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 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic copy of colour digital photography in jpg format, fine resolution with progress statement and as directed by Departmental Representative.

.2 Project identification: name and number of project and date of exposure indicated.

.3 Viewpoints and their location as determined by Departmental Representative.

.4 Frequency of photographic documentation:

- .1 Prior to commencement of Work
- .2 Weekly and as directed by Departmental Representative.
- .3 Upon completion of framing and services before concealment.
- .4 Upon completion of Work.

1.4 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 Before welding, soldering, grinding and/or cutting work, obtain a permit as directed by the Departmental Representative. Store flammable liquids in approved CSA containers.

.2 At least one 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.

.3 Return welding permit to Departmental Representative immediately upon completion of procedures for which permit was issued.

.3 "Fire Watchers" as described in NFC shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 15m may be ignited by conduction or radiation.

.3 Where work requires interruption or cause activation of fire alarms or fire suppression, extinguishing or protection systems:

.1 Provide "Watchman Service" as described in NFC; 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.

1.5 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 one week notice for work involving designated substances (Ontario Bill 208), hazardous substances (Canada Labour Code Part II Section 10), and before painting, caulking, installing carpet or using adhesives and other materials, that cause off gassing.

1.6 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 and covered pedestrian walkways and provide protection, complete with signs and electrical lighting as required by authority having jurisdiction.

.2 Provide one lockable truck entrance gate and one pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys. Paint public side of site enclosure in colour selected by Departmental Representative.

.3 Weather Enclosures: protect work temporarily until permanent enclosures completed.

.4 Protection of Existing Furnishings

.1 Contractor to relocate existing ground floor product and display shelving as necessary to perform work.

.2 Protect all HALLMARK assets from theft, damage and dust accumulation.

.5 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.

.6 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.

.7 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.

.8 Work zones:

.1 Work zone locations include: basement and ground floor areas as indicated on drawings.

.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. When Building Operations staff requires access to equipment in order to operate the building, proper coordination and communication must exist between all parties involved."

1.7 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 considered acceptable by a Departmental Representative.

1.8 SECURITY CHECK

.1 All personnel employed on this project will be subject to security check. Obtain requisite clearance 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.

1.9 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.

1.10 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.

1.11 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

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 00 10 – General Instructions.

.2 Section 01 32 18 – Construction Progress Schedule – Bar (GANTT) Chart.

1.2 USE OF SITE AND FACILITIES

.1 Where security is reduced by work provide temporary means to maintain security.

.2 Provide sanitary facilities for use by Contractor's personnel. Keep facilities clean.

1.3 HOURS OF WORK

.1 Regular hours of work are from 0800 – 1600 hours Monday to Friday, excluding weekends and Statutory Holidays. Request(s) for access to the site beyond routine hours of operation are subject to prior approval by the Departmental Representative.

1.4 PLACE OF WORK

.1 Schedule and perform work to minimize interference with building operations. Consult with the Departmental Representative to coordinate the work with scheduled building operations.

.2 Delivery and unloading of material and equipment is restricted to within the area of work.

1.5 SPECIAL REQUIREMENTS

.1 Submit schedule in accordance with Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

.2 Carry out noise generating work Monday to Friday from 0800 to 1600 hours.

.3 Deliver materials Monday to Friday 0800 to 1600 hours, unless otherwise approved by the Departmental Representative.

.4 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

.5 Keep within limits of work and avenues of ingress and egress.

.6 Ingress and egress of Contractor vehicles at site is limited to the construction site.

1.6 SMOKING ENVIRONMENT

.1 Comply with smoking restrictions. Smoking is allowed only in designated areas.

END OF SECTION

PART 1 – GENERAL

1.1 REGULATORY REQUIREMENTS

.1 An investigation into the presence of designated substances for the Base Building Code Deficiencies Project at the Brouse Building in Ottawa, Ontario was performed in order to meet the requirements of Section 30 of the *Ontario Occupational Health and Safety Act, Revised Statutes of Ontario, 1990, Chapter 0.1*. The *Canada Labour Code* also stipulates under Part II, Section 124 that every employer shall ensure that the health and safety at work of every person employed by the employer is protected. By having a Designated Substances Report (DSR) completed, the Departmental Representative will be able to inform his or her employees, contractors, and tenants of any designated substances that may be present and possibly disturbed throughout the duration of the project. The informed Departmental Representative will then be able to impose appropriate health and safety precautions for all applicable personnel as required.

.2 The designated substances identified in the *Occupational Health and Safety Act* and its corresponding regulations are:

.1 **Acrylonitrile**: "Designated Substances" *O. Reg 490/09,* as amended.

.2 **Arsenic**: "Designated Substances" *O. Reg 490/09,* as amended.

.3 **Asbestos**

- .1 "Designated Substances" *O. Reg 490/09,* as amended.
- .2 *"General – Waste Management" O. Reg 347/09, as amended*
- .3 "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations" *O.Reg 278/05* (as amended)
- .4 *PWGSC Departmental Policy DP 057 – "Asbestos Management"*

.4 **Benzene**: "Designated Substances" *O. Reg 490/09,* as amended.

.5 **Coke Oven Emissions**: "Designated Substances" *O. Reg 490/09,* as amended.

.6 **Ethylene Oxide**: "Designated Substances" *O. Reg 490/09,* as amended.

.7 **Isocyanates**: "Designated Substances" *O. Reg 490/09,* as amended.

.8 **Lead:**

.1 "Designated Substances"
O. Reg 490/09, as amended.

.2 "General – Waste Management"
O. Reg 347/09, as amended

.3 Hazardous Products Act's *Surface Coating Materials Regulations*
SOR/2005-109, as amended (2011)

.9 **Mercury**:

.1 "Designated Substances"
O. Reg 490/09, as amended.

.2 "General – Waste Management"
O. Reg 347/09, as amended

.10 **Silica**: "Designated Substances"
O. Reg 490/09), as amended.

.11 **Vinyl Chloride**: "Designated Substances"
O. Reg 490/09, as amended.

.3 All contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

1.2 VALIDITY DATE

.1 DST Consulting Engineers Inc. (DST), conducted the on-site survey for this report on August 1, 2013 (DST File No. BE-OT-017110).

.2 The scope of the work proposed is understood to consist of a designated Substances Survey, limited to the basement, ground floor and mezzanine level of the Brouse as indicated by PWGSC.

.1 The scope of work for this report involved a visual inspection of building materials and contents for the presence of suspected designated substances within the project areas at the Brouse Building on August 1, 2013.

.2 From the visual inspection, suspect materials were sampled (where necessary) and analyzed, where appropriate, for select designated substances. On the basis of this inspection, a total of Twenty-four (24) bulk samples of suspected asbestos-containing materials and Three (3) samples of suspected lead-containing paints and mortar were collected.

.3 Samples were then submitted for analysis at Paracel Laboratories Ltd., located at 300-

2319 St. Laurent Boulevard, Ottawa, ON K1G 4J8.

.4 The surveys were limited to those areas, which could be accessed by non-destructive means. The visual inspection and sampling was limited to readily accessible areas. Destructive testing was not included in the investigation. Due to the nature of building construction, some inherent limitations exist as to the possible thoroughness of the designated substance survey. The survey did not include the demolition of floors, floor finishes, solid ceilings or walls, beneath boiler cladding, inside or beneath boilers or other areas to examine concealed conditions.

.5 It is possible that designated substances are present in non-accessible areas and concealed spaces (i.e., wall and ceiling cavities), or additional confined spaces. No other areas outside the defined work boundaries have been assessed.

.6 Prior to beginning work, it must be confirmed with the Departmental Representative that no additional designated substances have been brought to the project area.

.7 In addition, the survey refers to Polychlorinated biphenyls (PCBs) and halocarbons, however, it does not refer to other substances that may be present in the day-to-day usage for specialized equipment or areas in buildings (i.e., lead shields, fume hoods, chemicals, etc.).

.8 There is a possibility that materials, which could not be reasonably identified within the scope of this assessment or which were not apparent during previous site visits may exist. Should any designated substance be encountered in the course of demolition or renovation, work must be stopped, preventative measures taken, and the Departmental Representative must be notified immediately. **Do not proceed until written instructions have been received**.

PART 2 - DESIGNATED SUBSTANCES

2.1 SURVEY RESULTS

.1 **ACRYLONITRILE**: Not Identified

.2 **ARSENIC**: Not Identified

.3 **ASBESTOS**: **Identified**

Asbestos is a naturally occurring material. In general, it has historically been intentionally added to many building materials in the construction industry to increase thermal or chemical resistance properties. More common uses are thermal insulation for pipes and boilers, structural steelwork fireproofing, floor tiles and in-wall and ceiling plasters. There are two classes of asbestos-containing materials: friable and non-friable. Friable asbestos-containing materials are loose in composition or can be easily crumbled using hand pressure. Non-friable asbestos-containing materials are more durable and are held together by a binder such as cement, vinyl or asphalt.

Representative bulk samples, collected on August 1, 2013 from materials located within some of the project areas, have been analyzed for asbestos. Analytical results indicate that select samples contain asbestos in the project areas. The following table summarizes the analytical results of bulk samples collected during the site investigation:

Table 1 - Asbestos Bulk Sample Results

Sample ID	Material	Location	Asbestos Type	Asbestos content (%)
Brouse 01A	**Drywall Joint Compound - Older**	**North (Rear) Entrance – Walls – Ground Floor**	**Chrysotile**	**1%**
Brouse 01B		**North (Rear) Entrance – Walls – Ground Floor**	**Not Analysed**	
Brouse 01C		**North Wall – Basement**	**Not Analysed**	
Brouse 02A	Plaster	Walls – Ground Floor	n/d	n/a
Brouse 02B			n/d	n/a
Brouse 02C			n/d	n/a
Brouse 03A	12"x12" Vinyl Floor Tile - Grey	North (Rear) Entrance – Ground Floor	n/d	n/a
Brouse 03B			n/d	n/a

Sample ID	Material	Location	Asbestos Type	Asbestos content (%)
Brouse 03C			n/d	n/a
Brouse 04A	Rough Plaster - Grey	Basement – Beneath Main Stair	n/d	n/a
Brouse 04B			n/d	n/a
Brouse 04C			n/d	n/a
Brouse 05A	Stone Mortar	Basement Walls	n/d	n/a
Brouse 05B			n/d	n/a
Brouse 05C			n/d	n/a
Brouse 06A	Drywall Joint Compound - Newer	Main Shop – Ground Floor	n/d	n/a
Brouse 06B		Main Shop – Ground Floor	n/d	n/a
Brouse 06C		Staff Area – Basement	n/d	n/a
Brouse 07A	12"x12" Vinyl Floor Tile – White with Grey Specks	Staff Area – Basement	n/d	n/a
Brouse 07B			n/d	n/a
Brouse 07C			n/d	n/a
Brouse 08A	12"x12" Vinyl Floor Tile – White with Blue Specks	Staff Area – Basement	n/d	n/a
Brouse 08B			n/d	n/a
Brouse 08C			n/d	n/a

Bold items exceed the 0.5% regulated concentration of asbestos, as per *O.Reg. 278/05*, as amended.
n/d = none detected, n/a = not applicable

The following non-friable ACMs are present in the project area, and may pose a risk if disturbed during the Base Building Code Deficiencies Project at the Brouse Building:

1. Older Drywall Joint Compound found in the North (rear) staff and mechanical areas of the Ground floor and basement levels. All older drywall joint compound applications should be considered asbestos-containing unless further sampling and delineation on a case by case basis proves otherwise.

The following friable ACMs are present in the project area, and may pose a risk if disturbed during the Base Building Code Deficiencies Project at the Brouse Building:

2. Two (2) Pipe fittings – grey cement compound (assumed, not sampled) observed in good condition in the south mechanical hallway on the basement level.

.5 **COKE OVEN EMISSIONS:** Not Identified

.6 **ETHYLENE OXIDE:** Not Identified

.7 **ISOCYANATES:** Not Identified

.8 **LEAD: Identified**

Lead is a naturally occurring metal. It was used primarily in paint prior to the 1980s to increase the drying process. Lead in paint becomes a danger when it is old or damaged, as it creates lead dust and chips. Lead can also be found in soldered joints installed on piping up to the mid 1990s and in older cast iron bell and spigot joints.

.1 According to the Hazard Products Act's *Surface Coating Materials Regulations* SOR/2005-109, as amended, allowable concentration of lead of surface coatings is 0.009 percent by weight (weight of lead to weight of paint), which is equivalent to 90 parts per million (ppm).

.2 Even at very low concentrations, there may be potential for exposure to very high levels of lead depending on the activities performed that disturb the lead-containing materials. At low lead concentrations, conducting a risk assessment to assess the potential for exposure is required to determine the need to follow precautionary measures.

.3 Two (2) representative paint samples and one (1) representative mortar sample were collected from the project area on August 1, 2013, and analyzed for lead content. The analytical result indicates that the paints in the project area have a lead content above the 90ppm threshold outlined in the Hazardous Products Act's *Surface Coating Materials Regulations SOR/2005-109*. The paint sample results are summarized in the following table:

Table 2 - Lead Paint Sample Results

Sample ID	Description	Location	Lead Content (ppm)
LP01	**Brown Paint**	**Metal Ceiling – Ground Floor**	**201,000 ppm**
LP02	**Yellow paint**	**Drywall Ceiling - Basement**	**339 ppm**
PB01	Brick Mortar	Exterior (Wellington side)	15 ppm

Bold items exceed the 90 ppm limit for lead, as per Hazardous Products Act's Surface Coating Materials Regulations SOR/2005-109

The brown paint on the ground floor ceiling was observed to be in poor (peeling) condition and significant debris was present on top of the lay-in ceiling tiles throughout the area. All other paints were observed in good condition at the time of the site investigation. Sampling of other paints in the project areas was not performed, as sampling without matrix interference (i.e. removing paint without also removing non-paint substrate) would have likely prove difficult. All surface coating materials within the project areas shall be assumed to contain detectable concentrations of lead. Exterior building mortars are not considered to be a concern with respect to lead.

.4 Lead is also suspected to be present in the emergency light batteries, solder on copper pipes, and cast iron drain pipe joint caulking. Prior to renovation activities it should be established which, if any, of these materials/equipment are present in the work area that may pose a risk to building occupants if disturbed.

.9 **MERCURY: Identified**

Mercury is present in vapour form in fluorescent light tubes observed in the project areas. However, the disturbance of fluorescent light tube fixtures is not anticipated for this project.

.10 **SILICA: Identified**

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

.11 **VINYL CHLORIDE MONOMER:** Not Identified

.12 **POLYCHLORINATED BIPHENYLS (PCBs):** Not Identified

During the site investigation, fluorescent light fixtures containing T-8 light tubes were observed in the project areas. DST does not suspect the ballasts associated with these light fixtures to contain PCBs.

Should any light or lamp ballast suspected of containing PCBs be encountered during this project, please refer to the Environment Canada, "Identification of Lamp Ballasts Containing PCBs", August 1991 report, for assistance with PCB identification. If PCB-containing equipment is identified and must be removed, it should be disposed of in accordance with the Canadian Environment Protection Act's PCB Regulations, the Federal Transportation of Dangerous Goods Act and Ontario Environmental Protection Act's "Waste Management – PCB's" Regulation 362/90 (O.Reg 33/07, French version).

.13 **HALOCARBONS:** Not Identified

2.2 RECOMMENDATIONS

1. ASBESTOS

PWGSC's *DP 057, Asbestos Management*, sets policy, establishes roles and responsibilities and provides a code of practice for the management of and working with asbestos-containing materials. All work must be done in accordance with this directive, as well as all other applicable legislation. Disturbance of all asbestos (whether friable or non-friable) is regulated in Ontario by "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations" *O.Reg 278/05, as amended,* which outlines the precautions required when performing work involving asbestos-containing materials. The regulation stipulates appropriate respiratory protection, work procedures and ventilation requirements that must be utilized during the disturbance of any asbestos-containing materials, or materials suspected to contain asbestos.

In the event of conflict between DP-057 and "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations" O.Reg 278/05, as amended, the more stringent shall apply.

The removal or disturbance of less than one square metre of drywall in which the joint-filling compound contains asbestos must be conducted using a minimum of Type 1 asbestos work procedures. The removal or disturbance of one square metre or more of drywall in which the joint filling compounds are asbestos-containing must be conducted using a minimum Type 2 asbestos work procedures.

The removal or disturbance of one square metre or less of friable asbestos containing materials must be conducted using a minimum of Type 2 asbestos work procedures. The removal or disturbance of more than one square metre of friable asbestos-containing materials must be conducted using Type 3 asbestos work procedures. Type 3 asbestos abatement operations performed in occupied federal buildings require daily asbestos air monitoring outside of each asbestos work area, as per PWGSC DP-057. It should be noted that the removal of good condition asbestos-containing pipe insulation and pipe fitting insulation can be conducted using Type 2 glove bag procedures, provided the material is in good condition, and a proper seal can be maintained.

The "General – Waste Management" O.Reg 347/90, as amended, governs the disposal of waste containing asbestos. The waste must be disposed at a licensed waste disposal site.

2. LEAD

If lead-containing materials are disturbed (i.e. during dry sanding, grinding, polishing and sawing operations), then proper precautions, as outlined under "Designated Substances" *O.Reg 490/09*, as amended, of the Occupational Health and Safety Act, must be followed.

Under Ontario Regulation 490/09, as amended of the Occupational Health and Safety Act, regulatory limits have been established for occupational exposure limits to airborne lead that may be present in a workplace. The Time Weighted Average Exposure Values to airborne lead dust or fumes should not exceed the Ministry of Labour's 0.05 milligram per cubic metre (mg/m^3) limit during the removal of paints and products containing any concentration of lead. The TWAEV represents the time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse health effects.

Contractors performing work that requires disturbance of lead-containing materials are responsible to ensure that the workers are not exposed to airborne lead dust levels in excess of the time-weighted average and Maximum Exposure Concentration for lead-containing paints. It should be noted that the use of mechanically-powered tools or torches on lead-containing materials increases the concentration of airborne lead dust or fumes and thereby requiring more stringent respiratory protection and controlled work procedures.

.1 Ontario Ministry of Labour (MoL) has published the document entitled "*Guideline: Lead on Construction Projects*". This document classifies all disturbances of lead-containing materials as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, based on presumed airborne concentrations of lead generated during the work each of which will have defined work practices. Although this document is not a regulation, Ministry of Labour Inspectors use it as guidance during site inspections.

.2 The disposal of construction waste containing lead is controlled by "General – Waste Management" *O.Reg 347/09, as amended*, under the *Ontario Environmental Protection Act*. The classification of the waste is dependent upon the result(s) of leachate test(s). The waste can be classified as "hazardous", "non-hazardous" or "registerable solid waste", depending on the results of the leachate test.

Prior to disposal, the concentration of leachable lead must be determined for waste materials with elevated lead contents following the Toxicity Characteristic Leaching Procedure (TCLP).

3. MERCURY

.1 Mercury is governed by "Designated Substances" *O.Reg 490/09,* as amended, under the Occupational Health and Safety Act. The regulation provides requirements for allowable exposure levels.

.2 In addition, mercury waste is considered a hazardous waste under "General – Waste Management" *O.Reg 347/09, as amended,* of the *Ontario Environmental Protection Act*. Fluorescent lamp tubes are considered hazardous material and should be recycled if removed from service. For information regarding the collection of fluorescent lamp tubes, please consult the PWGSC Representative.

4. SILICA

.1 Silica occurs as crystalline material in cement, drywall, and plaster. Crystalline silica is regulated under "Designated Substances" *O.Reg 490/09,* as amended, of the *Occupational Health and Safety Act* as a Designated Substance.

.2 Silica dust can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material. Since silica is presumed present in concrete within the project area, appropriate respiratory protection and ventilation must be donned during the demolition and modifications of these structures.

.3 The Occupational Health and Safety Branch of the MoL has published the document entitled "*Guideline: Silica on Construction Projects*". This document classifies the disturbance of materials containing silica as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. These work procedures should be followed when performing work involving the disturbance of silica-containing materials.

5. CONTRACTORS DUTIES

The contractor must review the designated substance report and take the necessary precautions to protect the health and safety of the workers and the environment. As per Section 30(4) of the *Ontario Occupational Health and Safety Act*, the party hiring the contractor (i.e., Departmental Representative) shall ensure that the contractor and subcontractor (if any) for the project has received a copy of the designated substance report prior to entering a binding contract for the supply of work on the project. As per Section 27(2) (a, b, and c) of the *Ontario Occupational Health and Safety Act*, while onsite, the contractor supervisor shall exercise every reasonable precaution for the protection of a worker. If you have any questions about the designated substance report, please contact the Departmental Representative.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 00 10 – General Instructions.

1.2 DEFINITIONS

.1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.

.2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.

.3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.

.4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.

.5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or work weeks.

.6 Master Plan: summary-level schedule that identifies major activities and key milestones.

.7 Milestone: significant event in project, usually completion of major deliverable.

.8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

.9 Project Planning, Monitoring and Control System: overall system to enable monitoring of project work in relation to established milestones.

1.3 REQUIREMENTS

.1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.

.2 Plan to complete Work in accordance with prescribed milestones and time frame.

.3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.

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

1.4 SUBMITTALS

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

.2 Submit to Departmental Representative within 10 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.

.3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

1.5 MASTER PLAN

.1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).

.2 Departmental Representative will review and return revised schedules within 5 working days.

.3 Revise impractical schedule and resubmit within 5 working days.

.4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.6 PROJECT SCHEDULE

.1 Develop detailed Project Schedule derived from Master Plan.

.2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:

.1 Award.
.2 Shop Drawings, Samples.
.3 Permits.
.4 Mobilization.
.5 Demolition
.6 Concrete Placing and Finishing
.7 Metal fabrications
.8 Interior Partitions and Openings
.9 Exterior Construction
.10 Finishes
.11 Facility Services
.12 Substantial Completion
.13 Demonstration and Training.

1.7 PROJECT SCHEDULE REPORTING

.1 Update Project Schedule on bi-weekly basis reflecting activity changes and completions, as well as activities in progress.

.2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.8 PROJECT MEETINGS

.1 Discuss Project Schedule at site meetings as required, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

.2 Weather related delays with their remedial measures will be discussed and negotiated.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

.1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative’s review.

.10 Keep one reviewed copy of each submission on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in Province of Ontario, Canada.

.3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which

adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.4 Allow 14 days for Departmental Representative's review of each submission.

.5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

.6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.

.7 Accompany submissions with transmittal letter, in duplicate, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.8 Submissions include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.
  - .6 Standards.
  - .7 Operating weight.
  - .8 Wiring diagrams.
  - .9 Single line and schematic diagrams.
  - .10 Relationship to adjacent work.

.9 After Departmental Representative's review, distribute copies.

.10 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

.11 Submit digital (PDF) copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

.12 Submit digital (PDF) copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 3 years of date of contract award for project.

.13 Submit digital (PDF) copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.14 Submit digital (PDF) copies of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.15 Submit digital (PDF) copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.16 Submit 3 hard copies & digital (PDF) copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.

.17 Delete information not applicable to project.

.18 Supplement standard information to provide details applicable to project.

.19 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.20 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

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

1.3 SAMPLES

.1 Submit for review samples in triplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.3 Where colour, pattern or texture is criterion, submit full range of samples.

.4 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

.5 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.

.6 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

END OF SECTION

Part 1 General

1.1 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. 1990, c.0.1, as amended and O. Reg. 213/91 as amended - Updated 2005.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation.

.3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.

.4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.

.5 Submit copies of incident and accident reports.

.6 Submit WHMIS MSDS - Material Safety Data Sheets.

.7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 5 days after receipt of comments from Departmental Representative.

.8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.

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

1.3 FILING OF NOTICE

.1 File Notice of Project with Provincial authorities prior to beginning of Work.

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

1.4 SAFETY ASSESSMENT

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

1.5 MEETINGS

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

1.6 REGULATORY REQUIREMENTS

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

1.7 PROJECT/SITE CONDITIONS

.1 Work at site will involve contact with: asbestos, lead, mercury, silica and mold.

.2 Refer to Section 01 14 25 Designated Substance Report (Brouse), item 2.2 Recommendations for removal or disturbance of designated substances.

1.8 GENERAL REQUIREMENTS

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.9 RESPONSIBILITY

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

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

1.10 COMPLIANCE REQUIREMENTS

.1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1.

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

1.11 UNFORSEEN HAZARDS

.1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety co-ordinator and follow procedures in accordance with Acts and Regulations of Ontario having jurisdiction and advise Departmental Representative verbally and in writing.

1.12 HEALTH AND SAFETY CO-ORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:

.1 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.

.2 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

.3 Be on site during execution of Work.

1.13 POSTING OF DOCUMENTS

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

1.14 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

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

1.15 BLASTING

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

1.16 POWDER ACTUATED DEVICES

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

1.17 WORK STOPPAGE

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

Part 2 PRODUCTS

2.1 NOT USED

Part 3 EXECUTION

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 00 01 – General Instructions.

1.2 REFERENCES AND CODES

.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 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Departmental Representative.

1.4 BUILDING SMOKING ENVIRONMENT

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

END OF SECTION

Part 1 General

1.1 INSPECTION

.1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

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

1.2 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies may be engaged by Departmental Representative for inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative for Quality Assurance purposes only.

.2 Engage and pay for Independent Inspection/Testing Agencies for the purposes of Quality Control to ensure that Work meets the requirements of the Contract Documents.

.3 Provide equipment required for executing inspection and testing by appointed agencies.

.4 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.5 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

1.3 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.4 PROCEDURES

.1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

1.6 REPORTS

.1 Submit 4 copies of inspection and test reports to Departmental Representative.

.2 Provide copies to subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.

1.7 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as requested.

END OF SECTION

Part 1 General

1.1 SUBMITTALS

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

1.2 INSTALLATION AND REMOVAL

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.3 WATER SUPPLY

.1 Contractor to provide a supply of potable water for construction use as required.

1.4 TEMPORARY POWER AND LIGHT

.1 Contractor to provide temporary power and light for the duration of the project.

.2 Connect to existing power supply in accordance with Canadian Electrical Code.

.3 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

1.5 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for temporary communication equipment necessary for own use and use of Departmental Representative.

1.6 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures.

1.2 REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.

.2 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

1.3 SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.5 SCAFFOLDING

.1 Scaffolding in accordance with CAN/CSA-S269.2 as applicable.

.2 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, temporary stairs and other temporary structures required for execution of work.

1.6 HOISTING

.1 Provide, operate and maintain hoists and cranes and other lifting equipment required for moving of workers, materials and equipment.

.2 Hoists, cranes and other lifting equipment to be operated by qualified operator.

1.7 SITE STORAGE/LOADING

.1 Confine work and operations of employees in accordance with the Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.8 CONSTRUCTION PARKING

.1 Parking on the site is unavailable.

1.9 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.10 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.11 CONSTRUCTION SIGNAGE

.1 Provide signs and notices for safety and instruction in both official languages. Graphic symbols to CAN/CSA-Z321.

.2 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.12 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs

.2 Protect travelling public from damage to person and property.

.3 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

1.13 CLEAN-UP

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Store materials resulting from demolition activities that are salvageable, as directed by Departmental Representative.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 45 00 – Quality Control.

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 the 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 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.

.3 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.

.4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.5 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 oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

.6 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 and 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 and 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 Quality of Work is of highest standard. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.8 CO-ORDINATION

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

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.10 LOCATION OF EQUIPMENT AND FIXTURES

.1 Consider location of equipment, fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform Departmental Representative of impending installation and obtain approval for actual location.

.4 Inform Departmental Representative of conflicting installation. Install as directed.

.5 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.11 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless otherwise noted.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.12 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.13 PROTECTION OF WORK IN PROGRESS

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

END OF SECTION

Part 1 General

1.1 EXISTING SERVICES

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

1.2 LAYOUT

.1 Confirm all project requirements prior to starting work.

.2 Make no changes or relocations without prior written notice to Departmental Representative.

.3 Confirm all structural, electrical, civil and mechanical work prior to starting construction.

1.3 RECORDS

.1 Maintain a complete, accurate log of work as it progresses.

.2 Record locations of maintained, re-routed and abandoned service lines.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 33 00 – Submittal Procedures.

1.2 SUBMITTALS

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of elements of project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of operational elements.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Departmental Representative or separate contractor.
- .6 Building Operations

.3 Include in request:

- .1 Identification of project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Departmental Representative or separate contractor.
- .7 Effect on Building Operations.
- .8 Written permission of affected separate contractor.
- .9 Date and time work will be executed.

1.3 MATERIALS

.1 Required for original installation.

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

1.4 PREPARATION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 EXECUTION

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

.2 Fit several parts together, to integrate with other Work.

.3 Uncover Work to install ill-timed Work.

.4 Remove and replace defective and non-conforming Work.

.5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

.6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.7 Cut rigid materials using masonry saw or core drill. Obtain Departmental Representative’s approval prior to use of pneumatic and impact tools on masonry work.

.8 Restore work with new products in accordance with requirements of Contract Documents.

.9 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.10 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

1.2 DEFINITIONS

.1 Waste Reduction Work plan (WRW): Written report which addresses opportunities for reduction, reuse, or recycling of materials.

.2 Materials Source Separation Program (MSSP): Consists of a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

.3 Waste Management Coordinator (WMC): Designate individual who is in attendance on-site, full-time. Designate, or have designated, individuals from each Subcontractor to be responsible for waste management related to their trade and for coordinating activities with WMC.

.4 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being re-manufactured 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 Reuse: Repeated use of a product in the same form but not necessarily for the same purpose. Reuse includes:

.1 Salvaging reusable materials from demolition projects, for resale, reuse on current project, or for storage for use on future projects.

.2 Returning reusable items, including pallets or unused product, to the vendor.

.7 Salvage: Removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of relocation, reuse or recycling.

1.3 WASTE MANAGEMENT GOALS

.1 This Project shall generate the least amount of waste possible. Processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.

.2 Prior to start of Work, conduct meeting with Departmental Representatives to review and discuss Project Waste Management Plan and Goals.

.3 Waste Management Goal: 90 - 95 percent of total Project Waste, not including designated substance/hazardous materials, to be diverted from landfill sites.

.4 Accomplish maximum control of solid construction waste.

.5 Preserve environment and prevent pollution and environment damage.

.6 Minimize waste disposal in landfills.

1.4 DOCUMENTS

.1 Maintain at job site, one copy of following documents:

.1 Waste Reduction Workplan.

.2 Material Source Separation Plan.

1.5 SUBMITTALS

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

.2 Prepare and submit following prior to project start-up:

.1 Submit 2 copies of completed Waste Reduction Work plan (WRW).

1.6 WASTE REDUCTION WORKPLAN (WRW)

.1 Prepare WRW prior to project start-up.

.2 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.

.3 Describe management of waste.

.4 Describe how WRW will achieve Waste Management Goals.

.5 Identify opportunities for reduction, reuse, and recycling of materials.

.6 Post WRW or summary where workers at site are able to review content.

.7 The WRW should declare procedures for handling, separating, recycling and disposal of the following categories of materials (as applicable to this project):

.1 Demolished steel, metal and reinforcing

.2 Other demolished metals (copper, aluminum, galvanized products)

.3 Wood trim, framing, plywood and other general untreated wood products

.4 Treated wood products (creosote, salt treated and other preservatives)

.5 Plaster and cementitious products

.6 Gypsum board or drywall

.7 Plumbing fixtures and fittings

.8 Electrical fixtures and fittings

.9 Pallets, cardboard and plastic packaging products from material delivery

1.7 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)

.1 Prepare MSSP and have ready for use prior to project start-up.

.2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.

.3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.

.4 Provide containers to deposit reusable and recyclable materials.

.5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.

.6 Locate separated materials in areas which minimize material damage.

1.8 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 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

1.9 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.

1.10 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises.

.2 Locate recycling and disposal storage containers or bins on site in a location approved by the Departmental Representative.

1.11 SCHEDULING

.1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.

Part 2 Products

.1 Not Used.

Part 3 Execution

3.1 APPLICATION

.1 Do Work in compliance with WRW.

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

3.2 CLEANING

.1 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.

3.3 DIVERSION OF MATERIALS

.1 Separate materials from general waste stream and stockpile in separate piles or containers, and consistent with applicable fire regulations.

.2 On-site sale of reusable, recyclable materials is not permitted.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures.

.2 Section 01 45 00 – Quality Control.

.3 Section 01 79 00 – Demonstration and Training.

1.2 SUBMITTALS

.1 Submittals: In accordance with Section 01 33 00 - Submittal Procedures.

.2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.3 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, one initial copy of operating and maintenance manuals in English.

.4 Copy will be returned after final inspection, with Departmental Representative's comments.

.5 Revise content of documents as required prior to final submittal.

.6 Two weeks prior to final inspection of the Work, submit to the Departmental Representative, two final copies of operating and maintenance manuals in English and a digital copy in PDF format.

.7 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.8 Furnish evidence, if requested, for type, source and quality of products provided.

.9 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.10 Pay costs of transportation.

1.3 FORMAT

.1 Organize data as instructional (Operations and Maintenance) 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. 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. Bind in with text; fold larger drawings to size of text pages.

.9 Include a digital copy, in PDF format, of the entire manual including drawings.

1.4 CONTENTS - EACH VOLUME

.1 Table of Contents: Provide title of project;

- .1 Date of submission;
- .2 Names, Addresses and telephone numbers of Departmental Representative and Contractor with name of responsible parties.
- .3 Schedule of products and systems, indexed to content of volume.

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

.6 Training: In accordance with Section 01 79 00 - Demonstration and Training.

1.5 AS-BUILTS AND SAMPLES

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

- .1 Contract Drawings.
- .2 Specifications.
- .3 Addenda.
- .4 Change Orders and other modifications to Contract.
- .5 Reviewed shop drawings, product data, and samples.
- .6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store record documents and samples in field office apart from documents used for construction. 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. Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

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

1.6 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of black line opaque drawings, provided by Departmental Representative.

.2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.4 Record drawings to be stamped and signed by a professional engineer registered or licensed in Province of Ontario, Canada.

.5 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 Additional Work not included on Original Drawings

.6 References to related shop drawings and modifications.

.6 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.

.7 Other Documents: Maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.7 EQUIPMENT AND SYSTEMS

.1 Each Item of Equipment and Each System: Include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Additional requirements: as specified in individual specification sections.

1.8 MATERIALS AND FINISHES

.1 Building Products, Applied Materials, and Finishes: Include product data, with catalogue number, size, composition, and colour and texture designations.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-Protection and Weather-Exposed Products: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional Requirements: As specified in individual specifications sections.

1.9 SPARE PARTS

.1 Provide spare parts, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site; place and store.

.4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.10 MAINTENANCE MATERIALS

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site; place and store.

.4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.11 SPECIAL TOOLS

.1 Provide special tools, in quantities specified in individual specification section.

.2 Provide items with tags identifying their associated function and equipment.

.3 Deliver to site; place and store.

.4 Receive and catalogue items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.

1.12 STORAGE, HANDLING AND PROTECTION

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures.

1.2 DESCRIPTION

.1 Demonstrate operation and maintenance of equipment and systems to facilities management personnel two weeks prior to date of final inspection.

.2 Departmental Representative will provide list of personnel to receive instructions, and will co-ordinate their attendance at agreed-upon times.

1.3 QUALITY CONTROL

.1 When specified in individual Sections require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct facilities management personnel, and provide written report that demonstration and instructions have been completed.

1.4 SUBMITTALS

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative's approval.

.3 Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.

.4 Give time and date of each demonstration, with list of persons present.

1.5 CONDITIONS FOR DEMONSTRATIONS

.1 Equipment has been inspected and put into operation.

.2 Systems are fully operational.

.3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

1.6 PREPARATION

.1 Verify that conditions for demonstration and instructions comply with requirements.

.2 Verify that designated personnel are present.

1.7 DEMONSTRATION AND INSTRUCTIONS

.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times, at the designated location.

.2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.

.3 Review contents of manual in detail to explain aspects of operation and maintenance.

.4 Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions.

1.8 TIME ALLOCATED FOR INSTRUCTIONS

.1 Ensure amount of time required for instruction of each item of equipment or system is adequate to provide facilities management personnel with clear understanding of component parts and system operation.

END OF SECTION