CONSTRUCTION SPECIFICATION FOR
SITE RESTORATION FOLLOWING INSTALLATION OF PIPELINES,
UTILITIES, AND ASSOCIATED STRUCTURES

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492.01  SCOPE

This specification covers the requirements for the restoration of a site following installation of sanitary and storm pipe sewers, pipe culverts and end sections, forcemains and associated appurtenances, watermains and associated appurtenances, and other underground utilities; maintenance holes, catch basins, ditch inlets, or valve chambers; and any other specified subsurface construction.

492.01.01  Specification Significance and Use

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

Use of this specification or any other specification shall be according to the Contract Documents.
492.01.02 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.

492.02 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.

When the Contract Documents indicate that municipal-oriented specifications are to be used and there is a municipal-oriented specification of the same number as those listed below, references within this specification to an OPSS shall be deemed to mean OPSS.MUNI, unless use of a provincial-oriented specification is specified in the Contract Documents. When there is not a corresponding municipal-oriented specification, the references below shall be considered to be the OPSS listed, unless use of a provincial-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 304 Single and Double Surface Treatment
OPSS 310 Hot Mix Asphalt
OPSS 313 Hot Mix Asphalt - End Result
OPSS 314 Untreated Granular, Subbase, Base, Surface Shoulder, and Stockpiling
OPSS 350 Concrete Pavement and Concrete Base
OPSS 351 Concrete Sidewalk
OPSS 353 Concrete Curb and Gutter Systems
OPSS 412 Sewage Forcemain Installation in Open Cut
OPSS 441 Watermain Installation in Open Cut
OPSS 490 Site Preparation for Pipelines, Utilities, and Associated Structures
OPSS 721 Steel Beam Guide Rail and Cable Guide Rail
OPSS 771 Standard Highway Fence
OPSS 772 Chain-Link Fence
OPSS 802 Topsoil
OPSS 803 Sodding
OPSS 804 Seed and Cover
492.03 DEFINITIONS

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

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

492.05 MATERIALS

492.05.01 Granular Materials
Granular materials shall be according to OPSS 1010.

492.05.02 Barbed Wire
Barbed wire shall be according to CAN/CGSB-138.2.

492.05.03 Electric Fence Wire
Electric fence wire shall be 2 mm diameter hot dipped galvanized wire.

492.05.04 Wood Fence
Wood fence material shall be according to OPSS 1601.

492.05.04.01 Board or Split Rail Fence
Posts and boards shall be the same size and type as used in the original fence.

Rails shall be split cedar in good condition and of adequate lengths to build either a straight or snake fence.

492.05.04.02 Wood Braces for Wire Fence
Diagonal wood braces shall be according to OPSS 771.

492.05.05 Highway Fence
Highway fence material shall be according to OPSS 771.
492.05.06  Steel Posts
Steel posts shall be T-rail fabricated from steel according to CAN/CSA G30.18 and shall be 2.5 m long.

492.05.07  Chain-Link Fence
Chain-link fence material shall be according to OPSS 1541.

492.05.08  Gates
Gates shall be fabricated from material suitable to the fence on either side of the gate opening. Material for highway fence gates shall be according to OPSS 771. Material for chain-link fence gates shall be according to OPSS 1541.

492.05.09  Guide Rail
Guide rail material shall be according to OPSS 721.

492.05.10  Concrete
Concrete for sidewalks shall be according to OPSS 351.
Concrete for curb and gutter shall be according to OPSS 353.

492.07  CONSTRUCTION

492.07.01  General
All disturbed areas shall be restored to an equivalent or better condition than existed prior to the commencement of construction.

492.07.02  Grading
Rough grading shall be performed to the levels, grades, and contours as specified in the Contract Documents allowing for the placement of surface materials. Soil shall not be disturbed within the drip line of trees and shrubs during grading.

Final grading shall be performed to the lines and elevations specified in the Contract Documents. The final grading shall be according to OPSS 206.

492.07.03  Roadway Restoration
The restoration of the roadway shall be scheduled to follow closely behind trench backfilling. The roadway shall be made and maintained safe for the passage of vehicular and pedestrian traffic after completion of backfilling and until permanent restoration takes place, as specified in the Contract Documents.

Granular subbase and base courses of the type specified in the Contract Documents shall be placed on the prepared subgrade to the dimensions specified in the Contract Documents and shall be according to OPSS 314.

The surface course of the type specified in the Contract Documents shall be placed on the prepared base course to the dimensions specified in the Contract Documents in accordance as follows:
a) Asphalt pavement shall be according to OPSS 310 or OPSS 313 as specified in the Contract Documents.

b) Concrete paving shall be not less than 150 mm in thickness and shall be according to OPSS 350.

c) Gravel surface courses shall be according to OPSS 314.

d) Surface treatment shall be according to OPSS 304.

492.07.04 Fences and Guide Rails

Fences and guide rails shall be restored with the same type of fence or guide rail that existed prior to construction along the lines and levels specified in the Contract Documents. A maximum clearance of 150 mm from ground level shall be maintained at any point along the fence line.

The erection of highway fence shall be according to OPSS 771.

The erection of chain-link fence shall be according to OPSS 772.

Posts for fences other than highway and chain-link fences shall be installed to the spacing that existed prior to construction.

Gates shall be installed at the same location and height as the gates that existed prior to construction. Gate size shall be according to the dimensions of the gate that existed prior to construction. Gates shall be secured with fittings to match the fence complete with latches, hinges, stops, and all necessary fittings.

Colour and finish material of the restored fence shall match the existing colour scheme and finish material. Where required, two coats of finish material shall be applied.

The construction of guide rails shall be according to OPSS 721.

492.07.05 Topsoil

Topsoil shall be placed after final grading operations have been completed and immediately prior to seeding or sodding operations. Topsoil shall be obtained from stockpiles prepared according to OPSS 490 or, if the required quantity is not obtainable from stockpiles, the Contractor shall import the required topsoil.

The quality of the topsoil and the construction methods for placing topsoil shall be according to OPSS 802. Stockpile sites within or adjacent to the Contract limits shall be restored to the original condition or to a condition acceptable to the Contract Administrator.

492.07.06 Shrub and Tree Replanting

Shrubs and trees shall be replanted as specified in the Contract Documents.

492.07.07 Sodding and Seeding

Lawns and grassed areas shall be sodded or seeded and covered as specified in the Contract Documents.

Sodding shall be according to OPSS 803.

Seeding and cover shall be according to OPSS 804.
492.07.08 Sidewalk and Concrete Curb and Gutter Systems

Concrete sidewalk shall be placed according to OPSS 351. Alignment and dimensions shall match existing sidewalk on either end of the restored sidewalk. Damaged sections of any sidewalk slab shall be removed and replaced to the nearest joint on either end of the damaged section.

Concrete curb and gutter systems shall be placed according to OPSS 353. Alignment and dimensions shall match the existing curb and gutter systems on either side of the restored curb and gutter. Damaged sections of curb and gutter shall be removed and replaced to the nearest joint or neat saw cut.

Placement of Granular A shall be according to OPSS 314 with a minimum depth of 100 mm as a base for the curb and gutter and sidewalk.

492.07.09 Management of Excess Material

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

492.10 BASIS OF PAYMENT

Payment at the Contract price for the appropriate tender items for the installation of sanitary and storm pipe sewers, pipe culverts and end sections, forcemains and associated appurtenances, watermains and associated appurtenances, and other underground utilities; maintenance holes, catch basins, ditch inlets, or valve chambers; and any other specified subsurface construction shall be full compensation for all labour, Equipment, and Material to do the work of site restoration.

When the Contract contains separate items for work required by this specification, payment shall be at the Contract prices and according to the specifications for such work.
Appendix 492-A, November 2010
FOR USE WHILE DESIGNING MUNICIPAL CONTRACTS

Note: This is a non-mandatory Commentary Appendix intended to provide information to a designer, during the design stage of a contract, on the use of the OPS specification in a municipal contract. This appendix does not form part of the standard specification. Actions and considerations discussed in this appendix are for information purposes only and do not supersede an Owner's design decisions and methodology.

Designer Action/Considerations

The designer should specify the following in the Contract Documents:

- Levels, grades, and contours for rough grading. (492.07.02)
- Lines and elevations for final grading. (492.07.02)
- Requirements for temporary roadway. (492.07.03)
- Type of granular subbase and base courses and surface course. (492.07.03)
- Dimensions of the granular subbase and base courses and surface course. (492.07.03)
- OPSS 310 or OPSS 313 for asphalt pavement. (492.07.03, a))
- Lines and levels for restoration of fences and guide rails. (492.07.04)
- Replanting of shrubs and trees. (492.07.06)
- Sodding or seeding and cover of lawns and grassed areas. (492.07.07)

Designer should determine if the Contract is to have separate items to cover the various components of site restoration or if the items for the installation of pipelines, utilities, and their associated structures will be all inclusive to cover the work. If separate items are desired, they should then be included in the Contract Documents along with the details of the work.

The designer should ensure that the General Conditions of Contract and the 100 Series General Specifications are included in the Contract Documents.

Related Ontario Provincial Standard Drawings

OPSD 912.101 to 912.533 Guide Rail System, Steel Beam
OPSD 913.101 to 913.130 Guide Rail System, Cable
OPSD 971.101 to 971.102 Fence, Highway Installation
OPSD 972.101 to 972.131 Fence, Chain-Link