

Part 1 General

1.1 SUMMARY

- .1 Section Includes.
 - .1 Methods and procedures for demolishing, salvaging, recycling and removing sitework items designated to be removed in whole or in part, and for backfilling resulting trenches and excavations.
- .2 Measurement Procedures.
 - .1 Measure removal of waste, materials designated for alternate disposal, materials designated for recycling, salvage or donation from the site in tonnes. Coordinate to Section 01 74 21 – Waste Management and Disposal.

1.2 REFERENCES

- .1 Canadian Council of Ministers of the Environment (CCME).
 - .1 PN1326, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.
- .2 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.
 - .2 Canadian Environmental Protection Act, 1999 (CEPA), c. 33.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .4 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

1.3 DEFINITIONS

- .1 Demolition: rapid destruction of building following removal of hazardous materials.
- .2 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being or environment if handled improperly.
- .3 Waste Audit (WA): detailed inventory of materials in building. Indicates quantities of reuse, recycling and landfill.
 - .1 Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project.
 - .2 Indicates quantities of reuse, recycling and landfill.

- .4 Waste Management Coordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .5 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. WRW is based on information acquired from WA.

1.4 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
- .3 Shop drawings.
 - .1 Submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning, where required by authorities having jurisdiction.
 - .2 Submit drawings stamped and signed by qualified professional engineer registered or licensed in Province of Manitoba, Canada.
- .4 Hazardous Materials: provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.
- .5 Waste Reduction Workplan: prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: ensure Work is performed in compliance with CEPA, CEEA, TDGA, and applicable Provincial/Territorial regulations.
- .2 Site Meetings.
 - .1 Convene pre-installation meeting one week prior to beginning work of this Section to:
 - .1 Verify project requirements.
 - .2 Co-ordination with other building subtrades.
 - .2 Arrange for site visit with Contract Administrator to examine existing site conditions adjacent to demolition work, prior to start of Work.
 - .3 Hold project meetings every week.
 - .4 Ensure key personnel, site supervisor, project manager, subcontractor representatives, WMC attend.
 - .5 Reporting Requirements: WMC to complete.
 - .6 WMC must provide written report on status of waste diversion activity at each meeting.

- .7 Contract Administrator will provide written notification of change to meeting schedule established upon contract award 24 hours prior to scheduled meeting.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Perform Work in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Storage and Protection.
 - .1 Protect in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
 - .2 Protect existing items designated to remain and items designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of Contract Administrator and at no cost to the City
 - .3 Remove and store materials to be salvaged, recycled and donated, in manner to prevent damage.
 - .4 Store and protect in accordance with requirements for maximum preservation of material.
 - .5 Handle salvaged and donated materials as new materials.
- .3 Waste Management and Disposal.
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

1.7 SITE CONDITIONS

- .1 Site Environmental Requirements.
 - .1 Perform work in accordance with Section 01 35 43 - Environmental Procedures.
 - .2 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
 - .3 Do not dispose of waste or volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
 - .1 Ensure proper disposal procedures are maintained throughout the project.
 - .4 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.
 - .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities and as directed by Contract Administrator.
 - .6 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .2 Existing Conditions.
 - .1 Remove contaminated or hazardous materials as directed by Contract Administrator from site, prior to start of demolition Work, and dispose of at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements and Section 02 81 01 - Hazardous Materials.

1.8 SCHEDULING

- .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.
 - .1 Notify Contract Administrator in writing when unforeseen delays occur.

Part 2 Products

2.1 EQUIPMENT

- .1 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

Part 3 Execution

3.1 PREPARATION

- .1 Inspect site with Contract Administrator and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.

3.2 REMOVAL OF HAZARDOUS WASTES

- .1 Remove contaminated or dangerous materials defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

3.3 REMOVAL OPERATIONS

- .1 Remove items as indicated on drawings.
- .2 Do not disturb items designated to remain in place.
- .3 Removal of Pavements, Curbs and Gutters:
 - .1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by Contract Administrator.
 - .2 Protect adjacent joints and load transfer devices.
 - .3 Protect underlying and adjacent granular materials.
- .4 Prevent contamination with base course aggregates, when removing asphalt pavement for subsequent incorporation into hot mix asphalt concrete paving,
- .5 Excavate at least 300 mm below pipe invert, when removing pipes under existing or future pavement area.
- .6 Remove designated shrubs and plant material during demolition.

- .1 Grind, chip, or shred other vegetation for mulching and composting.
- .7 Stockpile topsoil for final grading and landscaping.
 - .1 Provide erosion control and seeding if not immediately used.
- .8 Salvage.
 - .1 Dismantle items containing materials for salvage and stockpile salvaged materials at locations specified by Contract Administrator.
- .9 Disposal of Material.
 - .1 Coordinate to Section 01 74 21 – Waste Management and Disposal.
- .10 Backfill.
 - .1 Backfill in areas as indicated and in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.

3.4 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

3.5 REMOVAL FROM SITE

- .1 Remove stockpiled material as directed by Contract Administrator when it interferes with operations of project.
- .2 Remove stockpiles of like materials by alternate disposal option once collection of materials is complete.
- .3 Transport material designated for alternate disposal using approved haulers, facilities, receiving organizations listed in Waste Reduction Workplan and in accordance with applicable regulations.
 - .1 Written authorization from Contract Administrator is required to deviate from haulers, facilities, receiving organizations listed in Waste Reduction Workplan.
- .4 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.
 - .1 Disposal Facilities: approved and listed in Waste Reduction Workplan.
 - .2 Written authorization from Contract Administrator is required to deviate from disposal facilities listed in Waste Reduction Workplan.

3.6 RESTORATION

- .1 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work.
- .2 Use soil treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

3.7 CLEANING

- .1 Remove debris, trim surfaces and leave work site clean, upon completion of Work
- .2 Use cleaning solutions and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Methods and procedures for deconstruction of structures and parts of structures.

1.2 REFERENCES

- .1 Definitions:
 - .1 Alternate Disposal: reuse and recycling of materials by designated facility, user or receiving organization which has valid Certificate of Approval to operate. Alternative to landfill disposal.
 - .2 Deconstruction: systematic dismantling of structure in a manner that achieves safe removal/disposal of hazardous materials and maximum salvage/recycling of materials.
 - .1 Ultimate objective is to recover potentially valuable resources while diverting from landfill what has traditionally been significant portion of waste system.
 - .3 Demolition: rapid destruction of structure with or without prior removal of hazardous materials.
 - .4 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, including but not limited to: corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health, well being or environment if handled improperly.
 - .5 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
 - .6 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form.
 - .1 Recycling does not include burning, incinerating, or thermally destroying waste.
 - .7 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from remodelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
 - .8 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
 - .9 Source Separation: acts of keeping different types of waste materials separate, beginning from first time they became waste.
 - .10 Waste Management Coordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .2 Reference Standards:

- .1 Canadian Council of Ministers of the Environment (CCME)
 - .1 PN 1326-2003, Environmental Code of Practice for Aboveground and Underground Tank Systems Containing Petroleum Products and Allied Petroleum Products.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- .3 Federal Legislation
 - .1 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.
 - .2 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
 - .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
- .4 National Building Code 2005, Part 8 - Safety Measures at Construction and Demolition Sites

1.3 PERFORMANCE REQUIREMENTS

- .1 Separate deconstruction materials from waste stream to obtain minimum percentages of diversion as follows:

	Reuse	Recycling or Donation
Batt Insulation	0 %	50 % - donation.
Carpet	0 %	50 % - donation.
Doors and Windows	0 %	100 % - donation.
Electrical Equipment	0 %	45 % - recycle metal components.
Mechanical Equipment	0 %	45 % - recycle metal components.
Metals	0 %	100 % - recycling.
Brick/Masonry	50 %	25 % - recycling / donation.
Rubble	0 %	100 % - recycling.
Clean Uncontaminated Wood	50 %	50 % - recycling / donation.
Cardboard	0 %	100 %
Plastic Packaging	0 %	75 %
Overall Diversion Targets	5 %	75 %

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide pre-demolition audit and deconstruction/disassembly plan prior to starting work in accordance with Section 01 35 73 - Procedures for Deconstruction of Structures.
- .3 Provide certificates: copies of certified weigh bills, bills of lading, used building material receipts, from authorized disposal sites and reuse and recycling facilities for material removed from site to Contract Administrator weekly.
 - .1 Written authorization from Contract Administrator is required to deviate from haulers, facilities, receiving organizations listed in Waste Reduction Workplan.
- .4 Include following information:
 - .1 Time and date of removal.
 - .2 Description of materials.

- .3 Weight of material.
- .4 Breakdown of reuse, recycling and landfill percentages and quantities.
- .5 End destination of materials.
- .5 Hazardous Materials:
 - .1 Provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.
 - .2 Workers, haulers and subcontractors must possess current, applicable permits to remove, handle and dispose of wastes categorized Territorially as hazardous.
 - .1 Provide proof of compliance within 24 hours upon written request of Contract Administrator.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Ensure Work is performed in compliance with CEPA, CEAA, TDGA, and applicable provincial regulations.
 - .2 Site Meetings:
 - .1 Arrange for site visit with Contract Administrator to examine existing site conditions adjacent to demolition work, prior to start of Work.
 - .2 Ensure key personnel, site supervisor, project manager, subcontractor representatives and WMC attend.
 - .3 Health and Safety:

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Do Work in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Refer to Section 01 35 73 - Procedures for Deconstruction of Structures.

1.8 SITE CONDITIONS

- .1 Existing Conditions:
 - .1 Should materials resembling spray or trowel applied asbestos or other designated substance listed as hazardous be encountered in course of deconstruction, stop work, take preventative measures, and notify Contract Administrator immediately. Do not proceed until written instructions have been received.

- .2 Structures to be demolished to be based on their condition on date that tender is accepted.
 - .1 Remove, protect and store salvaged items as directed by Contract Administrator.
- .3 Protection:
 - .1 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, adjacent grades. Provide bracing, shoring, underpinning as required. Repair damage caused by deconstruction as directed by Contract Administrator.
 - .2 Support affected structures and, if safety of structure being deconstructed or adjacent structures, services appears to be endangered, take preventative measures. Cease operations and immediately notify Contract Administrator.
 - .3 Prevent debris from blocking surface drainage system, elevators, mechanical and electrical systems.

Part 2 Products

2.1 EQUIPMENT

- .1 Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.
- .2 Where possible use water efficient wetting equipment/trucks/attachments when minimizing dust.
- .3 Demonstrate that tools are being used in manner which allows for salvage of materials in best condition possible.

Part 3 Execution

3.1 PREPARATION

- .1 Disconnect and re-route electrical, telephone and communication service lines entering buildings to be deconstructed. Post warning signs on electrical lines and equipment which must remain energized to serve other products during period of demolition.
- .2 Locate and protect utility lines. Do not disrupt active or energized utilities traversing premises or designated to remain undisturbed.

3.2 REMOVAL OF HAZARDOUS WASTES

- .1 Prior to start of deconstruction work remove contaminated or hazardous materials as required by attached Occupational Hygiene report. Remove from site and dispose of at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements, in accordance with Hazmat report and Section 02 81 01 - Hazardous Materials.

3.3 DISASSEMBLY

- .1 Materials removed from structures are to be reused, donated or recycled to the greatest extent practicable, and as approved by Contract Administrator.
- .2 Throughout course of deconstruction pay close attention to connections and material assemblies. Employ workmanship procedures which minimize damage to materials and equipment.
- .3 Ensure workers and subcontractors are trained to carry out work in accordance with appropriate deconstruction techniques.
- .4 Project supervisor with previous deconstruction experience must be present on site throughout project.
- .5 Deconstruct in accordance with CSA S350 and other applicable safety standards.
- .6 Workers must utilize adequate fall protection.
- .7 Maintain structural integrity of structure.
- .8 Systematically remove finishes, furnishings, and mechanical and electrical equipment of value and where indicated on drawings.
- .9 Carefully remove windows and doors from structure and donate to Habitat for Humanity.
- .10 Disassemble non-loadbearing interior partitions and remove materials from structure. Salvage wood studs to extent practicable. Sort and recycle other materials in accordance with 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .11 Disassemble in sequence: roof, interior loadbearing partitions, exterior walls, floors, and foundation.
- .12 Wherever possible, transfer material assemblies from heights to ground level for easier disassembly. Take appropriate measures to ensure safety.
- .13 Separate from waste stream, material in condition suitable for reuse and/or recycling and as listed to required rates of diversion.
- .14 Remove and store materials to be salvaged, in manner to prevent damage.
 - .1 Store and protect in accordance with requirements for maximum preservation of material.
 - .2 Handle salvaged materials as new materials.
- .15 Source separate for recycling materials that cannot be salvaged for reuse including wood, metal, concrete and asphalt.
- .16 Remove materials that cannot be salvaged for reuse or recycling and dispose of in accordance with applicable codes at licensed facilities.
- .17 Where existing materials are to be re-used in Work, use special care in removal, handling, storage and re-installation to assure proper function in completed work.

3.4 PROCESSING

- .1 Designate location for processing of materials which eliminates double handling and provides adequate space to maintain efficient material flow.
- .2 Denail, strip, separate, materials to ensure best possible condition of salvaged materials.
- .3 Keep processing area clean and free of excess debris.
- .4 Supply separate, marked disposal bins for categories of waste material. Do not remove bins from site until inspected and approved by Contract Administrator.
- .5 Separate processed materials into organized piles for stockpiling. Provide collection area for materials processed.

3.5 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction. Eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

3.6 REMOVAL FROM SITE

- .1 Transport material designated for alternate disposal by approved haulers, facilities, receiving organizations listed in waste reduction workplan and in accordance with applicable regulations. Do not deviate from haulers, facilities, receiving organizations listed in waste reduction workplan without prior written authorization from Contract Administrator.
- .2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations. Disposal facilities must be approved of and listed in waste reduction workplan. Do not deviate from disposal facilities listed in waste reduction workplan without prior written authorization from Contract Administrator.

3.7 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout deconstruction.
- .2 Upon completion of project, remove debris, trim surfaces and leave work site clean.
- .3 Upon completion of project, reinstate areas affected by Work to condition which existed prior to beginning of Work.

3.8 SCHEDULE

- .1 See drawings for extent of building to remain and portions to be removed.

- .2 Deconstruct to the extent necessary and practicable for sorting materials in accordance with waste management goals. See Section 01 74 21 – Waste Management and Disposal.
- .3 Items to be salvaged for re-use or donation:
 - .1 Salvage and de-nail existing wood joists, trusses and studs to extent practicable for reuse in new construction as non-structural strapping, furring, studs and blocking, and for new ceiling trellis in Room 02 Gathering / Circulation area as indicated in drawings.
 - .2 Salvage existing basement concrete block to extent required for closing-in existing door openings and construction of new interior basement walls.
 - .3 Salvage doors, windows, plumbing fixtures and similar materials for donation to Habitat for Humanity.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian Environmental Protection Act, 1999 (CEPA 1999).
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 National Fire Code of Canada, 2005.
- .5 Transportation of Dangerous Goods Act (TDGA), 1999 c. 34.
- .6 Transportation of Dangerous Goods Regulations (TDGR), T-19.01-SOR/2003-400.
- .7 Storage of PCB Material Regulations, SOR/92-507.
- .8 PCB Waste Export Regulations, 1996, SOR/97-109.
- .9 Ozone-Depleting Substances Regulations, SOR/99-07.
- .10 Environmental Code of Practice on Halons, July 1996.
- .11 Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, March 1996.

1.2 DEFINITIONS

- .1 Toxic: substance is considered toxic if it is listed on Toxic Substances List found in Schedule 1 of CEPA.
- .2 List of Toxic Substances: found in Schedule 1 of CEPA, lists substances that have been assessed as toxic. Federal Government can make regulations with respect to a substance specified on List of Toxic Substances. Column II of this list identifies type of regulation applicable to each substance.
- .3 PCBs: includes chlorobiphenyls referred to in Column I of item 1 of the List of Toxic Substances in Schedule I of Canadian Environmental Protection Act.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:

- .1 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
- .2 Submit photocopy of shipping documents and waste manifests and export notices to Contract Administrator when shipping toxic wastes off site.
- .3 Maintain 1 copy of product data in readily accessible file on site.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Store and handle toxic wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
- .2 Store and handle flammable and combustible wastes in accordance with current National Fire Code of Canada requirements.
- .3 Co-ordinate storage of toxic wastes with Contract Administrator and follow internal requirements for labelling and storage of wastes.
- .4 Observe smoking regulations, smoking is prohibited in area where toxic wastes are stored, used, or handled.
- .5 Only certified persons who have successfully completed Environment Canada Environmental Awareness Course for Environmentally Safe Handling of Refrigerants are permitted to work on refrigeration and air conditioning systems.
- .6 Report spills or accidents involving toxic wastes immediately to Contract Administrator and to appropriate regulatory authorities. Take reasonable measures to contain the release while ensuring health and safety is protected.
- .7 Transport toxic wastes in accordance with federal Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .8 Use authorized/licensed carrier to transport toxic waste.
- .9 Co-ordinate transportation and disposal of toxic wastes with Contract Administrator.
- .10 Dispose of toxic wastes generated on site in accordance with applicable federal and provincial acts, regulations, and guidelines.
- .11 Ensure toxic waste is shipped to authorized/licensed treatment or disposal facility and that liability insurance requirements are met.
- .12 Minimize generation of toxic waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .13 Identify and evaluate recycling and reclamation options as alternatives to land disposal in compliance with LEED credit MR 2, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal.
 - .2 Hazardous waste burned for energy recovery.
 - .3 Lead-acid battery recycling.
 - .4 Hazardous wastes with economically recoverable precious metals.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Definitions:

- .1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
- .2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.

.2 Reference Standards:

- .1 Canadian Environmental Protection Act, 1999 (CEPA 1999).
 - .1 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).
 - .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .3 National Fire Code of Canada 2005.
 - .4 Transportation of Dangerous Goods Act, 1992 (TDG Act) 1999, (c. 34).
 - .5 Transportation of Dangerous Goods Regulations (SOR/2001-286).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

- .1 Submit 2 copies of WHMIS MSDS in accordance with Section 02 81 01 - Hazardous Materials.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Co-ordinate storage of hazardous materials with Contract Administrator and abide by internal requirements for labelling and storage of materials and wastes.
- .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
- .3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.
- .4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
 - .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.

- .2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Contract Administrator.
- .5 Transfer of flammable and combustible liquids is prohibited within buildings.
- .6 Transfer flammable and combustible liquids out of vicinity of open flames or heat-producing devices.
- .7 Solvents and cleaning agents must have flash point above 38 degrees C.
- .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
- .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
- .10 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
 - .1 Store hazardous materials and wastes in closed and sealed containers.
 - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
 - .3 Store hazardous materials and wastes in containers compatible with that material or waste.
 - .4 Segregate incompatible materials and wastes.
 - .5 Ensure that different hazardous materials or hazardous wastes are not mixed.
 - .6 Store hazardous materials and wastes in secure storage area with controlled access.
 - .7 Maintain clear egress from storage area.
 - .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.
 - .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
 - .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
- .11 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .12 Report spills or accidents immediately to Contract Administrator. Submit a written spill report to Contract Administrator within 24 ___ hours of incident.

1.4 TRANSPORTATION

- .1 Transport hazardous materials and wastes to and from site in accordance with federal Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .2 If hazardous waste is generated on site:
 - .1 Co-ordinate transportation and disposal with Contract Administrator.

- .2 Ensure compliance with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.
- .3 Use licensed carrier authorized by provincial authorities to accept subject material.
- .4 Prior to shipping material obtain written notice from intended hazardous waste treatment or disposal facility that it will accept material and that it is licensed to accept this material.
- .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.
- .6 Ensure that trained personnel handle, offer for transport, or transport dangerous goods.
- .7 Provide photocopy of shipping documents and waste manifests to Contract Administrator.
- .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide a photocopy of completed manifest to Contract Administrator.
- .9 Report discharge, emission, or escape of hazardous materials immediately to Contract Administrator and appropriate provincial authority. Take reasonable measures to control release.

Part 2 Products

2.1 MATERIALS

- .1 Allow hazardous materials on site only in quantities required to perform Work.
 - .1 Contract Administrator 24 hours minimum prior to bringing hazardous materials onto work site.
- .2 Maintain MSDS in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

Part 3 Execution

3.1 REMOVAL

- .1 Remove asbestos materials from the existing building in accordance with the attached occupational hygiene report.

3.2 WASTE MANAGEMENT

- .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
- .2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.
- .3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
- .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.

- .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
- .6 Dispose of hazardous wastes in timely fashion in accordance with applicable provincial regulations.
- .7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.

END OF SECTION