

DEMOLITION OF STRUCTURES**Part 1 General****1.1 RELATED SECTIONS**

- .1 Section 01 74 21 – Construction-demolition Waste Management and Disposal
- .2 Section 07 51 00 – Built-up Bituminous Roofing
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim
- .4 Section 23 05 00 – Common Work Results for HVAC
- .5 Section 26 05 00 - Common Work Results - Electrical

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International).
 - .1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures.
- .2 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Assessment Act (CEAA), 1992, c. 37.

1.3 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.
- .2 Divert excess materials from landfill to site approved by Departmental Representative.

1.4 ENVIRONMENTAL PROTECTION

- .1 Ensure Work is done in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
- .3 Fires and burning of waste or materials is not permitted on site.
- .4 Do not bury rubbish waste materials.
- .5 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 project.
- .6 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.

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- .7 Control disposal or runoff of water containing suspended materials or other harmful substances as directed by Departmental Representative.
- .8 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .9 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
- .10 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

1.5 EXISTING CONDITIONS

- .1 Should material resembling spray or trowel applied asbestos or other designated substance be encountered in course of demolition, stop work, take preventative measures, and notify Departmental Representative immediately. Do not proceed until written instructions have been received.

1.6 SCHEDULING

- .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.
 - .1 In event of unforeseen delay notify Departmental Representative in writing.

Part 2 Products**2.1 EQUIPMENT**

- .1 Equipment and heavy machinery to:
 - .1 On-road vehicles to meet applicable emission requirements as prescribed in CEPA-SOR/2003-2, On-Road Vehicle and Engine Emission Regulations.
 - .2 Off-road vehicles to meet applicable emission requirements as prescribed in EPA CFR 86.098-10 and EPA CFR 86.098-11.
- .2 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

Part 3 Execution**3.1 PROTECTION**

- .1 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, adjacent grades parts of existing building to remain.
 - .1 Provide bracing, shoring and underpinning as required.
 - .2 Repair damage caused by demolition as directed by Departmental Representative.

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- .2 Support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered, take preventative measures, stop Work and immediately notify Departmental Representative.
 - .3 Prevent debris from blocking surface drainage system, elevators, mechanical and electrical systems which must remain in operation.
 - .4 Ensure protection of goods located in interior spaces or on the existing building including equipment, furniture, hardware, woodwork and finishes that are both fixed and non-fixed to the building.
 - .5 Repair all damage caused by demolition according to the instructions of the Departmental Representative.
 - .6 Ensure that all demolition work have no noticeable effects on wildlife, groundwater, flow of adjacent waterways and that they do not generate excessive levels of atmospheric or acoustic pollution.
 - .7 Burning of debris and materials on site is not permitted.
 - .8 Do not discard waste or volatile materials such as fossil fuels, oils, petroleum-based lubricants or toxic cleaning solutions in waterways or sewers. Adhere to proper methods for discarding these types of products during the course of the Work.
 - .9 Do not pour water containing sediment into waterways, drains and sewers or on the ground by pump or other methods.
 - .10 Ensure proper evacuation of water as well as proper containment of water containing sediment or other non-soluble substances according to the requirements of local authorities.
 - .11 Protect all vegetation (trees, plants, shrubs and their foliage) that are found on site as well as those on adjacent properties as indicated.
 - .12 Prevent foreign substances or materials from contaminating the air outside the site by erecting temporary protection during the execution of demolition work. Remove all protective screens and clean the work area once all dust-generating work has been completed unless otherwise indicated by the Departmental Representative. Conform to the applicable requirements concerning environmental protection.
 - .13 Store materials to be reused, recycled or collected in a located approved by the Departmental Representative.
 - .14 Protect materials destined for reuse and recycling from damage caused by work on site, heavy machinery, excess humidity and water.
 - .15 Prevent the contamination of materials destined for reuse and recycling.
 - .16 Cover dry materials and waste or proceed to break them apart while keeping them moist to prevent air-borne dust and debris. Erect dust screens on all temporary access routes.

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- .1 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Disconnect and re-route electrical and telephone service lines entering buildings to be demolished.
 - .1 Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
- .3 Remove rodent and vermin as required by Departmental Representative.
- .4 Roof drains and scuppers:
 - .1 Existing roof drains and scuppers shall be inspected so that they remain open and functional to provide proper roof drainage.
 - .2 Maintain the existing downspouts in an operational state, and do not disconnect and remove until the new downspouts are fully installed and operational. After holes are made in new drains, provide and install temporary downspouts in order to avoid dumping rainwater on corridor sidewalks and on pedestrians. Coordinate the positioning of these temporary downspouts with the Departmental Representative.

3.3 SAFETY CODE

- .1 Blasting operations not permitted during demolition.

3.4 REMOVAL OF HAZARDOUS WASTES

- .1 Remove contaminated or dangerous materials as 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.
- .2 Prior to start of demolition work remove contaminated or hazardous materials as directed by Departmental Representative from site and dispose of at designated disposal facilities in safe manner and in accordance with TDGA and other applicable requirements. Refer Existing Conditions in Part 1.

3.5 DEMOLITION

- .1 Demolish structures as indicated on the plans and such that are required in order to accommodate new construction and as indicated by Departmental Representative.
- .2 All demolished material is the property of the Contractor unless otherwise indicated on the plans or by Departmental Representative. It is not permitted to sell the materials.
- .3 Demolish all designated structure so that maximum amount of material can be recovered for reuse and recycling.

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- .4 For the duration of the Work, take note of material assemblies and joins. Handle materials in such a way that will minimize damage to materials and equipment and allow for maximum recuperation.
 - .5 Inform all workers and subcontractors of the methods for carrying out the Work as required in the project with regards to waste management and the Plan for Waste Reduction.
 - .6 Demolish and remove existing assemblies as required for the new construction and as indicated. Employ methods which will permit the work to be carried out with respect to the restriction of the designated authorities and in the following manners:
 - .1 Proceed with selective demolition in the established order: beginning at topmost level and proceeding downward.
 - .2 Ensure that all openings and holes are made with care, such that they are plumb, square and aligned as per the required dimensions. Employ the cutting methods which will do the least possible damage to the elements designated to remain in place and to the adjacent elements. In order to prevent damage to the surrounding elements use pocket-size mechanical tools or hand-operated tools that are designed to cut and grind rather than hammer and chop. Temporarily cover the elements to be preserved.
 - .3 Carry out cutting or drilling from the finished or exposed surface towards the concealed surface to prevent damage to finished surfaces. Examine concrete surfaces for anchors, framing and other obstacles before cutting or drilling.
 - .4 The use of cutting torches is not permitted until all the work area is free of all flammable material. In concealed areas, such as conduits, verify the state and contents of the concealed spaces prior to using torches. When using a cutting torch ensure that portable firefighting equipment is present at the work site.
 - .5 Ensure that all areas where torches are being used are properly ventilated.
 - .6 Promptly remove from the site all material that is rotten, infested with vermin and all other dangerous or inappropriate material.
 - .7 Gather all the demolished material found inside building framing assemblies and remove the debris and material in such a way that does not submit the walls, roofs or framing assemblies to excessive loads.
 - .8 Promptly remove all debris and demolished materials. It is not permitted to retain or sell any elements that were removed on site.
 - .9 Return all construction elements and surfaces designated to remain in place to their original state prior to the start of demolition.
 - .10 And end of each day's work; leave Work in safe and stable condition.
 - .11 Demolish to minimize dusting.
 - .7 In areas where the Work must be removed completely or in part by this Section and the repairs are to be carried out by another trade, coordinate the work with the affected trades to ensure that the demolition is carried out to conform to the requirements of these trades and to ensure that all the work is carried out.

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- .8 Remove the structural framing only where required and as requested by Departmental Representative.
 - .9 At end of each day's work, leave Work in safe and stable condition.
 - .1 Protect interiors of parts not to be demolished from exterior elements at all times.
 - .10 Store materials in an area suitable for their intended use in the new Work or where instructed by Departmental Representative. Eliminate multiple handlings wherever possible.
 - .11 Remove following scrap materials from the roof assemblies. Carefully store and protect in a location designated by Departmental Representative, with a view to their being subsequently removed in an ecological fashion. Comply with applicable safety and fire prevention regulations.
 - .1 Metal flashings
 - .2 Fiberboard panels
 - .12 Provide separate and labelled containers for each category of demolished material. Notify Departmental Representative prior to removing containers from site.
 - .13 Designate a collection area for materials previously indicated to be disposed of ecologically.
 - .14 List any material previously designated for ecological disposal which has been deemed inappropriate and submit list in writing to Departmental Representative. Indicate in writing the reason for reclassification in order to obtain authorization dispose of materials in another manner.
 - .15 Demolish to minimize dusting. Keep materials wetted as directed by Departmental Representative.
 - .16 Dispose of materials as directed by Departmental Representative.
 - .17 Removal of stored materials:
 - .1 Materials shall be removed from the site between the hours of 18:00 and 6:00 unless otherwise indicated by Departmental Representative. The route designated for truck use on site shall be followed at all times unless otherwise indicated by Departmental Representative. The route and all restrictions must be verified by Departmental Representative and confirmed with each transporter before access to the route is granted.
 - .2 Promptly remove all demolition material and debris. Debris is not permitted to accumulate on the site.
 - .3 Selling or burning of demolition material and debris is not permitted on site.
 - .4 Remove demolished materials from the site and dispose the materials in accordance with authorities having jurisdiction. There cannot be more than one (1) waste container on site at one time.

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- .5 Transport all demolished materials designated for reuse and recycling to approved recuperation facilities indicated in the Plan for Waste Reduction and in accordance with applicable laws. Any other recuperation facility not listed in the Plan for Waste Reduction must be authorized by Departmental Representative.
- .6 If Contractor is unable to locate the steps or materials designated for reuse and recycling Departmental Representative must be notified in writing. Disposal of these materials is the responsibility of Contractor.
- .7 Materials not designated for reuse and recycling shall be removed from site in accordance with applicable laws. The facilities to receive these materials must be those indicated in the Plan for Waste Reduction. Any facility not indicated in the Plan for Waste Reduction must first be approved in writing by Departmental Representative.
- .8 Any stored materials causing delays in the work must be removed as directed by Departmental Representative.
- .9 Contain fibrous materials (e.g. Insulation to minimize release of airborne fibres while being transported within facility.
- .10 Dispose of specified materials in an ecological manner as directed by Departmental Representative.
- .11 Ensure that these materials are not removed to disposal or mixed with materials designated for disposal.
- .18 Remove and dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.
- .19 Protection of environment
 - .1 Remove all materials which have been designated as contaminated and / or dangerous by authorities having jurisdiction in the field of environmental protection. Take all necessary security measures in order to minimize the dangers when removing materials from site.
- .20 Prior to the start of demolition work, remove from the site all contaminated or dangerous materials as directed by the authorities having jurisdiction. Dispose of the materials by transporting them to facilities designated in the LTMD, 1980. Refer to Article 1.3 – Existing Conditions.
- .21 Use natural lighting to do Work where possible.
 - .1 Shut off lighting except those required for security purposes at end of each day.

3.6 REMOVAL FROM SITE

- .1 Remove stockpiled material as directed by Departmental Representative when it interferes with operations of project construction.
- .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 receiving organizations listed in Waste Reduction Workplan and in accordance with applicable regulations.

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- .1 Written authorization from Departmental Representative is required to deviate from receiving organizations listed in Waste Reduction Workplan.
 - .4 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.
 - .1 Disposal facilities must be those approved of and listed in Waste Reduction Workplan.
 - .2 Written authorization from Departmental Representative is required to deviate from disposal facilities listed in Waste Reduction Workplan.

END OF SECTION