

TOWNSHIP POLICY FOR ALL UNDERGROUND UTILITIES

INTRODUCTION

This specification forms part of the Policy for all underground Installations and is intended to apply only to the Drain and/or ditch crossings principally Municipal Drains installed under the Municipal Drainage Act or such private drains installed by individual owners both open and closed of whatever size and material shall also cover all natural watercourses swales, but does not cover other private municipal water and/or sanitary sewer crossings and/or oil and gas line crossings. The repair or restoration of same shall be governed by specifications for same either by the M.T.O. or such governing agencies.

Both open and closed municipal and private drains shall be referred to as "drains" in these specifications and the underground utility and necessary duct work shall be referred to simply as "utility".

INTENT

Before construction and installation of any utility, the contractor shall undertake to meet and discuss with all governing bodies the existing location of the drains, and after construction, as built drawings shall be submitted to the appropriate governing body to ensure compliance.

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MUNICIPAL ACTIONS

1) Alignment

The Contractor shall lay the utility in horizontal alignment in a straight line across the drains paralleling the road allowance or such other limits both from the approaching side and the leaving side of the crossing. Any deviation, if permitted at all, shall be clearly marked and a permanent record kept the same of such deviation in horizontal alignment at that location.

2) Grade

The Contractor shall lay the cable in a plowed or previously prepared trench of such width as required or specified to a minimum depth of 1.5 m. below the surface of the ground at that location with the following special exceptions:

i) Where a closed drain is located at a depth between 0 ? 1.5 m., the drain shall be cut through and a cable placed a minimum of 1 m. below the bottom of the drain at that location for a horizontal distance of at least 2 m. either way with approaching and leaving slopes not greater than 2?1 as shown per sketches attached.

ii) At locations where the closed drain is 1.5 m. in depth or greater, the cable may be placed over and across the drain at that location with markers clearly located in the vicinity indicating that the cable has been located here.

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3) Repairs To Cut Drains

The Contractor shall prior to laying the cable expose all closed drain crossings. Where such

drains are less than 1.5 m. deep, he shall make arrangements for trenching below such closed drains and arrange for the replacement of the drain pipes encountered. These may be of similar size or the same corrugated steel pipe culvert as removed and/or such new materials as will match the corrugated steel pipe and/or remove such concrete or tile drains and replace same with not less than a 4 m. length of corrugated steel pipe one size larger than the concrete tile or clay tile securely fastened either to the catch basin at either end, and/or coupled to or otherwise grouted or connected to the existing tiles. Such new connecting lines shall be adequately and properly bedded underneath and over top of the cable with compacted sand and/or granular r' backfill up to the spring line of the new pipe. The balance of the backfill that may be native material, must be compacted to 90% standard proctor density.

Where new corrugated steel pipe is required, it shall not be less than 2 mm. thickness and in accordance with the Corrugated Pipe Institute Specifications.

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4) Restorations

i) At Closed Drain Crossings:

Closed drain crossings shall be excavated separately from and prior to placing the utility, either above or below the drain, and shall be repaired as set out on these specifications and carefully backfilled only with approved material and compacted and fine graded and seeded to grass to the M.T.O. specifications.

ii) At Shallow Plow Through Open Drains:

The Contractor shall carefully close the plow groove on the slopes and the bottom with compacting equipment and seed any disturbed areas on the slopes and bottom of the drain. Seeding shall be to the M.T.O. specifications.

iii) At Deeper Open Drains with Steep Slopes:

At deeper open drains with steep slopes, requiring a trench cut or wedges, the Contractor shall lay the cable in the bottom of the prepared trench, which trench shall be to a width and depth as specified on the sketches, and shall then replace the excavated material from either the wedge or the trench and compact same to 90% standard proctor density. After such compaction of the backfill, he shall seed the disturbed area above the annual flood line and place riprap stone on the drain slopes from top to bottom complete with filter cloth below the riprap stone as shown on attached sketches. In all cases, the full disturbed slope section shall be protected with gabion stone. The Contractor need not place riprap stone across the bottom of the drains, but shall properly toe in the stone on the slopes. The bottom trench or excavation is refilled with excavated material.

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iv) At Embanked (Diked or Bermed) Drains:

The Contractor shall replace the excavated native material where suitable and/or supply such fresh clean dry clay material and backfill across the full width of the trench and/or wedge removed from the dikes or berets. Such material shall be carefully recomacted in the berets with layers not greater than 0.3 m. thickness and compacted to not less than 95% standard proctor density with care being taken not to damage any adjacent drain structures. The surface above the annual

flood line shall be carefully graded and seeded to the M.T.O. specifications. The slope distance below the annual flood line shall be protected by riprap.

These various restoration conditions are outlined in the sketches attached.

5) Junction And/Or Inverted Siphon Boxes

At locations where existing tile drainage systems exist and it appears with the installation of any utility that the utility will not go over or under a tile drain, there are two methods to be used: the Junction Box and the Inverted Siphon Box as outlined on the attached sketches.

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6) Utilities Running Parallel To Drainage System

In the event a utility is to be installed parallel to an existing drainage system, this new utility shall be installed at least 2 m. away from the existing drainage system. If this is unattainable, the utility shall be responsible for all costs in relocating the drainage system in accordance with the Drainage Act.

7) Future Maintenance and Repair

The Contractor shall guarantee the slope protection and drain crossing work for a period of twelve (12) months, after final inspection and shall repair any failures of such system at his own expense within sixty (60) days after being ordered to do so by the Municipal Drainage Superintendent for the Township having jurisdiction.

8) Cable Markers

The Contractor shall erect metal marker posts, a minimum of four feet (4') in height, together with a message plate at each end of all types of drain crossings to clearly mark the vicinity of the utility.

Note: These Specifications and Reports should be considered together complete with drawings.

9) Note

The Drainage Superintendent will be permitted to make minor variations in the Specification Policy from time to time; however, the general intent of the policy remains intact and the quality of work is not to be compromised.

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