

**Part 1 - General**

**1.01 Description**

- .1 This Section is supplemental to OPSS.MUNI 403 and shall supersede conflicting specifications within OPSS.MUNI 403.

**1.02 Related Specification**

- .1 Construction Specification Section 01210 - Contingencies/Allowances
- .2 Construction Specification Section 01570 - Environmental Protection
- .3 Construction Specification Section 01890 - Preservation, Protection and Reconstruction
- .4 Construction Specification Section 02240 - Dewatering
- .5 Construction Specification Section 02314 - Tunnelling
- .6 Construction Specification Section 02315 - Trenching, Backfilling and Compacting
- .7 Construction Specification Section 02318 - Excavation, Backfilling and Compacting for Structures
- .8 Construction Specification Section 02319 - Pipe Boring and Jacking
- .9 Construction Specification Section 02511 - Watermains
- .10 Construction Specification Section 02530 - Pipe Sewers
- .11 Construction Specification Section 02531 - Sewage Forcemains
- .12 OPSS.MUNI 403 - Construction Specification for Rock Excavation for Pipelines, Utilities and Associated Structures in Open Cut

**1.03 Definitions**

- .1 Trench:
  - .1 As defined in latest revision of Occupational Health and Safety Act, and any related regulations.
- .2 Rock Excavation:

- 
- .1 Removal of material from solid masses of igneous, sedimentary, or metamorphic rock, which prior to removal, was integral with parent mass. Such material would not be removable without the use of drilling and blasting operations or, where blasting is not permitted by local by-law, without the use of backhoe-mounted pneumatic breaker equipment and/or jack hammers.
  - .2 Removal of boulders and rock fragments larger than one cubic metre in volume.
  - .3 Removal of boulders from tunnel excavations where smallest dimension of such boulder is in excess of 0.500 m.
  - .4 Cemented till material or shale shall not be considered “rock”. Determination of cemented till and/or shale shall be made by the Region of Durham's Materials Testing Supervisor.

#### **1.04 Measurement for Payment**

- .1 Volume of rock excavated for trenches to be determined by product of following dimensions, measured in place:
  - .1 Height: Vertical distance from rock surface to bottom of designed trench.
  - .2 Width: Actual width of trench measured horizontally limited to pipe outside diameter plus 600 mm or the maximum trench width specified on the Contract Drawings.
  - .3 Length: Measured horizontally along centreline of trench.
- .2 Volume of rock excavation for structures to be determined by product of following dimensions:
  - .1 Height: Vertical distance from rock surface to bottom of working slab.
  - .2 Horizontal Area: Dimension of external surface of structure plus 300 mm clearance all around structure.
- .3 Volume of rock excavation in tunnels to be determined by the product of the following dimensions measured in place:
  - .1 Where tunnel is partially within rock mass:

- 
- .1 Height: Vertical distance from rock surface to outside of tunnel casing or liner.
  - .2 Width: Maximum width shall be the outer diameter of the tunnel casing or liner.
  - .3 Length: Measured horizontally along centreline of trench.
  - .2 Where tunnel is completely within the rock mass:
    - .1 Area: Outer diameter of tunnel liner or casing.
    - .2 Length: Measured horizontally along centreline of trench.
  - .4 Volume of rock excavation for boulders and rock fragments to be determined by product of three (3) maximum rectilinear dimensions.

#### **1.05 Basis of Payment**

- .1 Payment for rock excavation is in addition to (extra over) payment for earth excavations.
- .2 Where cemented till or shale is encountered, and is indicated in the Contract Documents, no “extra” payment shall be made.
- .3 Where cemented till or shale is encountered and is not indicated in the Contract Documents, the Contract Administrator shall allow for an “extra” payment for lost production only. In such case, the Contract Administrator's assessment of the value of lost production shall be based on reasonable production rates before and after encountering the cemented till or shale material. In no case shall the compensation for lost production exceed the value of the Contingency Unit Price Item for this work. The Contract Administrator's assessment of this value shall be final.
- .4 Payment for rock excavation shall be at the unit price bid in Form of Tender for one of the following as appropriate:
  - .1 Rock excavation to trench invert not exceeding 0.500 m.
  - .2 Rock excavation to trench invert greater than 0.500 m and boulders or rock fragments greater than one cubic metre in volume.
- .5 Where a boulder is removed from the face of a tunnel excavation, payment at the unit price bid for item "Rock Excavation in Tunnels" shall include filling of the remaining void in the wall face with grout.

END OF SECTION