CLEARVIEW
TOWNSHIP

Appendix C – Geotechnical Study TOR

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C1.00 Introduction

Geotechnical studies are required for the design and construction of Township roads and all developments including site drawings. The need and scope for this study will be decided by the Township. If the proposed development is revised, the study / report shall reflect the revisions by an updated report and/or letter from the author indicating the changes and whether the recommendations and conclusions are the same (Note: this is subject to the extent of the revisions).

The detailed design of any infiltration facilities will be based on site-specific percolation tests. The number of tests will be dependent on the size of the facility and the different types of soils conditions found within the proposed facility footprint zone of influence.

Additional studies such as slope stability studies or investigations may be required if the proposed work involves or is influenced by the existing presence or proposed construction of a slope or watercourse. If the proposed work is within areas regulated by NVCA, slope stability studies must also meet NVCA geotechnical engineering and design submission requirements for slope stability studies.

In addition to a geotechnical study, a hydrological study is required.

A geotechnical study is an objective, science-based, subsurface investigation study, prepared by a qualified expert (geotechnical engineer / consultant) that analyses soil and bedrock composition to determine its structural stability and its ability to accommodate development.

The report provides recommendations for construction including but not limited to earthworks, drainage works, landscaping, sewers, and other below-grade utilities, road, and pavement design to ensure that Works constructed by others are built to Township and other applicable standards.

The study will be used to guide the design and construction of buildings, Township roads, and services as well as to determine feasibility for infiltration of groundwater, if it is part of the proposal.

The geotechnical study and drawings shall be prepared and stamped by a professional engineer licensed in the province of Ontario and has suitable experience in the field of geoscience.

The geotechnical study is required to provide an assessment of whether there may be significant challenges in the conceptual designs, land requirements,

detailed design, and construction stages of a development and to supplement Stormwater Management (SWM) Reports.

C2.00 Geotechnical Study Scope (Minimum Requirements)

C2.01 Introduction

- Address of the subject property.
- General site location of the subject property.
- Project name (if applicable).
- Developer and Owner's contact information.
- Author name, title, qualifications, company name, and appropriate stamp.
- Brief description of the proposed development.
- Overview of the study area.
- Purpose of the study.
- Location and context map.

C2.02 Proposal Description and Context

- A description of the proposal, development statistics (such as number of units, site area) type of development proposed, building height, parking areas, access points, location of amenity areas, and proposed phasing.
- A description of the existing on-site conditions as well as surrounding areas, roads, natural areas, buildings, and parking areas.
- Concept Drawing for the development including building location, parking, access, amenity areas, grading and natural features, and any natural hazards.

C2.03 Investigation / Evaluation

C.2.03.1 Identification of Subsurface Conditions Including:

- Geologic setting.
- Soil, bedrock (if required), and groundwater characteristics. Note that confirmation of the seasonal high groundwater levels (HGWLs) are to be completed in the wet seasons, and through ongoing monitoring of water levels.
- Locations of investigation on-site and servicing drawings for the proposed development.
- Factors of safety, feasibility, and risk assessment.

C2.04 Impacts and Mitigation Measures

- Discuss the suitability of the site's soils for the proposed development and its planned structures, proposed Township roadways, and infrastructure or grading alterations.
- Provide a rationale for any recommendations of soil excavation, importing of soil materials, trenching, or backfilling.
- Identify recommended construction methods and materials, including those related to backfilling and the placement of fill materials.
- Provide recommendations on foundation design and construction based on the Site's subsurface conditions.
- Provide recommendations on surface treatments including granular base and asphalt composition for Township and private roads, parking lots, driveways, etc. This is to include new areas as well as areas that require restoration.
- Provide recommendations related to SWMFs, infiltration, and pond liners.
- recommendations for the site's drainage, considering pre-construction, during, and post-construction conditions.
- Mitigation measures and monitoring programs where necessary.
- Recommendations regarding below-grade watertight structure(s) and / or requirement of Environmental Compliance Approval (ECA) from MECP, where applicable.
- Other items as applicable per the specific site conditions and what is being proposed.

C2.05 Recommendations

- Summary and conclusions of the studies and how they support the development and any special considerations or conditions that should be imposed.
- Any recommendations or conditions that should form part of a decision on a particular matter.

C2.06 Drawings and Supporting Information

- Concept drawings.
- Location and context map.
- Borehole location maps.
- Borehole logs.
- Groundwater monitoring information in chart form.