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A REPORT TO
DE ZEN REALTY COMPANY LIMITED

A GEOTECHNICAL INVESTIGATION FOR PROPOSED ROAD EXTENSION AND STORM OUTFALL

7140 HURONTARIO STREET

CITY OF MISSISSAUGA

REFERENCE NO. 2507-S026

SEPTEMBER 2025

DISTRIBUTION

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1.0 INTRODUCTION

In accordance with an email authorization dated July 4, 2025, from Mr. Mark Palmieri of De Zen Realty Company Limited, a geotechnical investigation was carried out within a parcel of land known as 7140 Hurontario Street in the City of Mississauga.

The purpose of this investigation was to reveal the subsurface conditions and determine the engineering properties of the disclosed soils for the design and construction of a proposed Road Extension and Storm Outfall. The geotechnical findings and resulting recommendations are presented in this Report.

2.0 SITE AND PROJECT DESCRIPTION

The site is located in the Physiographic Region of Peel Plain, consisting of Bevelled Till Plains with clay to silt-textured till derived from glaciolacustrine deposits or shale.

The subject sites, currently known as 0 Vicksburgh Drive and 7174 Derrycrest Drive, have a total area of 17.6 hectares and is located at the south quadrant of Highway 407 and Hurontario Street in the City of Mississauga. The property is bounded by the Hydro One Easement to the north and northeast, Fletcher’s Creek to the west, Derrydale Golf Course and an office building to the south, and Derrycrest Drive to the east. A portion of the property has been divided by a tributary of Fletcher’s Creek. At the time of investigation, the properties are being used as farm land and a portion of the land along Derrycrest Drive was used as a winter light show venue which was being dismantled. The grading of the site gradually descends toward Fletcher’s Creek to the west and south.

At the time of the report preparation, detailed design for the proposed development has not been finalized; however, it is understood that an Industrial Development is being proposed. As part of the development, a new road extension including a crossing over the tributary of Fletcher’s Creek beyond the end of Vicksburgh Drive is proposed, along with a new storm outfall at the southwest limit of the property.

3.0 FIELD WORK

The field work, consisting of 3 sampled boreholes to depths ranging from 5.1 to 10.8 m, was performed on July 28 and August 1, 2025 at the locations shown on the Borehole Location Plan, Drawing No. 1, enclosed. The borehole locations were specified by Skira and Associates Ltd., the civil consultant of the project.

All boreholes were advanced at intervals to the sampling depths by a track-mounted machine with solid-stem augers for soil sampling. Standard Penetration Tests (SPTs), using the procedures described on the enclosed "List of Abbreviations and Terms", were performed at the sampling depths. The test results are recorded as the Standard Penetration Resistance (or 'N' values) of the subsoil. The compactness of the cohesionless strata and the consistency of the cohesive strata are inferred from the 'N' values. Split-spoon samples were recovered for soil classification and laboratory testing.

The field work was supervised and the findings were recorded by a Geotechnical Technician. The ground elevation at each of the borehole location was obtained using the Global Navigation Satellite System (GNSS).

4.0 SUBSURFACE CONDITIONS

The investigation revealed that beneath the topsoil veneer, and in the area fronting Vicksburgh Drive, a pavement structure and earth fill, the site is underlain by stratum of silty clay till and silty sand till.

Detailed descriptions of the encountered subsurface conditions are presented on the Boreholes Logs, comprising Figures 1, 2 and 3. The revealed stratigraphy is plotted on the Subsurface Profile, Drawing No. 2. The engineering properties of the disclosed soils are discussed herein.

4.1 Topsoil

The revealed topsoil is 8 cm to 20 cm in thickness encountered in Boreholes 2, 4 and 5 which are located at the vacant land.

4.2 Pavement Structure

A pavement structure, consisting of a layer of 100 mm thick asphalt and 510 mm thick granular fill, were encountered at Borehole 1, located at the cul-de-sac of Vicksburgh Gate.

4.3 Earth Fill

A layer of earth fill was encountered beneath the pavement structure at Borehole 1. The fill consists of sand and gravel. The earth fill extends to a depth of 1.5 m below the prevailing ground surface.

4.4 Silty Clay Till

The silty clay till was encountered in all boreholes. It extends to the borehole depths of 4.6 m to 7.6 m from the ground surface and is the predominant soil in the revealed stratigraphy. It consists of a random mixture of particle sizes ranging from clay to gravel, with the silt and clay being the dominant fraction. Sample examination indicates that it is sandy and contains a trace of gravel, with occasional sand seams, cobbles and boulders. Grain size analysis was performed on a silty clay till sample; the result is plotted on Figure 6.

The obtained 'N' values range from 7 to 54 blows, with a median of 25 blows per 30 cm of penetration, indicating the silty clay till is firm to hard, being generally very stiff in consistency. The surficial till is weathered, extending to depths of 0.6 m to 1.3 m below the prevailing ground surface.

The water content of silty clay till samples range between 10% and 18%, with a median of 13%, indicating moist to very moist, generally moist condition. Atterberg limits of a silty clay till sample is carried out, having Liquid Limit of 25% and Plastic Limit of 16%, showing that the sample is low in plasticity.

The engineering properties of the silty clay till deposit are presented below:

- High frost susceptibility and high soil-adfreezing potential.
- Low water erodibility.
- It will generally be stable in a relatively steep cut; however, prolonged exposure will allow the fissures in the weathered zone and the wet sand seams and layers to become saturated, which may lead to localized sloughing.

4.3 Silty Sand Till

The silty sand till was contacted beneath the silty clay till in Boreholes 2 and 3. It extends to the borehole depths of 6.6 m to 10.8 m from the ground surface. It consists of a random mixture of particle sizes ranging from clay to gravel, with the sand and silt being the dominant fraction. Sample examination indicates that it contains a trace of clay, some gravel and occasional sand seams. Grain size analysis was performed on 1 representative sample of the till and the result is plotted on Figure 7.

The compactness of the deposit is dense to very dense, being generally very dense, as inferred from the 'N' values ranging from 47 to over 100 blows, with a median over 100 blows per 30 cm of penetration.

The natural water content of the soil samples ranges from 8% to 10%, with a median of 9%, showing generally moist conditions.

The engineering properties of the till deposit are listed below:

- Moderate frost susceptibility.
- Moderate water erodibility.
- The till will be stable in relatively steep cuts; however, under prolonged exposure, localized sheet sliding may occur.

4.5 Compaction Characteristics of the Revealed Soils

The obtainable degree of compaction is primarily dependent on the soil moisture and, to a lesser extent, on the type of compactor used and the effort applied. As a general guide, the typical water content values of the revealed soils for Standard Proctor compaction are presented in Table 1.

Table 1 - Estimated Water Content for Compaction of On-Site Material

Soil Type	**Determined Natural Water Content (%)**	**Water Content (%) for Standard Proctor Compaction**	
		100% (optimum)	**Range for 95% or +**
Silty Clay Till	10 to 18 (median 13)	16	12 to 21
Silty Sand Till	8 to 10 (median 9)	10 to 12	6 to 17

* The above values are provided as a guideline. Standard Proctor Tests must be performed on bulk samples collected from site during construction prior to backfill and compaction.

5.0 GROUNDWATER CONDITION

All boreholes remained dry on completion of the field work.

The groundwater level will fluctuate with seasons and affected by the water level of Fletcher's Creek.

6.0 DISCUSSION AND RECOMMENDATIONS

The investigation revealed that beneath the topsoil veneer, and in localized area, pavement structure consisting of asphalt and granular fill overlying a layer of earth fill in the area fronting Vicksburgh Drive, the site is underlain by stratum of silty clay till and silty sand till.

At the time of the report preparation, design for the proposed development has not been finalized; however, it is understood a road extension will be provided beyond Vicksburg Gate for the future industrial development, including a road crossing over a tributary of Fletcher's Creek and a new storm outfall at the southwest limit of the property. The geotechnical findings warranting special consideration for the proposed project are presented below:

1. The topsoil must be removed for site development. It can only be re-used for landscaping in designated areas.
2. After demolition of the existing structures and foundations, the debris must be removed and disposed off-site.
3. The native soils are weathered extending to depths ranging from 0.6 to 1.3 m from the prevailing ground surface. It is weak and will consolidate under surcharge loads. To upgrade the weathered soils to engineered status, they must be subexcavated, sorted, aerated and properly compacted.
4. Due to the presence of earth fill, weathered soils, the subgrade of proposed structures must be inspected by a geotechnical engineer, or a geotechnical technician under the supervision of a geotechnical engineer, to assess its suitability for bearing the designed foundations.
5. Further investigation will be necessary for the proposed industrial buildings and associated structures of the development.

The recommendations appropriate for the design of the development are presented herein. One must be aware that the subsurface conditions may vary between boreholes. Should subsurface variances become apparent during construction, a geotechnical engineer must be consulted.

6.1 **Road Embankment and Crossing Approach**

Where the grading is to be raised at the road crossing, the on-site native soils, where its moisture is properly controlled, is generally suitable for reuse for the embankment construction. The placement of the earth fill must be completed as engineered fill. The requirements for the construction of the road embankment and site grading by engineered fill are presented below:

The topsoil must be stripped and removed for development. It can be stockpiled on site and reused in landscaped areas.

The existing structures and foundations must be demolished and the debris must be removed and disposed off-site. The backfill must be free of topsoil or deleterious material, placed and compacted to engineered fill specifications.

1. The earth fill and weathered soils must be subexcavated, sorted free of topsoil inclusions or deleterious materials, if any, prior to its reuse as engineered fill.
2. The exposed subgrade must be inspected and proof-rolled prior to any fill placement.
3. Inorganic soils must be used for the fill, and they must be uniformly compacted in lifts 20 cm thick to 98% or + of the maximum Standard Proctor dry density (SPDD) up to the proposed pre-grade or finished grade. The soil moisture must be properly controlled near the optimum. If the foundations are to be built soon after the fill placement, the densification process for the engineered fill must be increased to 100% SPDD.
4. If the engineered fill is compacted with the moisture content on the wet side of the optimum, the underground services and pavement construction should not begin until the pore pressure within the fill mantle has completely dissipated. This must be further assessed at the time of the engineered fill construction.
5. If imported fill is to be used, it should be inorganic soils, free of any deleterious material with environmental issue (contamination). Any potential imported earth fill from off-site must be reviewed for geotechnical and environmental quality by the appropriate personnel as authorized by the developer or agency, before it is hauled to the site.
6. The engineered fill must not be placed during the period where freezing ambient temperatures occur either persistently or intermittently. This is to ensure that the fill is free of frozen soils, ice and snow.
7. Where the fill is to be placed on a bank steeper than 3 horizontal (H):1 vertical (V), the face of the bank must be flattened to 3H:1V or flatter so that it is suitable for safe operation of the compactor and the required compaction, as well as long-term stability of the slope can be obtained.
8. The fill operation must be supervised on a full time basis and monitored by a technician under the direction of a geotechnical engineer.
9. The engineered fill envelope and finished elevations must be clearly and accurately defined in the field, and they must be precisely documented.
10. Any excavation carried out in the certified engineered fill must be reported to the geotechnical consultant who supervised the fill placement in order to document the locations of excavation and/or to supervise reinstatement of the excavated areas to engineered fill status. If construction on the engineered fill does not commence within a period of 2 years from the date of certification, the condition of the engineered fill must be assessed for re-certification.
11. The footing and underground services subgrade must be inspected by the geotechnical consulting firm that supervised the engineered fill placement. This is to ensure that the foundations and service pipes are placed within the engineered fill envelope, and the integrity of the fill has not been compromised by interim construction, environmental degradation and/or disturbance by the footing excavation.

6.2 Road Crossing and Storm Outfall

At the time of the report preparation, detailed design for the proposed road crossing over the tributary of Fletcher's Creek and the Storm outfall has not been finalized. Preliminary recommendations for the design of the road crossing and storm outfall are presented below.

Road Crossing (Borehole 2)

Based on the borehole findings, the proposed road crossing can be constructed on footings founded below the weathered soils into the competent native soil or on engineered fill. The recommended bearing pressures for the design of the conventional footings, founded between El. 197.4 m and El. 195.4 m, are presented below:

- Maximum Bearing Pressure at Serviceability Limit State (SLS) = 150 kPa
- Factored Bearing Pressure at Ultimate Limit State (ULS) = 240 kPa

Due to the decreasing 'N' values with depth, limited bearing capacity can be provided for the road crossing at shallow depths. Where higher bearing capacity is required, caissons (drilled piers) can be considered. The recommended bearing pressures for the design of the drilled piers, founded below at a depth of 189 m, are presented below:

- Maximum Bearing Pressure at Serviceability Limit State (SLS) = 800 kPa
- Factored Bearing Pressure at Ultimate Limit State (ULS) = 1250 kPa

The drilling operation will require extra effort at lower depths due to the presence of very dense till, cobbles and boulders.

To facilitate ease of subgrade inspection and cleaning, a metal liner should be used to seal off any groundwater seepage or prevent loose soils from caving into the cavity. The caissons should not be less than 80 cm in diameter. The liner can be removed after the pier is filled with concrete.

Alternatively, Helical piers can be considered to support the proposed crossing. The appropriate founding elevation is expected to be at least 9 m or deeper below the ground surface. The design load of Helical Piers can be assessed by the prospective foundation contractor in these specialties. Full scale load test in the field must be conducted to confirm the load carrying characteristics of piers/piles.

The installation of the piers/piles must be supervised and inspected by either a geotechnical engineer, or a geotechnical technician under the supervision of a geotechnical engineer, to ensure that the construction of piles is compatible with the foundation design requirements.

Additional review of the proposed crossing should be carried out once the detailed design becomes available.

Storm Outfall (Borehole 3)

Based on the borehole findings, the proposed storm outfall can be constructed on footings founded below the weathered soils into the competent native soil or on engineered fill. The recommended bearing pressures for the design of the conventional footings, founded below El. 198.5 m, are presented below:

- Maximum Bearing Pressure at Serviceability Limit State (SLS) = 200 kPa
- Factored Bearing Pressure at Ultimate Limit State (ULS) = 320 kPa

General Recommendations

The total and differential settlements of footings designed for the bearing pressure at SLS are estimated to be 25 mm and 20 mm, respectively.

During construction, the foundation subgrade must be inspected by a geotechnical engineer or a senior geotechnical technician to ensure that the revealed conditions are compatible with the foundation design requirements.

The foundation of the road crossing and outfall should extend into the sound native soils below the frost depth of 1.2 m or the scouring depth, whichever is deeper.

If groundwater seepage is encountered in excavation, the foundation must be poured immediately after subgrade inspection or the subgrade should be protected by a concrete mud-slab immediately after exposure. This will prevent construction disturbance and costly rectification of the bearing subsoil.

The building foundation should meet the requirements specified in the latest Ontario Building Code and the structures should be designed to resist an earthquake force using Site Classification ‘D’ (stiff soil).

6.3 Underground Services

The underground services should be founded on sound native soil or properly compacted inorganic earth fill. Where incompetent or weathered soil is encountered, it should be subexcavated and replaced with the bedding material, compacted to at least 98% SPDD.

A Class ‘B’ bedding is recommended for the underground services construction. It should consist of compacted 19-mm (3/4”) Crusher-Run Limestone (CRL), or equivalent, as approved by a geotechnical engineer.

The pipe joints connecting into the manholes and catch basins must be leak-proof to prevent the migration of fines through the joints. Openings to subdrains and catch basins should be shielded with a fabric filter to prevent blockage by silting.

A soil cover of at least equal to the diameter of the pipe should be in place at all times after pipe installation, to prevent pipe floatation when the trench is deluged with water derived from precipitation.

The on-site clayey soils are considered moderately high in corrosivity to ductile iron pipes and metal fittings; therefore, the underground services should be protected against soil corrosion. For estimation for the anode weight requirements, the electrical resistivities disclosed in Table 4 can be used. The proposed anode weight must meet the minimum requirements as specified by the Region and Municipality Standard.

6.4 Backfilling in Trenches and Excavated Areas

The on site inorganic soils are suitable for use as trench backfill. Where the soils are either too dry or on the dry site of the optimum, the soil may require wetting prior to structural compaction. Where the soils are wet, they must be aerated by spreading thinly on the ground or mixed with drier soil prior to structure compaction. The weathered soils must be sorted free of concentrated topsoil and organics, if any, before reusing for structural backfill and/or engineered fill.

When compacting the till on the dry side of the optimum, the compactive energy will frequently bridge over the chunks in the soil and be transmitted laterally into the soil mantle. Therefore, the lifts should be limited to 20 cm or less (before compaction), or to a suitable thickness assessed by test strips performed by the compaction equipment. Boulders over 15 cm in size must be sorted and removed from the backfill.

The backfill in service trenches should be compacted to at least 95% SPDD, increasing to 98% SPDD below the concrete floor slab and within 1.0 m below the pavement. The material should be compacted with the water content at 2% to 3% drier than the optimum.

In normal construction practice, the problem areas of pavement settlement largely occur adjacent to manholes, catch basins, services crossings, foundation walls and columns. In confined areas where the desired slope cannot be achieved or the operation of a proper heavy-duty compactor cannot be facilitated, sand fill or granular backfill, which can be appropriately compacted by using a smaller vibratory compactor, should be used.

Road Embankment

Backfill around the new road crossing should consist of non-frost susceptible granular material. If a culvert is considered, the backfill must be placed and compacted simultaneous on all sides to prevent unbalanced loading on the culvert. It should be compacted to at least 98% SPDD in 20 cm lifts, or to a suitable thickness as assessed by test strips performed by the equipment which will be used at the time of construction.

Earth fill of the road embankment beyond the culvert crossing can consist of selected on-site or imported inorganic soils, compacted uniformly to 98% SPDD in 20 cm lifts.

The proposed embankment should be graded at a 3 Horizontal (H):1 Vertical (V) or flatter for stability and sodded/vegetated to protect against rainwash erosion. Where steeper slope gradient is considered, a separate stability assessment must be performed to verify the stability of the slope.

The compaction must be inspected by a geotechnical technician under the supervision of a geotechnical engineer, to ensure that the backfill is compatible for road construction.

6.5 Pavement Design

The proposed road extension may be a private condominium road or a local industrial road. The pavement designs are presented in Table 2.

Table 2 - Pavement Design (Private Road and Local Industrial Road)

Course	Thickness (mm)	OPS Specifications
Asphalt Surface	40	HL3
Asphalt Binder		
Private Road	65	HL8
Local Industrial Road	100	HDBC
Granular Base	200	Granular 'A'
Granular Sub-base		Granular 'B', Type I
Private Road	250	
Local Industrial Road	400	

The final subgrade must be proof-rolled using a heavy roller or loaded dump truck. Any soft spot as identified must be rectified by subexcavation and replacing with selected dry inorganic material. The subgrade within 1.0 m below the underside of the granular sub-base must be compacted to at least 98% SPDD, with the water content at 2% to 3% drier than its optimum. All the granular bases should be compacted in 150 to 200 mm lifts to 100% SPDD.

The pavement subgrade will suffer a strength regression if water is allowed to saturate the mantle. The following measures should, therefore, be incorporated in the construction procedures and road design:

- If the road is to be constructed during the wet seasons or the subgrade is unstable, the top 1.0 m of the subgrade should be replaced with drier, compacted, selected subgrade material or the top 0.8 m of the subgrade should be replaced with granular material. This can be determined at the time of road construction.
- The subgrade should be properly crowned and smooth-rolled to allow interim precipitation to be properly drained prior to pavement construction.
- Lot areas adjacent to the roads should be properly graded to prevent ponding of large amounts of water. Otherwise, the water will seep into the subgrade mantle and induce a regression of the subgrade strength, with costly consequences for the pavement construction.
- Fabric filter-encased curb subdrains connecting to a positive outlet of catch basin, will be required on both sides of the roadway.

6.6 **Soil Parameters**

The recommended soil parameters for the project design are given in Table 3.

Table 3 - Soil Parameters

Unit Weight and Bulk Factor	**Unit Weight** **γ (kN/m^3)**		**Estimated** **Bulk Factor**	
	Bulk	**Submerged**	**Bulk**	**Submerged**
Silty Sand Till	22.0	12.5	1.33	1.03
Silty Clay Till	21.5	12.5	1.30	1.05

Lateral Earth Pressure Coefficients	**Active** **K_a**	**At Rest** **K_o**	**Passive** **K_p**
Silty Sand Till	0.30	0.40	3.33
Silty Clay Till	0.35	0.45	2.86

Coefficient of Permeability (K) and Percolation Time (T)	**K** **(cm/sec)**	**T** **(min/cm)**
Silty Sand Till	10^{-7}	80+
Silty Clay Till	10^{-4}	12

Effective Shear Strength Parameters	**Cohesion** **c’ (kPa)**	**Angle of** **Internal Friction, ϕ’**
Silty Sand Till	2	31°
Silty Clay Till	5	30°

Estimated Electrical Resistivity	
Silty Clay Till	3000 ohm·cm
Silty Sand Till	5000 ohm·cm

Coefficients of Friction	
Between Concrete and Granular Base	0.50
Between Concrete and Sound Native Soils	0.35

6.7 Excavation

Excavation should be carried out in accordance with Ontario Regulation 213/91. For excavation purposes, the types of soils are classified in Table 4.

Table 4 - Classification of Soils for Excavation

Material	**Type**
Sound Tills	2
Earth Fill and Weathered soils	3

In the tills, any perched groundwater yield can be collected and removed by conventional pumping from sumps.

The hard and very dense tills contain cobbles and boulders. Extra effort and a properly equipped backhoe will be required for excavation. Boulders and shale fragments larger than 15 cm in size are not suitable for structural backfill.

Prospective contractors must be asked to assess the in situ subsurface conditions for soil cuts by digging test pits to 1.0 m below the anticipated depth of excavation. These test pits should be allowed to remain open for a few hours to assess the trenching conditions.

7.0 LIMITATIONS OF REPORT

This report was prepared by Soil Engineers Ltd. for the account of De Zen Realty Company Limited for review by their designated consultants and government agencies. The material in this report reflects the judgement of Sze Wing Yu, B.Eng., and Kelvin Hung, P.Eng., in light of the information available to it at the time of preparation.

Use of this report is subject to the conditions and limitations of the contractual agreement. Any use which a Third Party makes of this report, or any reliance on decisions to be made based on it, is the responsibility of such Third Parties. Soil Engineers Ltd. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

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LIST OF ABBREVIATIONS AND DESCRIPTION OF TERMS

The abbreviations and terms commonly employed on the borehole logs and figures, and in the text of the report, are as follows:

SAMPLE TYPES

AS	Auger sample
CS	Chunk sample
DO	Drive open (split spoon)
DS	Denison type sample
FS	Foil sample
RC	Rock core (with size and percentage recovery)
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash sample

PENETRATION RESISTANCE

Standard Penetration Resistance or 'N' Value:

The number of blows of a 63.5 kg hammer falling from a height of 76 cm required to advance a 51 mm outer diameter drive open sampler 30 cm into undisturbed soil, after an initial penetration of 15 cm.

Plotted as '○'

Dynamic Cone Penetration Resistance:

A continuous profile showing the number of blows per each 30 cm of penetration of a 51 mm diameter, 90° point cone driven by a 63.5 kg hammer falling from a height of 76 cm.

Plotted as '—●—'

WH	Sampler advanced by static weight
PH	Sampler advanced by hydraulic pressure
PM	Sampler advanced by manual pressure
NP	No penetration

SOIL DESCRIPTION

Cohesionless Soils:

'N' (blows/30 cm)	Compactness
0 to 4	very loose
4 to 10	loose
10 to 30	compact
30 to 50	dense
> 50	very dense

Cohesive Soils:

Undrained Shear Strength (kPa)	'N' (blows/30 cm)	Consistency
<12	<2	very soft
12 to <25	2 to <4	soft
25 to <50	4 to <8	firm
50 to <100	8 to <15	stiff
100 to 200	15 to 30	very stiff
>200	>30	hard

Method of Determination of Undrained Shear Strength of Cohesive Soils:

x 0.0 Field vane test in borehole; the number denotes the sensitivity to remoulding

△ Laboratory vane test

METRIC CONVERSION FACTORS

1 ft = 0.3048 m
1 inch = 25.4 mm
1 lb = 0.454 kg
1 ksf = 47.88 kPa

JOB NO.: 2507-S026

LOG OF BOREHOLE: 1

FIGURE NO.: 1

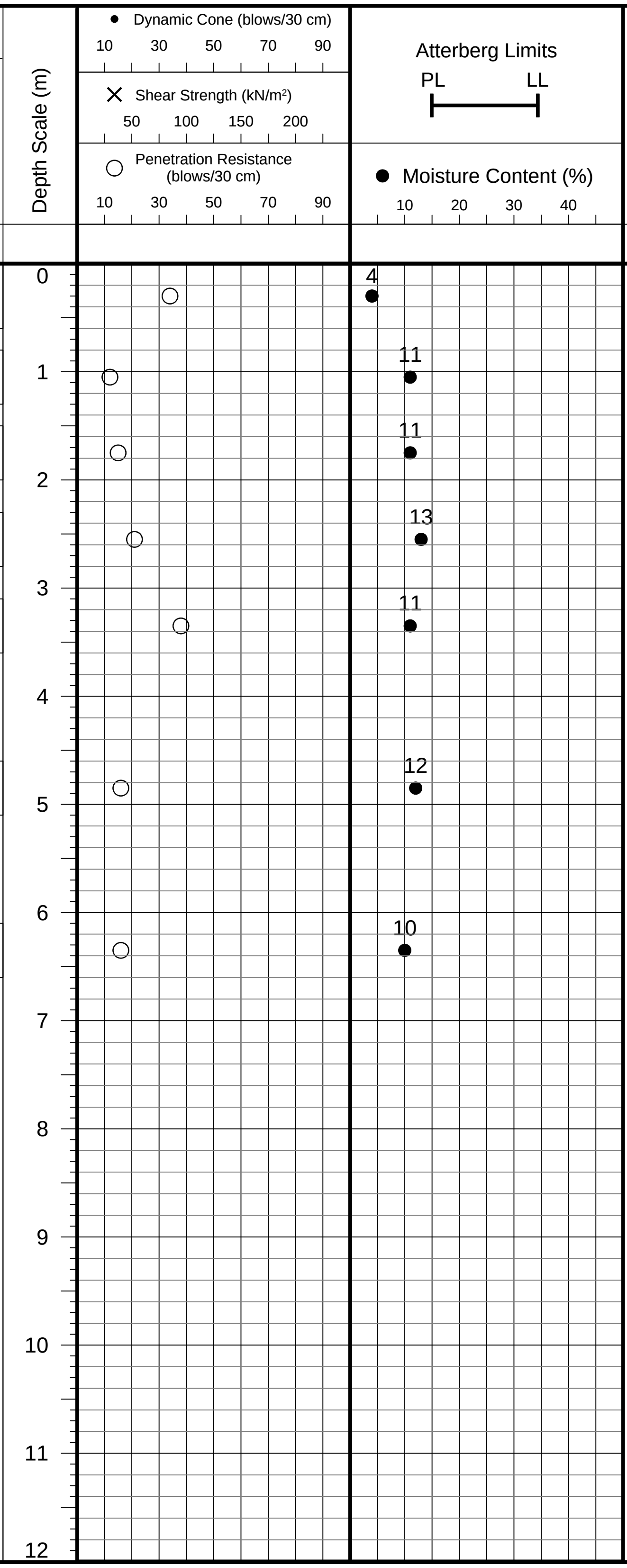
PROJECT DESCRIPTION: Proposed Road Extension and Storm Outfall

METHOD OF BORING: Solid Stem Augers

PROJECT LOCATION: 7140 Hurontario Street, City of Missisauga

DRILLING DATE: July 28, 2025

El. (m) Depth (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES N-Value	WATER LEVEL
202.2	Pavement Surface				
0.0	**100 mm ASPHALT** **510 mm GRANULAR**	1	DO	34	Dry on completion
	Brown **EARTH FILL** sand and gravel	2	DO	12	
200.7 1.5	Very stiff to hard **SILTY CLAY TILL** sandy a trace of gravel occ. sand seams	3	DO	15	
		4	DO	21	
		5	DO	38	
	brown grey	6	DO	16	
		7	DO	16	
195.6 6.6	**END OF BOREHOLE**				



Soil Engineers Ltd.

JOB NO.: 2507-S026

LOG OF BOREHOLE: 2

FIGURE NO.: 2

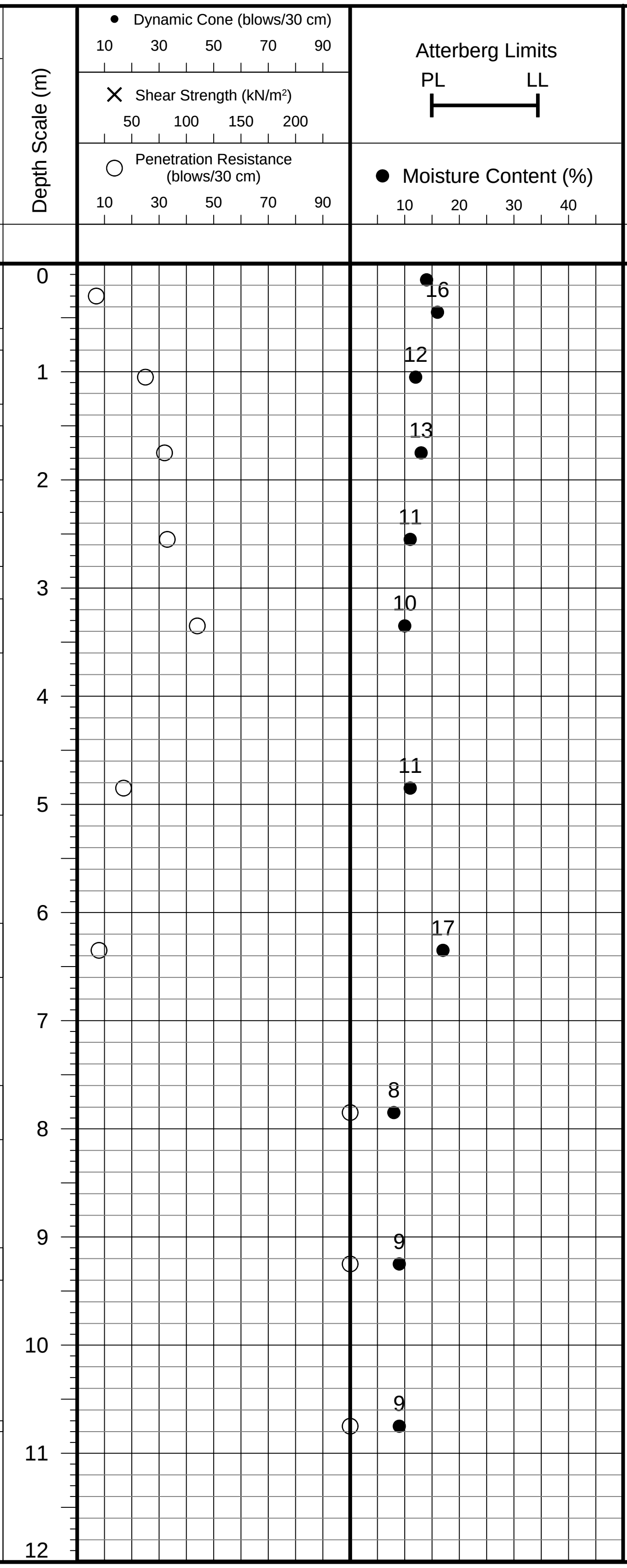
PROJECT DESCRIPTION: Proposed Road Extension and Storm Outfall

METHOD OF BORING: Solid Stem Augers

PROJECT LOCATION: 7140 Hurontario Street, City of Missisauga

DRILLING DATE: July 28, 2025

El. (m) Depth (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES N-Value
198.4	Ground Surface			
0.0	**20 cm TOPSOIL**	1A	DO	7
	Firm to hard **SILTY CLAY TILL** sandy a trace of gravel occ. sand seams weathered	1B		
		2	DO	25
		3	DO	32
		4	DO	33
	brown grey			
		5	DO	44
		6	DO	17
		7	DO	8
190.8 7.6	Grey, very dense **SILTY SAND TILL** a trace of clay some gravel	8	DO	50/13
		9	DO	53/15
187.6 10.8	**END OF BOREHOLE**	10	DO	50/13



WATER LEVEL

Dry on completion

JOB NO.: 2507-S026

LOG OF BOREHOLE: 3

FIGURE NO.: 3

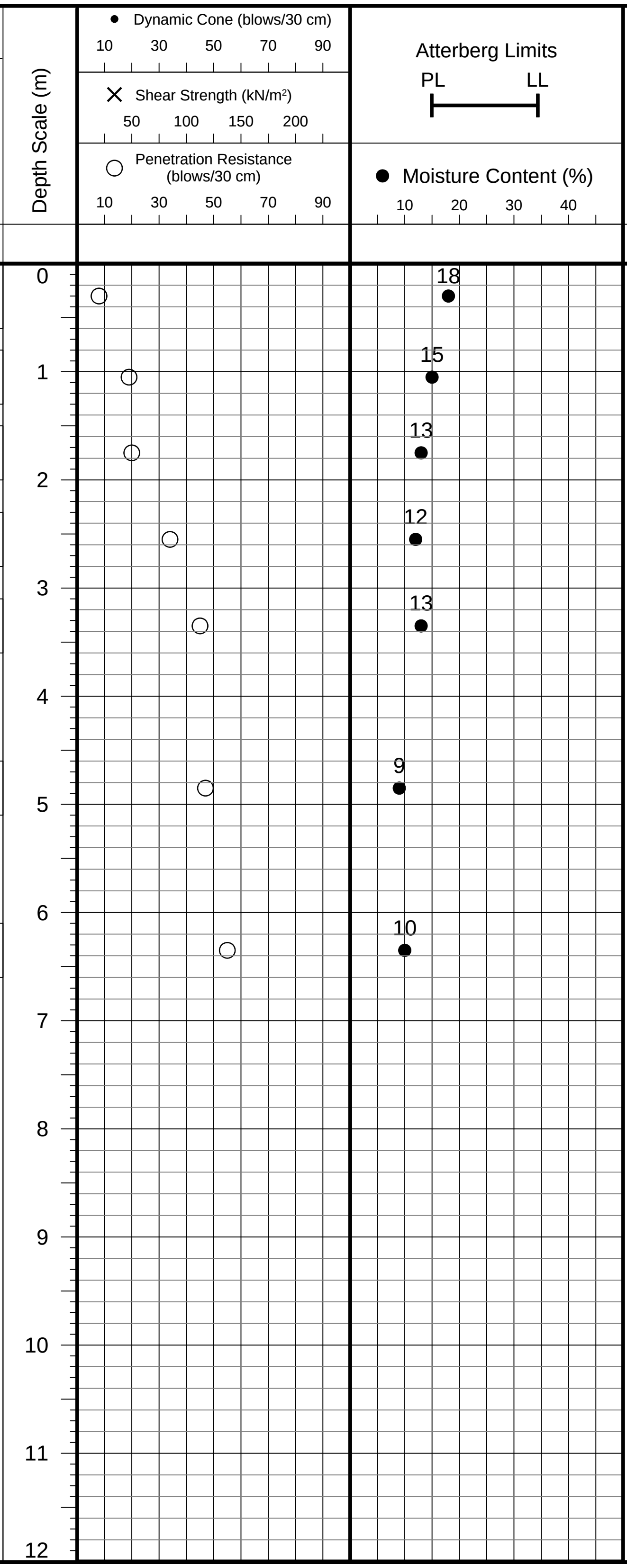
PROJECT DESCRIPTION: Proposed Road Extension and Storm Outfall

METHOD OF BORING: Solid Stem Augers

PROJECT LOCATION: 7140 Hurontario Street, City of Missisauga

DRILLING DATE: August 1, 2025

El. (m) Depth (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES N-Value	WATER LEVEL
199.8	Ground Surface				
0.0	Brown, stiff to hard **SILTY CLAY TILL** sandy a trace of gravel occ. sand seams, coubles and boulders weathered	1	DO	8	Dry on completion
		2	DO	19	
		3	DO	20	
		4	DO	34	
		5	DO	45	
195.2 4.6	Grey, dense to very dense **SILTY SAND TILL** a trace of clay some gravel occ. sand seams	6	DO	47	
		7	DO	55	
193.2 6.6	**END OF BOREHOLE**				



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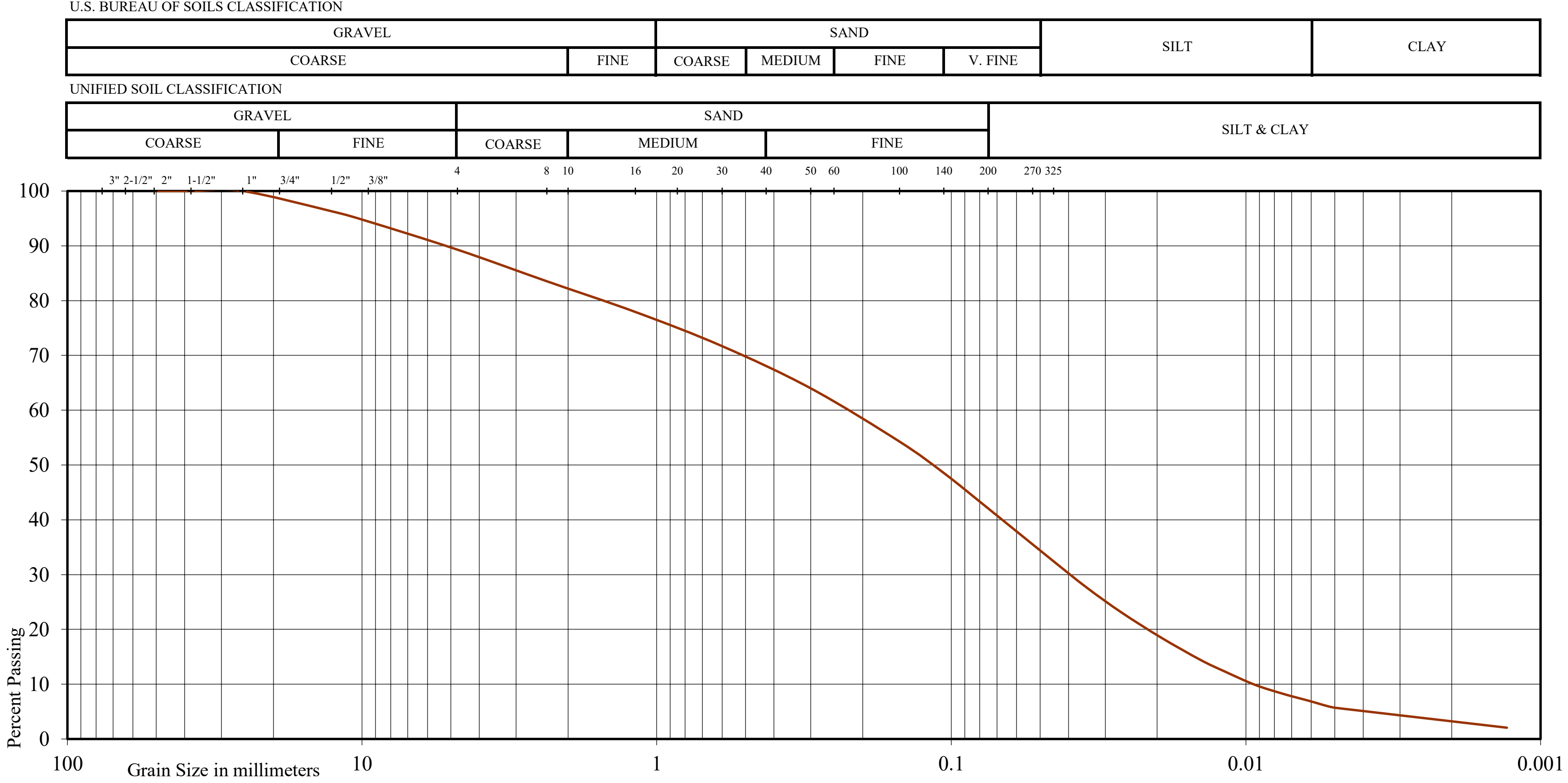
GRAIN SIZE DISTRIBUTION

Reference No: 2507-S026



Project: Proposed Road Extension and Storm Outfall

Location: 7140 Hurontario Street, City of Missisauga

Borehole No: 2

Sample No: 8

Depth (m): 7.9

Elevation (m): 190.5

Liquid Limit (%) = -

Plastic Limit (%) = -

Plasticity Index (%) = -

Moisture Content (%) = 8

Estimated Permeability

(cm./sec.) = 10^{-4}

Classification of Sample [& Group Symbol]: SILTY SAND TILL

a trace of clay, some gravel

Figure: 4

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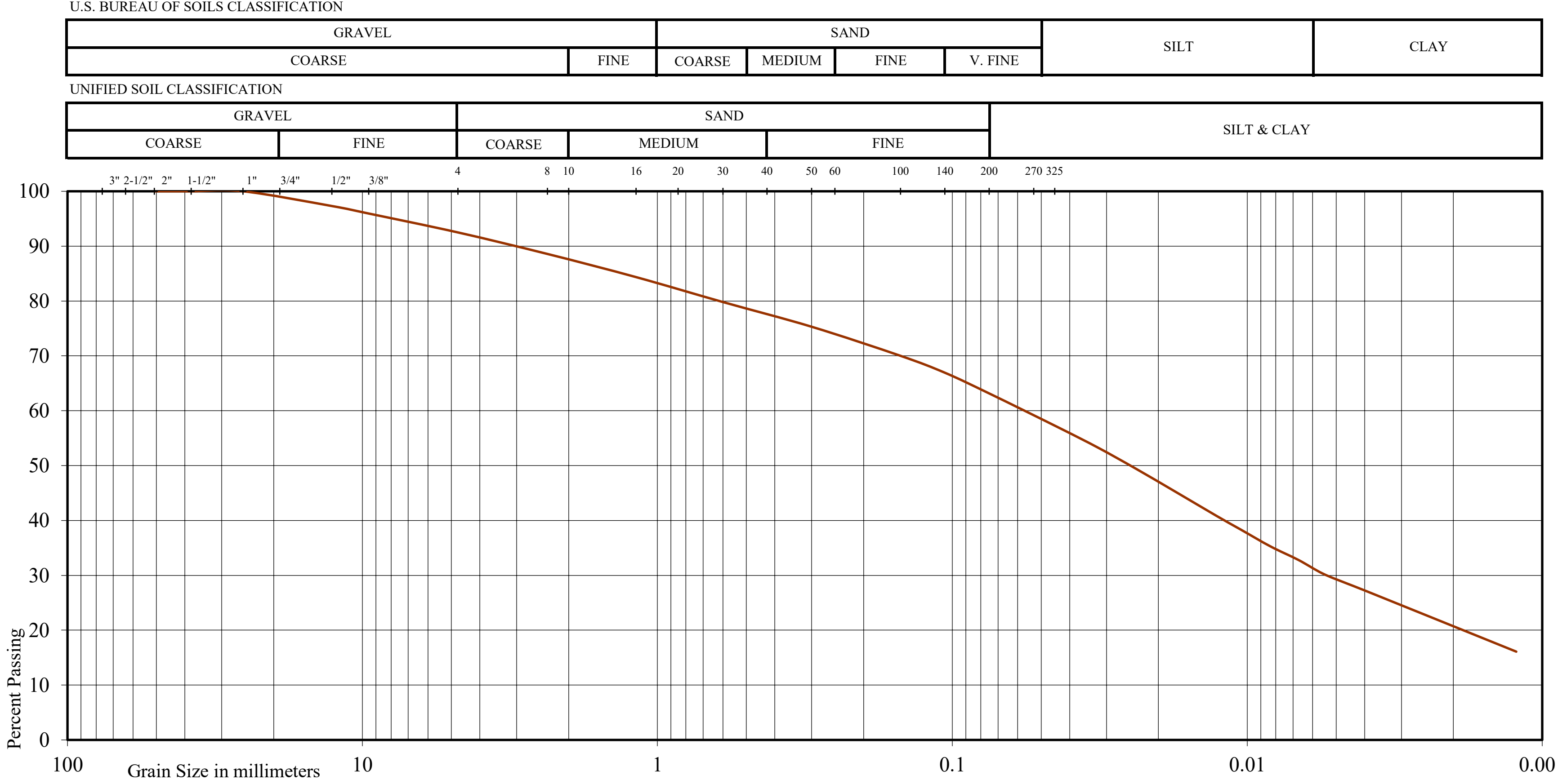
GRAIN SIZE DISTRIBUTION

Reference No: 2507-S026



Project: Proposed Road Extension and Storm Outfall

Location: 7140 Hurontario Street, City of Missisauga

Liquid Limit (%) = 25

Plastic Limit (%) = 16

Borehole No: 3

Plasticity Index (%) = 9

Sample No: 5

Moisture Content (%) = 13

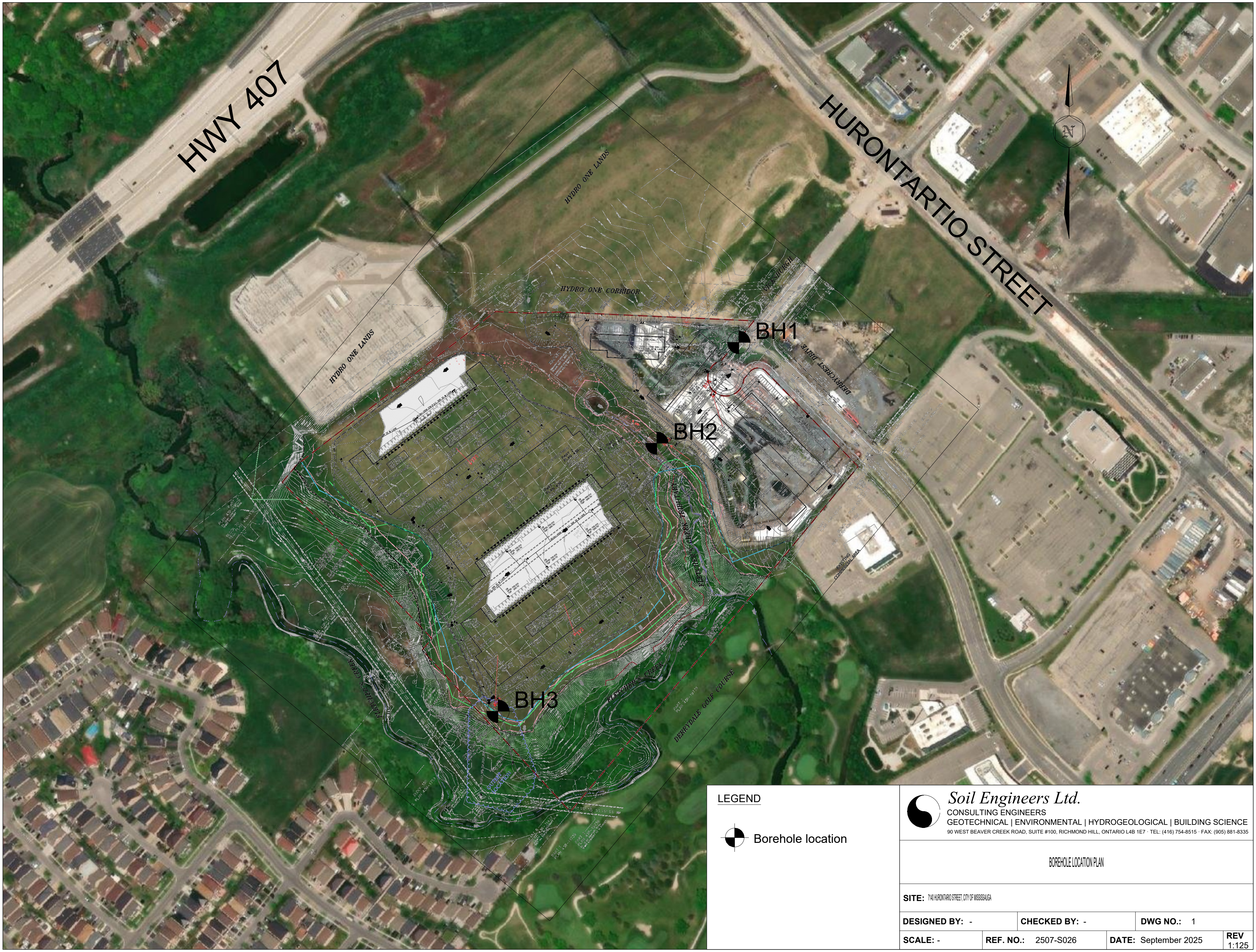
Depth (m): 3.4

Estimated Permeability (cm./sec.) = 10^{-7}

Elevation (m): 196.4

Classification of Sample [& Group Symbol]: SILTY CLAY TILL
sandy, a trace of gravel

Figure: 5



LEGEND

● Borehole location

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CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | HYDROGEOLOGICAL | BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL: (416) 754-8515 · FAX: (905) 881-8335

BOREHOLE LOCATION PLAN

SITE: 7140 HURONTARIO STREET, CITY OF MISSISSAUGA

DESIGNED BY: -
CHECKED BY: -
DWG NO.: 1
SCALE: -
REF. NO.: 2507-S026
DATE: September 2025
REV 1:125

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SUBSURFACE PROFILE
DRAWING NO. 2
SCALE: AS SHOWN

JOB NO.: 2507-S026
REPORT DATE: September 2025
PROJECT DESCRIPTION: Proposed Road Extension and Storm Outfall

PROJECT LOCATION: 7140 Hurontario Street, City of Missisauga

LEGEND

▤	TOPSOIL	⁙	GRANULAR	▥	SILTY SAND TILL	▨	SILTY CLAY TILL
■	ASPHALT	▩	FILL