# Airport Road Development

## Geotechnical Investigation & Slope Assessment

**Project Location:**

12760 Airport Road
Caledon, ON

**Prepared for:**

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**MTE File No.:** 56106-100

*Engineers, Scientists, Surveyors.*

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# 1.0 Introduction

MTE Consultants Inc. (MTE) was retained by Broccolini to conduct a slope assessment and geotechnical investigation at 12760 Airport Road in Caledon, Ontario, as shown on Figure 1 in Appendix A. The site is currently agricultural lands surrounded by other farm properties and is bordered by Airport Road to the north and Salt Creek to the south. Salt Creek is accompanied by a surrounding wetland in the topographic depression with wooded lots populating the banked slopes.

Based on preliminary site plans provided, the development will include commercial/industrial structures and associated parking lots and drive aisles. In general, the existing topography of the property includes a predominately flat farm field, sloping north to south before encountering the slope adjacent to the Salt Creek wetland and wooded lot feature.

The purpose of this geotechnical investigation is to determine the soil and groundwater conditions in the area of the proposed development and provide general geotechnical engineering recommendations for site grading, site servicing, foundations, floor slabs, pavement design and subdrainage requirements for the proposed development and also include a slope stability assessment along the south portion of the site.

# 2.0 Field and Laboratory Program

## 2.1 Borehole Drilling

The fieldwork for the investigation was carried out between January 14 to 17, 2025 and involved the drilling of six (6) boreholes (MW201-25 to BH206-25) to depths ranging from 6.4 to 9.3 m. The investigation results are to accompany the previous investigative studies completed on the property by others. The locations of the boreholes in consideration for this investigation are provided on the Site Plan, Figure 1 in Appendix A and borehole logs provided in the appendices.

Private and public utility companies were contacted prior to the start of drilling activities in order to isolate underground utilities near the boring locations.

The boreholes were advanced with a mobile drill B57 equipped with continuous flight hollow stem augers, supplied and operated by Direct Environmental Drilling Inc.

Representative soil samples were recovered throughout the depths explored. Standard Penetration Tests (SPT) were carried out during sampling operations in the boreholes using conventional split spoon equipment. The SPT N-values recorded are plotted on the borehole logs in Appendix B.

## 2.2 Monitoring Well Installation

Upon completion of drilling, monitoring wells were installed at two locations (MW201-25 and MW202-25) for the ongoing hydrogeological investigation completed by others. The remaining boreholes were backfilled with soil cuttings and bentonite in accordance with Ontario Regulation 468/10 (formerly O. Reg. 903) under the provinces Water Resources Act.

Two 50 mm diameter monitoring wells were installed to allow measurement of stabilized groundwater levels and groundwater sampling and testing, if required. The installations comprised 1.5 to 3.0 m long filtered screen and bentonite seals above the screen. Stabilized water level measurements were not taken by MTE as per the scope of work and should be

referenced in the Hydrogeological Investigation conducted by others. Details of the installation and groundwater observations and measurements are provided on the appended borehole logs.

The monitoring wells were installed in accordance to Ontario Regulation 468/10. A licensed well technician must properly decommission all wells before construction. The construction, maintenance and abandonment of the wells are regulated under the province's Water Resources Act.

### 2.3 Fieldwork Supervision

The fieldwork was monitored throughout by a member of our geotechnical engineering staff, who directed the drilling procedures; recorded SPT N-values; documented soil stratigraphies; monitored the groundwater conditions; and transported the recovered soil samples back to our office for further classification.

The geodetic borehole locations and ground surface elevations at the borehole locations were surveyed by MTE using a Trimble R10 Global Navigation Satellite System (GNSS) reference to UTM 17N grid.

### 2.4 Laboratory Testing

All of the soil samples collected in the geotechnical boreholes were submitted for moisture content testing. Additionally, three soil samples were submitted for particle size distribution analyses with the results provided in Appendix C.

## 3.0 Soil Conditions

Reference is provided to the appended borehole logs for soil stratigraphy details, SPT N-values, moisture content profiles, and groundwater observations and measurements. Soil conditions encountered at the site typically include topsoil overlying glacial till deposits with silt and sand deposits encountered at depth in the vicinity of the wetland.

The subsurface soil and groundwater conditions were established at the borehole locations only. Subsurface conditions should be expected to vary, in some instances significantly, between and beyond the borehole locations. The stratigraphic boundaries shown on the borehole logs have been inferred from non-continuous sampling and, as such, are approximate and typically represent transitions between soil types; they do not necessarily represent exact planes of geological change.

### 3.1 Topsoil

Topsoil was encountered surficially in all the boreholes and ranged in thickness from 125 to 300 mm (average thickness = 210mm). The topsoil was dark brown to black in colour with silty to clayey composition. No nutrient testing for applicable plant growth was conducted on the samples of topsoil as per the scope of work.

Topsoil pockets and areas of native soils mixed with topsoil and other organics should be expected across the site due to the past agricultural activities and natural grading from past farming practises.

### 3.2 Glacial Till Deposits

Glacial till was encountered underlying the topsoil in all the boreholes and extended to depths of 4.6 to 6.1 meters before encountering the underlying silt and sand deposits. Boreholes BH204-25 and BH205-25 were terminated within the glacial till deposits at depths of 6.6 and 6.7 m. The glacial till deposits were brown to grey in colour with mottled to monochromatic appearance and

ranges in composition from silt to clayey silt to clay and silt. Cobbles were encountered within the glacial till soils and should be expected during excavations.

The results of one particle size distribution analysis conducted on the till is provided in Appendix C and summarized in the following table;

**Table 1 - Results of Glacial Till Deposits Particle Size Distribution Analysis**

| Borehole Number | Sample Depth (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) |
|---|---|---|---|---|---|
| BH205-25 | 2.3-2.9 | 1 | 6 | 32 | 61 |

SPT N-values measured in the till ranged from 10 to above 50 blows per 300 mm penetration of the split spoon sampler indicating compact to very dense or very stiff to hard conditions. It is noted lower SPT N-values were encountered within the first 0.8 m, likely due to disturbed soils from agricultural practices. Insitu moisture contents in the till ranged from 8 to 27% indicating moist to very moist conditions. Cohesive portions of the till were noted as drier than to at the plastic limit.

### 3.3 Silt and Sand Deposits

Deposits of silt and sand soils were encountered underlying the glacial till deposits in Boreholes MW201-25, MW202-25, BH203-25 and BH206-25 and extended to the termination depth of each. The deposits were brown to grey in colour and range in composition from sandy silt to silty sand with trace to some amounts of gravel and clay. The results of two particle size distribution analyses conducted on the silt and sand soils are provided in Appendix C and summarized in the following table;

**Table 2 - Results of Silt and Sand Deposits Particle Size Distribution Analyses**

| Borehole Number | Sample Depth (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) |
|---|---|---|---|---|---|
| MW202-25 | 6.2-6.6 | 1 | 13 | 70 | 16 |
| BH206-25 | 4.6-5.2 | 15 | 21 | 45 | 19 |

SPT N-values measured in the silt and sand soils were all greater than 50 blows per 300 mm penetration of the split spoon sampler indicating very dense conditions. Insitu moisture contents in the silt and sand ranged from 4 to 15% indicating moist to saturated conditions.

## 4.0 Groundwater Conditions

Groundwater observations were carried out in the open boreholes at the time of drilling and are summarized on the borehole logs. Two monitoring wells (MW201-25 and MW202-25) were installed at select locations for collection of stabilized water level measurements. Water was encountered during drilling of Boreholes MW201-25 and MW202-25 at a depth of about 7.6 m.

It should be noted that the groundwater levels can vary and are subject to seasonal fluctuations and local variations.

# 5.0 Discussion and Recommendations

## 5.1 General

Based on the development plans provided, the proposed works include the construction of multiple slab-on-grade commercial/industrial buildings across the property with associated parking, drive aisles and loading docks. The development plans are still in conceptual stages and subject to change, as such, the recommendations provided herein are general in nature for commercial and industrial slab-on-grade construction. The findings and conclusions of the following report should be revised, reviewed and modified to accommodate future design changes and verify recommendations once development plans are finalized.

The subsurface stratigraphy at the site generally comprises topsoil overlying predominately glacial till deposits and silt and sand soils at depth. Groundwater was encountered within the silt and sand soils at depths of 7.6 m in Boreholes MW201-25 and MW202-25 during drilling.

This section of the report provides geotechnical engineering recommendations for the design of the project. These recommendations are intended for use by the project designers and are based on our interpretation of the factual information obtained. Where comments are made related to construction, they are provided to draw attention to aspects that could affect the design. Contractors bidding on or carrying out the work should make their own interpretation of the factual information contained in this report and make their own interpretation of, and draw their own conclusions from, that information to assess how it may affect means and methods, equipment selection, staging, costing and the like.

## 5.2 Site Preparation

The first construction activity that will be required for the proposed development will be grading. Prior to carrying out any cutting and engineering fill operations, the surficial topsoil must be removed and stockpiled. The average topsoil thickness was about 210 mm, however, for stripping and removal estimates it is recommended that the average thickness across the site be increased to account for merging and mixed soils near the surface due to past agricultural practises. The thicknesses encountered within the advanced boreholes should only be assumed at the specific location of samples. It is advisable to consider all the previous investigative studies conducted on the property to best estimate topsoil thicknesses across the property. The removed topsoil should be stockpiled onsite for future use in landscaping areas.

The majority of the native soils above the groundwater table are suitable for reuse as engineered fill if sufficient drying time is allotted. All fill should be placed in maximum 300 mm thick lifts and compacted to the following percentages;

**Table 3 - Engineered Fill Requirements**

| Fill Use | Minimum Compaction Required |
|---|---|
| Structural fill to support buildings | 100% SPMDD |
| Subgrade fill beneath pavements or services | 95%SPMDD |
| Bulk fill in landscape area | 90%SPMDD |

The subgrade soils are susceptible to disturbance and it is recommended that construction traffic on the subgrade be minimized.

Structural fill used for raising grades beneath the buildings should comprise granular material such as OPSS Granular ‘A’ or ‘B’. Subgrade fill material beneath the proposed pavement areas

and services should meet the requirements of OPSS Select Subgrade Material. Any imported fill should be tested and verified by a geotechnical engineer prior to placement.

Structural fill pads should extend a minimum 0.3 m beyond the edge of the footing envelope of any building and down to subgrade at an angle of 45 degrees to the horizontal. Full time testing by geotechnical personnel is recommended during fill placement and compaction to monitor material quality, lift thickness, and verify the compaction by insitu density testing.

In order to minimize the effects of weather and groundwater, fill operations onsite should be carried out in the dry summer months.

## 5.3 Site Servicing

### *5.3.1 Excavations and Dewatering*

The development will be serviced with full municipal services. It is anticipated that the invert levels for the watermain and sewers will be at conventional depths.

Temporary excavations to conventional depths for installation of underground pipes at this site must comply with the Ontario Occupational Health and Safety Act and Regulations for Construction Projects. The native soils encountered within the boreholes would be classified as Type 2 soils (O. Reg. 213/91, s. 226 (4)). Temporary side slopes must be cut at an inclination of 1.0 horizontal to 1.0 vertical or less at a level 1.2 m above the base of the excavation for open cut pipe installation, exclusive of groundwater effects.

Trench side slopes must be continuously inspected especially after periods of heavy rainfall or snow melt to identify areas of instability. Surface water should be directed away from entering the trench.

Groundwater inflow should be expected where intermittent seams are encountered throughout the glacial till deposits. Reference to the Hydrogeological assessment completed by others for further details regarding site dewatering and expected groundwater conditions should be undertaken. It will be necessary to flatten the excavation side slopes where groundwater seepage is occurring to ensure stability. Every excavation that a worker may be required to enter shall be kept reasonably free of water (O. Reg. 213/91, s. 230).

It should be noted that an Environmental Activity and Sector Registry (EASR) or Permit to Take Water (PTTW) may be required for the dewatering system for sewer installations at the site if inverts extend below 7m in depth. The design of the dewatering system should be left to the contractor’s discretion to control groundwater at least 0.5 m below the invert level in order to provide stable excavation base.

### *5.3.2 Pipe Bedding*

It is anticipated invert elevation of the pipes will be at conventional 2 to 3 m depths below ground surface. No bearing problems are anticipated for pipes set on properly dewatered native inorganic subsoil or imported structural fill. The bedding material may need to be thickened if sub-excavation encounters soft or spongy soil from the base of the service trench.

Pipe bedding for water and sewer services should be conventional Class 'B' pipe bedding comprising a minimum 150 mm thick layer of OPSS Granular 'A' aggregate below the pipe invert. Granular 'A' type aggregate should be provided around the pipe to at least 300 mm above the pipe and the bedding aggregate should be compacted to a minimum 95% Standard Proctor Maximum Dry Density (SPMDD).

A well-graded clear stone such as Coarse Aggregate for HL4 Asphaltic Concrete (OPSS 1003) could be used in the sewer trenches as bedding below the spring line of the pipe to facilitate

sump pump dewatering, if necessary. The clear stone should be compacted with a plate tamper and fully wrapped with a non-woven filter cloth.

### *5.3.3 Trench Backfilling*

The trenches above the specified pipe bedding may be backfilled with inorganic onsite soils placed in 300 mm thick lifts and compacted to at least 95% SPMDD. Wet or saturated native soils are not considered suitable for reuse as trench backfill. Any additional material required at the site should comprise imported granular soils such as OPSS Select Subgrade Material. The excavated native soils suitable for reuse in trench backfill will comprise of clayey and silty soils with blocky/clumpy texture. These soils should be compacted with a sheepsfoot roller to break up the soils and remove large voids present within the blocky texture. Services trenches located under proposed pavement areas shall be backfilled with OPSS 1010 Granular B materials placed in 300 mm thick lifts and compacted to at least 95% SPMDD.

To minimize potential problems, backfilling operations should follow closely after excavation so that only a minimal length of trench is exposed. Care should be taken to protect side slopes of excavations by diverting surface run-off away from the excavations. If construction extends into the winter, then additional steps should be taken to minimize frost and ensure that frozen material is not used as backfill.

## 5.4 Pavements

It is understood pavements will be constructed for the proposed roadways and parking lots at the site. The pavement subgrade soils will comprise native inorganic soils or imported structural fill.

The pavement component thicknesses in the following table are recommended based on the proposed pavement usage, the frost-susceptibility and strength of the subgrade soils, and the Benkelman beam spring rebound coefficient for glacial till soils;

**Table 4 - Pavement Design**

| Pavement Component | Light Duty | Heavy Duty |
|---|---|---|
| Asphalt Hot Mix | 90 mm | 120 mm |
| OPSS 1010 Granular ‘A’ Base | 150 mm | 150 mm |
| OPSS 1010 Granular ‘B’ Subbase | 350 mm | 450 mm |

Heavy duty pavements should be used for main access ways to the development and where large vehicles will frequent, such as garbage and fire trucks.

Samples of aggregates should be checked for conformance to OPSS 1010 prior to utilization on site and during construction. The Granular 'B' subbase and Granular 'A' base courses must be compacted to 100% SPMDD, as verified by insitu density testing.

The asphaltic concrete paving materials should conform to the requirements of OPSS 1150. The asphalt should be placed and compacted in accordance with OPSS 310. The Performance Graded Asphalt Cement designation for the asphaltic concrete is 58-28.

The asphaltic concrete should comprise 40 mm of HL3 surface over 50 mm of HL8 binder for the light duty pavement option and 50 mm of HL3 surface over 70 mm of HL8 binder for the heavy duty pavement option.

The pavement design is based on the assumption that construction will be carried out during the drier time of the year and that the subgrade soil is stable as determined by proof-rolling

inspected by a geotechnical engineer. If the subgrade is wet and unstable, additional granular subbase will be required.

All materials and construction services required for the work should be in accordance with the relevant sections of the Ontario Provincial Standard Specifications.

It is strongly recommended to install subdrains beneath the low areas of pavement and connected to catchbasins. The purpose of the subdrains is to remove excess subsurface water in order to improve overall pavement serviceability and increase the pavement life. Consideration should be given to providing continuous subdrains along the perimeter edges of the new roadways to promote drainage of the granular materials.

The work of subdrain installation shall be in accordance with OPSS 405 and OPSD 216.021. The subdrain shall be 100 or 150 mm diameter perforated pipe conforming to OPSS 1801 or 1840, and wrapped with geotextile conforming to OPSS 1860.

## 5.5 Curbs, Gutter and Sidewalks

The concrete for curbs, gutters and sidewalks should be proportioned, mixed, placed and cured in accordance with the requirements of OPSS 353, and OPSS 1350 and shall meet the following specific requirements (OPSS 353.05.01):

- Minimum compressive strength = 30 MPa at 28 days
- Coarse aggregate = 19.0 mm nominal max. size
- Maximum slump = 60 mm for curb and gutter, 80 mm for sidewalks
- Air entrainment = 6.5 ± 1.5%

During cold weather any freshly placed concrete must be covered with insulating blankets to protect against freezing as per OPSS 904. Three cylinders from each day's pour should be taken for compressive strength testing. Air entrainment, temperature and slump tests should be conducted on the same batch of concrete from the test cylinders made.

## 5.6 Shallow Foundation Design

The proposed development plans include slab-on-grade commercial/industrial buildings with conventional strip/pad footings.

In general, the undisturbed native soils or approved structural fill is considered suitable to support building foundations. It is noted where loose to firm native soils are present in the upper portion of native soils, foundations are required to extend past these soils into adequate bearing soils. If shallow foundations are to be constructed, the proposed founding depths should be reviewed by MTE to confirm if the proposed founding soils will be suitable to meet the design bearing resistances.

Building footings constructed on the undisturbed compact to very stiff native soils at a minimum depth od 1.0 m or approved structural fill may be designed for a factored geotechnical bearing resistance at Ultimate Limit States (ULS) of 300 kPa, and soil bearing resistance for 25 mm of total settlement at Serviceability Limit States (SLS) of 200 kPa.

The founding materials are susceptible to disturbance by construction activity, especially during wet weather and care should be taken to preserve the integrity of the material as bearing strata.

The soil in trenches beneath footings for sewer and watermain services shall be compacted by tamping up to the level of the footing base or shall be filled with concrete having a strength not less than 10 MPa, to support the footing.

The footing areas must be inspected by a geotechnical engineer to ensure that the soil conditions encountered at the time of construction are suitable to support the design resistances

prior to pouring concrete. Any loose, disturbed, organic and deleterious material identified during the inspection should be removed from the footing areas and replaced with structural fill or concrete.

All exterior floor slabs and footings in unheated areas must be provided with a minimum 1.4 m of earth cover after final grading in order to minimize the potential of damage due to frost action, as per Ontario Provincial Standard Drawing, OPSD 3090.101, dated November 2010. If construction is undertaken during the winter, the subgrade soil and concrete should be protected from freezing.

A modulus of subgrade reaction of 20 to 25 MPa/m should be used in the design of the floor slab.

A minimum 150 mm thick layer of Granular 'A' material uniformly compacted to 100% SPMDD should be provided directly beneath the floor slab for leveling and support purposes.

Where spread footings are constructed at different elevations, the difference in elevation in the individual footing should not be greater than one half of the clear distance between the footings. The lower footing should be constructed first so that if it is necessary to construct the lower footings at a greater depth than anticipated, the elevation of the upper footings can be adjusted accordingly. Stepped strip footings should be constructed in accordance with OBC Section 9.15.3.8 and 9.15.3.9.

A Site Classification ‘D’ should be used for earthquake load and effects in accordance with Table 4.1.8.4.B. of the 2024 Ontario Building Code.

## 5.7 Slope Assessment

The purpose of the slope assessment was to assess the overall stability of the existing slope located at the southern limit of the property, bordering Salt Creek. Preliminary onsite assessments were completed for the entirety of the slope based on visual observations and topographic survey information available. During the site visits, photographs were taken and any visual indications of slope movement, vegetation, erosion conditions and groundwater seepage were noted and summarized in the sections below. Based on quaternary mapping, the advanced boreholes and our experience in the area, the near-surface soils at the site consist of the glacial till containing silt to clay and silt soils with some glaciolacustrine deposits of silts and sands.

The existing slope is considered well vegetated with generally well standing vertical trees with dense bushes throughout the woodlot. No evidence of rotational slides, tension cracks, slumps, or bulges were observed at the time of the site visit. The change in elevation ranges from approximately 5.0 to 6.0 meters and in inclinations between 1.4 to 4.0 horizontal to 1.0 vertical as shown on the Cross Sections on Figures 3 to 5 in Appendix A. It should be noted that steeper and shallower portions are present at localized regions along the slope. A watercourse is located within the wetland feature situated at the toe of the slope.

### *5.7.1 Slope Analysis Results*

Using the Ministry of Natural Resources (MNR) Slope Stability Rating Chart, the slope assessment results in slope ratings of 40 for Section A-A and 20 for Sections B-B and C-C. The MNR rating chart provides an approximation of relative slope stability and investigation requirements. In this case, a rating less than 24 corresponds to a slope instability rating of “low potential” requiring a “site inspection only, confirmation and report letter” and a rating above 35 corresponds to a slope instability rating of “moderate potential” requiring a “site inspection, survey, preliminary study and detailed report”.

Collective topographic data was collected from past surveys performed onsite by others in conjunction with relevant Lidar data available and supplemental surveys completed by MTE OLS Ltd. The topographic data collectively was used to map the slope features and provide contouring data across the slope sections created. Cross Sections (A-A', B-B' and C-C') were generated from the topographical data and are provided in Appendix A. A computer model was prepared using the GeoStudio 2019 Basic Edition Software by GEO-SLOPE International Ltd. for the slopes, based on the subsurface stratigraphy and groundwater conditions encountered in the boreholes advanced in the slope vicinity.

The soil parameters used in the slope stability analyses were based on field and laboratory testing, as well as empirical correlations and are noted in the following table;

**Table 5 - Soil Parameters Used in Slope Analysis**

| Soil Type | Unit Weight ($kN/m^3$) | Effective Cohesion (kPa) | Angle of Internal Friction (°) |
|---|---|---|---|
| Glacial Till | 21.5 | 0 | 33 |
| Silt and Sand | 20.0 | 0 | 31 |

It is noted that in the spring (rainy) season, groundwater pressure can be considerably higher than those measured during the rest of the year. Also, slope surface infiltration during significant rainfall and snow melt can increase the groundwater pressure by saturating the soil material above the water table and on the face of the slope. The slope analysis also utilized relevant data for floodplain mapping to consider flooded events of the wetland area.

The slope stability analysis was conducted on the computer model to confirm stable slope conditions of the existing slope. The software calculates the factor of safety against failure by calculating all forces and moments for a series of idealized vertical slices through the ground with a bottom boundary chosen to represent a "trial" failure surface. A factor of safety for slope stability is then defined as the total forces or moments acting to destabilize the slope divided by the total forces acting to resist failure. A factor of safety of unity indicates incipient failure since the analytical destabilizing and stabilizing forces are equal. Typically, for permanent and engineered cut or fill slopes, a factor of safety of greater than 1.4 obtained using these methods of analysis is considered acceptable. The Toronto Region Conservation Authority (TRCA) stipulates a factor of safety greater than 1.5 for slopes in their jurisdiction. The slope stability analyses were carried out for a number of potential failure modes. The various failures analyzed include shallow translational type failures of the residual soil, medium depth rotational failures at the top and bottom of the slope, and deep rotational failures through the entire height of the slope.

The results of the slope stability modeling indicate the existing cross section profiles, B-B and C-C have factors of safety against slope failure greater than 1.5, indicating the slopes are stable under the current conditions. The model results indicate the existing cross section A-A has a factor of safety against slope failure above 1.0, suggesting it is stable under current conditions but does not meet the TRCA requirements.

A toe erosion allowance is not required for slope sections B-B and C-C due to the proximity of the watercourse exceeding 15 m from the slope toe. However, slope section A-A does require a toe erosion based on the recommendations provided by the Ontario Ministry of Natural Resources Table 3: Determination of Toe Erosion Allowance. Based on the referenced table, a suitable toe erosion allowance was determined to be 5 m. This erosion limit was determined based on the composition and density of the native soils, the watercourse flow velocities and the

limited evidence of active erosion along the slope toe. The watercourse system is a minor stream running through the wetland area with limited grade fall and velocities present.

The analysis for cross section A-A, when considering flooded events and toe erosion allowances, results in factors of safety to be less than 1.0, indicating unstable conditions. The cross section was analyzed to determine appropriate stable slope inclinations suitable to achieve a factor of safety of 1.5 or greater, when considering these conditions. Through an iterative approach, stable slope inclinations of 2.5 horizontal to 1.0 vertical were determined suitable to achieve the factor of safety requirements, resulting in an offset of about 7.7m from the top of slope. The factors of safety are closely related to the steepness of the slopes, pore water pressures and the soil strengths. The analysis results for each slope section stable conditions are provided in Figures 6 and 7 in Appendix A.

Additionally, a development setback of 6 m would be required from the defined stable top of slope or stable slope setbacks. The development setback is defined for access allowance to the slope for future servicing, maintenance or rehabilitation required. No development of any nature should exist within the development setback limits. The described erosion allowances, setback requirements and development limits are provided on the Cross Sections on Figures 3 to 5 and the linework is presented on the Site Plan, Figure 1 in Appendix A.

No additional fill should be placed at the crest or face of the slope unless it is engineered free draining granular material to prevent build-up of pore water pressure within the soil structure. No excavation work should be conducted at the bottom of slope. No infiltration or stormwater management infrastructure should be placed within the top of slope area. Any grading should direct the groundwater drainage away from the slope and towards suitable receptors within the proposed development during and after construction. The tableland area surrounding the slope should be topsoiled and seeded as soon as possible after construction to minimize surface erosion. It is recommended that excavations be monitored by a geotechnical engineer to verify subsoil conditions.

## 5.8 Stormwater Infiltration

It is understood that at-source infiltration of stormwater runoff from the development may also be considered for this site. Soak-away pits generally require soils with a minimum percolation rate of 15 mm/hr and a minimum separation between the bottom of the pit and the seasonally high water table of 1 m (MOE, 2003). Particle size distribution analyses were carried out on the upper native soils encountered at the site. They are plotted on Table 101 in Appendix C.

Based on the predominately fine grained (silt and clay) nature of the native soils at the site, it is our opinion that at-source infiltration of stormwater runoff may be difficult for this development. Insitu infiltration testing could be performed if required to confirm in the exact areas of LID measures.

## 5.9 Construction inspection and Testing

MTE recommends that geotechnical inspection and testing procedures be conducted throughout the various phases of the project.

Engineer site visits should be conducted to confirm geotechnical bearing resistances for footings. Soil compaction testing should be carried out on structural fill beneath the building, foundation wall backfill, subslab granular fill, and trench backfill. Laboratory and field testing of the pavement structure components (granulars and asphaltic concrete) should be conducted, as well as concrete testing for foundations, curbs and sidewalks.

MTE offers soil compaction, concrete, and asphalt testing as well as soil inspection services through our offices.

# 6.0 Limitations of Report

Services performed by MTE Consultants Inc. (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Geotechnical Engineering & Consulting profession practicing under similar conditions in the same geographic area were the services are provided. No other warranty or representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of the Client. This report is not intended to be exhaustive in scope or to imply a risk-free site. As such, this report may not deal with all issues potentially applicable to the site and may omit aspects which are or may be of interest to the reader.

In addition, it should be recognized that a soil sample result represents one distinct portion of a site at the time it is collected, and that the findings of this report are based on conditions as they existed during the time period of the investigation. The material in the report reflects our best judgment using the information available at the time the report was written. The soil and groundwater conditions between and beyond the test holes may differ from those encountered in the test holes. Should subsurface conditions arise that are different from those in the test holes MTE should be notified to determine whether or not changes should be made as a result of these conditions.

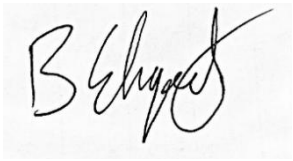
It should be recognized that the passage of time may affect the views, conclusions and recommendations (if any) provided in this report because groundwater conditions of a property can change, along with regulatory requirements. All design details were not known at the time of submission of this report and it is recommended MTE should be retained to review the final design documents prior to construction to confirm they are consistent with our report recommendations. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may determine whether it affects the contents of this report.

Any use which another party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by another party as a result of decisions made or actions taken, based upon this report. Others with interest in the site should undertake their own investigations and studies to determine how or if the condition affects them or their plans. The contractors bidding on this project or undertaking the construction should make their own interpretation of the factual information and draw their own conclusions as to how subsurface conditions may affect their work.

The benchmark and elevations provided in this report are primarily established to identify differences between the test hole locations and should not be used for other purposes such as, planning, development, grading, and excavation.

All of which is respectfully submitted,

**MTE Consultants Inc.**

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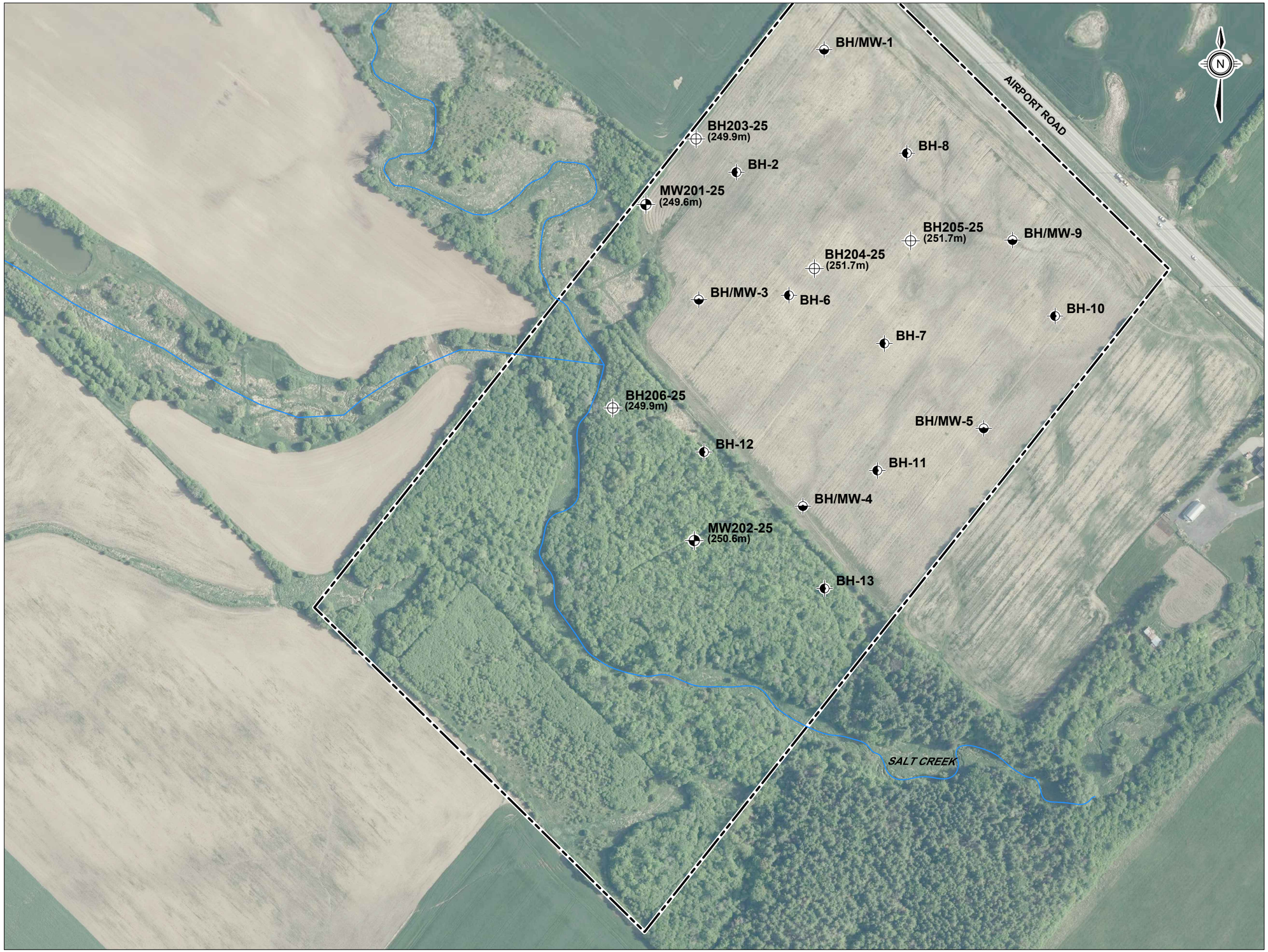
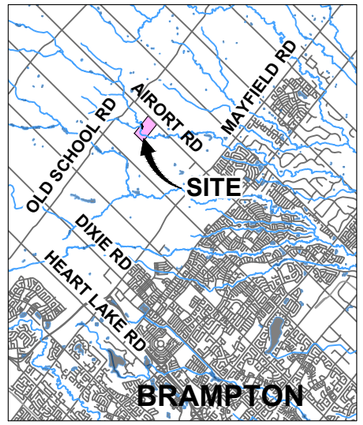
# Appendix A

# Figures




**KEY PLAN** (nts)

## LEGEND

- SITE
- BOREHOLE
- BOREHOLE/MONITORING WELL
- BOREHOLE (A&A, May 2022)
- BOREHOLE/MONITORING WELL (A&A, May 2022)
- **(251.7m)** ELEVATION (m AMSL)

## REFERENCES

REGION OF PEEL, 2020 AERIAL IMAGERY;
R-PE SURVEYING LTD., PLAN OF SURVEY, JANUARY 5 - 2023;
LAND INFORMATION ONTARIO, liDAR ELEVATION DATA, © KING'S PRINTER FOR ONTARIO, 2024;
A&A ENVIRONMENTAL CONSULTANTS INC., PROJECT No. 6903, MAY 2022; AND
LAND INFORMATION ONTARIO, ROAD AND WATER NETWORK © KING'S PRINTER FOR ONTARIO, 2024 (key plan),

## NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

0 30 60 90 120 150m

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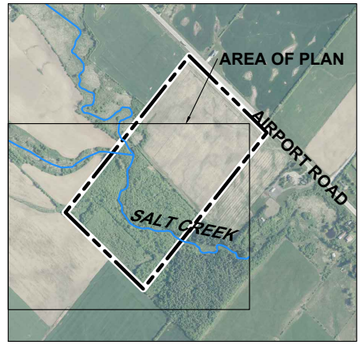
Engineers, Scientists, Surveyors

PROJECT
**GEOTECHNICAL SLOPE ASSESSMENT**
AIRPORT ROAD SLOPE ASSESSMENT
CALEDON, ONTARIO

TITLE
**SITE PLAN**

| Drawn | Scale | Figure |
|---|---|---|
| DCH | 1:3,000 | 1 |
| Checked | Project No. 56106-100 | |
| Date (YYYY-MM-DD) 2025-02-10 | Rev No. 0 | |

CAD: P:\P\56106\100\56106-100-GE01.1.DWG


**SITE PLAN** (1:20,000)

## LEGEND

- SITE
- TOE OF SLOPE
- TOP OF SLOPE
- 7.7m SETBACK
- 6m DEVELOPMENT SETBACK
- A A' CROSS-SECTION

## REFERENCES

REGION OF PEEL, 2020 AERIAL IMAGERY;
R-PE SURVEYING LTD., PLAN OF SURVEY, JANUARY 5 - 2023; AND
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## NOTES

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ALL LOCATIONS ARE APPROXIMATE.

0 25 50 75 100m

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PROJECT
**GEOTECHNICAL SLOPE ASSESSMENT**
AIRPORT ROAD SLOPE ASSESSMENT
CALEDON, ONTARIO

TITLE
**TOPOGRAPHIC PLAN**

| Drawn | Scale | Figure |
|---|---|---|
| DCH | 1:2,500 | 2 |
| Checked | Project No. 56106-100 | |
| Date (YYYY-MM-DD) 2025-01-30 | Rev No. 0 | |

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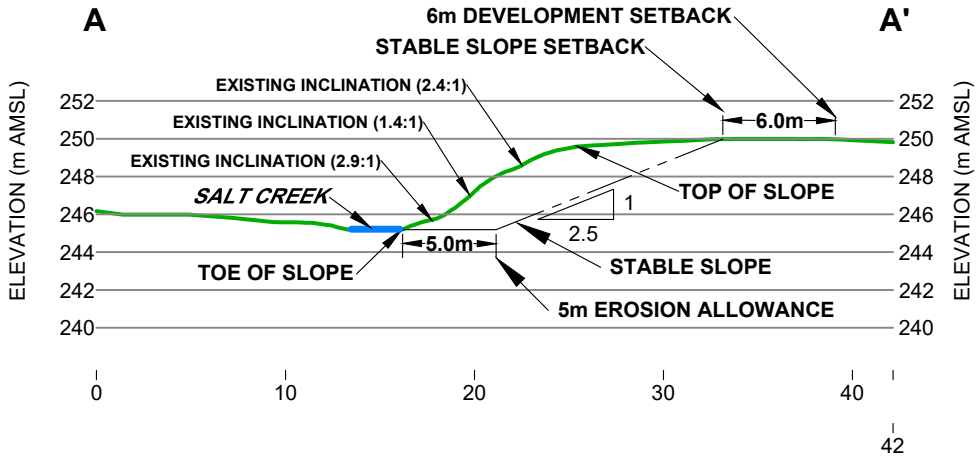


0 4 8 12 16 20m

## REFERENCES

LAND INFORMATION ONTARIO, liDAR ELEVATION DATA, © KING'S PRINTER FOR ONTARIO, 2024.

## NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

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PROJECT
**GEOTECHNICAL SLOPE ASSESSMENT**
AIRPORT ROAD SLOPE ASSESSMENT
CALEDON, ONTARIO

TITLE
**CROSS-SECTION A-A'**

| Drawn | Scale | Figure |
|---|---|---|
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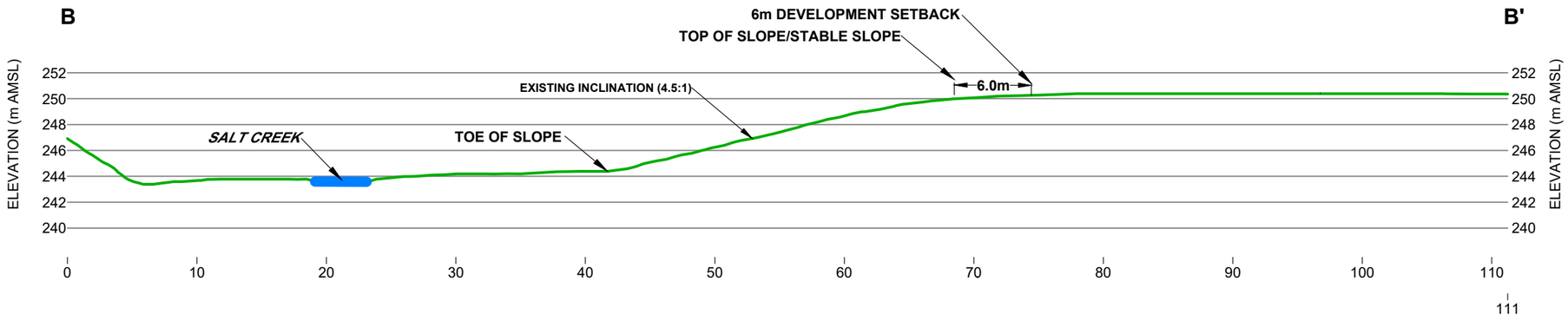
| Checked | Project No. 56106-100 | |
| Date (YYYY-MM-DD) 2025-01-30 | Rev No. 0 | |




0 4 8 12 16 20m

## REFERENCES

LAND INFORMATION ONTARIO, liDAR ELEVATION DATA, © KING'S PRINTER FOR ONTARIO, 2024.

## NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

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PROJECT
**GEOTECHNICAL SLOPE ASSESSMENT**
AIRPORT ROAD SLOPE ASSESSMENT
CALEDON, ONTARIO

TITLE
**CROSS-SECTION B-B'**

| Drawn | Scale | Figure |
|---|---|---|
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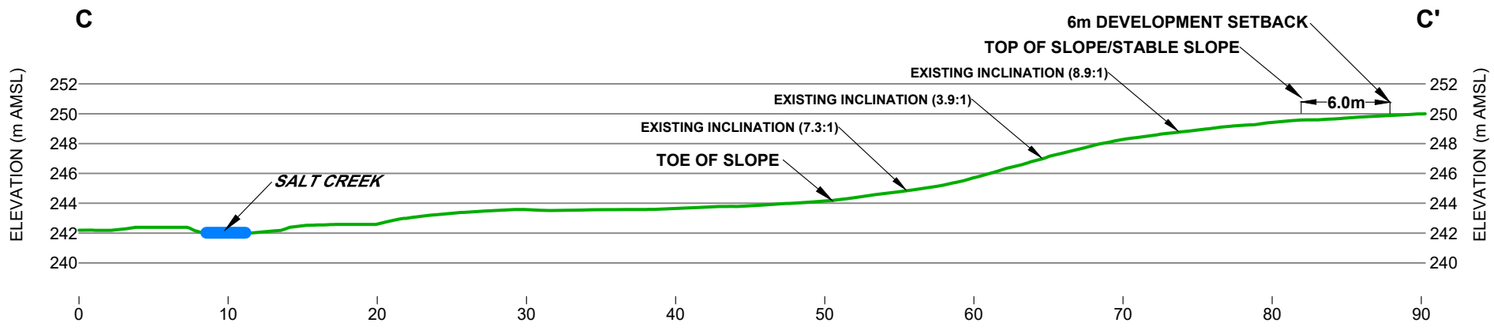
| Checked | Project No. 56106-100 | |
| Date (YYYY-MM-DD) 2025-01-30 | Rev No. 0 | |




## REFERENCES

LAND INFORMATION ONTARIO, liDAR ELEVATION DATA, © KING'S PRINTER FOR ONTARIO, 2024.

## NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

0 4 8 12 16 20m

MTE
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PROJECT
**GEOTECHNICAL SLOPE ASSESSMENT**
AIRPORT ROAD SLOPE ASSESSMENT
CALEDON, ONTARIO

TITLE
**CROSS-SECTION C-C'**

| Drawn | Scale | Figure |
|---|---|---|
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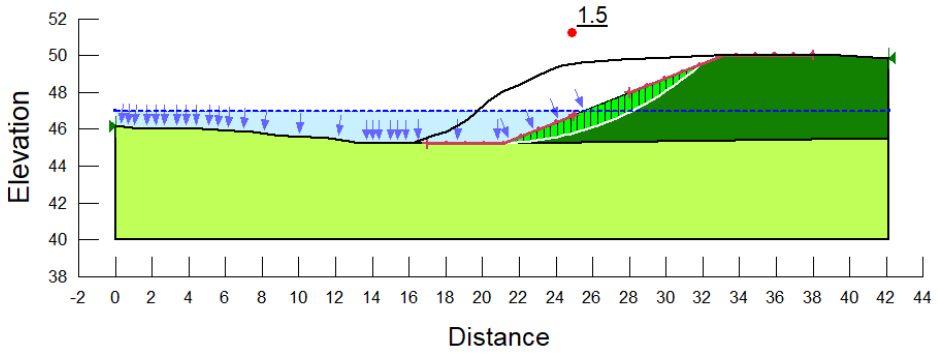
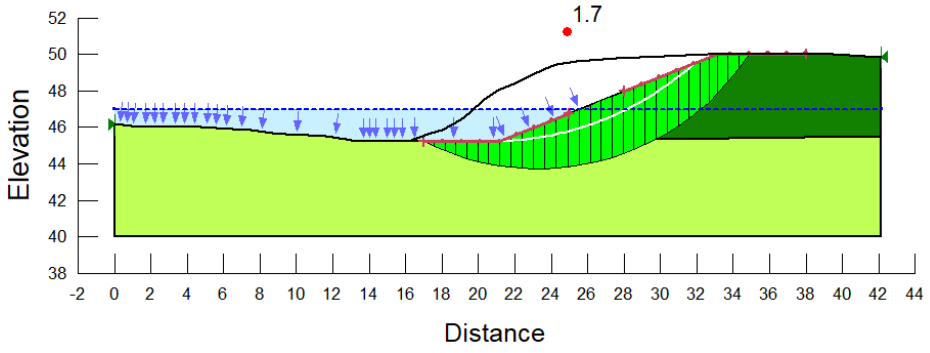
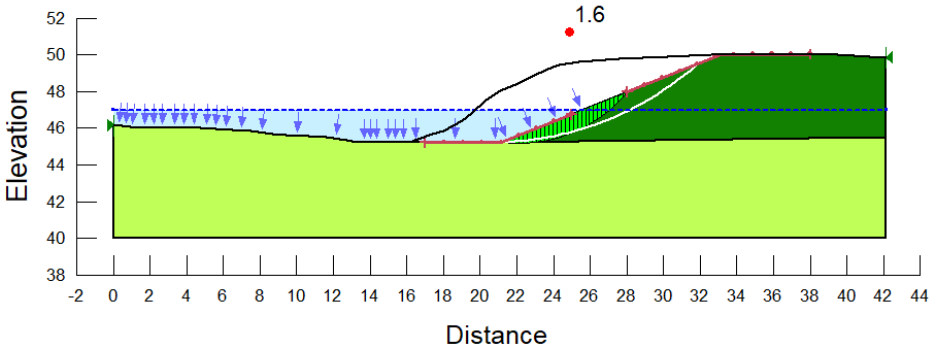
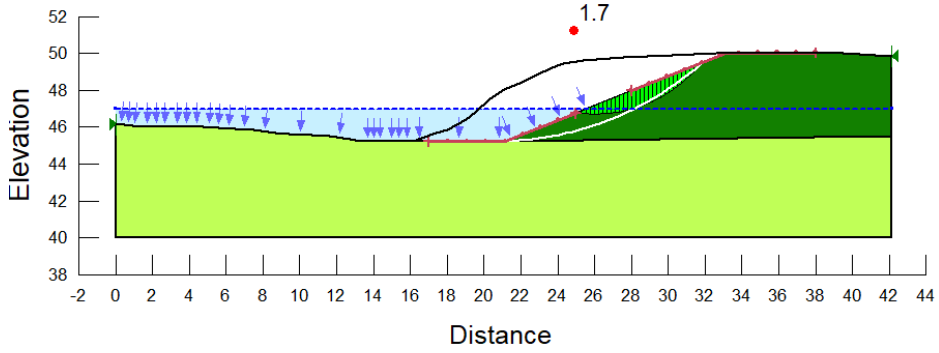
| Checked | Project No. 56106-100 | |
| Date (YYYY-MM-DD) 2025-01-31 | Rev No. 0 | |




| Color | Name | Unit Weight (kN/m³) | Cohesion' (kPa) | Phi' (°) |
|---|---|---|---|---|
| | Glacial Till | 21.5 | 0 | 33 |
| | Silt and Sand | 20 | 0 | 31 |

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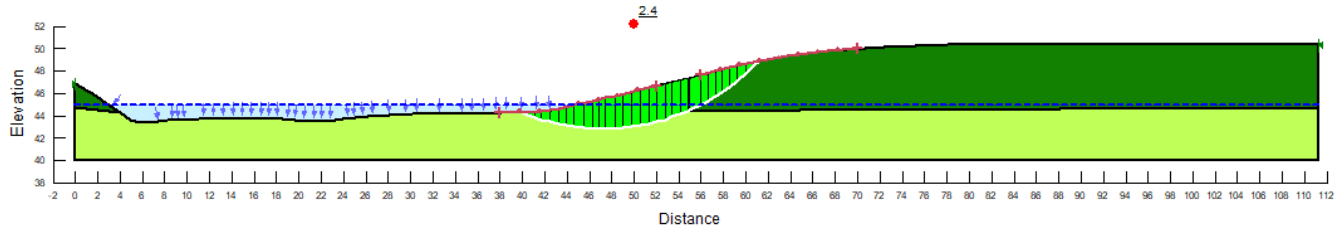
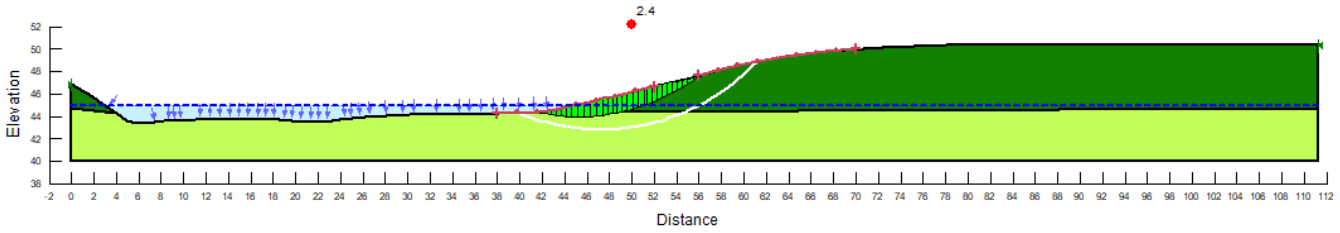
PROJECT
**Geotechnical Slope Assessment**
12760 Airport Road
Caledon East, Ontario

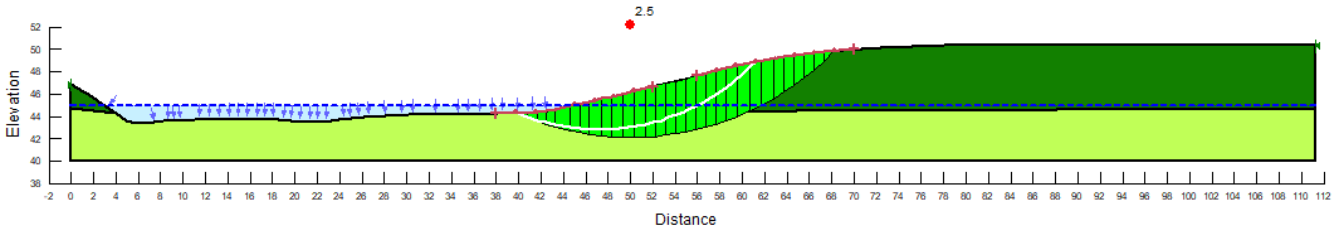
TITLE
**Cross Section A-A**
**Model Results**

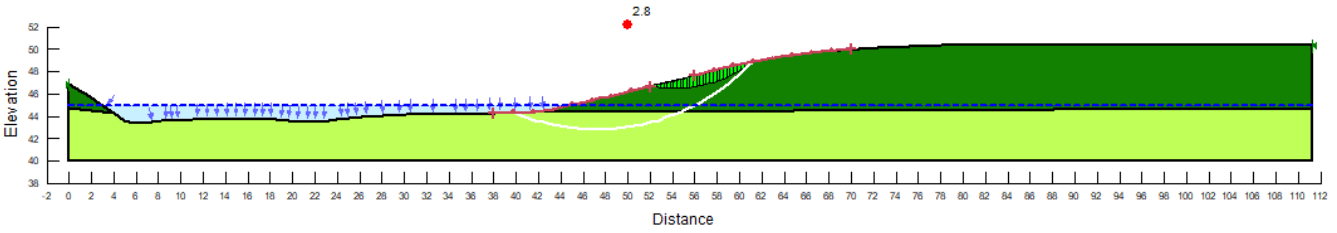
| | | | |
|---|---|---|---|
| Drawn | BEM | Scale | |
| Checked | BEM | Project No. | 56106_100 |
| Date | Jan./25 | Rev No. | 0 |

**Figure 6**




| Color | Name | Unit Weight (kN/m³) | Cohesion' (kPa) | Phi' (°) |
|---|---|---|---|---|
| | Glacial Till | 21.5 | 0 | 33 |
| | Silt and Sand | 20 | 0 | 31 |

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PROJECT
**Geotechnical Slope Assessment**
12760 Airport Road
Caledon East, Ontario

TITLE
**Cross Section B-B**
**Model Results**

| | | | |
|---|---|---|---|
| Drawn | BEM | Scale | |
| Checked | BEM | Project No. | 56106_100 |
| Date | Jan./25 | Rev No. | 0 |

**Figure 7**

# Appendix B

# Borehole Logs

**Site Photographs**

**Abbreviations and Symbols**

**Borehole Logs**

**Photograph 1 - Section A-A top of slope [looking south]**

**Photograph 2 - Section A-A top of slope [looking down slope]**

**Photograph 3 - Section A-A toe of slope [looking south]**

**Photograph 4 - Section A-A toe of slope [looking at watercourse]**

**Photograph 5 - Section B-B top of slope [looking down slope]**

**Photograph 6 - Section B-B toe of slope [looking south]**

**Photograph 7 - Section C-C top of slope [looking east]**

**Photograph 8 - Section C-C top of slope [looking down slope]**

**Photograph 9 - Section C-C toe of slope [looking east]**

The following are abbreviations and symbols commonly used on borehole logs, figures and reports.

## Sample Types

| | |
|---|---|
| AS | Auger Sample |
| CS | Chunk Sample |
| BS | Bulk Sample |
| GS | Grab Sample |
| WS | Wash Sample |
| SS | Split Spoon |
| RC | Rock Core |
| SC | Soil Core |
| TW | Thinwall, Open |
| TP | Thinwall, Piston |

## Soil Tests

| | |
|---|---|
| PP | Pocket Penetrometer |
| FV | Field Vane |
| SPT | Standard Penetration Test |
| CPT | Cone Penetration Test |
| WC | Water Content |
| WL | Water Level |

## Penetration Resistance

| | |
|---|---|
| Standard Penetration Test, N (ASTM D1586) | The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) open spilt spoon sampler for a distance of 300 mm (12 in.). |
| Dynamic Cone Penetration Resistance | The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive an uncased 50 mm (2 in.) diameter, 60o cone attached to “A” size drill rods for a distance of 300 mm (12 in.). |

## Soil Description

| Cohesive Soils | Undrained Shear Strength (Cu) | |
|---|---|---|
| Consistency | kPa | psf |
| Very Soft | 0 to 12 | 0 to 250 |
| Soft | 12 to 25 | 250 to 500 |
| Firm | 25 to 50 | 500 to 1,000 |
| Stiff | 50 to 100 | 1,000 to 2,000 |
| Very Stiff | 100 to 200 | 2,000 to 4,000 |
| Hard | Above 200 | Above 4,000 |

| Cohesionless Soils | |
|---|---|
| Relative Density | SPT N Value |
| Very Loose | 0 to 4 |
| Loose | 4 to 10 |
| Compact | 10 to 30 |
| Dense | 30 to 50 |
| Very Dense | Above 50 |

| | |
|---|---|
| WH | Sampler advanced by static weight of hammer |
| WR | Sampler advanced by static weight of drilling rods |
| PH | Sampler advanced by hydraulic force |
| PM | Sampler advanced by manual force |

| | |
|---|---|
| DTPL | Drier than Plastic Limit |
| APL | About Plastic Limit |
| WTPL | Wetter than Plastic Limit |
| mbgs | Metres below Ground Surface |

## ID No.: MW201-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/14/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** Monument Casing

| Depth (ft / m) | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type | Standard Penetration (Dynamic Cone) | Shear Strength (PP) kPa / Shear Strength (FV) kPa | Water Content % |
|---|---|---|---|---|---|---|---|
| 0 / 0 | Ground Surface | 249.6 | | | | | |
| 0 | **TOPSOIL** dark brown silty clayey topsoil, with organics (150mm) | 0.0 | 1 | SS | 12 | | 32 |
| 2 | **SILT TILL** compact brown silt, some clay, trace sand and gravel, with rootlets, very mosit | | 2 | SS | 21 | | 23 |
| 4 | | 248.1 | | | | | |
| 6 / 2 | grey and brown, some sand, very moist to moist | 1.5 | 3 | SS | 22 | | 19 |
| 8 | | | 4 | SS | 29 | | 17 |
| 10 | | 246.6 | | | | | |
| 10 | **CLAYEY SILT TILL** hard brown clayey silt, trace sand and gravel | 3.0 | 5 | SS | 30 | | 17 |
| 12 / 4 | | | | | | | |
| 14 | | 245.0 | | | | | |
| 14 | some sand, with cobbles | 4.6 | 6 | SS | 32 | | 12 |
| 16 | | | | | | | |
| 18 | | | | | | | |
| 20 / 6 | | 243.5 | | | | | |
| 20 | **SILT AND SAND** very dense grey silt and sand, trace clay, very moist | 6.1 | 7 | SS | 50/100mm | | 6 |
| 22 | | | | | | | |

Groundwater Observations and Standpipe Details: Concrete; Bentonite; 51mm PVC Riser

**Field Technician:** A. Challis

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

## ID No.: MW201-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

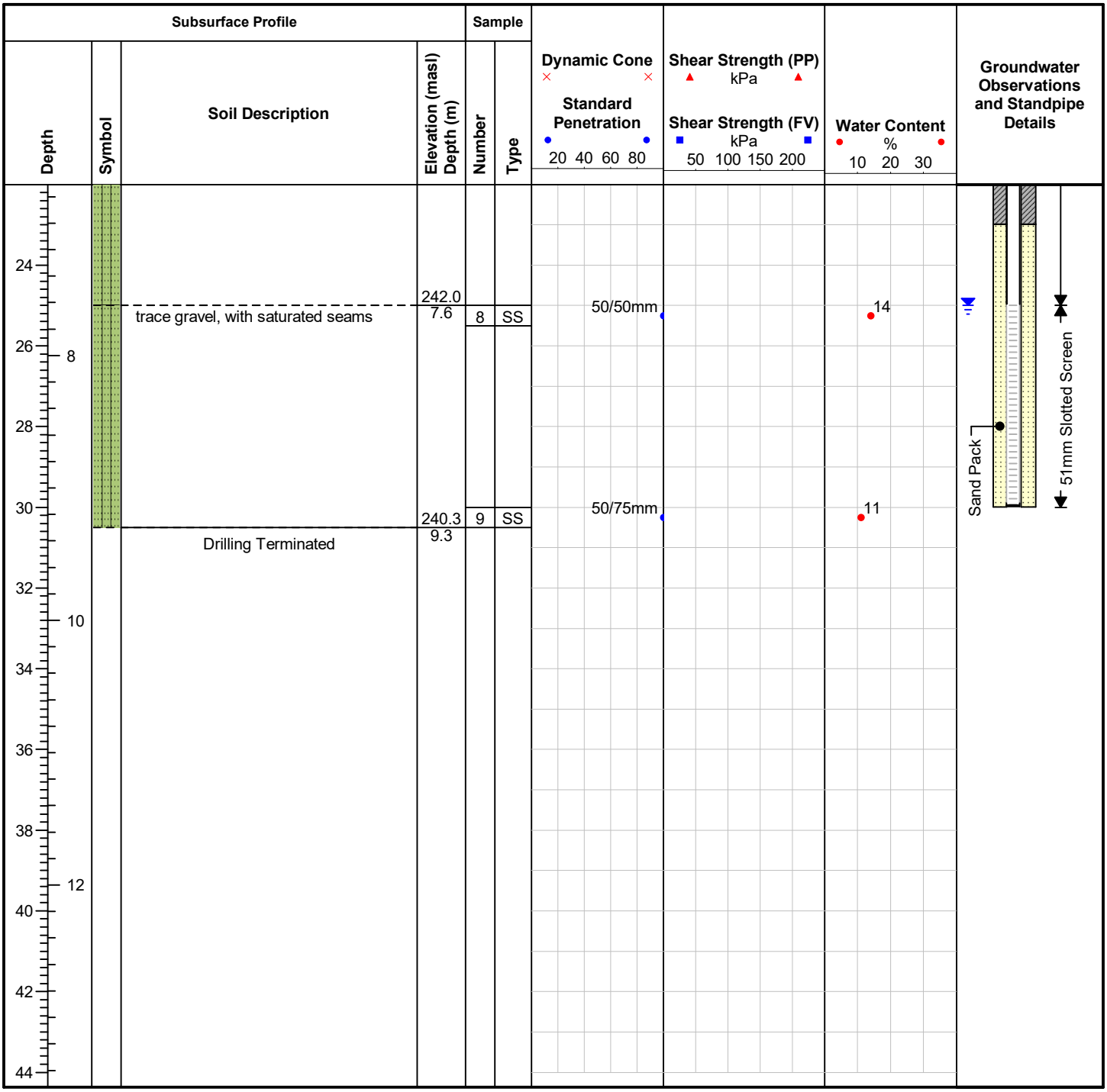
**Date Completed:** 1/14/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** Monument Casing




**Field Technician:** A. Challis

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

## ID No.: MW202-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/17/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

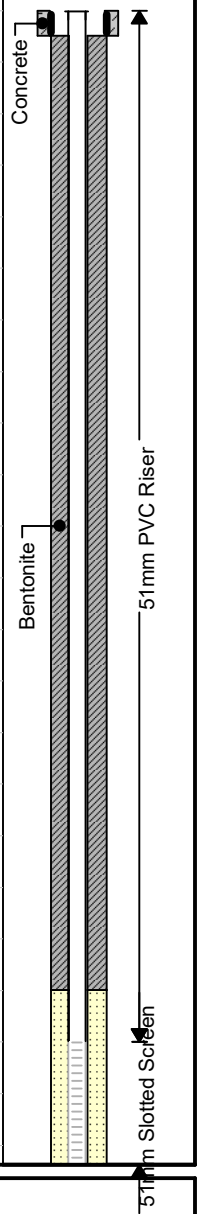
**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** Monument Casing

| Depth (ft / m) | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type |
|---|---|---|---|---|
| 0 / 0 | Ground Surface | 250.6 | | |
| | **TOPSOIL** dark brown silty clayey topsoil, with organics (250mm) | 0.0 / 250.3 / 0.3 | | |
| | **SILT TILL** compact to dense brown silt, some clay, trace sand and gravel, very moist | | 1 | SS |
| | | 249.1 / 1.5 | | |
| | mottled light brown and brown, with cobbles | | 2 | SS |
| | | 248.2 / 2.4 | | |
| | **CLAYEY SILT TILL** hard brown clayey silt, some sand, trace gravel, with cobbles and silt layers | | 3 | SS |
| | | | 4 | SS |
| | | 246.3 / 4.3 | | |
| | **SILT TILL** dense brown silt, some clay and sand, trace gravel, very moist | | 5 | SS |
| | | 245.7 / 4.9 | | |
| | **SANDY SILT TILL** very dense brown sandy silt, some clay, trace gravel, with silt seams, very moist | 244.8 / 5.8 | | |
| | **SILT** very dense brown to grey silt, some clay and sand, trace gravel, moist | | 6 | SS |
| | | 244.2 / 6.4 | | |

| Depth (ft / m) | Dynamic Cone Penetration (20 40 60 80) | Shear Strength (PP) kPa / Shear Strength (FV) kPa (50 100 150 200) | Water Content % (10 20 30) |
|---|---|---|---|
| 0 / 0 | | | |
| 2 / | 17 | | 15 |
| 4 / | 35 | | 15 |
| 6 / 2 | 25 | | 16 |
| 8 / | 37 | | 13 |
| 10 / | 68 | | 8 |
| 12 / 4 | 86 | | 15 |
| 14 / | | | |
| 16 / | | | |
| 18 / | | | |
| 20 / 6 | | | |
| 22 / | | | |




**Field Technician:** B. Ehgoetz

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

## ID No.: MW202-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/17/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** Monument Casing

| Depth | Symbol | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type | Dynamic Cone / Standard Penetration | Shear Strength (PP) kPa / Shear Strength (FV) kPa | Water Content % | Groundwater Observations and Standpipe Details |
|---|---|---|---|---|---|---|---|---|---|
| 24 | | **SILTY SAND** very dense brown silty sand, wet to saturated | 243.0 | | | | | | |
| | | some to trace gravel, saturated | 7.6 | 7 | SS | 50/125mm | | 9 | Sand Pack; 51mm Slotted Screen |
| 26 | 8 | | | | | | | | |
| 28 | | | 242.1 | | | | | | |
| | | **SANDY SILT** very dense grey sandy silt, moist | 8.5 | 7B | AS | | | | |
| 30 | | | 241.3 | 8 | SS | 50/50mm | | | |
| | | Drilling Terminated | 9.3 | | | | | | |
| 32 | | | | | | | | | |
| | 10 | | | | | | | | |
| 34 | | | | | | | | | |
| 36 | | | | | | | | | |
| 38 | | | | | | | | | |
| | 12 | | | | | | | | |
| 40 | | | | | | | | | |
| 42 | | | | | | | | | |
| 44 | | | | | | | | | |

**Field Technician:** B. Ehgoetz

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

## ID No.: BH203-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/14/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** N/A

| Depth (ft / m) | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type | Standard Penetration (Dynamic Cone) | Shear Strength (PP) kPa / Shear Strength (FV) kPa | Water Content % |
|---|---|---|---|---|---|---|---|
| 0 / 0 | Ground Surface | 249.9 | | | | | |
| | **TOPSOIL** dark brown silty clayey topsoil, with organics (300mm) | 0.0 / 249.6 / 0.3 | 1 | SS | 8 | | 30 |
| 2 / | **SILT TILL** loose to compact brown silt, some clay and sand, trace gravel, very moist | | 2 | SS | 13 | | 21 |
| 4 / | | 248.4 | | | | | |
| 6 / 2 | dense, some sand, trace gravel and clay, with cobbles | 1.5 / 247.6 | 3 | SS | 34 | | 24 |
| 8 / | **SANDY SILT TILL** compact brown sandy silt, some to trace clay and gravel, very moist | 2.3 | 4 | SS | 20 | | 15 |
| 10 / | | | 5 | SS | 20 | | 11 |
| 12 / 4 | | 245.3 | | | | | |
| 14 / | **SILT TILL** dense brown silt, some clay and sand, trace gravel, very moist | 4.6 | 6 | SS | 47 | | 12 |
| 16 / | | | | | | | |
| 18 / | | 243.8 | | | | | |
| 20 / 6 | **SILT AND SAND** very dense grey silt and sand, trace clay and gravel, very moist | 6.1 / 243.5 / 6.4 | 7 | SS | 90 | | 4 |
| 22 / | Drilling Terminated | | | | | | |

Groundwater Observations and Standpipe Details: Bentonite and Cuttings; Dry Cave

**Field Technician:** A. Challis

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

## ID No.: BH204-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/14/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** N/A

| Depth (ft / m) | Symbol | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type | Dynamic Cone / Standard Penetration (20 40 60 80) | Shear Strength (PP) kPa / Shear Strength (FV) kPa (50 100 150 200) | Water Content % (10 20 30) | Groundwater Observations and Standpipe Details |
|---|---|---|---|---|---|---|---|---|---|
| 0 ft / 0 m | | Ground Surface | 251.7 | | | | | | |
| 0 | | **TOPSOIL** dark brown silty clayey topsoil, with organics (250mm) | 0.0 / 251.4 / 0.3 | 1 | SS | 8 | | 21 | |
| 2 | | **SILT TILL** loose to compact brown silt, some clay and sand, trace gravel, very moist | | 2 | SS | 19 | | 20 | |
| 4 | | | | 3 | SS | 21 | | 20 | |
| 6 / 2 | | | 249.4 | | | | | | |
| 8 | | **CLAYEY SILT TILL** very stiff brown clayey silt, trace sand and gravel, very moist | 2.3 | 4 | SS | 20 | | 25 | |
| 10 | | | | 5 | SS | 17 | | | ← Bentonite and Cuttings |
| 12 / 4 | | | 247.1 | | | | | | |
| 14 | | **CLAY AND SILT TILL** stiff grey clay and silt, trace sand and gravel | 4.6 | 6 | SS | 10 | | 26 | |
| 16 | | | | | | | | | |
| 18 | | | | | | | | | ← Dry Cave |
| 20 / 6 | | with wet layers, APL | 245.6 / 6.1 | 7 | SS | 20 | | 21 | |
| 22 | | Drilling Terminated | 245.1 / 6.6 | | | | | | |

**Field Technician:** A. Challis

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

## ID No.: BH205-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/17/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** N/A

| Depth (ft / m) | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type | Standard Penetration (Dynamic Cone) | Shear Strength (PP) kPa / Shear Strength (FV) kPa | Water Content % | Groundwater Observations and Standpipe Details |
|---|---|---|---|---|---|---|---|---|
| | Ground Surface | 251.7 | | | | | | |
| 0 | **TOPSOIL** dark brown silty clayey topsoil, with organics (225mm) | 0.0 | 1 | SS | 6 | | 22 | |
| 2 | **CLAYEY SILT TILL** stiff mottled brown and grey clayey silt, trace sand and gravel, trace rootlets, DTPL | 250.8 / 0.9 | 2 | SS | 20 | | 20 | |
| 4 | hard, turning grey, rootlets cease | | 3 | SS | 22 | | 19 | |
| 6 | | 249.4 | | | | | | |
| 8 | **SILTY CLAY TILL** hard grey silty clay, trace sand and gravel, DTPL | 2.3 | 4 | SS | 20 | | 22 | |
| 10 | | 248.7 | | | | | | |
| 12 | **CLAYEY SILT TILL** very stiff mottled brown and grey clayey silt, trace sand and gravel, DTPL | 3.0 | 5 | SS | 16 | | 23 | |
| 14 | grey | 247.1 / 4.6 | 6 | SS | 12 | | 27 | |
| 16 | | | | | | | | |
| 18 | | 245.6 | | | | | | |
| 20 | **CLAY AND SILT TILL** stiff to very stiff grey clay and silt, trace sand, DTPL to APL | 6.1 | 7 | SS | 11 | | 14 | |
| 22 | | 245.0 / 6.7 | | | | | | |

Bentonite and Cuttings

Dry Cave

**Field Technician:** B. Ehgoetz

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

**Sheet:** 1 of 1

## ID No.: BH206-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/15/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** N/A

| Depth (ft / m) | Symbol | Soil Description | Elevation (masl) / Depth (m) | Sample Number | Sample Type | Dynamic Cone – Standard Penetration (20 40 60 80) | Shear Strength (PP) kPa / Shear Strength (FV) kPa (50 100 150 200) | Water Content % (10 20 30) | Groundwater Observations and Standpipe Details |
|---|---|---|---|---|---|---|---|---|---|
| 0 / 0 | | Ground Surface | 249.9 | | | | | | |
| 0 | | **TOPSOIL** dark brown silty clayey topsoil, with organics (125mm) | 0.0 | 1 | SS | 8 | | 21 | |
| 2 | | **SILT TILL** loose to compact brown silt, some clay, trace sand and gravel, trace rootlets, very moist | | 2 | SS | 20 | | 17 | |
| 4 | | | | 3 | SS | 28 | | 16 | |
| 6 / 2 | | | 247.6 | | | | | | |
| 8 | | **CLAYEY SILT TILL** hard brown clayey silt, trace sand and gravel, with cobbles | 2.3 | 4 | SS | 32 | | 16 | |
| 10 | | | | 5 | SS | 51 | | 12 | Bentonite and Cuttings |
| 12 / 4 | | | 245.3 | | | | | | |
| 14 | | **SANDY SILT** very dense brown sandy silt, some clay and gravel, with cobbles, moist | 4.6 | 6 | SS | 71 | | 4 | |
| 16 | | | | | | | | | |
| 18 | | | | | | | | | |
| 20 / 6 | | grey, trace gravel | 243.8 | 7 | SS | 50/125mm | | 4 | Dry Cave |
| 22 | | | 6.1 | | | | | | |

**Field Technician:** A. Challis

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

## ID No.: BH206-25

**Project Name:** Airport Road - Geotechnical Investigation

**MTE File No.:** 56106-100

**Client:** Broccolini

**Site Location:** Airport Road, Caledon, ON

**Date Completed:** 1/15/2025

**Drilling Contractor:** Direct Environmental Drilling Inc

**Drill Rig:** Mobi Drill B57 Track Mount

**Drill Method:** Hollow Stem Augers

**Protective Cover:** N/A

| Subsurface Profile | | | | Sample | | Dynamic Cone / Standard Penetration (20 40 60 80) | Shear Strength (PP) kPa / Shear Strength (FV) kPa (50 100 150 200) | Water Content % (10 20 30) | Groundwater Observations and Standpipe Details |
|---|---|---|---|---|---|---|---|---|---|
| Depth | Symbol | Soil Description | Elevation (masl) Depth (m) | Number | Type | | | | |
| 24 | | | | | | | | | |
| 26 | | | 242.0 | 8 | SS | 50/50mm | | 5 | |
| 8 | | Drilling Terminated | 7.9 | | | | | | |
| 28 | | | | | | | | | |
| 30 | | | | | | | | | |
| 32 | | | | | | | | | |
| 10 | | | | | | | | | |
| 34 | | | | | | | | | |
| 36 | | | | | | | | | |
| 38 | | | | | | | | | |
| 12 | | | | | | | | | |
| 40 | | | | | | | | | |
| 42 | | | | | | | | | |
| 44 | | | | | | | | | |

**Field Technician:** A. Challis

**Drafted by:** B. Ehgoetz

**Reviewed by:** B. Thorner

MTE

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH/MW1



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978274 E 4380565

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION |
|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 10 | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 20 | | |
| | | | 3 | SS | 18 | | |
| | | | | | | ▽ | W. L. 2.2 mBGL Apr 05, 2022 |
| | stiff below 2.3m | | 4 | SS | 10 | | |
| | grey, wet below 3.1m | | 5 | SS | 10 | | |
| | | | 6 | SS | 13 | | |
| | hard below 4.6m | | 7 | SS | 37 | | |
| | | | 8 | SS | 49 | | |
| 6.1 | **End of Borehole:** | | | | | | |

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT $w_P$ — NATURAL MOISTURE CONTENT $w$ — LIQUID LIMIT $w_L$

WATER CONTENT (%): 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)

GR SA SI CL

Notes:
Water Levels:
(i) During Drilling: 3.1m
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ○ $^{\varepsilon_f}$=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH2



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978192 E 4380633

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| SOIL PROFILE (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | SAMPLES NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 20 40 60 80 100 | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ WATER CONTENT (%) 10 20 30 | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 8 | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 19 | | | | | | |
| | | | 3 | SS | 17 | | | | | | |
| | | | 4 | SS | 19 | | | | | | |
| | | | 5 | SS | 18 | | | | | | |
| | stiff below 3.8m | | 6 | SS | 11 | | | | | | |
| | grey, wet below 4.6m | | 7 | SS | 7 | | | | | | |
| | | | 8 | SS | 6 | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: 4.6m
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH/MW3

PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 4850824 E 597885

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ — WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 12 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 21 | | | | | | | |
| | | | 3 | SS | 24 | | | | | | | |
| | | | 4 | SS | 20 | | | | | | | |
| | hard below 3.8m | | 5 | SS | 18 | | | | | | | |
| | | | 6 | SS | 32 | | W. L. 4.5 mBGL Apr 05, 2022 | | | | | |
| | grey below 5.3m | | 7 | SS | 34 | | | | | | | |
| | | | 8 | SS | 23 | | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: -
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\varepsilon$=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH/MW4

PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978214 E 438027

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | SAMPLES NUMBER | SAMPLES TYPE | SAMPLES "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT ($w_P$ w $w_L$) WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil and organic, brown, moist, stiff | | 1 | SS | 8 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 21 | | | | | | | |
| | | | 3 | SS | 13 | | | | | | | |
| | stiff below 2.3m | | 4 | SS | 12 | | | | | | | |
| | hard below 3.1m | | 5 | SS | 30 | | | | | | | |
| | | | 6 | SS | 36 | ▽ | W. L. 4.3 mBGL Apr 05, 2022 | | | | | |
| | grey below 4.6m | | 7 | SS | 22 | | | | | | | |
| 5.3 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Auger refusal at 5.3m
Water Levels:
(i) During Drilling: -
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ○ $\varepsilon$=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH/MW5



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978059 E 4389033

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ / WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 5 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 22 | | | | | | | |
| | | | 3 | SS | 21 | | | | | | | |
| | | | 4 | SS | 20 | | | | | | | |
| | stiff below 3.1m | | 5 | SS | 14 | | | | | | | |
| | grey below 3.8m | | 6 | SS | 13 | | | | | | | |
| | wet below 4.6m | | 7 | SS | 13 | | | | | | | |
| | | | 8 | SS | 9 | | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: 4.6m
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\circ^{\varepsilon=3\%}$ Strain at Failure

# LOG OF BOREHOLE BH6

PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 4850854 E 597910

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ / WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 13 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 23 | | | | | | | |
| | | | 3 | SS | 20 | | | | | | | |
| | stiff below 2.3m | | 4 | SS | 12 | | | | | | | |
| | | | 5 | SS | 14 | | | | | | | |
| | very stiff below 3.8m | | 6 | SS | 23 | | | | | | | |
| | grey below 4.6m | | 7 | SS | 17 | | | | | | | |
| | | | 8 | SS | 18 | | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: -
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\varepsilon_f$=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH7

PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978134 E 4380360

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ / WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil and organics, brown, moist, stiff | | 1 | SS | 10 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff to stiff | | 2 | SS | 21 | | | | | | | |
| | | | 3 | SS | 14 | | | | | | | |
| | | | 4 | SS | 14 | | | | | | | |
| | | | 5 | SS | 14 | | | | | | | |
| | grey, wet below 4.6m | | 6 | SS | 12 | | | | | | | |
| | | | 7 | SS | 10 | | | | | | | |
| | very stiff below 5.3m | | 8 | SS | 21 | | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: 4.6m

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH8



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7972136 E 430606

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ — WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 10 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff to stiff | | 2 | SS | 20 | | | | | | | |
| | | | 3 | SS | 14 | | | | | | | |
| | | | 4 | SS | 14 | | | | | | | |
| | | | 5 | SS | 10 | | | | | | | |
| | grey, wet below 4.6m | | 6 | SS | 9 | | | | | | | |
| | | | 7 | SS | 9 | | | | | | | |
| | | | 8 | SS | 10 | | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: 4.6m
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: + 3, × 3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

# LOG OF BOREHOLE BH/MW9

PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978106 E 438056

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION |
|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 11 | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 18 | | |
| | | | 3 | SS | 18 | | |
| | | | 4 | SS | 18 | | |
| | stiff below 3.8m | | 5 | SS | 15 | | |
| | | | 6 | SS | 7 | | |
| | wet, grey below 4.6m | | 7 | SS | 8 | | |
| | | | 8 | SS | 8 | | |
| 6.1 | **End of Borehole:** | | | | | | |

Notes:
Water Levels:
(i) During Drilling: 4.6m
(ii) At Completion (50mm monitoring was installed)

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT $w_P$ — NATURAL MOISTURE CONTENT $w$ — LIQUID LIMIT $w_L$
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT (kN/m³)
REMARKS AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
$\varepsilon_f$=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH10



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7977977 E 4320430

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| SOIL PROFILE (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | SAMPLES NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 20 40 60 80 100 | PLASTIC LIMIT $w_P$ — NATURAL MOISTURE CONTENT $w$ — LIQUID LIMIT $w_L$ / WATER CONTENT (%) 10 20 30 | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 7 | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 9 | | | | | | |
| | | | 3 | SS | 15 | | | | | | |
| | | | 4 | SS | 18 | | | | | | |
| | stiff below 3.1m | | 5 | SS | 13 | | | | | | |
| | | | 6 | SS | 8 | | | | | | |
| | grey, wet below 4.6m | | 7 | SS | 7 | | | | | | |
| | | | 8 | SS | 6 | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: 4.6m
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\varepsilon_{50}$=3% Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH11



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 7978153 E 438028

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ — WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil, brown, moist, stiff | | 1 | SS | 13 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 21 | | | | | | | |
| | | | 3 | SS | 17 | | | | | | | |
| | stiff below 2.3m | | 4 | SS | 10 | | | | | | | |
| | | | 5 | SS | 10 | | | | | | | |
| | | | 6 | SS | 13 | | | | | | | |
| | grey, very stiff to hard below 4.6m | | 7 | SS | 19 | | | | | | | |
| | | | 8 | SS | 44 | | | | | | | |
| 6.1 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Water Levels:
(i) During Drilling: -
(ii) At Completion (50mm monitoring was installed)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\circ^{\varepsilon=3\%}$ Strain at Failure

# LOG OF BOREHOLE BH12

PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N4850734 E597896

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION |
|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil and organic, brown, moist, stiff | | 1 | SS | 12 | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff | | 2 | SS | 20 | | |
| | | | 3 | SS | 23 | | |
| | hard below 2.3m | | 4 | SS | 44 | | |
| | very stiff below 3.1m | | 5 | SS | 23 | | |
| | hard below 3.8m | | 6 | SS | 51 | | |
| | | | 7 | SS | 34 | | |
| 5.3 | **End of Borehole:** | | | | | | |

Notes:
Auger refusal at 5.3m

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT $w_P$ | NATURAL MOISTURE CONTENT $w$ | LIQUID LIMIT $w_L$
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
$\circ^{\varepsilon_f=3\%}$ Strain at Failure

A&A ENVIRONMENTAL CONSULTANTS INC.

# LOG OF BOREHOLE BH13



PROJECT: Geotechnial Investigation for the Proposed Development
CLIENT: BVD Petroleum Inc.
PROJECT LOCATION: 0 Airport Road, Caledon, ON
DATUM: Geodetic
BH LOCATION: N 4850931 E 597893

**DRILLING DATA**
Method: Hollow Stem Auger
Diameter: 0.2m
Date: May-03-2022

PROJECT NO.: 6903

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | SAMPLES: NUMBER | SAMPLES: TYPE | SAMPLES: "N" BLOWS / 0.3 m | GROUND WATER CONDITIONS | ELEVATION | DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ / WATER CONTENT (%) (10 20 30) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | **Topsoil:** 200mm | | | | | | | | | | | |
| 0.2 | **Clay and Silt:** weathered/disturbed, trace sand, with trace topsoil and organics, brown, moist, stiff | | 1 | SS | 14 | | | | | | | |
| 0.8 | **Clayey Silt to Silty Clay Till:** trace sand and gravel, brown, moist, very stiff to hard | | 2 | SS | 22 | | | | | | | |
| | | | 3 | SS | 16 | | | | | | | |
| | | | 4 | SS | 36 | | | | | | | |
| | | | 5 | SS | 66 | | | | | | | |
| 3.8 | **End of Borehole:** | | | | | | | | | | | |

Notes:
Auger refusal at 3.8m

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

# Appendix C

# Laboratory Test Results

**MNR Slope Stability Rating Charts**

**Laboratory Results Table 101**

TABLE I – Slope Section A-A

**SLOPE STABILITY RATING CHART**

| | |
|---|---|
| Site Location: Airport Road, Caledon<br>Property Owner: N/A<br>Inspected By: B.Ehgoetz | Project No.: 56106-100<br>Inspection Date: October 24, 2024<br>Weather: Overcast 15 $^{O}$C |

| | Rating Value (select one) For Section D |
|---|---|
| 1. SLOPE INCLINATION<br>Degrees horizontal:vertial<br>a) 16 or less 3:1 or flatter<br>b) 16 to 26 2:1 to 3:1<br>c) **26 or more steeper than 2:1** | 0<br>6<br>**<16>** |
| 2. SOIL STRATIGRAPHY<br>a) Shale, Limestone (bedrock)<br>b) Sand, Gravel<br>c) Till<br>d) **Clay, Silt**<br>e) Fill | 0<br>6<br>9<br>**<12>**<br>16 |
| 3. SEEPAGE FROM SLOPE FACE<br>a) **None or near bottom only**<br>b) Near mid-slope only<br>c) Near crest only or from several levels | **<0>**<br>6<br>12 |
| 4. SLOPE HEIGHT<br>a) 2m or less<br>b) **2.1 to 5m**<br>c) 5.1 to 10m<br>d) more than 10m | 0<br>**<2>**<br>4<br>8 |
| 5. VEGETATION COVER ON SLOPE FACE<br>a) Well vegetated: heavy shrubs or forested with mature trees<br>b) **Light vegetation: mostly grass, weeds, occasional trees, shrubs**<br>c) No vegetation, bare | 0<br>**<4>**<br>8 |
| 6. TABLE LAND DRAINAGE<br>a) **Table land flat, no apparent drainage over slope**<br>b) Minor drainage over slope, no active erosion<br>c) Drainage over slope, active erosion, gullies | **<0>**<br>2<br>4 |
| 7. PROXIMITY OF WATERCOURSE TO SLOPE TOE<br>a) 15 metres or more from slope toe<br>b) **Less than 15 metres from slope toe** | 0<br>**<6>** |
| 8. PREVIOUS LANDSLIDE ACTIVITY<br>a) **No**<br>b) Yes | **<0>**<br>6 |
| SLOPE INSTABILITY RATING — RATING VALUES TOTAL — INVESTIGATION REQUIREMENTS<br>Toe Erosion? | Total<br>**40**<br>Yes |

| | | |
|---|---|---|
| 1. Low potential | <24 | Site Inspection only, confirmation, report letter. |
| 2. Slight potential | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. **Moderate potential** | **>35** | Borehole investigation, piezometers, lab tests, surveying, detailed report. |

NOTES:
a) This chart does not apply to rock slopes or to Leda Clay slopes (Ottawa area).
b) Choose only one from each category and compare total rating with above requirements.
c) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe, the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

Reference: Table 4.2, Technical Guide – River & Stream Systems: Erosion Hazard Limit. Ontario Ministry of Natural Resources.

TABLE II – Slope Section B-B

**SLOPE STABILITY RATING CHART**

| | |
|---|---|
| Site Location: Airport Road, Caledon<br>Property Owner: N/A<br>Inspected By: B.Ehgoetz | Project No.: 56106-100<br>Inspection Date: October 24, 2024<br>Weather: Overcast 15 $^{O}$C |

| | Rating Value (select one) For Section B |
|---|---|
| 1. SLOPE INCLINATION<br>Degrees horizontal:vertial<br>a) **16 or less 3:1 or flatter**<br>b) 16 to 26 2:1 to 3:1<br>c) 26 or more steeper than 2:1 | **<0>**<br>6<br>16 |
| 2. SOIL STRATIGRAPHY<br>a) Shale, Limestone (bedrock)<br>b) Sand, Gravel<br>c) Till<br>d) **Clay, Silt**<br>e) Fill | 0<br>6<br>9<br>**<12>**<br>16 |
| 3. SEEPAGE FROM SLOPE FACE<br>a) **None or near bottom only**<br>b) Near mid-slope only<br>c) Near crest only or from several levels | **<0>**<br>6<br>12 |
| 4. SLOPE HEIGHT<br>a) 2m or less<br>b) 2.1 to 5m<br>c) **5.1 to 10m**<br>d) more than 10m | 0<br>2<br>**<4>**<br>8 |
| 5. VEGETATION COVER ON SLOPE FACE<br>a) Well vegetated: heavy shrubs or forested with mature trees<br>b) **Light vegetation: mostly grass, weeds, occasional trees, shrubs**<br>c) No vegetation, bare | 0<br>**<4>**<br>8 |
| 6. TABLE LAND DRAINAGE<br>a) **Table land flat, no apparent drainage over slope**<br>b) Minor drainage over slope, no active erosion<br>c) Drainage over slope, active erosion, gullies | **<0>**<br>2<br>4 |
| 7. PROXIMITY OF WATERCOURSE TO SLOPE TOE<br>a) **15 metres or more from slope toe**<br>b) Less than 15 metres from slope toe | **<0>**<br>6 |
| 8. PREVIOUS LANDSLIDE ACTIVITY<br>a) **No**<br>b) Yes | **<0>**<br>6 |
| SLOPE INSTABILITY RATING — RATING VALUES TOTAL — INVESTIGATION REQUIREMENTS<br>Toe Erosion? NO | Total<br>**20** |

| | | |
|---|---|---|
| 1. **Low potential** | **<24** | Site Inspection only, confirmation, report letter. |
| 2. Slight potential | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. Moderate potential | >35 | Borehole investigation, piezometers, lab tests, surveying, detailed report. |

NOTES:
a) This chart does not apply to rock slopes or to Leda Clay slopes (Ottawa area).
b) Choose only one from each category and compare total rating with above requirements.
c) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe, the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

Reference: Table 4.2, Technical Guide – River & Stream Systems: Erosion Hazard Limit. Ontario Ministry of Natural Resources.

TABLE III – Slope Section C-C

**SLOPE STABILITY RATING CHART**

| | |
|---|---|
| Site Location: Airport Road, Caledon<br>Property Owner: N/A<br>Inspected By: B.Ehgoetz | Project No.: 56106-100<br>Inspection Date: October 24, 2024<br>Weather: Overcast 15 $^{O}$C |

| | Rating Value (select one) For Section B |
|---|---|
| 1. SLOPE INCLINATION<br>Degrees horizontal:vertial<br>a) **16 or less 3:1 or flatter**<br>b) 16 to 26 2:1 to 3:1<br>c) 26 or more steeper than 2:1 | **<0>**<br>6<br>16 |
| 2. SOIL STRATIGRAPHY<br>a) Shale, Limestone (bedrock)<br>b) Sand, Gravel<br>c) Till<br>d) **Clay, Silt**<br>e) Fill | 0<br>6<br>9<br>**<12>**<br>16 |
| 3. SEEPAGE FROM SLOPE FACE<br>a) **None or near bottom only**<br>b) Near mid-slope only<br>c) Near crest only or from several levels | **<0>**<br>6<br>12 |
| 4. SLOPE HEIGHT<br>a) 2m or less<br>b) 2.1 to 5m<br>c) **5.1 to 10m**<br>d) more than 10m | 0<br>2<br>**<4>**<br>8 |
| 5. VEGETATION COVER ON SLOPE FACE<br>a) Well vegetated: heavy shrubs or forested with mature trees<br>b) **Light vegetation: mostly grass, weeds, occasional trees, shrubs**<br>c) No vegetation, bare | 0<br>**<4>**<br>8 |
| 6. TABLE LAND DRAINAGE<br>a) **Table land flat, no apparent drainage over slope**<br>b) Minor drainage over slope, no active erosion<br>c) Drainage over slope, active erosion, gullies | **<0>**<br>2<br>4 |
| 7. PROXIMITY OF WATERCOURSE TO SLOPE TOE<br>a) **15 metres or more from slope toe**<br>b) Less than 15 metres from slope toe | **<0>**<br>6 |
| 8. PREVIOUS LANDSLIDE ACTIVITY<br>a) **No**<br>b) Yes | **<0>**<br>6 |
| SLOPE INSTABILITY RATING — RATING VALUES TOTAL — INVESTIGATION REQUIREMENTS<br>Toe Erosion? NO | Total<br>**20** |

| | | |
|---|---|---|
| 1. **Low potential** | **<24** | Site Inspection only, confirmation, report letter. |
| 2. Slight potential | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. Moderate potential | >35 | Borehole investigation, piezometers, lab tests, surveying, detailed report. |

NOTES:
a) This chart does not apply to rock slopes or to Leda Clay slopes (Ottawa area).
b) Choose only one from each category and compare total rating with above requirements.
c) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe, the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

Reference: Table 4.2, Technical Guide – River & Stream Systems: Erosion Hazard Limit. Ontario Ministry of Natural Resources.

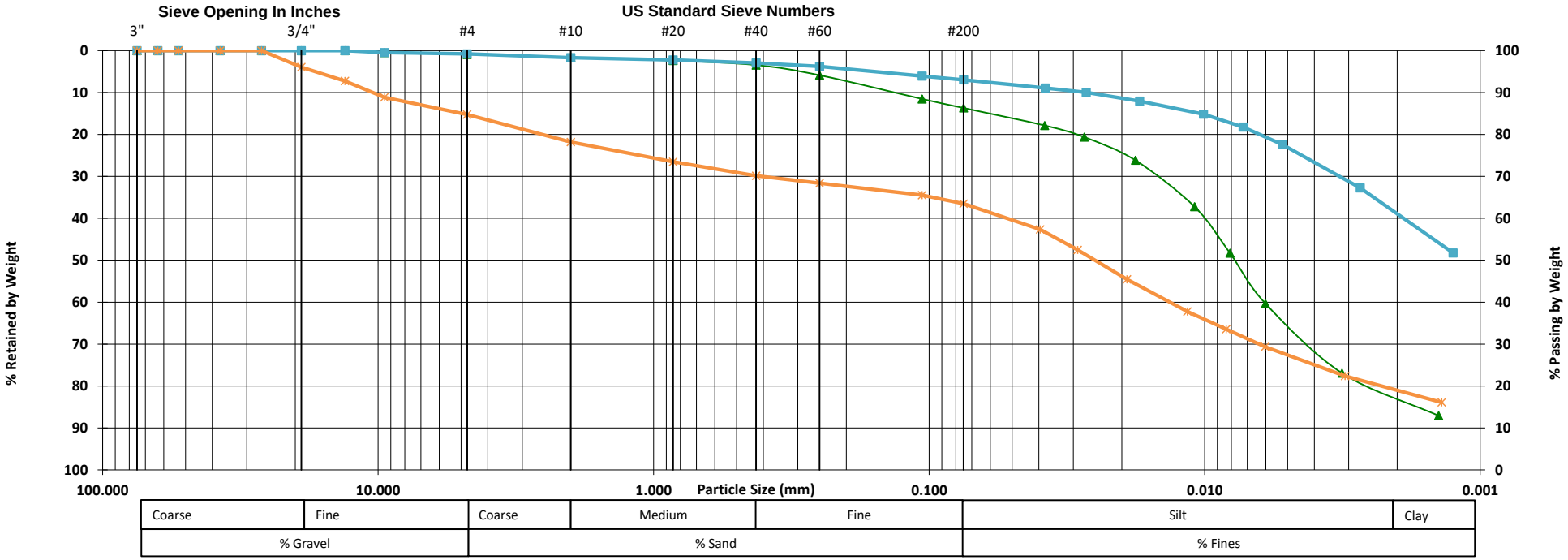
# Particle Size Distribution Analysis Test Results

**Project Name:** Airport Road Slope Stability Assessment
**Client:** Broccolini Construction (Toronto) Inc.
**Project Location:** Caledon, ON

**Date Sampled:** Jan. 14-17, 2025
**Date Tested:** Feb. 2-4, 2025

**MTE File No.:** 56106-100
**Table No:** 101

## Unified Soil Classification




| Symbol | Borehole ID | Sample # | Sample Depth | Description |
|---|---|---|---|---|
| ▲ | MW202-25 | SS-6 | 6.2-6.6 mbgs | SILT, some Clay and Sand, trace Gravel |
| ■ | BH205-25 | SS-4 | 2.3-2.9 mbgs | Silty CLAY, trace Sand and Gravel |
| ✳ | BH206-25 | SS-6 | 4.6-5.2 mbgs | Sandy SILT, some Clay and Gravel |

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For specific tests as listed on www.ccil.com

**NOTES:**