

## **SPECIFICATION SECTION 02200**

### **DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND OBSTRUCTIONS**

#### **TABLE OF CONTENTS**

1. DESCRIPTION.....	3
1.1 Submittals.....	3
2 CONSTRUCTION REQUIREMENTS .....	3
2.1 General.....	3
2.2 Removal of Drainage Structures .....	4
2.3 Removal of Pavements, Footpaths, etc.....	5
2.4 Removal of Buildings and Structures .....	5
3 MEASUREMENT AND PAYMENT.....	6
3.1 Method of Measurement .....	6
3.2 Basis of Payment .....	7



## **SPECIFICATION SECTION 02200 - DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND OBSTRUCTIONS**

### **1. DESCRIPTION**

This Specification Section prescribes the demolition and removal of existing structures, wholly or in part and disposal off Site of buildings, structures, pavements regardless of their nature (asphalt, concrete, etc.) and any other obstructions which are not designated or permitted to remain exceeding one cubic meter. Demolition includes the salvage of designated materials, backfilling and compacting in accordance with Specification all trenches, holes and pits resulting from demolition and removal work.

The Contractor shall also locate all wells and similar structures and shall fill and compact the same in accordance with the Specification.

#### **1.1 Submittals**

The Contractor shall prepare and submit to the Engineer for approval prior to starting the work, the following:

- (a) Shop Drawings in accordance with the provisions of Specification Section 01200 Contractor's Drawings, including information of a structural nature such as; drainage, curbs, pavements, etc. of the items to be demolished, removed and dumped at approved disposal areas off Site.
- (b) Complete details of the method, equipment and schedule to for the Demolition and Removal work.
- (c) Inventory of salvaged materials that the Contractor desires to reuse in the Works subject to the Engineer's approval or for other purposes.
- (d) Drawings showing the proposed disposal sites and storage areas.

### **2 CONSTRUCTION REQUIREMENTS**

#### **2.1 General**

Demolition and Removal shall be executed within the boundaries of the Site as shown on the Drawings or as directed by the Engineer. The Demolition and Removal work shall comply with the following conditions:

- (a) Materials recovered from the demolition Works shall remain the property of the Employer. Reuse of salvaged materials is subject to the Employer's agreement.
- (b) All designated saleable material shall be salvaged in sections or pieces with due care to avoid damage and they shall be stored by the Contractor at specified places on the Site as directed by the Engineer.
- (c) Basements or cavities left by the removal of structures shall be filled with an acceptable material to the level of the surrounding ground and if within the prism of construction and shall be compacted in accordance with the requirements described in Specification Section 03400 "Embankment".
- (d) Demolition and Removal includes salvage of reuseable materials, their custody, preservation, and storage within the Site or any other locations as may be designated by the Engineer or the Employer or disposal as provided herein.
- (e) All materials resulting from the demolition shall generally be removed from the Site in accordance with the requirements for unsuitable material stipulated in Specification Sections 03100 Common Soil Excavation and 03150 Rock Blasting.
- (f) If the material to be removed is, in the Engineer's opinion, reusable in the Works such material shall be measured and paid only for the quantities actually incorporated in the Works for which pay items are included in the Bill of Quantities.

## **2.2 Removal of Drainage Structures**

- (a) Bridges, culverts and other drainage structures in use shall not be removed until satisfactory other arrangements have been made to accommodate traffic.
- (b) The removal of existing culverts within embankment areas shall be done only if necessary for the installation of new structures.
- (c) All culvert sections removed, which are not designated for stockpiling or relaying, shall be removed from the Site and disposed of in a manner approved by the Engineer.
- (d) Unless otherwise directed, the substructures of existing structures shall be removed down to the natural stream bottom and those parts outside the stream shall be removed down to at least 300 mm below the natural ground surface.

- (e) Blasting or other operations necessary for the removal of an existing structure or obstruction, which may damage new construction, shall be completed prior to commencing the new work unless otherwise approved by the Engineer.
- (f) Existing bridges or other structures, when specified by the Engineer to be salvaged, shall be carefully dismantled without damage. Salvaged members shall be match marked, unless the Engineer waives the requirement. All salvaged material shall be stored as requested by the Engineer.
- (g) Unless waived in writing by the Engineer all concrete removed that is of a suitable size for riprap and not needed for such use in the Works shall be stockpiled at locations designated by the Engineer for use by the Employer.

### **2.3 Removal of Pavements, Footpaths, etc.**

- (a) Irrespective of their thickness or nature all; asphalt or concrete pavements, footpaths or other hard surfaces designated for removal shall be broken up into pieces, the size of which shall not exceed 300 mm in any dimension.
- (b) Removal of pavements shall be carefully undertaken to avoid damage to abutting sections of pavement or structures designated to remain.

### **2.4 Removal of Buildings and Structures**

- (a) Upon receipt of notification by the Engineer the Contractor shall assume all responsibility for the vacant building or buildings and shall proceed with the demolition and removal thereof as specified.
- (b) Unless otherwise indicated on the Drawings or directed by the Engineer the Contractor shall complete the demolition and removal of buildings and structures together with all foundations and retaining walls, piers, partitions and columns.
- (c) The Contractor shall inspect each building to be removed and determine by himself the work involved and the equipment and materials required for such demolition work.
- (d) The Contractor shall conduct his operations in such a manner as to avoid hazards to persons and vehicles. After work is started on any building the work on that shall be continued and completed expeditiously.
- (e) The Contractor shall be responsible for removing any additional small buildings or miscellaneous structures which have not been indicated on the Drawings.

### **3 MEASUREMENT AND PAYMENT**

#### **3.1 Method of Measurement**

- (a) All the works, material, labor and any other incidentals necessary to perform the Works herein specified for demolition and removal of:
  - (i) Masonry, concrete or wood structures;
  - (ii) Existing pavement (regardless of its nature), including all the layers of its structure (if its removal is necessary);
  - (iii) Existing structures, culverts, wells and the like;

shall be measured in accordance with the preambles established below.

- (b) The unit price for any work under this Specification Section will be deemed to include any precautions or special working methods necessary to avoid damage to abutting material designated to remain. The Contractor shall rectify any such damage at his own expense.
- (c) The demolition and removal of existing concrete, brick or wood structures and obstructions shall be based on field measurements, agreed with the Engineer, prior to the commencement of the demolition. The volume subject to measurement and payment shall be the net outside dimensions of the pertinent structure above the surface of the ground prior to the commencement of the demolition. The volume of concrete and brickwork in the foundations to be demolished and removed shall be paid according to the external net dimensions of the same; any necessary excavation and other Works necessary to locate the foundations shall be deemed to be included in the unit prices and shall not be paid separately. The demolition and removal of steel reinforcement shall not be paid separately and shall be deemed to be included in the unit prices.
- (d) The volume of the demolition and removal of the pavements, roads etc. shall be based on field measurements, agreed with the Engineer, prior to the commencement of the demolition. The volume subject to measurement and payment shall be the net outside dimensions of the pertinent structure prior to the commencement of the demolition. The demolition and removal of steel reinforcement shall not be paid separately and shall be deemed to be included in the unit prices.
- (e) The demolition and removal of existing culverts shall be based on field measurements, agreed with the Engineer, prior to the commencement of the

demolition. The volume subject to measurement and payment shall be the net outside dimensions of the pertinent structure above and below the surface of the ground prior to the commencement of the demolition. Any necessary excavation and other Works necessary to locate the culverts shall be deemed to be included in the unit prices and shall not be measured and paid separately. The demolition and removal of steel reinforcement shall not be paid separately and shall be deemed to be included in the unit prices.

- (f) The location, backfilling and compacting of wells and the like in compliance with the requirements of Specification Section 03400 Embankment shall not be measured separately and shall be deemed to be Indirectly Paid Work, payment of which is included in the rates and prices for other main items or distributed among all the pay items listed in the Bill of Quantities. No separate payment will be made for these items.
- (g) The filling and compacting of the voids and holes arising from the Demolition and Removal of Existing Structures in compliance with the requirements of Specification Section 03400 Embankment shall not be measured separately and shall be deemed to be Indirectly Paid Work, payment of which is included in the rates and prices for other main items or distributed among all the pay items listed in the Bill of Quantities. No separate payment will be made for these items.
- (h) The Demolition and Removal of Existing Structures and Obstructions provisions and construction requirements identified in this Specification Section shall be measured for payment in pay items 02200-01 and 02200-02 as the whole of Package.
- (i) Any Demolition and Removal of Existing Structures and Obstructions Works not specifically identified in this Specification Section but which are necessary for the performance of the Works shall be deemed to be included in pay items 02200-01 and 02200-02.

### **3.2 Basis of Payment**

The work under this Specification Section shall be paid for in accordance with the applicable unit prices as indicated in the Bill of Quantities and given below. Payment shall constitute full compensation for performing the requirements of the Contract for the item of work as specified including furnishing all necessary labor, materials, tools, equipment, tests and incidentals.

<b><u>Pay Item</u></b>	<b><u>Description</u></b>	<b><u>Unit</u></b>
<b>02200</b>	<b>Demolition and Removal of Existing Structures and Obstructions</b>	
02200-01	Demolition of Existing Concrete, Masonry or Wood Structures	m <sup>3</sup>
02200-02	Demolition of Existing Asphalt or Concrete Pavement	m <sup>3</sup>