Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .6        Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

**1.4                FINAL CLEANING**

- .1        When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2        Prior to final review remove surplus products, tools, construction machinery and equipment.
- .3        Remove waste products and debris other related to the execution of the work under this contract .
- .4        Remove waste materials from site daily.

**END OF SECTION**



**Part 1            General****1.1               RELATED SECTIONS**

- .1       Section 01 00 10 – General Instructions.

**1.2               REFERENCES**

- .1       N/A

**1.3               WASTE MANAGEMENT GOALS**

- .1       Prior to start of Work conduct meeting with Departmental Representative to review and discuss Waste Management Plan and Goals.
- .2       Provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced. 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.
- .3       Accomplish maximum control of solid construction waste.
- .4       Preserve environment and prevent pollution and environment damage.

**1.4               RELATED REQUIREMENTS**

- .1       Section 01 00 10 – General Instructions.

**1.5               DEFINITIONS**

- .1       Class III: non-hazardous waste - construction renovation and demolition waste.
- .2       Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .3       Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .4       Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .5       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.
- .6       Separate Condition: refers to waste sorted into individual types.
- .7       Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

- .8 Waste Audit (WA): detailed inventory of materials in building. Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project. Indicates quantities of reuse, recycling and landfill. Refer to Schedule A.
- .9 Waste Management Co-ordinator (WMC) : contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .10 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. Refer to Schedule B. WRW is based on information acquired from WA (Schedule A).

## **1.6 DOCUMENTS**

- .1 Maintain at job site, one copy of following documents:
  - .1 Waste Audit.
  - .2 Schedules A completed for project.

## **1.7 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals in accordance with Section 01 00 10 – General Instructions.
- .2 Prepare and submit following prior to project start-up:
  - .1 Submit [2] copies of completed Waste Audit (WA): Schedule A.
- .3 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.
  - .1 Failure to submit could result in hold back of final payment.
  - .2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled, co-mingled and separated off-site or disposed of.
  - .3 For each material reused, sold or recycled from project, include amount and the destination.
  - .4 For each material land filled or incinerated from project, include amount of material and identity of landfill, incinerator or transfer station.

## **1.8 WASTE AUDIT (WA)**

- .1 Conduct WA prior to project start-up.
- .2 Prepare WA: Schedule A.
- .3 Record, on WA - Schedule A, extent to which materials or products used consist of recycled or reused materials or products.

## **1.9 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 for demolition 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 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.
  - .3 Provide waybills for separated materials.

#### **1.10 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, oil, paint thinner 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 from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

#### **1.11 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by existing facility.

#### **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 SELECTIVE DEMOLITION**

- .1 Do not demolish building elements beyond what is indicated on Drawings without approval by Departmental Representative's.

**3.2 APPLICATION**

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

**3.3 CLEANING**

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

**3.4 WASTE AUDIT (WA)**

- .1 Schedule A - Waste Audit (WA):

(1) Material Category	(2) Material Quantity Unit	(3) Estimated Waste %	(4) Total Quantity of Waste (unit)	(5) Generation Point	(6) % Recycled	(7) % Reused
Wood and Plastics Material Description						
Off-cuts						
Warped Pallet Forms						
Plastic Packaging						
Cardboard Packaging						
Other						
Doors and Windows Material Description						

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Painted Frames						
Glass						
Wood						
Metal						
Other						

**END OF SECTION**

**Part 1 General****1.1 RELATED SECTIONS**

- .1 Section 01 45 00 – Quality Control.

**1.2 REFERENCES**

- .1 N/A

**1.3 ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-warranty Meeting:
  - .1 Convene meeting one week prior to contract completion with Departmental Representative, to:
    - .1 Verify Project requirements.
    - .2 Warranty is one year for material and labour
  - .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.

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 00 10 – General Instructions.
- .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 manufacturer as products provided in Work.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.

**1.5 FORMAT**

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf [219 x 279] mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
  - .1 Identify contents of each binder on spine.

- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab.
  - .1 Bind in with text; fold larger drawings to size of text pages.
- .9 Provide [1:1] scaled CAD files in dwg format on CD.

## **1.6 CONTENTS - PROJECT RECORD DOCUMENTS**

- .1 Table of Contents for Each Volume: provide title of project;
  - .1 Date of submission; names.
  - .2 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
  - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
  - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data.
  - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

## **1.7 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.

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

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .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 locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - .2 Field changes of dimension and detail.
  - .3 Changes made by change orders.
  - .4 Details not on original Contract Drawings.
  - .5 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
  - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications and field test records, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

## **1.9 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 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .3 Provide servicing and lubrication schedule, and list of lubricants required.
- .4 Include manufacturer's printed operation and maintenance instructions.
- .5 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .6 Additional requirements: as specified in individual specification sections.

#### **1.10 WARRANTIES AND BONDS**

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Departmental Representative approval.
- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
  - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
  - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within [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 Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Include information contained in warranty management plan as follows:
  - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
  - .2 Provide list for each warranted equipment, item, feature of construction or system indicating:
    - .1 Name of item.
    - .2 Model and serial numbers.

- .3 Location where installed.
- .4 Name and phone numbers of manufacturers or suppliers.
- .5 Names, addresses and telephone numbers of sources of spare parts.
- .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
- .7 Cross-reference to warranty certificates as applicable.
- .8 Starting point and duration of warranty period.
- .9 Summary of maintenance procedures required to continue warranty in force.
- .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .11 Organization, names and phone numbers of persons to call for warranty service.
- .12 Typical response time and repair time expected for various warranted equipment.
- .3 Procedure and status of tagging of equipment covered by extended warranties.
- .4 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .9 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .10 Written verification to follow oral instructions.
  - .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

#### **1.11 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.

**END OF SECTION**