

## **PART 1 - GENERAL**

### 1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 29 - Health and Safety Requirements.
- .3 Section 01 35 43 - Environmental Procedures.
- .4 Section 01 50 00 - Temporary Facilities.
- .5 Section 01 74 21 - Construction/ Demolition Waste Management and Disposal.

### 1.2 REFERENCES

- .1 Canadian Standards Association (CSA):
  - .1 CSA-S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .2 Federal Legislation:
  - .1 Canadian Environmental Assessment Act (CEAA), SC 1992, c. 37.
  - .2 Canadian Environmental Protection Act (CEPA), SC 1999, c. 33.
  - .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

### 1.3 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 in a manner that achieves safe removal / disposal of hazardous materials and maximum salvage/recycling of materials. The ultimate objective is to recover potentially valuable resources while diverting from landfill what has traditionally been significant portion of waste system.
- .3 Demolition: in the context of this project, demolition refers to the careful disassembly of specific areas and extent of the existing exterior envelope. It requires that materials and building elements are removed cleanly and deliberately to enable to following: salvage of existing materials, reinstallation of existing materials, or replacement with new materials to rebuild the existing assembly and/ or make weathertight.
- .4 Disassembly: Physical detachment of materials from structure and may include: prying, pulling, cutting, unscrewing.
- .5 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.

1.3 DEFINITIONS (continued)

- .6 Materials Source Separation Program (MSSP): a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at the point of generation.
- .7 Processing: Tasks which are subsequent to disassembly and may include: moving materials, removing nails, cleaning, separating and stacking.
- .8 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
- .9 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .10 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.
- .11 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials for reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .12 Salvage: removal of structural and non-structural materials from deconstruction / disassembly projects for purpose of reuse or recycling.
- .13 Source Separation: acts of keeping different types of waste materials separate, beginning from first time they became waste.

1.4 PERFORMANCE REQUIREMENTS

- .1 Salvage, stockpile and protect masonry units and other exterior elements noted for salvage, removal and reinstallation under this Contract.
- .2 Separate discarded materials from the waste stream to obtain minimum percentages of diversion in accordance with Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

1.5 ACTION AND INFORMATION SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to the start of work on site, submit documented evidence of the project supervisor's previous experience with masonry removal work of a similar nature to this project.

1.6 QUALITY ASSURANCE

- .1 Ensure Work is performed in compliance with applicable federal and provincial regulations.
- .2 Brick masonry removals shall be carried out by the masonry subcontractor with experience in specialized restoration work.

1.7 STORAGE, HANDLING AND PROTECTION

- .1 Do in accordance with Section 01 74 21 - Construction/ Demolition Waste Management and Disposal.

1.8 ENVIRONMENTAL REQUIREMENTS

- .1 Do Work in accordance with Section 01 35 43 - Environmental Procedures.

1.9 SITE CONDITIONS

- .1 Existing Conditions:
  - .1 Take over areas scheduled for test openings based on their condition, at time of examination prior to tendering.
  - .2 Items to be salvaged, as identified by the Departmental Representative, to be carefully removed, protected and handed to the Departmental Representative.
  - .3 Should materials resembling spray or trowel applied asbestos or other designated substance listed as hazardous be encountered in the course of deconstruction, stop work, take preventative measures, and notify the Departmental Representative immediately. Do not proceed until written instructions have been received.
  - .4 Label and package component parts of mechanical and electrical items specified for salvage in accordance with the Departmental Representative's instructions to prevent damage or loss.
- .2 Protection:
  - .1 Prevent movement, settlement or damage of adjacent surfaces, services, and other existing elements to remain. Provide bracing and shoring as required. Repair damage caused by deconstruction as directed by the Departmental Representative.
  - .2 Take precautions to support affected structures and, if the safety of the building or services appears to be endangered, cease operations and notify the Departmental Representative.
  - .3 Prevent debris from blocking building drains, surface drainage systems, mechanical and electrical systems.
  - .4 Provide special protection to in accordance with Section 01 50 00 - Temporary Facilities.

**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 a manner which allows for the salvage of materials in the best condition possible.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- .1 Do Work in accordance with Section 01 35 29 - Health and Safety Requirements, CSA S350 and other applicable safety standards.
- .2 Maintain existing utilities and protect them against damage during selective demolition operations.
- .3 Locate and protect utility lines. Do not disrupt active or energized utilities designated to remain undisturbed.

#### **3.2 EXAMINATION**

- .1 Survey existing conditions and correlate with requirements indicated to determine the extent of selective demolition required.
- .2 Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- .3 When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Departmental Representative.
- .4 Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.
- .5 Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

#### **3.3 DISASSEMBLY, REMOVALS AND DEMOLITION**

- .1 Disassemble and remove existing construction only to the extent required by the Work and as indicated. Use methods required to complete the work within limitations of governing regulations and as follows:
  - .1 Generally, proceed with selective demolition systematically, from higher to lower level.
  - .2 Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  - .3 Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - .4 Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  - .5 Maintain adequate ventilation when using cutting torches.

3.3 DISASSEMBLY, REMOVALS AND DEMOLITION (continued)

- .6 Remove decayed, deteriorated, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- .7 Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting structure.
- .8 Dispose of disassembled items and materials promptly. On-site storage or sale of removed items is prohibited.
- .9 Return elements of construction and surfaces designated to remain to a condition at least equal to that which existed before the start of selective demolition operations.
- .10 At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. At all times, protect from damage parts not to be disassembled.
- .11 Disassemble to minimize dusting.
  
- .2 Where necessary to avoid disturbance of portions of the building designated to remain, disassemble progressively limited defined portions of the building and coordinate the sequence of the disassembled work with the progressive replacement or reinstallation of the disassembled portions.
- .3 Ensure workers and subcontractors are briefed and trained to carry out the work in accordance with appropriate deconstruction techniques.
- .4 Throughout the course of deconstruction, pay close attention to connections and material assemblies. Employ workmanship procedures which minimize damage to materials and equipment.
- .5 Coordinate disassembly work with the installation of temporary weather-tight closures and waterproof membranes to ensure complete weather protection throughout the period of the Work.
- .6 Remove existing equipment, services, and obstacles where required for disassembly, removals or demolition, and replace as work progresses.
- .7 Coordinate with the Departmental Representative to ensure that materials and fixtures intended to remain are not disassembled.
- .8 The Departmental Representative will determine items to be salvaged for reinstallation in the new construction. Verify with the Departmental Representative before commencing disassembly work.
- .9 Where existing materials are to be re-used in the Work, use special care in the removal, handling, storage and re-installation as necessary to assure proper function in the completed work.
- .10 Remove and store materials to be salvaged in a manner to prevent damage.
  - .1 Store salvaged materials where directed and protect in accordance with requirements for maximum preservation of material.
  - .2 Handle salvaged materials as new materials.

3.3 DISASSEMBLY, REMOVALS AND DEMOLITION (continued)

- .11 Remove structural framing only where required and as directed by the Departmental Representative.
- .12 Coordinate with other Sections to facilitate the systematic disassembly of masonry and salvaging masonry units for re-use.
- .13 Unit masonry removal:
  - .1 Remove masonry in a manner that will facilitate testing of salvaged units.
  - .2 Salvage as many brick masonry units as possible to provide a sufficient sample stock for accuracy during testing.
  - .3 Clean salvaged brick masonry units of existing mortar and stockpile for testing.
  - .4 Replacement Masonry Unit: Carry out testing of masonry units for absorption, saturation coefficient and compressive strength, uniformity of size and colour, etc., in order to find a suitable and compatible replacement to match the removed masonry unit.
  - .5 Replacement Masonry unit also to match existing in dimensions (Metric Jumbo Utility at 90 x 90 x 290 mm), colour, and coursing pattern (1/3 Running Bond).
- .14 Remove existing sheet metal flashings that are designated for reinstallation; clean and stockpile for re-installation.
- .15 Polyurethane and polystyrene insulation are present in the areas of the wall assemblies where partial disassembly is to be executed. Where cutting, grinding, or any other technique which generates heat is used in the disassembly process, take all necessary precautions to eliminate the risk of fire.
- .16 Removed materials which are not designated for re-use or cannot be salvaged for reuse, are the property of the Contractor and shall be removed from the site.
- .17 Except where noted or directed otherwise by the Departmental Representative, dispose of disassembled materials in accordance with the requirements of the authorities having jurisdiction and applicable codes.
- .18 Source-separate for recycling, materials that cannot be salvaged for reuse including metal and concrete.

3.4 CUTTING AND PATCHING

- .1 Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- .2 Refer to Division 1 requirements.

### 3.5 PROCESSING

- .1 Designate a location for processing of materials which eliminates double handling and provides adequate space to maintain an efficient material flow.
- .2 Restrict the storage of materials to comply with the conditions specified in Section 01 50 00 - Temporary Facilities.
- .3 Separate materials to ensure the best possible condition of salvaged materials.
- .4 Keep the processing area clean and free of excess debris.
- .5 Supply separate, marked disposal bins for categories of waste material. Do not remove bins from site until inspected and approved by the Departmental Representative. Notify the Departmental Representative prior to removal of bins from site.
- .6 Separate processed materials into organized piles for stockpiling. Provide a collection area for materials designated for alternate disposal. Pile materials on pallets to facilitate transport off-site or to the storage areas.

### 3.6 POLLUTION CONTROLS

- .1 Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- .2 Take appropriate precautions to protect building users, the public, vehicles and adjacent property from dust and debris generated by the selective demolition work. Remove temporary protection and make good when disassembly and dust-generating activities are complete.
- .3 Remove from site contaminated or dangerous materials, as defined by the authorities having environmental jurisdiction, and dispose of in safe manner to minimize danger at the site or during disposal.
- .4 Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

### 3.7 STOCKPILING

- .1 Label stockpiles, indicating the material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in the new construction. Eliminate double handling wherever possible.

3.8 REMOVAL FROM SITE

- .1 Promptly dispose of demolished materials that will not be reinstalled or stored for future reinstallation. Do not allow demolished materials to accumulate on-site.
- .2 Do not sell or burn demolished materials on site.
- .3 Transport demolished materials off site and legally dispose of them.

3.9 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout deconstruction.
- .2 Sweep the affected exterior areas broom-clean on completion of selective demolition operation.
- .3 Upon completion of the Project, remove debris, trim surfaces and leave the work site clean.
- .4 Upon completion of the project, reinstate areas affected by the Work to a condition at least equal to that which existed prior to beginning of the Work.

**END OF SECTION**