

**THE REGIONAL MUNICIPALITY
OF PEEL
BASIS OF PAYMENT
FOR
SANITARY SEWER CONSTRUCTION**

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Payment for each item shall be made at the unit price indicated in the Schedule of Unit Prices in the Form of Tender for the supply of all necessary materials, equipment, tools, labour and supervision to complete the item as specified and shown on drawings. The tendered unit price shall include the following:

PS.1. EXCAVATION

1.1. Trench Excavation

- Field locations and protection of existing utilities in advance of the excavation including water services.
- Careful removal, storage and replacement of obstructions including culverts, headwalls, catchbasins, fences, curbs, interlocking stones and shrubbery.
- Excavation, removal and disposal of surplus excavated materials off site.
- Shoring and dewatering.
- Placing and compacting approved native backfill material
- Temporary restoration of surfaces to carry traffic and pedestrians.
- Protection of existing road surface.
- Meet all requirements of Region of Peel, local municipality and Ministry of Transportation of Ontario (MTO) pertaining to Road Cut Permits conditions.
- Co-ordination of works with local residents to minimize disruption to access.

The payment for this work will be made under applicable items in the subsequent sections.

1.2. Asphalt/Concrete Removal

- Excavation, removal and disposal of asphalt or concrete pavement off-site.
- Temporary restoration of surfaces to carry traffic and pedestrians.

The measurement for payment shall be in square metres over the area excavated at a depth as shown on boreholes in enclosed soil report.

PS.2. CONSTRUCTION OF SANITARY SEWER

- Excavation and asphalt removal as per Section PS.1.
- Maintaining sewage flow in existing sewers, or by-passing by means of pumping where required
- Removal and disposal of the existing sewer where applicable.
- Supplying, grading and compacting granular bedding. Granular bedding shall conform to HL8 dry mix gradation requirements.
- Supply, installation and jointing of pipes and fittings.
- Backfilling with excavated native material, where granular backfill is not required and has not been specified

Pay quantity shall be based on the horizontal length measured over the centre line of the pipe from centre to centre of maintenance holes unless otherwise specified.

PS.3. BACKFILL

3.1. Granular Backfill

- Supplying, placing and compacting imported granular 'B' backfill materials meeting requirements of OPSS 314.

3.2. Unshrinkable Backfill

- Supply, placing and vibrating 0.4 MPa unshrinkable backfill.
- Covering backfilled excavation with steel plates in paved areas, driveways and areas used by vehicles and wood planks or other approved material in areas used by pedestrians.
- Maintenance of cover until temporarily restored.
- Temporary restoration of surfaces to carry traffic and pedestrians.

Pay quantity shall be based on the horizontal length measured in metres over the centre line of the pipe where granular or unshrinkable backfill was installed.

PS.4. BORING/TUNNELLING WITH STEEL LINER

- Excavation as per Section PS.1.
- Construction of boring/tunnelling shaft and exit shaft.
- Supply boring/tunnelling and installation of steel liner.
- Grouting of pipe.
- Supply and backfilling of shafts with granular material in travelled portion of roadway

This work is over and above the sewer installation and the pay quantity for the completed tunnel/bore section shall be based on the measured length

along the centre line of tunnel/bore from inside face to inside face of shafts, unless otherwise specified.

PS.5. MAINTENANCE HOLES

- Excavation as per Section PS.1.
- Removal and disposal off site of the existing maintenance hole(s) including drop structure and its bedding material, where required.
- Supply and installation of precast maintenance holes and connection of all pipes as per the construction drawings and the Region of Peel Standard Drawings.
- Supply of concrete and construction of benching as per Region of Peel Standard Drawings.
- Supply and installation of maintenance hole frame and covers.
- Supplying all other equipment and materials required to complete the maintenance holes.
- Drop structure where specified in the contract drawings.
- Supply and install safety platform on all maintenance holes greater than five metre depth (Regional Standard Drawing 3-2-1).
- Supply, placing and compacting granular "B" backfill.

Pay quantity shall be per each maintenance hole as listed in the Form of Tender.

PS.6. CONNECT NEW PIPE TO EXISTING MAINTENANCE HOLES CONNECT EXISTING SEWER PIPE TO NEW MAINTENANCE HOLE

- Excavation as per Section PS.1.
- Breaking out, removal and disposal off site of existing benching.
- Maintaining sewage flow at all times.

- Cut an opening in the maintenance hole.
- Insert sewer pipe into maintenance hole and grout the pipe in place.
- Rebenching maintenance hole to design as shown on drawings.
- Supply, placing and compacting granular "B" backfill.

This work is over and above the sewer installation and the pay quantity shall be based on a lump sum per connection.

PS.7. SEWER SERVICE CONNECTIONS

a) Open Cut Method

- Excavation as per Section PS.1.
- Removal and disposal of existing services where applicable.
- Supply, placing and compaction of HL8 dry stone granular bedding material.
- Supply, placing, jointing of pipe.
- Supply, placing and compacting granular `B' backfill to one metre behind curb or sidewalk and under all driveways.

Pay quantity shall be for the number of units installed.

b) Boring Under Trees or Other Conflicting Obstructions

- Constructing boring shafts as per Section PS.1.
- Boring and installation of service connection in accordance with Standard Drawings.
- Supply, placing and compacting granular `B' backfill to one metre behind curb or sidewalk and under all driveways.

Pay quantity shall be over and above the sanitary service installation based on the number of locations where boring was required.

PS.8. REMOVE EXISTING MAINTENANCE HOLE

- Excavation as per section PS.1
- Removal and disposal of the existing maintenance hole off site
- Supply, placing and compacting granular 'B' backfill to one metre behind curb or sidewalk and under all driveways.

Pay quantity shall be based on the number of units removed.

PS.9. ABANDON EXISTING MAINTENANCE HOLE

- Excavation as per Section PS.1.
- Supply and plug the pipes in the maintenance holes with concrete.
- Removal of maintenance hole to a minimum depth of 0.6 metres below grade or as indicated on the drawing and disposal off site.
- Disposal of frame and cover off site.
- Placing and compacting sand or screenings inside the maintenance hole.
- Supply, placing and compacting granular backfill in the travelled portion of the roadway.

Pay quantity shall be based on a lump sum for each maintenance hole abandoned.

PS.10. ABANDON EXISTING SEWER

- Excavation as per Section PS.1.
- Blocking off sewer ends.
- Supply and filling the abandoned pipe with unshrinkable grout up to the obvert at the highest point in the sewer line.

Pay quantity shall be based on the horizontal length measured over the centre line of pipe from centre to centre of maintenance hole or from centre of maintenance hole to the dead end.

PS.11. T.V. INSPECTION

- Mobilization of all necessary equipment on site.
- Flushing of sewers and disposal of dirt, grease, silt and debris.
- Inspection of sewers by a competent sub-contractor that has been approved by the Region of Peel.
- Submission of report in written form and on DVD as per Region of Peel Standard Specifications for sanitary sewers.
- Submission of video tape as per Region of Peel Standard Specifications for sanitary sewers.

Pay quantity will be based on the horizontal length measured over the center line of the pipe from center to center of maintenance hole.

PS.12. BOULDER REMOVAL

- For the purpose of this document, a boulder shall be considered as any singular, monolithic, hard object with a volume greater than 0.5m³. All objects smaller than 0.5m³ shall be considered as normal excavation under Volume 2 item PW1 and no extra payment will be considered.

The unit price bid shall be full payment for all material, labour and equipment to cover the cost of excavation and disposal off site as well as any delays caused by boulders. This item is to be used for localized conditions only. General soils conditions are illustrated in the soils report and the contractor's equipment must be of suitable size, power and ability to work effectively in these types of soils.

PS.13. TEST HOLES

- The unit price bid shall be payment in full for all costs involved in accurately locating underground utilities, when instructed to do so by

the Project Manager, for the purposes of design or re-design of services. This item does not include the normal locating/uncovering of utilities for excavations, removals and installations.

Payment shall be based on the number of approved test holes dug or factored by the Vendor.

PS.14. FILTRATION TESTING

Payment shall be paid for as specified in the contract documents.