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| Version | Date | Description of Revisions |
| 1 | March 21, 2016 | New Specification (AAM) |
| 2 | May 1, 2017 | Revised to reflect OPSS.MUNI 517 (Apr 2017) and OPSS.MUNI 518 (Apr 2017) |

NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

**Notice:** This Document hardcopy must be used for reference purpose only.

**The on-line copy is the current version of the document.**

# GEneral

## Summary

### This Section details the methods of by-pass pumping or fluming to be used for the unwatering of the *[name waterbody]* to install *[name proposed sewer/watermain]* at *[name location].* The Contractor shall choose and identify one of the methods in the dewatering control and discharge plan included in Section 02241 – Provide Water Control Plan, Dewatering, Discharge Plan and Groundwater Monitoring Program

## Related Sections

### *[Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.*

### *Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.*

### *This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]*

### *[List Sections specifying installation of products supplied but not installed under this Section and indicate specific items.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Execution requirements for [[item]... specified under this Section.

### *[List Sections specifying products installed but not supplied under this Section and indicate specific items.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Product requirements for ...[item]... for installation under this Section.

### *[List Sections specifying related requirements.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: [Optional short phrase indicating relationship].

#### Section 01060 – Regulatory Requirements

#### Section 01300 – Submittals

#### Section 01561 – Environmental Protection

#### Section 02230 – Site Preparation for Pipelines, Utilities and Associated Structures

#### Section 02240 – Dewatering- General

#### Section 02241 – Provide Water Control Plan, Dewatering, Discharge Plan and Groundwater Monitoring Program

#### Section 02242 – Supply Install and Subsequently Remove Dewatering System

#### Section 02243 – Operate and Maintain Dewatering System

#### Section 02244 – Retain Specialty Subcontractor To Monitor Existing Groundwater Levels and Discharge Water Quality in Accordance With PTTW

#### Section 02245 – Restoration Works Associated With Dewatering Activities

#### Section 02314 – Tunnelling

#### Section 02315 – Trenching, Backfilling and Compacting

## References

### Ontario Ministry of the Environment and Climate Change website

#### <http://www.ontario.ca/page/permits-take-water>

### Ontario Provincial Standards for Roads and Public Works (OPSS)

#### OPSS.MUNI 517 (Apr 2017) Dewatering of Pipeline, Utility and Associated Structure Excavation

#### OPSS.MUNI 518 (Apr 2017) Control of Water From Dewatering Operations

#### OPSS 805 (Nov 2010) Temporary Erosion and Sediment Control Measures

### Ontario Provincial Standard Drawings (OPSD)

#### OPSD 219.150 (Nov 2006) Sandbag Barrier

#### OPSD 221.020 (Nov 2000) Temporary Water Passage System Pumping and Piping

#### OPSD 221.010 (Nov 2000) Temporary Water Passage System Culvert in Watercourse

### Ontario Water Resources Act R.S.O. 1990 c. O.40

#### O. Reg. 387/04 Water Taking and Transfer

### Regional Municipality of York

#### Bylaw 2011-56 Discharge of Sewage, Storm water and Land Drainage Bylaw (Amended 2014)

## Measurement and Payment

*[Note to Consultant- Payment can be lump sum, or percentage-based on Setup/Operate and Dismantling/Restoration phases.*

*If the work of this Section is to be measured and paid for by several different methods, please amend the standard wording given above to reflect the different methods of measurement and payment.*]

### Payment for the work of this Section under Item No(s). in the Bid Form includes full compensation for all labour, equipment and materials required to supply, construct, operate and maintain the cofferdams and either the by-pass pumping or the temporary flume, as well as their removal upon construction completion.  It shall also include the supply, operation and maintenance of the unwatering pumps for the duration of construction, as well as the sediment removal system and the restoration of any areas impacted by erosion as a result of unwatering activities.

### Payment for Item [ ] shall be lump sum with 40% paid upon the installation, and the remaining 60% paid after operation and subsequent removal of the Bypass Fluming/Unwatering system.

# PRODUCTS

## Cofferdam

### Cofferdams are to be constructed using woven polypropylene or polyethylene fabric bags (minimum unit weight 135 g/m2) filled with clean pea gravel. Individual bag dimensions shall be either 650 mm x 350 mm (approximate) or cubic metre bags, as specified on the Contract Drawings.

### The Contractor shall construct the cofferdam as shown in OPSD 219.150 (Sandbag Barrier), but the cofferdam shall also be wrapped with an anchored impermeable membrane to ensure water tightness. Cofferdams shall be constructed to match the height of the channel banks, and the ends shall be placed firmly against a sloping or vertical embankment to prevent water from outflanking the cofferdam.

### The Contractor shall note that any fish stranded in an isolated Work area following installation of the cofferdam must be safely transported downstream of the Work into the creek. Only a qualified biologist or technician with a valid fish collection permit from the MNRF is permitted to perform the fish rescue.

### The Contractor shall release the pea gravel into the watercourse as directed by the Contract Administrator, and dispose the bags off-Site.

## Bypass Pumping

### The Contractor shall provide for and maintain the flow, where required, of all watercourses and ditches encountered during the progress of the Work. In accordance with the Contract Documents, the Contractor shall pump existing flows around the isolated work area as shown on the Contract Drawings and in accordance with OPSD 221.020. Existing flows shall be maintained downstream of the Work area without interruption.

### The Contractor shall have available on-Site, and deploy as necessary, a sufficient number of pumps to convey flows around the Work area. A screen, with openings no greater than 15 mm, shall be installed on the intake end of the pump hose to prevent the entry of fish.

### The Contractor shall continually monitor the bypass pumping discharge areas for erosion. Any areas impacted by erosion shall be restored to original pre-construction condition.

### Noise from pumps shall be mitigated so as to not cause a nuisance to neighbouring property owners when the Contractor is not working on-Site.

## Temporary Flume

### Pipes shall be used to construct the temporary flume and convey channel flows. The diameter of the pipes is specified on the Contract Drawings.  Pipes shall be watertight.

### The flume shall be constructed in accordance with OPSD 221.010. The Contractor shall be wholly responsible for the adequacy of diverting flows through the flume. The cofferdam associated with the temporary flume shall be constructed to limit the leakage of water at the interface between the cofferdam and the flume pipe, as well as any joints of the flume pipe(s).

### The Contractor is advised that the Contract Drawings only show a schematic of the fluming system, and that the method of construction will need to be adjusted to accommodate Site constraints and avoid undermining the foundations of the existing retaining wall.

# EXECUTION

## Unwatering of Isolated Work Area

### The Contractor shall maintain the isolated Work area free of surface and ground water so that construction may be carried out in a “dry” condition. To ensure the Work is completed in dry conditions, any water entering the isolated work area shall be pumped into a Consultant approved sediment removal system (e.g., sediment filter bag, excavated sediment trap, dewatering trap) located a minimum of 30 m from the watercourse in a stable, vegetated area. The water discharging from the approved sediment removal system shall be allowed to disperse over the vegetated surface and re-enter the watercourse downstream of the Work area. If conditions of the unwatering discharge location cannot be achieved, the Contractor shall consult with the Consultant to determine an appropriate alternative.

### The Contractor shall have available, and deploy as necessary, sufficient number of pumps to maintain a dry work area up to bankfull stage (i.e., when channel is at full capacity).

### The Contractor shall monitor and maintain the sediment removal system to ensure that the discharge is not sediment laden. Additionally, the Contractor shall continually monitor the unwatering discharge location for erosion. Any areas impacted by erosion shall be restored to original condition.

### Noise from pumps shall be mitigated so as to not cause a nuisance to neighbouring property owners when the Contractor is not working on Site.

**END OF SECTION**