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**A REPORT TO
BRIARWOOD (DUNDALK) LTD.**

**A GEOTECHNICAL INVESTIGATION FOR
PROPOSED RESIDENTIAL DEVELOPMENT**

**CON 2 SWTSR PT LOT 234
SOUTHEAST OF GREY ROAD 9 AND IDA STREET**

TOWNSHIP OF SOUTHGATE (DUNDALK)

REFERENCE NO. 2310-S058

**SEPTEMBER 2026
(2nd REVISION OF REPORT DATED DECEMBER 2024)**

DISTRIBUTION

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1.0 **INTRODUCTION**

In accordance with written authorization dated October 30, 2023 from Mr. Enzo Di Giovanni of Briarwood (Dundalk) Ltd., a geotechnical investigation was carried out on a parcel of land, legally described as “CON SWTSR PT LOT 234”, located southeast of Grey Road 9 and Ida Street in the Township of Southgate (Dundalk).

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

2.0 **SITE AND PROJECT DESCRIPTION**

The Township of Southgate (Dundalk) is situated in the physiographic region known as the Dundalk Till Plain, where moraines and eskers occur in areas that have been partly eroded by glacial Lake Algonquin and filled with lacustrine sands, silts, clays and reworked till.

The subject site is located east of Ida Street, approximately 650 m south of Grey Road 9 in the Township of Southgate (Dundalk). The property is approximately 51.3 acres and is generally weed-covered, with two watercourses traversing through the property. At the time of investigation, the center portion of the site was flooded.

Based on the Functional Grading Plan prepared by Valdor Engineering Inc., dated September 27, 2024, the western portion of the site fronting Ida Street will be developed into 2 buildings, 5-storey in height, with on-grade parking spaces and associated landscaping. The development will be provided with municipal services and access roadways meeting the Town’s standards.

3.0 **FIELD WORK**

The field work within the present development limits, consisting of 4 boreholes extending to depths ranging from 6.3 to 6.6 m, was performed on October 30 and 31, 2023. Upon completion of the borehole drilling and sampling, groundwater monitoring wells were installed in 3 of the boreholes to facilitate a hydrogeological assessment, which will be presented under a separate cover. The depth and details of the monitoring wells are shown on the corresponding Borehole Logs. The borehole locations are shown on the Borehole and Monitoring Well Location Plan, Drawing No. 1.



The boreholes were advanced at intervals to the sampling depths by a track-mounted machine using hollow stem augers and equipped with split spoon sampler for soil sampling. Standard Penetration Tests, 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 data was recorded by a geotechnical technician.

The ground elevation at each borehole and monitoring well location was determined using a handheld Global Navigation Satellite System (GNSS) equipment.

4.0 **SUBSURFACE CONDITIONS**

The investigation revealed that beneath the topsoil, the site is generally underlain by a stratum of sandy silt till.

Detailed descriptions of the encountered subsurface conditions are presented on the Borehole Logs, comprising Figures 1 to 4, inclusive, and are summarized on the Subsurface Profile, Drawing No. 2. The engineering properties of the disclosed soils are discussed herein.

4.1 **Topsoil**

The layer of topsoil, ranging from 18 to 40 cm thick, was encountered at all borehole locations. The topsoil is dark brown in colour, indicating appreciable amounts of roots and humus which are compressible under loads. The thickness of the topsoil may vary, and thicker topsoil can occur in the low-lying and treed areas.

4.2 **Sandy Silt Till**

The sandy silt till was encountered beneath the topsoil in all boreholes. It consists of a random mixture of particle sizes ranging from clay to gravel, with sand and silt predominating the soil stratigraphy. A grain size analysis was performed on a representative sandy silt till sample and the result is presented on Figure 5.



The obtained 'N' values of the till range from 4 to over 100, with a median of 25 blows per 30 cm of penetration, indicating that the till is very loose to very dense, being generally compact in relative density. The very loose condition is generally restricted to the weathered zone which extends to a depth of up to 1.2 m below the prevailing ground surface.

The natural water content values range from 7% to 17%, with a median of 9%, indicating that the sandy silt till is dry to very moist, generally in moist condition. The high water content values are restricted to the weathered zone.

The engineering properties of the sandy silt till are presented below:

- Highly frost susceptible and low water erodibility.
- In excavation, the till will be stable in steep cuts. However, local sloughing and sheet collapse may occur under prolonged exposure.

4.3 **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

Soil Type	Determined Natural Water Content (%)	Water Content (%) for Standard Proctor Compaction	
		100% (optimum)	Range for 95% or +
Sandy Silt Till	7 to 17 (median 9)	13	8 to 17

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

5.0 **GROUNDWATER CONDITION**

The boreholes were checked for the presence of groundwater on completion of the field work. The groundwater levels are summarized in Table 2.

**Table 2 - Groundwater Level on Completion**

Borehole No.	Ground Elevation (m)	Borehole Depth (m)	Monitoring Well Depth (m)	Groundwater Level on Completion	
				Depth (m)	Elevation (m)
1	513.0	6.6	6.1	5.3	507.7
2	512.3	6.3	6.1	4.6	507.7
3	513.5	6.6	No well	Dry	-
4	511.7	6.6	6.1	3.7	508.0

Groundwater was detected in Boreholes 1, 2 and 4 at depths ranging from 3.7 to 5.3 m below the prevailing ground surface, or between El. 508.0 to 505.7 m, on completion of the borehole drilling. The groundwater is subject to seasonal fluctuation.

Groundwater levels in the monitoring wells were recorded over three monitoring events, on November 20, December 11 and January 10, 2024. The groundwater data is summarized in Table 3:

Table 3 - Groundwater Level in Monitoring Well

Borehole No.	Groundwater Level in Monitoring Wells					
	November 20, 2023		December 11, 2023		January 10, 2024	
	Depth (m)	El. (m)	Depth (m)	El. (m)	Depth (m)	El. (m)
1	1.36	511.69	0.72	512.33	0.40	512.65
2	0.83	511.48	0.22	512.09	-0.05*	512.36
4	0.83	510.84	0.43	511.24	0.24	511.43

* Groundwater level measured above ground surface

The recorded groundwater level in the monitoring wells ranges from above the ground surface at El. 512.36 m to El. 510.84 m. The groundwater level within the property will fluctuate with seasons. Detail groundwater condition at the site will be presented in the hydrogeological report under separate cover.

6.0 **DISCUSSION AND RECOMMENDATIONS**

The investigation revealed that beneath the topsoil, the site is generally underlain by a stratum of sandy silt till.



Groundwater was detected in Boreholes 1,2 and 4 at depths ranging from 3.7 to 5.3 m below the prevailing ground surface, or between El. 508.0 to 505.7 m on completion of the borehole drilling. Stabilized groundwater level in the monitoring wells recorded between November 2023 and January 2024 ranges from El. 512.36 m to 510.84 m. The groundwater is subject to seasonal fluctuation.

A review of the latest site grading plan indicates that the western portion of the site fronting Ida Street will be developed into 2 buildings, 5-storey in height, with on-grade parking spaces and associated landscaping. The development will be provided with municipal services and paved access roadways meeting the Town's standards. The geotechnical findings which warrant special consideration are presented below:

1. The topsoil should be removed prior to site grading and construction of the proposed structures. It can only be reused for landscaping purposes. Any surplus must be removed off site.
2. The weathered till is not suitable to support any structure sensitive to movement. It must be subexcavated, sorted free of organics or other deleterious materials, before reusing as structural backfill.
3. The foundation subgrade must be inspected by a geotechnical engineer or a geotechnical technician under the supervision of a geotechnical engineer, to ensure that the revealed conditions are compatible with the foundation design requirements.
4. Where site grading with additional fill is required, the earth fill can be constructed in an engineered manner for building support, pavement and underground services construction.
5. The proposed buildings can be supported on conventional spread and strip footings founded on the native soils below the weathered zone. The foundation subgrade must be inspected by a geotechnical engineer prior to ensure that the revealed conditions are compatible with the foundation design requirements.
6. A Class 'B' bedding, consisting of 19-mm Crusher-Run Limestone (CRL) or equivalent, is recommended for the construction of the underground services.
7. All excavation must be carried out in accordance with the O. Reg. 213/91.

The recommendations appropriate for the project are presented herein. One must be aware that the subsurface conditions may vary between boreholes. Should this become apparent during construction, a geotechnical engineer must be consulted to determine whether the following recommendations require revision.



6.1 **Site Preparation**

A review of the preliminary functional grading plan prepared by Valdor Engineering Inc., dated August 26, 2026, indicates that the site will be raised for the proposed development. Accordingly, engineered fill can be used for the site grading.

The additional earth filling required to raise the site can be constructed in an engineered manner for building construction, underground services and pavement support. The engineering requirements for a certifiable fill are presented below:

1. The topsoil must be stripped prior to the development. It can be stockpiled at designated area for reuse in landscaped areas only. Any surplus must be removed off site.
2. The exposed subgrade must be inspected and proof-rolled prior to any fill placement. Ploughed soil or badly weathered soil should be further assessed by subexcavation, it must be sorted free of organics or deleterious material, if any, aerated prior to reuse for engineered fill construction.
3. Inorganic soils must be used, and they must be uniformly compacted in lifts 20 cm thick to at least 98% Standard Proctor Maximum Dry Density (SPMDD) up to the proposed 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% SPMDD.
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. If the engineered fill is to be left over the winter months, adequate earth cover, or equivalent, must be provided for protection against frost action.
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.
12. Despite stringent control in the placement of the engineered fill, variations in soil type and density may occur in the engineered fill. Therefore, the foundations must be properly reinforced and designed by structural engineer for the project. The total and differential settlements of 25 mm and 20 mm, respectively, should be considered in the design of the foundations founded on engineered fill.

6.2 **Foundations**

The proposed development will consist of 2 buildings, 5-storey in height, with on-grade parking spaces. The proposed finished floor elevation of the buildings is at El. 513.85 m. The proposed buildings can be supported by conventional spread and strip footings founded on engineered fill or sound native soils below the frost penetration depth. The recommended soil bearing pressures at Serviceability Limit State (SLS) and Ultimate Limit State (ULS) for the design of the footings founded on engineered fill are presented below:

- Maximum Allowable Bearing Pressure (SLS) = 150 kPa
- Factored Ultimate Bearing Pressure (ULS) = 225 kPa

Where higher bearing capacity is required for the 5-storey building, the footings must extend to at least El. 509 m (i.e. approximately 3 to 4 m below the existing grade) extending into the dense soil, the recommended soil bearing pressures at SLS and ULS for the design of the footings are presented below:



- Maximum Allowable Bearing Pressure (SLS) = 300 kPa
- Factored Ultimate Bearing Pressure (ULS) = 475 kPa

Where the foundations are to be extended into more competent ground surface, it may be more cost-effective to subexcavate to a size 20% to 30% larger than the designed footing width, and fill with lean concrete up to the normal footing elevation immediately after the suitable founding soil is exposed. In order to minimize the amount of side sloughing of the incidental in situ material to remain on the approved subgrade prior to construction, the concrete must be readily available. Therefore, the sequence of foundation construction, consisting of footing excavation, subgrade inspection and concreting, must be carried out on a continuous basis.

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

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

Footings exposed to weathering should be protected against frost action by a minimum 1.4 m of earth cover or must be properly insulated.

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 must meet the requirements specified in the latest Ontario Building Code. As a guide, the structure should be designed to resist an earthquake force using Site Classification 'D' (stiff soil).

Due to the high groundwater level encountered within the property, temporary dewatering will be necessary for the proposed foundation construction. Otherwise, soil improvement can be considered to support the proposed structure without the need for deep excavation. The feasibility should be further assessed by contractors specialized in this work. Additional boreholes may be necessary to confirm the appropriate founding elevations and elaborate on the design requirement for the proposed buildings.



6.3 **Slab-On-Grade**

The subgrade for slab-on-grade construction must consist of sound native soils or engineered fill.

In preparation of the subgrade, any weathered and/or loose soil should be subexcavated, sorted free of any deleterious material, aerated and uniformly compacted to at least 98% SPMDD. The subgrade should be inspected and assessed by proof-rolling.

The concrete slab for the building addition must be constructed on a 20 cm thick granular bedding, consisting of 19-mm CRL, compacted to 100% SPMDD. A Modulus of Subgrade Reaction (k_s) of 25 MPa/m can be used for slab design.

The floor slab at the entrances into the heated areas of the building should be insulated with 50-mm Styrofoam, or equivalent, extending 1.4 m internally. This measure is to prevent cold drafts in the winter from inducing frost action in the subgrade and causing damage to the floor slab. In areas where the slab is to be exposed to cold weather conditions, the slab should be fully insulated.

The grading around the building structure must be such that it directs runoff away from the structure.

6.4 **Underground Services**

According to the latest servicing plan dated September 27, 2024, the proposed services within the development is expected to be founded in the native soils. In areas where the weak subgrade was encountered, it should be subexcavated and replaced with properly compacted inorganic soil and/or bedding material compacted to at least 98% SPMDD.

A Class 'B' bedding is recommended for construction of the underground services. The bedding material should consist of compacted 19-mm CRL, or equivalent, as approved by a geotechnical engineer. The pipe joints connecting to the manholes and catch basins should be leak proof or wrapped with a waterproof membrane, to prevent any soil penetration and filtration through the joints.

In order to prevent pipe floatation when the sewer trench is deluged with water derived from precipitation, a minimum soil cover equal to the diameter of the pipe should be in place at all times after completion of the pipe installation. Openings to subdrains and catch basins should be shielded with a fabric filter to prevent blockage by silting.



Any metal pipe and fitting for the underground services should be protected against soil corrosion. For estimation of anode weight requirements, the estimated electrical resistivity of the disclosed soils can be used and it should meet the minimum requirement as stipulated for the Region's and/or Town's requirement.

6.5 **Backfilling in Trenches and Excavated Areas**

The on-site till is generally suitable for a 95% or + SPMDD compaction. The weathered till with higher water content that will be reused should be spread out for aeration or mixed with drier material prior to re-use as an earth fill for site grading and/or trench backfilling.

The lifts for compaction should be limited to 20 cm, or to a suitable thickness as assessed by test strips performed by the equipment which will be used at the time of construction.

The backfill in service trenches or beside foundation walls or below transformer pads should be compacted to at least 95% SPMDD. In the zone below the floor subgrade, concrete slabs, or within 1.0 m below the pavement, the material should be compacted with the water content 2% to 3% drier than the optimum, compacted to 98% of the respective maximum SPMDD.

If the compaction of the soils is carried out with the water content within the range for 95% SPMDD but on the wet side of the optimum, the surface of the compacted soil mantle will roll under the dynamic compactive load. This is unsuitable for pavement construction since each component of the pavement structure is to be placed under dynamic conditions which will induce the rolling action of the subgrade surface and cause structural failure of the new pavement. The foundations or bedding of the sewer and slab-on-grade will be placed on a subgrade which will not be subjected to impact loads. Therefore, the structurally compacted soil mantle with the water content on the wet side or dry side of the optimum will provide an adequate subgrade for the construction.

In normal construction practice, the problem areas of settlement largely occur adjacent to manholes, catch basins, services crossings, foundation walls and columns. A granular backfill should be used for compaction in confined spaces with a smaller vibratory compactor.

The narrow trenches for services crossings should be cut at 1 vertical:2 or + horizontal so that the backfill can be effectively compacted. Otherwise, soil arching will prevent the achievement of proper compaction.



6.6 Pavement Design

The recommended pavement design for the access road and on-grade parking is presented in Table 4.

Table 4 - Pavement Design

Course	Thickness (mm)	OPS Specifications
Asphalt Surface	40	HL3
Asphalt Binder	50	HL8
Granular Base	150	Granular 'A' or equivalent
Granular Subbase		Granular 'B' or equivalent
Parking	300	
Fire Route	450	

In preparation of the pavement, the final subgrade surface must be proof-rolled. Any soft/loose spots identified should be subexcavated and replaced with selected on-site material, free of organics, and uniformly compacted to at least 98% SPMDD. The granular bases should be compacted to 100% SPMDD.

Along the perimeter where surface runoff may drain onto the pavement, an intercept subdrain system should be installed to prevent infiltrating precipitation from seeping into the granular bases (since this may inflict frost damage on the pavement). The subdrains should consist of filter wrapped weepers, and connected to the catch basins and storm manholes. The subdrains should be backfilled with free-draining granular material.

6.7 Soil Parameters

The recommended soil parameters for the project design are given in Table 5.

Table 5 - Soil Parameters

<u>Unit Weight and Bulk Factor</u>	<u>Unit Weight (kN/m³)</u>		<u>Estimated Bulk Factor</u>	
	<u>Bulk</u>	<u>Submerged</u>	<u>Loose</u>	<u>Compacted</u>
Sandy Silt Till	22.5	12.5	1.33	1.05

**Table 5 - Soil Parameters (Cont'd)**

<u>Lateral Earth Pressure Coefficients</u>	Active K_a	At Rest K_o	Passive K_p
Sandy Silt Till	0.32	0.48	3.12
<u>Estimated Coefficients of Permeability (K) and Percolation Times (T)</u>	K (cm/sec)		T (min/cm)
Sandy Silt Till	10 ⁻⁵ to 10 ⁻⁶		20 to 50
<u>Coefficients of Friction</u>			
Between Concrete and Granular Base			0.50
Between Concrete and Sound Native Soils			0.35
<u>Estimated Electrical Resistivity</u>			
Sandy Silt Till			5000 ohm·cm

6.8 **Excavation**

Excavation should be carried out in accordance with Ontario Regulation 213/91. For excavation purposes, the types of soils are classified in Table 6.

Table 6 - Classification of Soils for Excavation

Material	Type
Sandy Silt Till	2
Weathered Till	3

Excavation into the till containing boulders may require extra effort and the use of a heavy-duty excavator.

During excavation, any groundwater yield can be collected and removed by conventional pumping from sumps.

The appropriate method of dewatering should be assessed by test pumping once the bottom of excavation is determined. Detail groundwater condition of the site and the requirement for groundwater control will be discussed in the hydrogeological report under separate cover.

Prospective contractors must be asked to assess the in situ subsurface conditions for soil cuts by digging test pits to at least 1.0 m below the sewer subgrade. These test pits should



be allowed to remain open for a period of at least 4 hours to assess the trenching conditions and to provide safeguard measures for the project excavations.

7.0 **LIMITATIONS OF REPORT**

This report was prepared by Soil Engineers Ltd. for the account of Briarwood (Dundalk) Ltd., for review by their designated consultants, financial institutions, and government agencies. The material in the report reflects the judgement of Curtis Lee, B.Eng., EIT and Kelvin Hung, P.Eng., in light of the information available to it at the time of preparation.

Use of the 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.

SOIL ENGINEERS LTD.



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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:

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

Cohesive Soils:

<u>Undrained Shear Strength (kPa)</u>	<u>'N' (blows/30 cm)</u>	<u>Consistency</u>
<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



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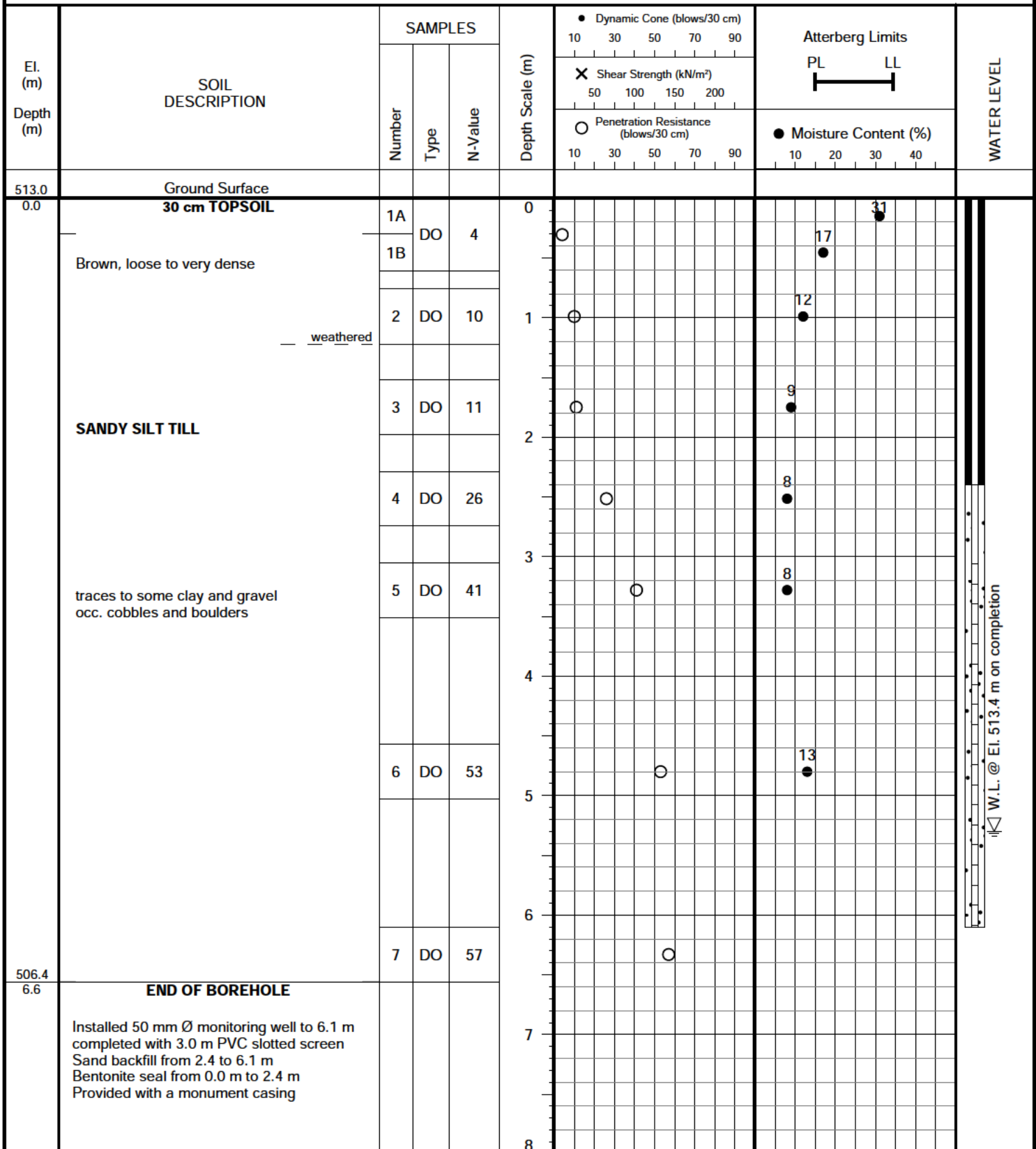
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JOB NO.: 2310-S058

LOG OF BOREHOLE: 1

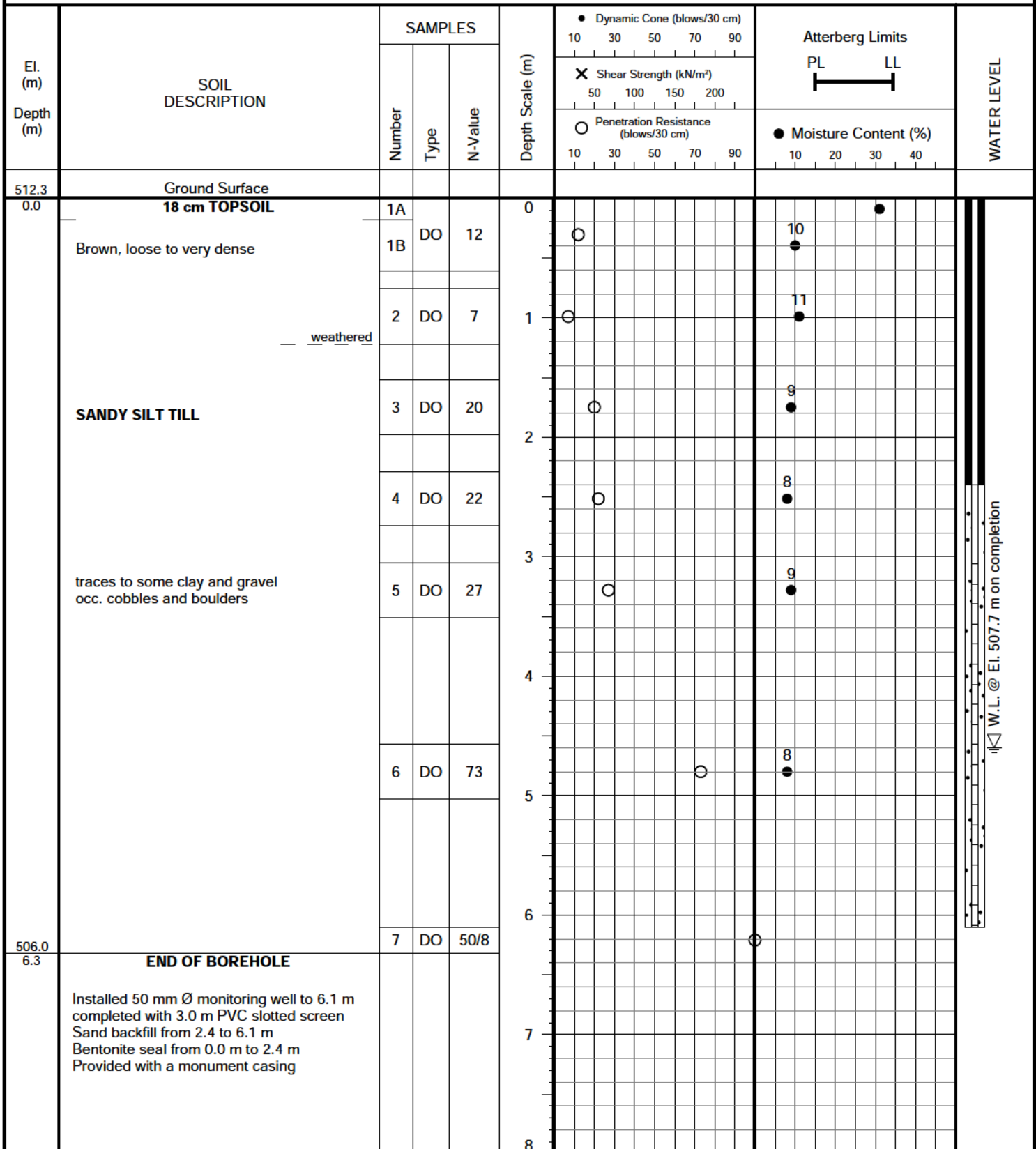
FIGURE NO.: 1

PROJECT DESCRIPTION: Proposed Residential Development**METHOD OF BORING:** Hollow Stem Auger**PROJECT LOCATION:** CON 2 SWTSR PT LOT 234
Southeast of Grey Road 9 and Ida Street,
Township of Southgate (Dundalk)**DRILLING DATE:** October 30, 2023**Soil Engineers Ltd.**

JOB NO.: 2310-S058

LOG OF BOREHOLE: 2

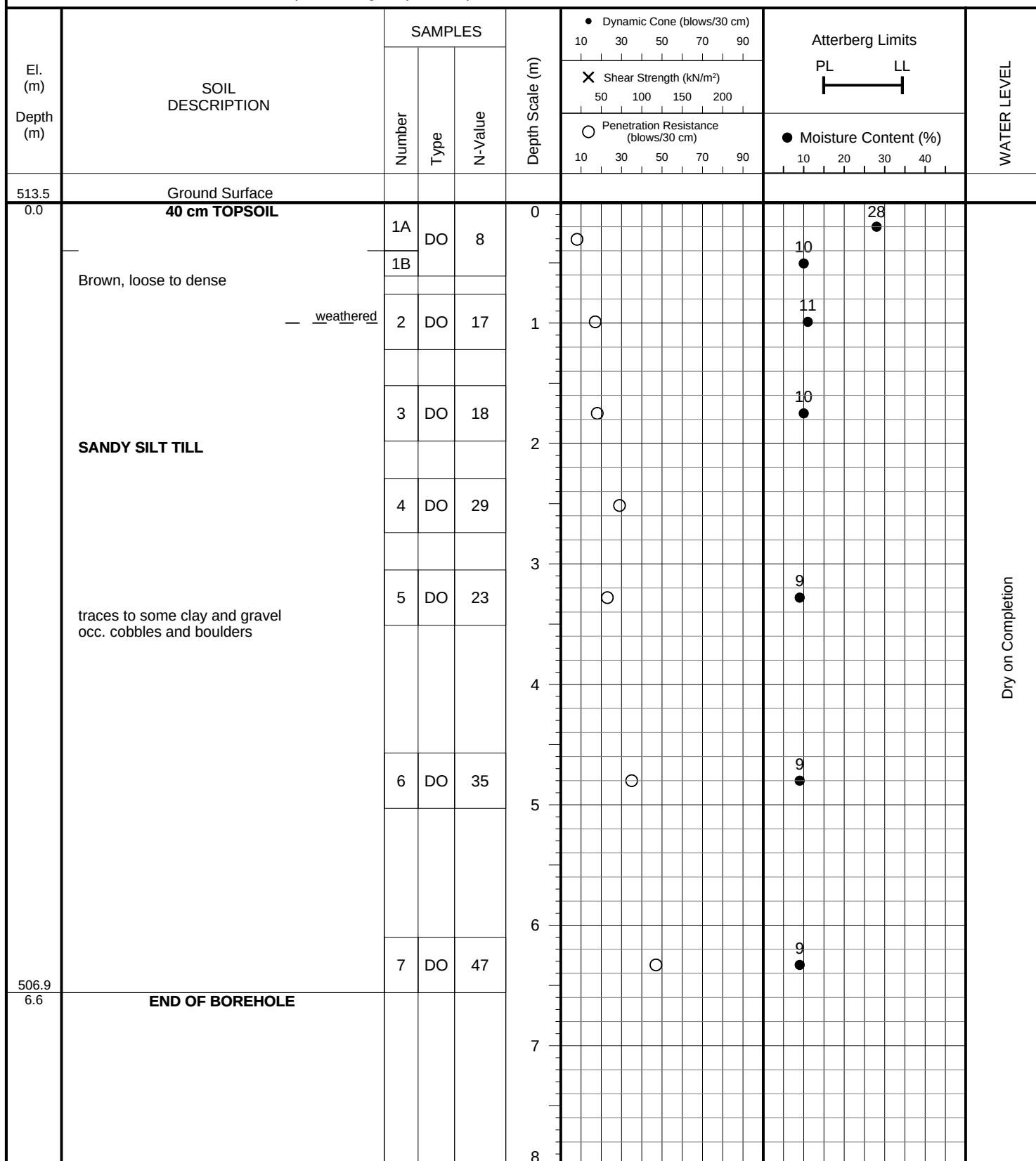
FIGURE NO.: 2

PROJECT DESCRIPTION: Proposed Residential Development**METHOD OF BORING:** Hollow Stem Auger**PROJECT LOCATION:** CON 2 SWTSR PT LOT 234
Southeast of Grey Road 9 and Ida Street,
Township of Southgate (Dundalk)**DRILLING DATE:** October 30, 2023**Soil Engineers Ltd.**

JOB NO.: 2310-S058

LOG OF BOREHOLE: 3

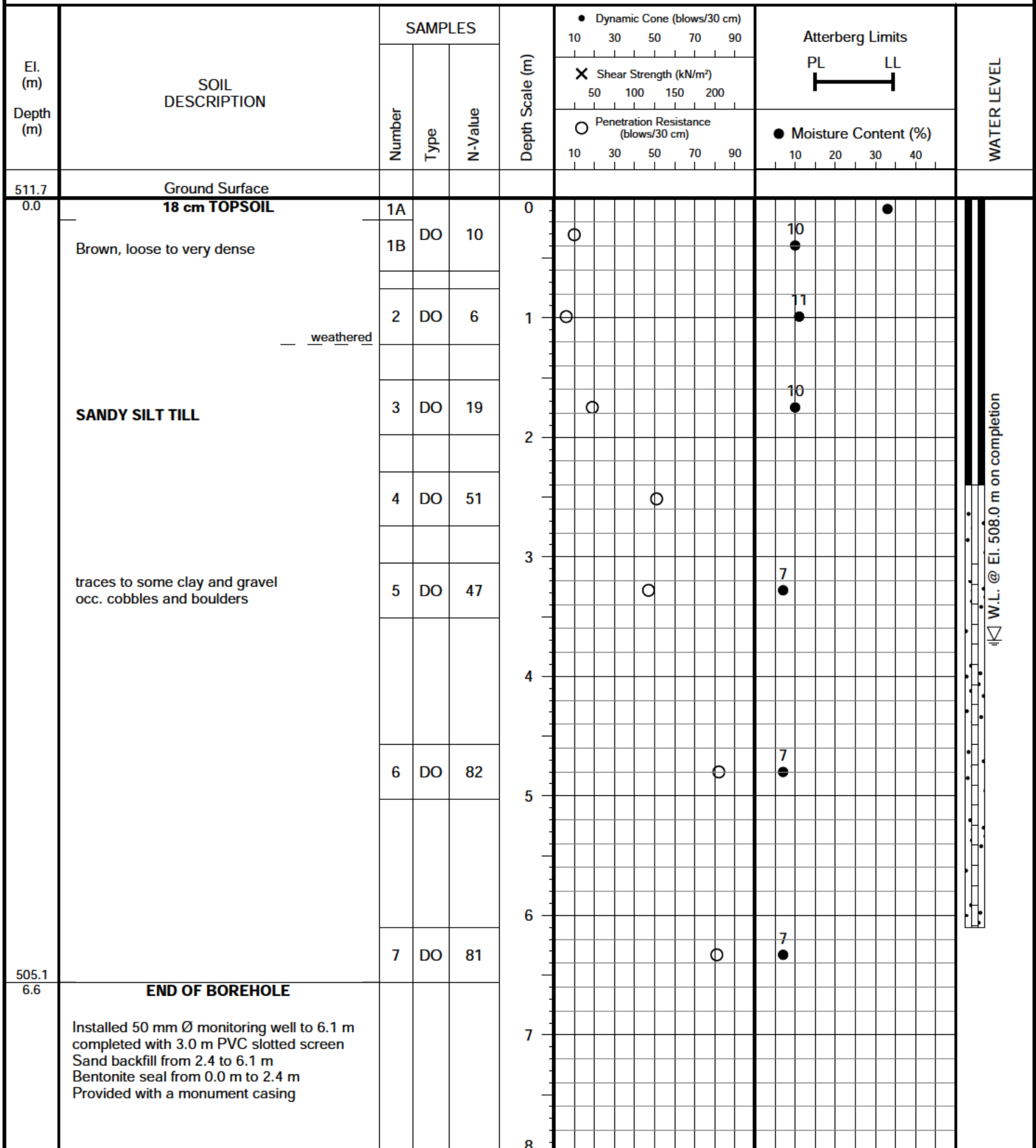
FIGURE NO.: 3

PROJECT DESCRIPTION: Proposed Residential Development**METHOD OF BORING:** Hollow Stem Auger**PROJECT LOCATION:** CON 2 SWTSR PT LOT 234
Southeast of Grey Road 9 and Ida Street,
Township of Southgate (Dundalk)**DRILLING DATE:** October 30, 2023**Soil Engineers Ltd.**

JOB NO.: 2310-S058

LOG OF BOREHOLE: 4

FIGURE NO.: 4

PROJECT DESCRIPTION: Proposed Residential Development**METHOD OF BORING:** Hollow Stem Auger**PROJECT LOCATION:** CON 2 SWTSR PT LOT 234
Southeast of Grey Road 9 and Ida Street,
Township of Southgate (Dundalk)**DRILLING DATE:** October 31, 2023**Soil Engineers Ltd.**

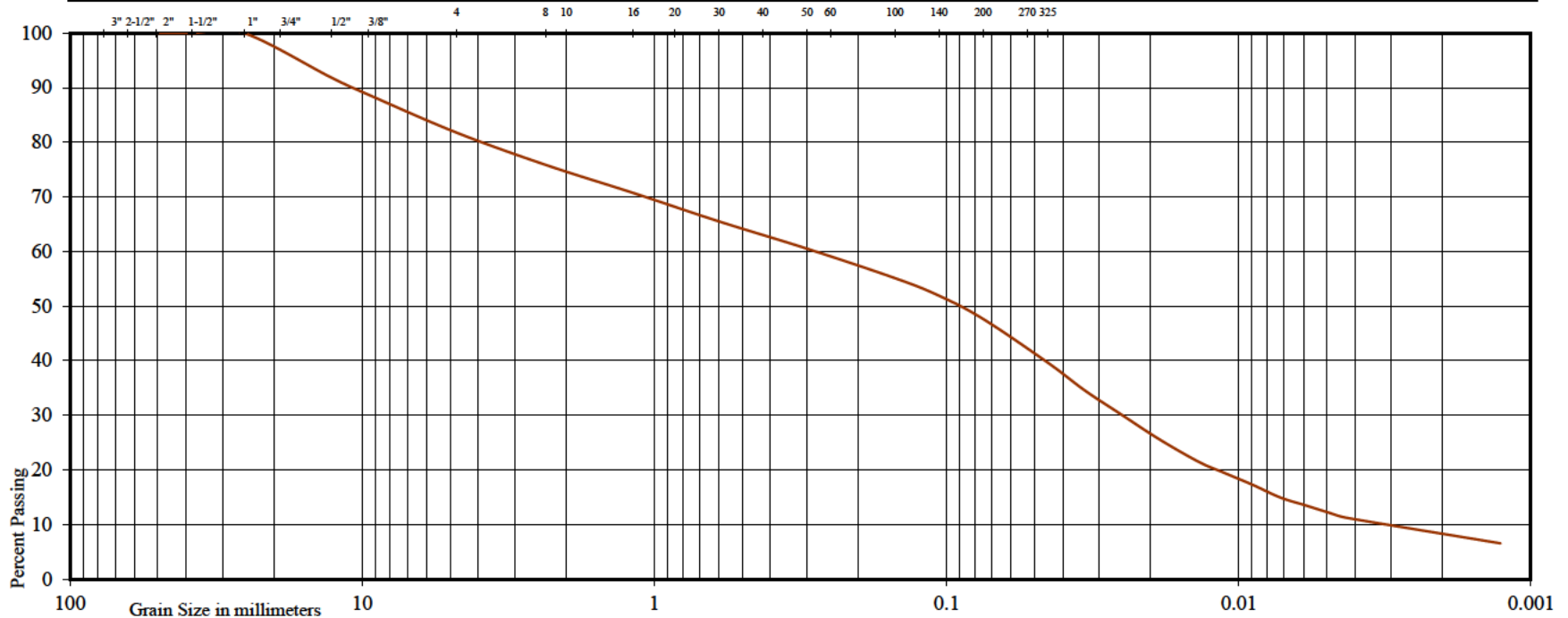


U.S. BUREAU OF SOILS CLASSIFICATION

GRAVEL			SAND				SILT	CLAY
COARSE		FINE	COARSE	MEDIUM	FINE	V. FINE		

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND				SILT & CLAY
COARSE	FINE	COARSE	MEDIUM	FINE		



Project: Proposed Residential Development

Location: CON SWTSR PT LOT 234, Southeast of Grey Road 9 and Ida Street
Township of Southgate (Dundalk)

Borehole No: 2

Sample No: 5

Depth (m): 3.3

Elevation (m): 509.0

Liquid Limit (%) = -

Plastic Limit (%) = -

Plasticity Index (%) = -

Moisture Content (%) = 9

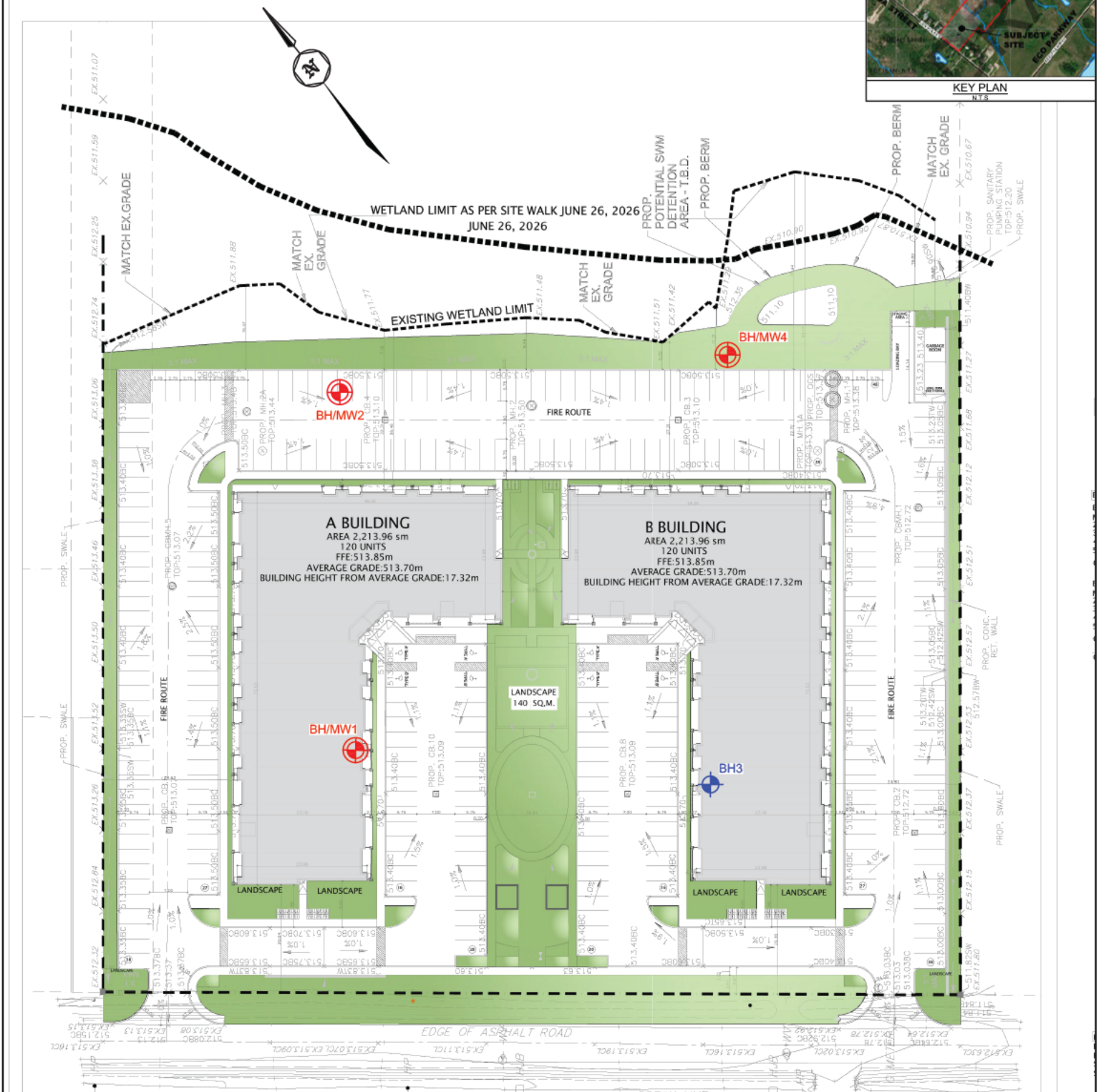
Estimated Permeability

(cm./sec.) = 10^{-5}

Classification of Sample [& Group Symbol]: SANDY SILT, TILL
some gravel, a trace of clay



KEY PLAN



IDA STREET

LEGEND



Borehole



Borehole and
Monitoring Well



Soil Engineers Ltd.

CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | HYDROGEOLOGICAL | BUILDING SCIENCE
80 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 TEL: (416) 754-8515 FAX: (905) 881-4335

Borehole and Monitoring Well Location Plan

SITE: CON SWTSR PT LOT 234
Southeast of Grey Road 9 and Ida Street, Township of Southgate (Dundalk)

DESIGNED BY: C.L. CHECKED BY: K.H. DWG NO.: 1

SCALE: 1:1000 REF. NO.: 2310-S058 DATE: October 2026

REV
3



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SUBSURFACE PROFILE

DRAWING NO. 2

SCALE: AS SHOWN

JOB NO.: 2310-S058

REPORT DATE: September 2026

PROJECT DESCRIPTION: Proposed Residential Development

PROJECT LOCATION: CON 2 SWTSR PT LOT 234
Southeast of Grey Road 9 and Ida Street,
Township of Southgate (Dundalk)

LEGEND



SANDY SILT TILL



TOPSOIL



WATER LEVEL (END OF DRILLING)

BH No.:
El. (m):

1
513

2
512.3

3
513.5

4
511.7

