



**Note: The PROV implemented in April 2017 replaces OPSS 403 COMMON, November 2010 with no technical content changes.**

**CONSTRUCTION SPECIFICATION FOR  
ROCK EXCAVATION FOR PIPELINES, UTILITIES,  
AND ASSOCIATED STRUCTURES IN OPEN CUT**

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**403.01 SCOPE**

This specification covers the rock excavation requirements for the installation of sanitary and storm pipe sewers, pipe culverts and end sections, forcemains and associated appurtenances, and watermains and associated appurtenances; underground Utilities; and maintenance holes, catch basins, ditch inlets, and valve chambers in open cut.

**403.01.01 Specification Significance and Use**

This specification has been developed for use in provincial oriented Contracts. The administration, testing, and payment policies, procedures, and practices reflected in this specification correspond to those used by the Ontario Ministry of Transportation.

Use of this specification or any other specification shall be according to the Contract Documents.

#### **403.01.02 Appendices Significance and Use**

Appendices are not for use in provincial contracts as they are developed for municipal use, and then, only when invoked by the Owner.

Appendices are developed for the Owner's use only.

Inclusion of an appendix as part of the Contract Documents is solely at the discretion of the Owner. Appendices are not a mandatory part of this specification and only become part of the Contract Documents as the Owner invokes them.

Invoking a particular appendix does not obligate an Owner to use all available appendices. Only invoked appendices form part of the Contract Documents.

The decision to use any appendix is determined by an Owner after considering their contract requirements and their administrative, payment, and testing procedures, policies, and practices. Depending on these considerations, an Owner may not wish to invoke some or any of the available appendices.

#### **403.02 REFERENCES**

When the Contract Documents indicate that provincial-oriented specifications are to be used and there is a provincial-oriented specification of the same number as those listed below, references within this specification to an OPSS shall be deemed to mean OPSS.PROV, unless use of a municipal-oriented specification is specified in the Contract Documents. When there is not a corresponding provincial-oriented specification, the references below shall be considered to be to the OPSS listed, unless use of a municipal-oriented specification is specified in the Contract Documents.

This specification refers to the following standards, specifications, or publications:

##### **Ontario Provincial Standard Specifications, Construction**

OPSS 206	Grading
OPSS 412	Sewage Forcemain Installation in Open Cut
OPSS 441	Watermain Installation in Open Cut

#### **403.03 DEFINITIONS**

For the purpose of this specification, the following definitions apply:

**Associated Appurtenances** means as defined in OPSS 412 and OPSS 441.

**Associated Structures** means a maintenance hole, catch basin, ditch inlet, or valve chamber.

**Rock** means rock as defined in OPSS 206.

#### **403.07 CONSTRUCTION**

##### **403.07.01 General**

Rock excavation to install sanitary and storm pipe sewers, pipe culverts and end sections, forcemains and associated appurtenances, and watermains and associated appurtenances; underground Utilities; and maintenance holes, catch basins, ditch inlets, and valve chambers in open cut shall be performed to the lines and grades specified in the Contract Documents.

**403.07.02 Use of Explosives**

The requirements for the use of explosives shall be as specified in the Contract Documents.

**403.07.03 Management of Excess Material**

Management of excess material shall be according to the Contract Documents.

**403.09 MEASUREMENT FOR PAYMENT**

**403.09.01 Actual Measurement**

**403.09.01.01 Rock Excavation for Pipelines, Utilities and Associated Structures**

Measurement shall be in cubic metres.

The volume of rock excavation for pipelines, Utilities, and associated structures shall be determined by the product of the relevant following dimensions measured in place:

a) Height

The height of rock excavation for pipelines, Utilities, and associated structures is the difference in elevation between the theoretical bottom of bedding and the lower of the top of the original rock or the top of shatter.

The top of the original rock shall be determined using one of the following methods:

- i. Elevations taken after the overburden has been removed but before rock excavation.
- ii. From rock surface elevations on both sides of the excavation after rock excavation has been completed.

b) Width

The width of rock excavation for pipelines and Utilities is the actual width of trench measured horizontally to a maximum of the specified trench width.

c) Length

The length of rock excavation for pipelines and Utilities is measured horizontally along the centreline of the trench to the outside limits of the backfill for the associated structures or to the outlet end of a pipe where it emerges from the rock.

d) Horizontal

The horizontal measurement for associated structures is the:

- i. diameter at the external surfaces of a circular structure plus 300 mm all around; or
- ii. the length and width to the external surfaces of a rectangular or square structure plus 300 mm on all sides.

Where the excavation for this item overlaps rock excavation for other items there shall be no deduction for the overlap.

The volume of boulders in an excavation shall be determined by the product of the three maximum rectilinear dimensions. Where boulders classified as rock are measured for payment, only the amount

actually removed shall be considered for payment, the total volume of rock considered for payment shall not exceed the volume of excavation within the theoretical lines.

**403.09.02                      Plan Quantity Measurement**

When measurement is by Plan Quantity, such measurement shall be based on the units shown in the clauses under Actual Measurement.

**403.10                              BASIS OF PAYMENT**

**403.10.01                      Rock Excavation for Trenches and Associated Structures - Item**

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment, and Material to do the work.