PATERSON GROUP

Geotechnical Investigation

Proposed Commercial Development

4175 Strandherd Drive
Ottawa, Ontario

Prepared for CHP Management LP as Agent for Strandherd LP

Report PG7725-1 dated November 24, 2025

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1.0 Introduction

Paterson Group (Paterson) was commissioned by CHP Management LP as Agent for Strandherd LP to conduct a geotechnical investigation for the proposed commercial development to be located at 4175 Strandherd Drive in the City of Ottawa (reference should be made to *Figure 1 - Key Plan* included in Appendix 2 for the general site location).

The objectives of the geotechnical investigation were to:

- ❑ Determine the subsoil and groundwater conditions at this site by means of test holes.

- ❑ Provide geotechnical recommendations for the design of the proposed development including construction considerations which may affect the design.

The following report has been prepared specifically and solely for the aforementioned project which is described herein. It contains our findings and includes geotechnical recommendations pertaining to the design and construction of the subject development as they are understood at the time of writing this report.

Investigating the presence or potential presence of contamination on the subject site was not part of the scope of work of the present investigation. Therefore, the present report does not address environmental issues.

2.0 Proposed Development

Based on the conceptual site plan drawings available at the time of writing this report, it is understood that the proposed development will consist of a commercial plaza-style development comprised of eight (8) low-rise buildings, buildings CRU 1 through CRU 10, and are anticipated to be of slab-on-grade construction.

Associated access roads, loading zones, parking areas, drive-thru lanes, and landscaped areas are also anticipated within the proposed development. It is understood the proposed building will be municipally serviced.

3.0 Method of Investigation

3.1 Field Investigation

Field Program

The field program for the current investigation was conducted between the dates of October 7 and October 17, 2025, and consisted of advancing a total of thirty-nine (39) boreholes to a maximum depth of 6.7 m below existing ground surface. The test holes were distributed in a manner to provide general coverage of the subject site. The borehole locations are illustrated on the attached Drawing PG7725-1 - Test Hole Location Plan included in Appendix 2.

The boreholes were drilled using a rubber-track mounted drill rig operated by a two-person crew. The drilling procedure consisted of augering to the required depths at the selected locations and sampling the overburden soils. All fieldwork was conducted under the full-time supervision of Paterson personnel under the direction of a senior engineer.

Two previous field investigations were completed within the subject site boundary and the surrounding lands. A field program was conducted by Paterson on October 24, 2000, and consisted of five (5) test pits excavated to a maximum depth of 5.0 m below the existing ground surface within the subject site boundary.

Further, a field program was conducted by Paterson on May 28, 2012, and consisted of three (3) test pits excavated to a maximum depth of 6.1 m below the existing ground surface within the subject site boundary. The previously advanced test pit locations are illustrated on the attached Drawing PG7725-1 - Test Hole Location Plan included in Appendix 2.

Sampling and In Situ Testing

Soil samples collected from the boreholes were recovered from a 50 mm diameter split-spoon (SS) or the auger flights (AU). All soil samples were visually inspected and initially classified on site. The split-spoon and auger samples were placed in sealed plastic bags. All samples were transported to our laboratory for further examination and classification. The depths at which the split-spoon and auger samples were recovered from the test holes are shown as SS and AU, respectively, on the Soil Profile and Test Data sheets presented in Appendix 1.

A Standard Penetration Test (SPT) was conducted in conjunction with the recovery of the split spoon samples. The SPT results are recorded as "N" values on the Soil Profile and Test Data sheets. The "N" value is the number of blows required to drive the split spoon sampler 300 mm into the soil after a 150 mm initial penetration using a 63.5 kg hammer falling from a height of 760 mm.

Undrained shear strength testing was carried out at regular depth intervals in cohesive soils, using field vanes.

The overburden thickness was evaluated by a dynamic cone penetration test (DCPT) completed at boreholes BH 9-25 and BH 22-25 during the current field program. The DCPT consists of driving a steel drill rod, equipped with a 50 mm diameter cone at the tip, using a 63.5 kg hammer falling from a height of 760 mm. The number of blows required to drive the cone into the soil is recorded for each 300 mm increment. Due to the low resistance exerted by the silty clay, the cone was pushed using the hydraulic head of the drill rig until resistance to penetration was encountered. The hammer was then used to further advance the cone to practical refusal.

The subsurface conditions observed in the test holes were recorded in detail in the field. The soil profiles are logged on the Soil Profile and Test Data Sheets in Appendix 1 of this report.

Groundwater

A total of seven (7) boreholes were provided with monitoring wells and a total of thirty (30) boreholes were provided with flexible piezometers to permit monitoring of the groundwater levels subsequent to the completion of the current field program. The groundwater observations are discussed in Section 4.3 and presented in the Soil Profile and Test Data Sheets in Appendix 1.

Typical monitoring well construction details are described below:

- ➢ Slotted 51 mm diameter PVC screen at the base of each borehole.
- ➢ 51 mm diameter PVC riser pipe from the top of the screen to the ground surface.
- ➢ No.3 silica sand backfill within annular space around screen.
- ➢ Bentonite hole plug above PVC slotted screen up to the ground surface.

Reference should be made to the Soil Profile and Test Data sheets presented in Appendix 1 for specific well construction details.

3.2 Field Survey

The test hole locations were selected by Paterson to provide general coverage of the proposed development taking into consideration the existing site features. The test hole locations, and the ground surface elevation at each test hole location, were surveyed by Paterson using a GPS unit with respect to a geodetic datum. The locations of the test holes, and ground surface elevation at each test hole location, are presented on Drawing PG7725-1 - Test Hole Location Plan included in Appendix 2.

3.3 Laboratory Review

Soil samples were recovered from the subject site and visually examined in our laboratory to review the results of the field logging. Moisture content testing was completed on all recovered soil samples from the current investigation. Atterberg limits testing was conducted on four (4) selected soil samples, grain-size distribution testing was conducted on six (6) selected soil samples, and consolidation testing was conducted on three (3) selected undisturbed silty clay samples.

The results of the Atterberg limits, grain-size distribution, and consolidation testing are presented in Subsection 4.2 and presented in Appendix 1.

3.4 Analytical Testing

Two (2) soil samples were submitted for analytical testing to assess the corrosion potential for exposed ferrous metals and the potential of sulphate attacks against subsurface concrete structures. The samples were submitted to determine the concentration of sulphate and chloride, the resistivity, and the pH of the samples. The results are presented in Appendix 1 and are discussed further in Section 6.7.

3.5 Hydraulic Conductivity Testing

Hydraulic conductivity testing was conducted at four (4) monitoring well locations to provide insight on the hydraulic properties of the subsoils at the subject site by the means of falling and/or rising head slug tests. The test data was analyzed using AQTESOLV Pro Version 4.5 aquifer analysis software package by HydroSOLVE Inc and the results were processed as per the method set out by Hvorslev (1951). Assumptions inherent in the Hvorslev method include a homogeneous aquifer of infinite extent and a screen length significantly greater than the monitoring well diameter.

The assumption regarding screen length and well diameter is considered to be met based upon a typical length of 1.52 m and a diameter of 0.05 m, respectively. While the idealized assumptions regarding aquifer extent and homogeneity are not strictly met in this case (or in any real-world situation), it has been our experience that the Hvorslev method produces effective point estimates of hydraulic conductivity in conditions similar to those encountered at the subject site. Hvorslev analysis is based on the line of best fit through the field data (hydraulic head recovery vs. time), plotted on a semi-logarithmic scale. The testing results are further discussed in Subsection 4.4 of this report.

4.0 Observations

4.1 Surface Conditions

The subject site is currently undeveloped and grass covered. However, based on available aerial photographs, unspecified fill material appears to have been placed along the eastern boundary of the subject site as recently as 2015. Further, based on historical aerial images, the subject site is understood to have been previously used for agricultural purposes.

The ground surface across the site is relatively flat, sloping gently from north to south between approximate geodetic elevations 95.5 to 94.5 m. The subject site is bordered to the north by Systemhouse Street, to the east by Strandherd Drive, to the west by the O'Keefe Municipal Drain, and to the south by an existing commercial development. An existing ditch is present at the northwestern corner of the site with an approximate depth of 1 m below the surrounding ground surface. The ground surface at the subject site was generally noted to be approximately 0.5 m below the grade of the surrounding roadways.

4.2 Subsurface Profile

Generally, the subsurface profile at the subject site consists of a layer of topsoil underlain by a layer of very stiff brown silty clay, followed by a layer of firm to stiff grey silty clay, further underlain by glacial till deposit and further by the underlying bedrock formation. A layer of fill was encountered below the topsoil layer at some borehole locations. Reference should be made to the Soil Profile and Test Data Sheets in Appendix 1 for details of the soil profile encountered at each borehole location.

DCPT testing was conducted in boreholes BH 9-25 and BH 22-25. Practical refusal to the DCPT was encountered in the above-noted boreholes at a depth of 7.2 m and 8.7 m, respectively, below the existing ground surface.

Topsoil

The topsoil layer was observed within all boreholes and was noted to range in thickness between 200 to 350 mm. The topsoil layer was noted to consist of a blend of brown silty clay with silty sand. Traces of crushed stone were noted within the topsoil layer at several borehole locations throughout the subject site.

Fill

The above-noted topsoil layer was noted to be underlain by a layer of fill at boreholes BH 1-25 through BH 4-25, BH 8-25 through BH 10-25, BH 29-25, BH 31-25, and BH 38-25. The fill layer encountered on the eastern portion of the site was noted to extend to approximate depths ranging between 0.2 to 1.5 m below the existing ground surface. The fill layer encountered at the northwestern corner of the site was noted to extend to approximate depths ranging between 0.3 to 1.5 m below the existing ground surface. The fill layer was observed to consist of brown silty sand or silty clay with variable amounts of sand, clay, crushed stone, and organics.

Silty Clay

The above-noted topsoil and fill layers were observed to be underlain by a native silty clay deposit. The very stiff to stiff, brown silty clay layer was observed to extend to approximate depths ranging between 0.7 to 4.2 m below existing ground surface. The brown silty clay layer was observed to be underlain by a layer of stiff to firm grey silty clay. The grey silty clay layer was observed to extend to approximate depths ranging between 2.4 and 6.6 m below the existing ground surface.

Glacial Till

The silty clay layer was observed to be underlain by a compact to dense deposit of glacial till. The glacial till deposit was observed to consist of silty sand or silty clay with variable amounts of clay, sand, gravel, cobbles and boulders. The glacial till deposit was observed to extend to approximate depths ranging between 1.6 and 6.7 m below the existing ground surface.

Bedrock

Based on available geological mapping, bedrock in the area of the subject site consists of dolostone and sandstone of the March Formation with a drift thickness ranging between 5 to 15 m.

Atterberg Limits Testing

Atterberg limits testing was completed on four (4) selected silty clay samples recovered during the current investigation. The results of the Atterberg Limits testing are presented in Table 1 and on the Atterberg Limits results sheet included in Appendix 1.

Table 1 – Atterberg Limits Results						
Borehole	**Sample**	**Depth (m)**	**LL (%)**	**PL (%)**	**PI (%)**	**Classification**
BH 1-25	SS2	0.8 – 1.4	75	39	36	MH
BH 8-25	SS3	1.5 – 2.1	77	38	39	MH
BH 20-25	SS2	0.8 – 1.4	56	24	32	CH
BH 29-25	SS3	1.5 – 2.1	75	37	38	MH
Notes: LL: Liquid Limit; PL: Plastic Limit; PI: Plastic Index; MH: Inorganic Silts of High Plasticity; CH: Inorganic Clays of High Plasticity						

Grain Size Distribution and Hydrometer Testing

Grain size distribution analysis was completed on six (6) selected recovered samples. The results of the grain size distribution analyses are presented in Table 2 below and on the Grain Size Distribution sheets included in Appendix 1.

Table 2 – Grain Size Distribution Analysis Results				
Sample No.	**Depth (m)**	**Gravel (%)**	**Sand (%)**	**Silt and Clay (%)**
BH 14-25 (SS5)	3.8 – 4.4	19.1	47.1	33.8
BH 17-25 (SS5)	3.1 – 3.7	24.1	42.2	33.7
BH 22-25 (SS4)	5.3 – 5.9	23.7	39.1	37.2
BH 26-25 (SS7)	4.6 – 5.2	23.6	43.0	33.4
BH 29-25 (SS2-Top)	0.8 – 1.4	1.1	33.1	65.8
BH 29-25 (SS2-Bot)	0.8 – 1.4	0	0.9	99.1

Consolidation Testing

A total of three (3) site specific consolidation tests were conducted during the previous investigation. The results of the consolidation tests are summarized in Table 3 and are included in Appendix 1. The value for p'c is the preconsolidation pressure, and p'o is the effective overburden pressure of the test sample. The difference between these values is the available preconsolidation. The values for C_{cr} and C_c are the recompression and compression indices, respectively. These soil parameters are a measure of the compressibility due to stress increases below and above the preconsolidation pressures. The higher values for the C_c, as compared to the C_{cr}, illustrate the increased settlement potential above, as compared to below, the preconsolidation pressure.

Table 3 – Consolidation Testing Results

Borehole	Sample	Depth (m)	σ'_p (kPa)	σ'_{vo} (kPa)	C_r	C_c	Q
BH 1A-25	TW1	3.0 – 3.6	77.37	49.11	0.024	2.196	A
BH 9A-25	TW1	3.8 – 4.4	80.00	52.79	0.031	1.723	A
BH 29A-25	TW1	3.0 – 3.6	92.91	49.79	0.014	1.438	VG

Note: Q: Quality assessment of sample - VG: Very Good; A: Acceptable

4.3 Groundwater

Groundwater levels were measured in the available monitoring wells throughout the subject site and are presented on the Soil Profile and Test Data sheets in Appendix 1, and in Table 4 below.

Table 4 – Measured Groundwater Levels

Test Hole Number	Method	Ground Surface Elevation (m)	Measured Groundwater Level		Date
			Depth (m)	Elevation (m)	
Groundwater Levels Based on Piezometer and Monitoring Well Measurements					
BH 1-25	Piezometer	95.50	2.52	92.98	October 24, 2025
BH 2-25	Piezometer	94.99	3.27	91.72	October 24, 2025
BH 3-25	Piezometer	95.58	2.67	92.91	October 24, 2025
BH 4-25	Piezometer	94.97	1.93	93.04	October 24, 2025
BH 5-25	Piezometer	95.14	4.45	90.69	October 24, 2025
BH 6-25	Piezometer	95.11	4.82	90.29	October 24, 2025
BH 7-25	Piezometer	95.60	1.94	93.36	October 24, 2025
BH 8-25	Piezometer	96.32	2.88	93.44	October 24, 2025
BH 9-25	Piezometer	95.69	5.29	90.40	October 24, 2025
BH 10-25	Piezometer	95.04	1.82	93.22	October 24, 2025
BH 11-25	Piezometer	94.89	3.78	91.11	October 24, 2025
BH 12-25	Piezometer	94.88	1.88	93.00	October 24, 2025
BH 14-25	Piezometer	94.84	1.47	93.37	October 24, 2025
BH 15-25	Piezometer	94.93	1.62	93.31	October 24, 2025
BH 16A-25	Piezometer	94.74	1.54	93.20	October 24, 2025
BH 17-25	Piezometer	95.02	1.68	93.34	October 24, 2025
BH 18A-25	Piezometer	94.96	1.80	93.16	October 24, 2025

Table 4 – Measured Groundwater Levels (Continued)

Test Hole Number	Method	Ground Surface Elevation (m)	Measured Groundwater Level		Date
			Depth (m)	Elevation (m)	
Groundwater Levels Based on Piezometer and Monitoring Well Measurements					
BH 20-25	Piezometer	94.71	1.36	93.35	October 24, 2025
BH 21-25	Piezometer	94.71	1.37	93.34	October 24, 2025
BH 22-25	Piezometer	94.58	1.24	93.34	October 24, 2025
BH 23-25	Piezometer	94.92	4.40	90.52	October 24, 2025
BH 24-25	Piezometer	94.65	1.57	93.08	October 24, 2025
BH 25-25	Piezometer	94.64	1.60	93.04	October 24, 2025
BH 26-25	Piezometer	94.58	Piezometer Damaged		October 24, 2025
BH 27-25	Piezometer	94.58	1.26	93.32	October 24, 2025
BH 28-25	Piezometer	94.51	1.25	93.26	October 24, 2025
BH 29-25	Piezometer	95.30	2.00	93.31	October 24, 2025
BH 30-25	Piezometer	94.76	1.72	93.04	October 24, 2025
BH 31-25	Piezometer	95.14	4.28	90.86	October 24, 2025
BH 33-25	Monitoring Well	95.13	1.84	93.30	October 24, 2025
BH 34-25	Monitoring Well	94.93	1.97	92.96	October 24, 2025
BH 35-25	Monitoring Well	94.73	1.44	93.29	October 24, 2025
BH 36-25	Monitoring Well	94.75	2.20	92.55	October 24, 2025
BH 37-25	Monitoring Well	94.86	3.36	91.50	October 24, 2025
BH 38-25	Monitoring Well	96.30	2.95	93.35	October 24, 2025
BH 39-25	Monitoring Well	94.78	1.35	93.43	October 24, 2025

NOTE: The ground surface elevations at the monitoring well locations were surveyed by Paterson using a high precision GPS unit and are referenced to a geodetic datum.

It should be noted that surface water can become trapped within a backfilled borehole column, which can lead to higher-than-normal groundwater level readings. It should be noted that groundwater levels are subject to seasonal fluctuations. Therefore, groundwater levels could vary at the time of construction.

4.4 Hydraulic Conductivity Testing Results

Hydraulic conductivity tests were conducted at four (4) monitoring well locations throughout the subject site on October 28, 2025. The testing results are summarized in Table 5 below.

Table 5 – Summary of Hydraulic Conductivity Testing Results

Test Hole Number	Ground Surface Elevation (m)	Testing Depth Interval (m)	Testing Elevation Interval (m)	K (m/sec)	Test Type	Soil Type
BH 33-25	95.13	2.28-3.78	92.85-91.35	3.42×10^{-6}	Falling Head	Glacial Till
				2.76×10^{-6}	Rising Head	
BH 34-25	94.93	2.41-3.91	92.52-91.02	1.98×10^{-6}	Falling Head	Glacial Till
				1.86×10^{-6}	Rising Head	
BH 35-25	94.73	2.28-3.78	92.45-90.95	5.18×10^{-7}	Falling Head	Glacial Till
BH 39-25	94.78	4.62-6.12	90.16-88.66	2.98×10^{-6}	Falling Head	Glacial Till
				2.38×10^{-6}	Rising Head	

Summary of Results

Hydraulic conductivity testing conducted at monitoring well locations yielded hydraulic conductivity values ranging between approximately 3.42×10^{-6} to 5.18×10^{-7} m/sec for the glacial till.

These values are generally consistent with typical published values for glacial till. It should be noted that hydraulic conductivity may vary across the subject site depending on the composition/compaction at a given location of the overburden.

5.0 Discussion

5.1 Geotechnical Assessment

From a geotechnical perspective, the subject site is suitable for the proposed development. Based on the results of the field investigation, the proposed low-rise buildings may be founded on conventional spread footings placed on the in-situ, undisturbed, very stiff silty clay or dense glacial till bearing surface, or approved fill bearing surface.

Due to the presence of a silty clay layer, the subject site is subjected to a permissible grade restriction. Our permissible grade raise recommendations are discussed in Subsection 5.3.

The above and other considerations are further discussed in the following sections.

5.2 Site Grading and Preparation

Stripping Depth

Topsoil and deleterious fill, such as those containing significant amounts of organic materials, should be stripped from under any buildings, paved areas, pipe bedding, and other settlement sensitive structures. Peat and highly organic soils should not be located below settlement sensitive structures, such as building foundations, slabs, infrastructure and auxiliary structures. Care should be taken not to disturb adequate bearing soils below the founding level during site preparation activities. Disturbance of the subgrade may result in having to sub-excavate the disturbed material and the placement of additional suitable fill material.

Area of Existing Fill Material Below Future Building Footprint

It is anticipated a fill layer will be encountered along the eastern property parcel boundary and at the northwestern portion of the subject site at the founding depth of the proposed CRU 7, 8, 9, and CRU 10 buildings. Where fill is encountered, provided the in-situ fill is considered to be of relatively workable soils (i.e., compactable using sheepsfoot and/or smooth-drum rollers), consideration could be given to sub-excavating 400 mm below the design founding depth of the proposed structures foundations, proof-rolling (i.e., re-compacting) and reinstating with engineered fill (OPSS Granular A and/or OPSS Granular B Type II crushed stone) as a capping layer for the bearing surface. All approved fill material should be placed in maximum 300 mm loose lifts **under dry conditions and in above freezing temperatures.** All sub-excavation and proof-rolling works should be reviewed and approved by Paterson field personnel.

Fill Placement

Imported Fill Placement

Fill placed for grading beneath the building footprints should consist, unless otherwise specified, of clean imported granular fill, such as Ontario Provincial Standard Specifications (OPSS) Granular A or Granular B Type II. The imported fill material should be tested and approved prior to delivery to the site. The fill should be placed in maximum 300 mm thick loose lifts and compacted by suitable compaction equipment. Fill placed beneath the buildings should be compacted to a minimum of 98% of the standard Proctor maximum dry density (SPMDD).

Fill used for grading beneath the base and subbase layers of paved areas should consist, unless otherwise specified, of clean imported granular fill, such as OPSS Granular A, Granular B Type II or select subgrade material. This material should be tested and approved prior to delivery to the site. The fill should be placed in lifts no greater than 300 mm thick and compacted using suitable compaction equipment for the lift thickness. Fill placed beneath the paved areas should be compacted to at least 95% of its SPMDD.

Any soft or poor performing areas should be removed and replaced with engineered fill consisting of OPSS Granular A or Granular B Type II, with a maximum particle size of 50 mm. The engineered fill should be placed in maximum 300 mm loose lifts and compacted to 98% SPMDD using suitable vibratory equipment.

Site Generated Fill Placement

From a geotechnical perspective, site-generated fill free of organic debris, inorganic material and/or stones/cobbles larger than 200 mm in their longest dimension and sensitive/saturated grey clay soils are generally considered suitable for re-use as pre-grade material throughout the subject site. The site-generated fill may be used for raising the ground surface within the building footprints, above the underside of and around footings, as foundation wall backfill, throughout the proposed paved areas and throughout landscaped areas.

These materials should be spread in a maximum of 300 mm thick loose lifts and at least compacted by the tracks of the spreading equipment to minimize voids below landscaped areas. Clayey workable fill must be compacted using a suitably-sized vibratory sheepsfoot roller.

If this material is to be used to build up the subgrade level for areas to be paved, below the slab-on-grade structures, and below pipe bedding, it should be placed in maximum 300 mm thick loose lifts and compacted using a suitably sized sheepsfoot roller to a minimum of 98% of the material's standard Proctor maximum dry density (SPMDD), in the dry and above-freezing conditions. Each lift of site-generated fill should be reviewed and approved by Paterson field personnel at the time of construction.

Prior to using site-generated soil, topsoil and significant amounts of organics (peat, stumps, logs and/or other organic debris) or deleterious materials should be segregated from the fill prior to re-use. The preparation and segregation of fill material should be reviewed and approved at the time of construction by Paterson personnel. Paterson personnel may advise on the suitability of potential re-use material at that time.

Care will also need to be taken during storage, placement and compaction of the excavated fill and native soils to maintain them in an unfrozen state and at a moisture content which is suitable for compaction. Soils intended for re-use which become frozen and/or which have excessive moisture contents will not be considered suitable for reuse at the subject site. Placement of this material during winter months increases the risk of placing frozen material which may result in future poor performing areas that will require repair.

It should be noted that placement of site-generated fill will be very difficult during the early-spring season, during periods of heavy-rainfall and will not be able to be accomplished during the winter seasons. It is recommended that construction schedules be planned with these constraints considered in the timing and scheduling of these works if this method will be considered.

Any soft or poor performing areas should be removed and replaced with engineered fill consisting of OPSS Granular A or Granular B Type II, with a maximum particle size of 50 mm. The engineered fill should be placed in maximum 300 mm loose lifts and compacted to 98% SPMDD using suitable vibratory equipment.

In-Filling Existing Ditches

Based on our observations during the field investigation, it is understood that an existing ditch is currently located within the northwestern corner of the subject site. The ditch was noted to have an average depth of 1 m below the surrounding ground surface. Based on our review of historical aerial images, it is understood that the existing ditch located within the subject site was once connected to the adjacent and re-routed O'Keefe Municipal Drain.

Further, based on our review of the proposed grading plans, it is understood that the above-noted ditch will be infilled to support the proposed development. The following backfilling program is recommended for development within the ditch area. Our backfilling recommendations take into consideration the subsoils profile within the ditch area and proposed finished grading conditions. The ditch should be drained before the backfilling procedure begins and the backfilling operation should be completed under dry weather conditions and above freezing temperatures.

- The existing ditch side slopes should be stepped to provide a 1.5H:1V profile with maximum 500 mm high steps. All existing topsoil, organic mater, sediments, and fill associated with the ditch should be removed.

- Workable site-generated soil fill, such as those specified in previous sections of this report, may be used as ditch infill material provided it is placed in accordance with the fill placement recommendations outlined in previous sections of this report and capped with a minimum 300 mm thick layer of OPSS Granular A. Otherwise, engineered fill such as OPSS Granular A or Granular B Type II may be used as ditch infill material. All infill material should be placed in maximum 300 mm loose lifts **under dry conditions and above freezing temperatures** to in-fill the ditch. Every lift should be adequately compacted using a sheepsfoot roller and approved by Paterson personnel during placement. It should be noted that if granular fill material is selected for the ditch infill application, Paterson should be informed as to re-assess the permissible grade raise recommendations within and immediately surrounding the ditch footprint area.

5.3 Foundation Design

Bearing Resistance Values – Conventional Spread Footings

Using continuously applied loads, conventional footings can be designed using the bearing resistance values presented in Table 6 below. An undisturbed soil bearing surface consists of one from which all topsoil and deleterious materials, such as loose, frozen or disturbed soil, whether in situ or not, have been removed, in the dry, prior to the placement of concrete for footings.

Table 6 - Bearing Resistance Values		
Bearing Surface	**Bearing Resistance Values (kPa)**	
	SLS	**ULS**
Very Stiff to Stiff Brown Silty Clay	150	225
Dense Glacial Till	175	260
Engineered Fill*	150	225

Note: Strip and pad footings, up to 2 m and 3 m wide, respectively, placed upon an in-situ soil or approved engineered fill bearing surface can be designed using the above bearing resistance values.

*An engineered fill bearing surface consisting of imported and appropriately placed and compacted crushed sone, or, site-generated and prepared soils for raising subgrade. All these fills would be required to be verified by Paterson during the importing, preparation, and placement stages to qualify this bearing resistance value.

A geotechnical resistance factor of 0.5 is applied to the above noted bearing resistance values at ULS. The above-noted bearing resistance values at SLS for soil bearing surfaces will be subjected to potential post-construction total and differential settlements of 25 and 20 mm, respectively.

Alternative footing sizes may be able to be accommodated depending on final grading and should be reviewed and advised upon by Paterson during the foundation design and preliminary/detailed design stages. The above-noted footing design bearing resistance values considers the grading restrictions provided in the following section of this report.

Lateral Support

The bearing medium under footing-supported structures is required to be provided with adequate lateral support with respect to excavations and different foundation levels.

Adequate lateral support is provided to a silty clay bearing medium when a plane extending down and out from the bottom edge of the footing at a minimum of 1.5H:1V, passes only through in situ soil or engineered fill of the same or higher capacity as the bearing soil.

Permissible Grade Raise

Based on the presence of a silty clay deposit a permissible grade raise restriction is recommended in the immediate area of settlement sensitive structures. Our current permissible grade raise recommendations for the proposed development are presented on Drawing PG7725-2 Permissible Grade Raise Plan in Appendix 2.

It should be noted that the permissible grade raise restrictions presented in the above-noted drawing are applicable within 4 m of building footprints. The permissible grade raise within landscaped and parking areas located beyond 4 m from building footprints may be increased by 0.6 m. The current permissible grade raise recommendations provided in this report assume that the grade raise soil material will consist of workable site-generated soils, and will reduce should granular crushed stone material be used instead. If grade raise material is to consist of granular crushed stone, Paterson should be notified and should conduct a supplemental review of the permissible grade raise restrictions. Paterson should be included during the design and tendering process to ensure the above recommendations are adequately implemented.

If higher permissible grade raises are required, preloading with or without a surcharge, lightweight fill, and/or other measures should be investigated to reduce the risks of unacceptable long-term post construction total and differential settlements. Provided sufficient time is available to induce the required settlements, consideration could be given to surcharging the subject site.

Lightweight Fill

Upon review of the most recent grading plan made available to Paterson at the time of writing this report (Novatech Job No. 125050, Figure C-GR, Dated June 2025), the proposed grading conditions throughout a portion of the site are above our permissible grade raise recommendations. Therefore, lightweight fill (LWF) will be required for the proposed buildings and areas surrounding the building footprints where the permissible grade raise restrictions have been exceeded.

The LWF within the building footprints should consist of EPS 22 (expanded polystyrene) geofoam blocks, which allow for raising the grade without adding a significant load to the underlying soils. The use of lightweight fill within the proposed building footprint will mitigate long-term post constriction total and differential settlements. The EPS blocks should be machine cut by the manufacturer so that joints will be reasonably tight. A non-woven geotextile should be placed overtop of the LWF as to mitigate the loss of soil fines from the cover material into the joints between the EPS blocks and against the foundation wall.

The LWF beyond building footprints should consist of EPS Type 19 and Type 12 geofoam blocks throughout hardscaped (paved or other areas with concrete surface features) and landscaped areas, respectively. If the lightweight fill will be located in an area of landscaping, a minimum 600 mm of soil cover is recommended to be provided to the lightweight fill layer to promote grass and associated vegetation to establish overtop the lightweight fill.

The LWF should be placed upon a flat soil surface. Therefore, the soil should be compacted to be relatively smooth and flat prior to installation. Consideration may be given to placing a thin layer of sand or stone dust to attain a relatively smooth/flat surface for placement.

The entire lightweight fill layer footprint is recommended to be covered with a layer of polyethylene (taped at seams) extending between the building footprint and outer edge of the layer and extending below its surface by a minimum of 100 mm at all edges of the lightweight fill layer.

The placement of all lightweight fill should be reviewed at the time of placement by Paterson personnel. It is advised a brief pre-construction meeting to be held between Paterson and the construction team to confirm placement methodology prior to the installation.

5.4 Design for Earthquakes

Shear wave velocity testing was completed for the subject site to determine the applicable seismic site designation for the proposed buildings in accordance with Ontario Building Code 2024 (OBC 2024). The shear wave velocity testing was completed by Paterson personnel. Two seismic shear wave velocity profiles from the testing are presented in Figures 2 and 3 in Appendix 2 of the present report.

Field Program

The seismic array was located as presented in Drawing PG7725-1 - Test Hole Location Plan attached to the present report. Paterson field personnel placed 24 horizontal 4.5 Hz geophones mounted to the surface by means of two 75 mm ground spike attached to the geophone land case. The geophones were spaced at 3 m intervals and were connected by a geophone spread cable to a Geode 24 Channel seismograph.

The seismograph was also connected to a laptop computer and a hammer trigger switch attached to a 12-pound dead blow hammer. The hammer trigger switch sends a start signal to the seismograph. The hammer is used to strike an I-Beam seated into the ground surface, which creates a polarized shear wave. The hammer shots are repeated between four (4) to eight (8) times at each shot location to improve signal to noise ratio.

The shot locations are also completed in forward and reverse directions (i.e.- striking both sides of the I-Beam seated parallel to the geophone array). The shot locations were 20.0, 4.5 and 3.0 away from the first and last geophone, and at the centre of the geophone array.

Data Processing and Interpretation

Interpretation of the shear wave velocity results was completed by Paterson personnel. Shear wave velocity measurement was made using reflection/refraction methods. The interpretation is performed by recovering arrival times from direct, reflected and refracted waves.

The interpretation is repeated at each shot location to provide an average shear wave velocity, Vs_{30}, of the upper 30 m of soil. The layer intercept times, velocities from different layers and critical distances are interpreted from the shear wave records to compute the bedrock depth at each location.

The bedrock velocity was interpreted using the main refractor wave velocity, which is considered a conservative estimate of the bedrock velocity due to the increasing quality of the bedrock with depth. It should be noted that as bedrock quality increases, the bedrock shear wave velocity also increases. Based on our testing results, the average overburden shear wave velocity is **200 m/s**, while the bedrock shear wave velocity is **2,075 m/s**. Further, the testing results indicate the average overburden thickness to be approximately 10 m.

The Vs_{30} was calculated using the standard equation for average shear wave velocity calculation provided in the Ontario Building Code 2024, and as presented below, where in this case Layer 1 represents the overburden and Layer 2 depicts the bedrock.

$$V_{s30} = \frac{Depth_{of\ interest}(m)}{\left(\frac{Depth_{Layer1}(m)}{V_{S_{Layer1}}(m/s)} + \frac{Depth_{Layer2}(m)}{V_{S_{Layer2}}(m/s)}\right)}$$

$$V_{s30=} \frac{30\ m}{\left(\frac{10\ m}{200\ m/s} + \frac{20\ m}{2{,}075\ m/s}\right)}$$

$$V_{s30=} 503\ m/s$$

Based on the results of the seismic testing, the average shear wave velocity of the upper 30 m profile, Vs_{30}, was calculated to be **503 m/s**. Therefore, a **Site Designation X_{503}** is applicable for design of the proposed structures as per OBC 2024. The soils underlying the subject site are not considered susceptible to liquefaction or cyclic softening.

5.5 Slab on Grade Construction

With the removal of all topsoil and fill, containing significant amounts of deleterious or organic materials, the native soil subgrade approved by Paterson field personnel at the time of excavation will be considered an acceptable subgrade surface on which to commence backfilling for slab-on-grade construction.

It is recommended to scarify and proof-roll (i.e., re-compact) the subgrade surface using a suitably-sized smooth drum roller, under the supervision of Paterson personnel, prior to placing fill in support of the proposed slab on grade. Any soft areas should be removed and reinstated with an engineered fill, such as OPSS Granular B Type II and compacted to a minimum of 98% of the materials SPMDD. OPSS Granular A, Granular B Type II or Paterson-reviewed and -approved site-generated fill may be used for backfilling below the floor slab (outside the zone of influence of the footings).

It is recommended that the upper 200 mm of sub-slab fill consists of OPSS Granular A crushed stone. All backfill material within the footprint of the proposed buildings should be placed in maximum 300 mm thick loose layers and compacted to at least 98% of its SPMDD.

5.6 Pavement Design

Car only parking areas and access lanes are proposed as part of the development at this site. The proposed pavement structures are shown in Tables 7 and 8 below.

Table 7 – Recommended Pavement Structure – Light Vehicle Parking

Thickness (mm)	Material Description
50	**Wear Course –** Superpave 12.5-FC2 Asphaltic Concrete
150	**BASE –** OPSS Granular A Crushed Stone
300	**SUBBASE –** OPSS Granular B Type II Crushed Stone
SUBGRADE – Either in-situ soil, approved proof-rolled fill, or Granular B Type I or II material placed over in-situ soil	

Table 8 – Recommended Pavement Structure – Local Roadways, Access Lanes and Heavy Vehicle Parking	
Thickness (mm)	**Material Description**
40	**Wear Course** - Superpave 12.5-FC2 Asphaltic Concrete
50	**Upper Binder Course** - Superpave 19.0 Asphaltic Concrete
150	**BASE** - OPSS Granular A Crushed Stone
400	**SUBBASE** - OPSS Granular B Type II Crushed Stone
SUBGRADE - Either in-situ soil, approved proof-rolled fill, or Granular B Type I or II material placed over in-situ soil	

If soft spots develop in the subgrade during compaction or due to construction traffic, the affected areas should be excavated and replaced with OPSS Granular B Type I or II material. The pavement granular base and subbase should be placed in maximum 300 mm thick lifts and compacted to a minimum of 100% of the material's SPMDD using suitable compaction equipment.
Minimum Performance Graded PG58H-34 asphalt cement should be used for this project. Cement asphalt should be compacted to a minimum average density of 93% and no more than 98%.

Rigid Pavement Structure

It is understood that a rigid pavement structure may be considered for the anticipated drive-thru lanes. The rigid pavement structure presented in Table 9 is recommended for the subject drive-through lanes for areas where a concrete pad is anticipated. It should be noted that the reinforced concrete slab will be susceptible to frost heave if frost protection is not provided. Therefore, control and isolation joints are required for the subject concrete slabs.

Table 9 – Rigid Pavement Structure	
Thickness (mm)	**Material Description**
As Specified by Others	**Reinforced Concrete –** Minimum 32 MPa -with 5 to 8% air entrainment
150	**BASE –** OPSS Granular A Crushed Stone
450	**SUBBASE –** OPSS Granular B Type II Crushed Stone
100	**RIGID INSULATION** – High-density extruded polystyrene rigid insulation boards such as DuPont Styrofoam HL-40
SUBGRADE – Either in-situ soil, approved proof-rolled fill, or Granular B Type I or II material placed over in-situ soil	

To minimize the potential differential frost heave at the interface between the rigid pavement structure and adjacent asphalt pavement structures, a frost taper should be over-excavated below the asphalt pavement structure. It is recommended that a minimum 600 mm thick frost taper, consisting of a Granular B Type II placed in maximum 300 mm thick lifts and compacted to a minimum of 100% of the SPMDD using suitable vibratory equipment, extend horizontally at least 1.5 m beyond the outside edge of the concrete pad.

The frost taper beyond the horizontal section should slope up to match the pavement structure subgrade level at a 3H:1V slope. It is recommended that insulation for frost mitigation is considered below the rigid pavement structure to prevent movement from frost action. For preliminary purposes, it is recommended that 100 mm thick rigid insulation panels extending 1.8 m beyond all faces of the slab are utilized. However, the insulation panel thickness and frost taper extent can be confirmed at the time of grading plan review.

If soft spots develop in the subgrade during compaction or due to construction traffic, the affected areas should be excavated and replaced with OPSS Granular B Type II material. The granular base and subbase should be placed in maximum 300 mm thick lifts and compacted to a minimum of 98% of the SPMDD using suitable vibratory equipment.

Full depth isolation joints consisting of approximately 12 mm thick compressible material are recommended adjacent to any existing rigid structure such as curbs, poles, sidewalks, and buildings to allow minor movement to occur independently from each other.

Control joints, also known as contraction joints, provide a location where drying shrinkage cracks or cracking attributed to frost heave can occur without affecting the appearance of the concrete pad. The saw cut control joints should be placed at a minimum 2.4 m grid with a depth of 50 mm and a maximum width of 5 mm.

Pavement Joint Tie-in

Where the proposed pavement structure meets an existing pavement structure, the following recommendations should be followed:

- A 300 mm wide section of the existing asphalt roadway should be saw cut from the existing pavement edge to provide a sound surface to abut the proposed pavement structure.
- It is recommended to mill a 300 mm wide and 40 mm deep section of the existing asphalt at the saw cut edge.
- The proposed pavement structure subbase materials should be tapered no greater than 3H:1V to meet the existing subbase materials.

- Clean existing granular road subbase materials can be reused upon assessment by Paterson at the time of excavation (construction) as to its suitability.

Light Post Construction

It is expected that light posts will be constructed within the proposed development. Light post pole bases are considered unheated structures and therefore their subgrade would require a minimum of 2.1 m of soil cover or equivalent to be protected from frost action. Generally, it is recommended that the post bases be founded below the depth of frost migration for unheated structures.

Furthermore, it is anticipated that the proposed pole bases are to be installed using open excavation and will be founded upon an undisturbed hard to stiff silty clay. The site excavated material is considered frost susceptible, and not suitable for backfill directly against the bases.

To mitigate potential frost action from the backfill material surrounding the bases, it is recommended that the buried portion of the bases be surrounded by a layer of engineered fill such as OPSS Granular A or Granular B Type II with a minimum thickness of 600 mm surrounding the pole base.

This thickness may be reduced to 300 mm if the proposed bases are surrounded by a suitable non-fixed casing material such as a sono-tube shell or other approved product capable of remaining intact below the ground surface.

The pole bases may be founded on a silty clay or glacial till bearing surface once approved by Paterson at the time of construction. Based on these recommendations, the bearing resistance values noted in Section 5.3 may be applied for end bearing. It should be noted that the pole bases will be subject to post-construction settlements of up to 25 mm.

Pavement Structure Drainage

Satisfactory performance of the pavement structure is largely dependent on keeping the contact zone between the subgrade material and the base stone in a dry condition. Failure to provide adequate drainage under conditions of heavy wheel loading can result in the fine subgrade soil being pumped into the voids in the stone subbase, thereby reducing its load carrying capacity. For areas where silty clay is encountered at subgrade level, it is recommended that subdrains be installed during the pavement construction as per City of Ottawa standards. The subdrain inverts should be approximately 300 mm below subgrade level.

6.0 Design and Construction Precautions

6.1 Foundation Drainage and Backfill

Foundation Drainage

Given the slab-on-grad nature of the proposed structures, a foundation drainage system is not required for the proposed structure provided foundation backfill recommendations provided below and in Section 5.2 are followed.

Foundation Backfill

Backfill against the exterior sides of the foundation walls should consist of free draining non-frost susceptible granular materials (such as clean sand or OPSS Granular A or OPSS Granular B Type I or Type II granular material) placed in maximum 300 mm thick loose lifts and compacted using suitably sized compaction equipment. Where backfill supports hardscaping, it is recommended that Paterson review and approve fill placement efforts to ensure adequate benching of lifts upon excavation sidewalls and compaction of each lift.

Concrete Sidewalks Adjacent to Buildings

To avoid differential settlements within the proposed sidewalks adjacent to the proposed buildings, it is recommended that the upper 600 mm of backfill placed below the concrete sidewalks adjacent to the building footprints to consist of non-frost susceptible material such as OPSS Granular A or Granular B Type II. The granular material should be placed in maximum 300 mm loose lifts and compacted to a minimum of 98% of the material's SPMDD using suitable compaction equipment. The subgrade material should be shaped to promote positive drainage away from the proposed buildings. Consideration should be given to placing a layer of rigid insulation below the granular fill layer, however, should be detailed by the geotechnical consultant once design drawings are finalized.

Further, consideration can be given to installing a 150 mm diameter perforated, corrugated plastic pipe surrounded on all sides by 150 mm of 19 mm clear crushed stone at the interface of the soil subgrade and the granular sidewalk base. If a drainage pipe is provided at the top of the soil subgrade layer, the granular backfill thickness below the sidewalk may be reduced to 300 mm.

6.2 Protection Against Frost Action

Foundation Structures

Perimeter footings of heated structures are required to be insulated against the deleterious effects of frost action. A minimum 1.5 m thick soil cover, or an equivalent thickness of soil cover and foundation insulation, should be provided for adequate frost protection of heated structures.

Exterior unheated footings, such as those for isolated exterior piers, are more prone to deleterious movement associated with frost action. These should be provided with a minimum 2.1 m thick soil cover, or an equivalent thickness of soil cover and foundation insulation.

Frost Protection at Building Entrances

If consideration is given to placing rigid insulation below hardscaping at building entrances to mitigate heave and settlement due to freezing cycles within the underlying subgrade, the following insulation detail is recommended for building entrances:

- The sidewalk pavement structure is recommended to consist of 150 mm of OPSS Granular A and 450 mm of OPSS Granular B Type II crushed stone, all placed in maximum 300 mm thick loose lifts and compacted to a minimum of 98% of the materials SPMDD.
- Place a minimum 100 mm thick layer of rigid insulation consisting of extruded polystyrene, such as DOW Chemical High-Load HI-40, below the layer of crushed stone. The rigid insulation layer is recommended to extend a minimum horizontal distance of 1.2 m from all sides of the entrance.
- Provide a transition for the next 600 mm beyond the 1.2 m horizontal extension using a 50 mm layer of extruded polystyrene rigid insulation.
- The thickness and applicability of the insulation layer would be dependant on the nature of the soils used to build up the subgrade (i.e., can be reduced if free-draining non-frost susceptible crushed stone is used to build up the subgrade and as advised by Paterson during the design phase).

Implementation of the above-noted detail should be reviewed at the time of construction (placement of insulation, compaction testing on each lift of stone fill, etc.) by Paterson personnel.

6.3 Excavation Side Slopes

The side slopes of the excavations in the soil and fill overburden materials should either be cut back at acceptable slopes or should be retained by shoring systems from the start of the excavation until the structure is backfilled. It is expected that sufficient room will be available for the excavations to be undertaken by open-cut methods (i.e., unsupported excavations).

Unsupported Excavations

The excavation side slopes above the groundwater level extending to a maximum depth of 3 m should be cut back at 1H:1V or flatter. The flatter slope is required for excavation below groundwater level. The brown and grey clay subsoils at this site are considered to be mainly Type 2 and Type 3 soil according to the Occupational Health and Safety Act and Regulations for Construction Projects.

Excavation side slopes carried out for the building footprint are recommended to be provided surface protection from erosion by rain and surface water runoff if shoring is not anticipated to be implemented. This can be accomplished by covering the entire surface of the excavation side-slopes with tarps secured between the top and bottom of the excavation and approved by Paterson personnel at the time of construction. It is further recommended to maintain a relatively dry surface along the bottom of the excavation footprint to mitigate the potential for sloughing of side-slopes.

Excavated soil should not be stockpiled directly at the top of excavations and heavy equipment should be kept away from the excavation sides.

It is recommended that a trench box be used at all times to protect personnel working in trenches. Based on this, trench boxes should be considered for all sewer pipe installations undertaken throughout the subject site. It is expected that services will be installed by “cut and cover” methods and excavations will not be left open for extended periods of time.

Slopes in excess of 3 m in height should be periodically inspected by Paterson field personnel in order to detect if the slopes are exhibiting signs of distress.

6.4 Pipe Bedding and Backfill

Bedding and backfill materials should be in accordance with the most recent Material Specifications and Standard Detail Drawings from the Department of Public Works and Services, Infrastructure Services Branch of the City of Ottawa.

The pipe bedding for the sewer and water pipes should consist of at least 150 mm of OPSS Granular A. The bedding layer thickness should be increased to a minimum of 300 mm where the subgrade will consist of grey silty clay. The material should be placed in a maximum 225 mm thick loose lifts and compacted to a minimum of 99% of its SPMDD. The bedding material should extend at least to the spring line of the pipe.

The cover material, which should consist of OPSS Granular A, should extend from the spring line of the pipe to at least 300 mm above the obvert of the pipe. The material should be placed in maximum 225 mm thick lifts and compacted to a minimum of 99% of its SPMDD.

Reinstatement of the trench located above the pipe cover layer should consist of placing trench-generated workable soil fill (i.e., grey clay is not expected to be workable or re-usable for this purpose) in maximum 300 mm thick loose lifts and compacted using a suitably sized vibratory sheepsfoot roller to a minimum of 95% of the materials SPMDD. Each lift of soil fill placed within the service trenches should be reviewed and approved at the time of construction by Paterson personnel. Wet site-generated fill, such as the grey silty clay, will be difficult to re-use, as the high-water contents make compacting impractical without an extensive drying period.

Backfilling Within Trench Boxes

When the bedding and cover material is placed within the confines of a trench box and steel plates, it is recommended that the trench box be placed tightly against the outside of the trench walls and remains approximately 300 mm above the obvert level of the service pipe.

The vertical excavation sidewalls within the lower portion of the trench (below the obvert level of the pipe) can be supported using steel plates extended down to the bottom of the trench. The steel plates can be extended below the base of the excavation to prevent basal heave, in conjunction with adequate dewatering measures when located below the groundwater table.

To minimize the potential for disturbance of the bedding and cover material and subsequent settlement of the service pipe during the removal of the steel plates, it is recommended that the bedding layer be re-compacted tightly against the trench sidewalls upon removal/lifting of the steel plate up to the top of the bedding layer and prior to placing the pipe. This is recommended to mitigate settlement of the pipe that would results from removing the plates without re-compacting the fill that would be left unconfined to the sides of the trench. This procedure would be repeated for the springling and cover layers until the steel plates are removed.

It is generally recommended that this procedure be reviewed by Paterson field personnel at the time of construction.

Clay Seals

To reduce long-term lowering of the groundwater level at this site, clay seals should be provided in the service trenches. The clay seals should be at least 1.5 m long in the trench direction and should extend from trench wall to trench wall. Generally, the clay seals should extend from the frost line and fully penetrate the bedding, sub-bedding and cover material.

The clay seals should consist of relatively dry and compatible brown silty clay placed in maximum 225 mm thick loose layers and compacted to a minimum of 95% of the material's SPMDD. The clay seals should be placed at the site boundaries and at strategic locations at no more than 60 m intervals in the service trenches. Paterson field personnel should review the placement of all clay seals undertaken at the time of construction.

6.5 Groundwater Control

It is anticipated that groundwater infiltration into the excavations should be low to moderate and controllable using open sumps. The contractor should be prepared to direct water away from all subgrades, regardless of the source, to prevent disturbance to the founding medium.

Groundwater Control for Construction

Under the current regulations enacted by the Ministry of Environment, Conservation and Parks (MECP), any dewatering in excess of 50,000 L/day requires a registration on the Environmental Activity and Sector Registry (EASR), so long as that dewatering is related to construction. If the dewatering is not related to construction, a Permit to Take Water obtained from the MECP will be required.

In the event that an EASR is required to facilitate dewatering of the proposed development, a minimum of three to four weeks should be allotted for completion of the EASR registration and the Water Taking and Discharge Plan, to be prepared by a Qualified Person as stipulated under O.Reg. 63/16. Should a Permit to Take Water be required, a minimum of five to six months should be allotted for completion of the permit, due to the minimum review period imposed by the MECP.

6.6 Winter Construction

Precautions must be taken if winter construction is considered for this project. The subsoil conditions at this site consist of frost susceptible materials. In the presence of water and freezing conditions, ice could form within the soil mass. Heaving and settlement upon thawing could occur.

In the event of construction during below zero temperatures, the founding stratum should be protected from freezing temperatures using straw, propane heaters and tarpaulins or other suitable means.

In this regard, the base of the excavations should be insulated from sub-zero temperatures immediately upon exposure and until such time as heat is adequately supplied to the building and the footings are protected with sufficient soil cover to prevent freezing at founding level.

Trench excavations and pavement construction are also difficult activities to complete during freezing conditions without introducing frost into the subgrade or in the excavation walls and bottoms. Precautions should be taken if such activities are to be carried out during freezing conditions. Additional information could be provided, if required.

The trench excavations should be carried out in a manner that will avoid the introduction of frozen materials into the trenches. Also, pavement construction is difficult during winter. The subgrade consists of frost susceptible soils which will experience total and differential frost heaving as the work takes place. In addition, the introduction of frost, snow or ice into the pavement materials, which is difficult to avoid, could adversely affect the performance of the pavement structure. Additional information could be provided, if required.

Provisions should also be carried out for accommodating spring-thaw conditions when subgrade conditions for pavements and other works are impacted by higher degrees of soil saturation. Additional information should be provided by Paterson for planning winter construction and pavement works.

6.7 Corrosion Potential and Sulphate

The results of analytical testing show that the sulphate content is less than 0.1%. This result is indicative that Type 10 Portland cement (normal cement) would be appropriate for this site. The chloride content and the pH of the sample indicate that they are not significant factors in creating a corrosive environment for exposed ferrous metals at this site, whereas the resistivity is indicative of a moderate, to slightly aggressive corrosive environment.

6.8 Landscaping Considerations

Tree Planting Considerations

In accordance with the City of Ottawa Tree Planting in Sensitive Marine Clay Soils (2017 Guidelines), Paterson completed a soils review of the site to determine applicable tree planting setbacks. Atterberg limits testing was completed in previous investigations by others for the recovered silty clay samples at selected locations throughout the subject site. The soil samples were recovered from elevations below the anticipated design underside of footing elevation. The results of testing by others are presented in Table 1 in Subsection 4.2 and in Appendix 1.

Based on the results of the Atterberg limit testing mentioned above, the plasticity index was found to be less than 40% in all the tested clay samples. In addition, based on the moisture level and consistency, the silty clay across the subject site is considered to be a clay of low to medium potential for soil volume change.

The following tree planting setbacks are recommended for the low to medium sensitivity silty clay deposit and where trees are located near buildings founded on cohesive soils..

- Large trees (mature height over 14 m) can be planted within these areas provided that a tree to foundation setback equal to the full mature height of the tree can be provided.

- Tree planting setback limits may be reduced to 4.5 m for small (mature tree height up to 7.5m) and medium size trees (mature tree height 7.5 m to 14 m), provided that the conditions noted below are met.

- A small tree must be provided with a minimum of 25 m^3 of available soils volume while a medium tree must be provided with a minimum of 30 m^3 of available soil volume, as determined by the Landscape Architect. The developer is to ensure that the soil is generally un-compacted when backfilling in street tree planting locations.

- The tree species must be small (mature tree height up to 7.5 m) to medium size (mature tree height 7.5 m to 14 m) as confirmed by the Landscape Architect.

- Grading surrounding the tree must promote drainage to the tree root zone (in such a manner as not to be detrimental to the tree), as noted on the Grading Plan.

It is well documented in the literature, and is our experience, that fast-growing trees located near buildings founded on cohesive soils that shrink on drying can result in long-term differential settlements of the structures. Tree varieties that have the most pronounced effect on foundations are seen to consist of poplars, willows and some maples (i.e., Manitoba Maples) and, as such, they should not be considered in the landscaping design

7.0 Recommendations

It is a requirement for the foundation design data provided herein to be applicable that a material testing and observation program be performed by the geotechnical consultant. The following aspects of the program should be performed by Paterson:

- ❑ Review the preliminary and detailed grading and servicing plans, from a geotechnical perspective.
- ❑ Review and inspection of the installation of the foundation drainage systems.
- ❑ Observation of all bearing surfaces prior to the placement of concrete.
- ❑ Sampling and testing of the concrete and fill materials.
- ❑ Periodic observation of the condition of unsupported excavation side slopes in excess of 3 m in height, if applicable.
- ❑ Observation of all subgrades prior to backfilling and follow-up field density tests to determine the level of compaction achieved.
- ❑ Field density tests to determine the level of compaction achieved.
- ❑ Sampling and testing of the bituminous concrete including mix design reviews.

A report confirming that these works have been conducted in general accordance with our recommendations could be issued upon the completion of a satisfactory inspection program undertaken by Paterson.

All excess soil must be handled as per *Ontario Regulation 406/19: On-Site and Excess Soil Management*.

8.0 Statement of Limitations

The recommendations provided are in accordance with the present understanding of the project. Paterson requests permission to review the recommendations when the drawings and specifications are completed.

A soils investigation is a limited sampling of a site. Should any conditions at the site be encountered which differ from those at the test locations, Paterson requests immediate notification to permit reassessment of our recommendations.

The recommendations provided herein should only be used by the design professionals associated with this project. They are not intended for contractors bidding on or undertaking the work. The latter should evaluate the factual information provided in this report and determine the suitability and completeness for their intended construction schedule and methods. Additional testing may be required for their purposes.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than CHP Management LP as Agent for Strandherd LP, or their agents, is not authorized without review by Paterson for the applicability of our recommendations to the alternative use of the report.

Paterson Group Inc.

Nicholas F. R. Versolato, CPI, B.Eng.

Drew Petahtegoose, P.Eng.

Report Distribution:

❑ CHP Management LP as Agent for Strandherd LP (1 email copy)
❑ Paterson Group (1 copy)

APPENDIX 1

SOIL PROFILE AND TEST DATA SHEETS

SYMBOLS AND TERMS

ATTERBERGS TESTING RESULTS

GRAIN SIZE DISTRIBUTION TESTING RESULTS

CONSOLIDATION TESTING

ANALYTICAL TESTING RESULTS

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361277.24 **NORTHING:** 5014524.20 **ELEVATION:** 95.50

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 7, 2025

FILE NO. : PG7725

HOLE NO. : BH 1-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [95.20m]			AU 1			16			95
FILL: Compact, brown silty sand with crushed stone 0.69m [94.81m]		1	SS 2	75	4-6-7-5 13	36			94
Very stiff to stiff, brown **SILTY CLAY**		2	SS 3	100	3-2-1-1 3	49			93
2.97m [92.53m]		3	SS 4	100	P	67	7 68	2.52 m 2025-10-24	92
Firm, grey **SILTY CLAY**		4	SS 5	100	P	69	2 29		91
4.57m [90.94m]		5	SS 6	100	P	68	5 39		90
End of Borehole		6							89
(GWL at 2.52 m depth - October 24, 2025)		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361275.51 **NORTHING:** 5014523.21 **ELEVATION:** 95.50

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH 1A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
For soil profile refer to BH 1-25		1									95
		2									94
3.05m [92.45m]											
Firm, grey **SILTY CLAY**		3	TW 1	100							93
3.66m [91.84m]											
End of Borehole		4									92
		5									91
		6									90
		7									89
		8									88
		9									87
		10									86
		11									85

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361270.45 **NORTHING:** 5014507.89 **ELEVATION:** 94.99

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 7, 2025

FILE NO. : PG7725

HOLE NO. : BH 2-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) / PL (%) WATER CONTENT (%) LL (%)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							20 40 60 80		
TOPSOIL 0.24m [94.75m]			AU 1			22			94
FILL: Compact, brown silty sand, trace clay and organics 0.69m [94.30m]		1	SS 2	83	4-4-3-3 7	48			93
Very stiff to stiff, brown **SILTY CLAY**		2	SS 3	100	1-2-1-1 3	64			92
2.90m [92.09m]		3						3.27 m 2025-10-24	91
Firm to stiff, grey **SILTY CLAY**		4							90
6.55m [88.44m]		5							89
End of Borehole		6							88
(GWL at 3.27 m depth - October 24, 2025)		7							87
		8							86
		9							85
		10							84
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361287.62 **NORTHING:** 5014497.77 **ELEVATION:** 95.58

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 7, 2025

FILE NO. : PG7725

HOLE NO. : BH 3-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE								
TOPSOIL 0.25m [95.33m]		0	AU 1			21		95
FILL: Compact, brown silty sand, trace clay, crushed stone and organics 0.69m [94.89m]		1	SS 2	67	P	30		94
Hard to stiff, brown **SILTY CLAY**		2	SS 3	83	P	48		93
2.90m [92.68m]		3						92
Stiff to firm, grey **SILTY CLAY**		4						91
4.57m [91.01m]		5	SS 4	25	1-5-5-4	10		90
GLACIAL TILL: Compact, grey silty sand with gravel, rock fragments, cobbles and boulders, some clay 5.46m [90.12m]			SS 5	95	10 50-/-/-/ 50/0.08	13		
End of Borehole		6						89
Practical refusal to augering at 5.46 m depth		7						88
(GWL at 2.67 m depth - October 24, 2025)		8						87
		9						86
		10						85
		11						

PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)

20 40 60 80

△ REMOULDED SHEAR STRENGTH (kPa)

▲ UNDRAINED SHEAR STRENGTH (kPa)

20 40 60 80

PL (%) WATER CONTENT (%) LL (%)

20 40 60 80

△5 △7 △10 △30

▲48 ▲60 ▲82

249 209

2.67 m 2025-10-24

DISCLAIMER: THE DATA PRESENTED IN THIS SHEET IS THE PROPERTY OF PATERSON GROUP AND THE CLIENT FOR WHOM IT WAS PRODUCED. THIS SHEET SHOULD BE READ IN CONJUNCTION WITH ITS CORRESPONDING REPORT. PATERSON GROUP IS NOT RESPONSIBLE FOR THE UNAUTHORIZED USE OF THIS DATA.

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361286.80 **NORTHING:** 5014478.54 **ELEVATION:** 94.97

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 7, 2025

FILE NO. : PG7725

HOLE NO. : BH 4-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.28m [94.69m]			AU 1			33			
FILL: Loose, brown silty sand, trace organics 0.69m [94.28m]									
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	83	3-3-4-3 7	45			94
		2	SS 3	92	3-2-2-1 4	65		1.93 m 2025-10-24	93
2.69m [92.28m]			SS 4	100	1-1-1-1 2	75 75			
Firm, grey **SILTY CLAY** 2.97m [92.00m]		3							92
GLACIAL TILL: Firm, grey silty clay with gravel, sand, cobbles and boulders 3.51m [91.46m]			SS 5	42	1-50-/-/ 50/0.15	14			
End of Borehole		4							91
Practical refusal to augering at 3.51 m depth									
(GWL at 1.93 m depth - October 24, 2025)		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361230.92 **NORTHING:** 5014525.91 **ELEVATION:** 95.14

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 8, 2025

FILE NO. : PG7725

HOLE NO. : BH 5-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [94.89m]		0	AU 1			33			95
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	79	3-4-5-5 9	42			94
2.21m [92.93m]		2	SS 3	100	1-1-1-1 2	54			93
Stiff to firm, grey **SILTY CLAY**		3					7 7 2 5 / 53 51 43 43		92
5.03m [90.11m]		4						4.45 m 2025-10-24	91
End of Borehole		5							90
(GWL at 4.45 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361225.31 **NORTHING:** 5014507.49 **ELEVATION:** 95.11

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 8, 2025

FILE NO. : PG7725

HOLE NO. : BH 6-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.23m [94.88m]		0	AU 1			34			95
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	62	2-4-4-5 8	44			94
		2	SS 3	100	1-1-1-2 2	52			93
2.21m [92.90m]									
Stiff to firm, grey **SILTY CLAY**		3	SS 4	100	P	62			92
			SS 5	100	P	74			91
		4	SS 6		P	70			90
4.57m [90.54m]									
End of Borehole		5							89
(GWL at 2.82 m depth - October 24, 2025)		6							88
		7							87
		8							86
		9							85
		10						4.82 m 2025-10-24	
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361206.15 **NORTHING:** 5014505.82 **ELEVATION:** 95.30

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 8, 2025

FILE NO. : PG7725

HOLE NO. : BH 7-25

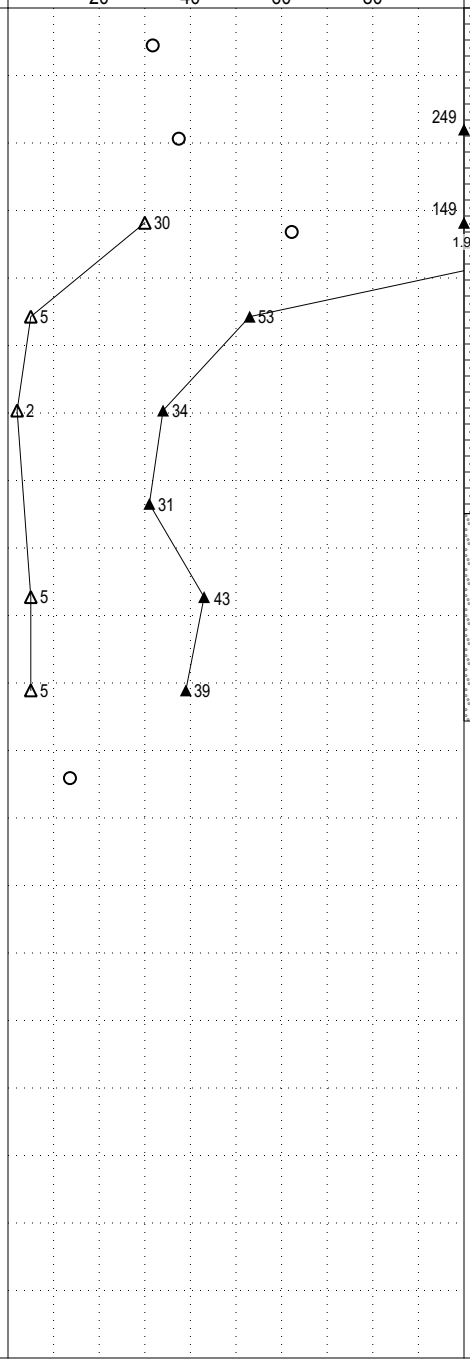
SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	ELEVATION (m)
GROUND SURFACE							
TOPSOIL 0.25m [95.05m]		0	AU 1			32	95
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	83	3-4-5-5 9	37	94
		2	SS 3	100	P	62	93
2.21m [93.09m]							
Stiff to firm, grey **SILTY CLAY**		3					92
		4					91
5.94m [89.36m]		5					90
GLACIAL TILL: Very stiff, grey silty clay with gravel, sand, rock fragments, cobbles and boulders		6	SS 4	22	2-11-50-/ 61/0.05	14	89
6.45m [88.85m]							
End of Borehole		7					88
Practical refusal to augering at 6.45 m depth		8					87
(GWL at 1.94 m depth - October 24, 2025)		9					86
		10					85
		11					

PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80

REMOULDED SHEAR STRENGTH (kPa)

UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80

PL (%) WATER CONTENT (%) LL (%) 20 40 60 80



PIEZOMETER CONSTRUCTION

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361203.38 **NORTHING:** 5014506.21 **ELEVATION:** 95.30

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH 7A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 7-25		1							95
		2							94
		3							93
3.81m [91.49m]									92
Firm, grey **SILTY CLAY**		4	TW 1	104					91
4.42m [90.88m]									
End of Borehole		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361139.70 **NORTHING:** 5014472.76 **ELEVATION:** 96.32

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 8, 2025

FILE NO. : PG7725

HOLE NO. : BH 8-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	ELEVATION (m)
GROUND SURFACE							96
TOPSOIL with crushed stone 0.23m [96.09m]			AU 1			27	
FILL: Very stiff, brown silty clay with sand, crushed stone and organics 1.45m [94.87m]		1	SS 2	50	3-5-7-8 12	26	95
Hard to very stiff, brown **SILTY CLAY** 3.66m [92.66m]		2	SS 3	87	2-6-6-7 12	44	94
Stiff, grey **SILTY CLAY** 4.27m [92.05m]		3					93
End of Borehole		4					92
(GWL at 2.88 m depth - October 24, 2025)		5					91
		6					90
		7					89
		8					88
		9					87
		10					86
		11					

PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)

20 40 60 80

△ REMOULDED SHEAR STRENGTH (kPa)

▲ UNDRAINED SHEAR STRENGTH (kPa)

20 40 60 80

PL (%) WATER CONTENT (%) LL (%)

20 40 60 80

△30 △12 △5 ▲139 ▲89 ▲63

PIEZOMETER CONSTRUCTION

2.88 m 2025-10-24

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361251.82 **NORTHING:** 5014527.10 **ELEVATION:** 95.69

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

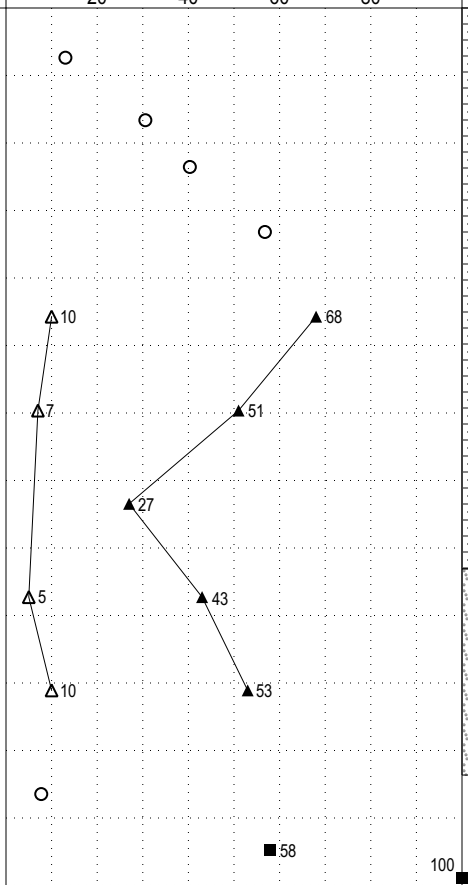
REMARKS:

DATE: October 8, 2025

FILE NO. : PG7725

HOLE NO. : BH 9-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.35m [95.34m]			AU 1			13			95
FILL: Very stiff, brown silty clay with sand, trace crushed stone 1.45m [94.24m]		1	SS 2	83	5-10-11-10 21	31 40			94
Very stiff to stiff, brown **SILTY CLAY** 2.90m [92.79m]		2	SS 3	87	3-2-2-3 4	57			93
Stiff to firm, grey **SILTY CLAY** 5.94m [89.75m]		3 4 5 6							92 91 90
GLACIAL TILL: Compact, grey silty sand with gravel, cobbles and boulders 6.71m [88.98m]		6	SS 4	75	8-12-15-16 27	8			89
Dynamic Cone Penetration Test commenced at 6.71 m depth 7.16m [88.53m]		7							88
End of Borehole		8							87
Practical refusal to DCPT at 7.16 m depth on inferred bedrock or boulders		9 10 11							86 85



SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361251.27 **NORTHING:** 5014525.17 **ELEVATION:** 95.69

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH 9A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH (kPa) / ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 9-25		1							95
		2							94
		3							93
3.81m [91.88m]									92
Firm, grey **SILTY CLAY**		4	TW 1	100					91
4.42m [91.27m]									
End of Borehole		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361172.85 **NORTHING:** 5014418.79 **ELEVATION:** 95.04

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 8, 2025

FILE NO. : **PG7725**

HOLE NO. : **BH10-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.74m]			AU 1			35			95
FILL: Very stiff, brown silty clay, trace organics and crushed stone 0.69m [94.35m]									
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	87	2-2-3-3 5	40			94
		2	SS 3	100	1-1-1-1 2	79		1.82 m 2025-10-24	93
2.21m [92.83m]									
Stiff to firm, grey **SILTY CLAY**		3	SS 4	100	P	74			92
3.30m [91.74m]			SS 5	100	P	33			
GLACIAL TILL: Firm, grey silty clay with gravel, cobbles and boulders 3.73m [91.31m]						21			
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders 4.57m [90.47m]		4	SS 6	75	20-40-28-25 68	8			91
End of Borehole		5							90
(GWL at 1.82 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361193.92 **NORTHING:** 5014418.31 **ELEVATION:** 94.89

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 9, 2025

FILE NO. : PG7725

HOLE NO. : BH11-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.59m]			AU 1			22			94
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	87	2-2-2-3 4	51			93
		2	SS 3	100	1-1-1-1 2	67	△7 ▲77		92
2.90m [91.99m] Stiff, grey **SILTY CLAY** 3.35m [91.54m]		3	SS 4	62	1-1-15-54 16	8		3.78 m 2025-10-24	91
GLACIAL TILL: Very stiff, grey silty clay with sand, gravel, rock fragments, cobbles and boulders 3.68m [91.21m]		4							90
End of Borehole		5							89
Practical refusal to augering at 3.68 m depth		6							88
(GWL at 3.78 m depth - October 24, 2025)		7							87
		8							86
		9							85
		10							84
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361197.35 **NORTHING:** 5014387.10 **ELEVATION:** 94.88

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 9, 2025

FILE NO. : PG7725

HOLE NO. : BH12-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.58m]			AU 1			27			94
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	92	1-2-1-2 3	49			
2.21m [92.67m]		2	SS 3	100	P	57	△10 ▲80	1.88 m 2025-10-24	93
Stiff, grey **SILTY CLAY** 2.36m [92.52m]			SS 4	83	1-3-4-4 7	17			92
GLACIAL TILL: Compact to dense, grey silty sand with clay, gravel, cobbles and boulders		3	SS 5	21	21-13-17-12 30	7			91
		4	SS 6	58	5-5-6-6 11	11			90
		5	SS 7	46	2-6-8-18 14	12			89
		6	SS 8	67	11-13-28-35 41	9			88
6.55m [88.33m]			SS 9	45	5-18-50-/ 68/0.15	14			87
End of Borehole		7							86
Practical refusal to augering at 6.55 m depth		8							85
(GWL at 1.88 m depth - October 24, 2025)		9							84
		10							
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361221.63 **NORTHING:** 5014366.16 **ELEVATION:** 94.86

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 9, 2025

FILE NO. : PG7725

HOLE NO. : BH13-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.28m [94.58m]			AU 1			29			94
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	100	2-2-2-3 4	53			
1.78m [93.08m]			SS 3	58	1-1-1-63 2	41 18			93
GLACIAL TILL: Very stiff, brown silty clay with sand, gravel, cobbles and boulders 2.51m [92.35m]		2							
GLACIAL TILL: Very dense to dense, grey silty sand with gravel, cobbles and boulders, some clay		3	SS 4	75	1-18-35-33 53	8 7			92
			SS 5	17	16-10-10-12 20	11			
4.01m [90.85m]		4	SS 6	39	50-/-/-/ 50/0.13	2			91
End of Borehole									
Practical refusal to augering at 4.01 m depth		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361192.67 **NORTHING:** 5014358.80 **ELEVATION:** 94.84

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 9, 2025

FILE NO. : PG7725

HOLE NO. : BH14-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.28m [94.56m]									
Very stiff to stiff, brown **SILTY CLAY**		1	AU 1			40			94
			SS 2	79	2-2-2-2 4	51			
		2	SS 3	100	1-1-1-1 2	50			93
2.74m [92.10m]							△12 ▲68		
GLACIAL TILL: Very stiff to stiff, grey silty sand with gravel, cobbles and boulders, trace clay		3	SS 4	54	6-9-11-14 20	8			92
		4	SS 5	54	1-2-2-5 4	10			91
4.57m [90.27m]									
End of Borehole		5							90
Practical refusal to augering at 4.57 m depth									
(GWL at 1.47 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

1.47 m 2025-10-24

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361218.11 **NORTHING:** 5014339.26 **ELEVATION:** 94.93

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 9, 2025

FILE NO. : PG7725

HOLE NO. : BH15-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL, trace crushed stone 0.20m [94.73m]									
Very stiff to stiff, brown **SILTY CLAY**		1	AU 1			30			
			SS 2	71	P	50	△20		94
		2	SS 3	100	P	56	△12 ▲77		93
2.59m [92.34m]									
GLACIAL TILL: Hard to very stiff, brown silty clay with sand, gravel, cobbles and boulders - Grey by 2.9 m depth		3	SS 4	33	1-4-35-18 39	11	▲77		92
			SS 5	50	2-6-5-5 11	8			
		4	SS 6	29	17-6-5-7 11	11			91
5.26m [89.67m]									
GLACIAL TILL: Compact, grey silty sand with gravel, cobbles and boulders, trace clay		5	SS 7	29	10-7-8-13 15	9			90
			SS 8	33	1-7-9-9 16	12			
6.71m [88.22m]		6	SS 9	79	2-8-12-13 20	11			89
End of Borehole		7							88
(GWL at 1.62 m depth - October 24, 2025)		8							87
		9							86
		10							85
		11							84

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1.62 m 2025-10-24

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361234.26 **NORTHING:** 5014320.41 **ELEVATION:** 94.76

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH16-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.46m]			AU 1			21			94
Very stiff, brown **SILTY CLAY**		1	SS 2	83	2-2-2-2 4	49			
1.68m [93.08m]			SS 3	62	1-10-9-23 19	7			93
GLACIAL TILL: Very stiff, grey silty clay with sand, gravel, cobbles and boulders 1.78m [92.98m]		2							
End of Borehole		3							92
Practical refusal to augering at 1.78 m depth		4							91
		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361234.90 **NORTHING:** 5014319.36 **ELEVATION:** 94.74

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH16A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 16-25		1							94
		2						1.54 m 2025-10-24	93
2.29m [92.45m]									
GLACIAL TILL: Dense, brown silty sand with gravel, cobbles and boulders, trace clay			SS 4	61	10-50-/-/ 50/0.1	7	○		92
2.79m [91.95m]		3							
End of Borehole									91
Practical refusal to augering at 2.79 m depth		4							
(GWL at 1.54 m depth - October 24, 2025)									90
		5							
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361250.69 **NORTHING:** 5014307.57 **ELEVATION:** 95.02

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH17-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [94.77m]			AU 1			29			95
Very stiff, brown **SILTY CLAY**									
0.99m [94.03m]		1	SS 2	67	3-5-50-/ 55/0.08	30 14			94
GLACIAL TILL: Very stiff, brown silty clay with sand, gravel, cobbles and boulders			SS 3	33	1-3-19-21 22	12		1.68 m 2025-10-24	
2.21m [92.81m]		2							93
GLACIAL TILL: Compact, grey silty sand with clay, gravel, cobbles and boulders			SS 4	54	2-4-25-10 29	9			
		3	SS 5	33	1-1-2-3 3	10			92
4.57m [90.45m]		4	SS 6	50	1-2-4-5 6	12			91
End of Borehole		5							90
(GWL at 1.68 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361261.53 **NORTHING:** 5014284.67 **ELEVATION:** 94.94

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH18-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.28m [94.66m]			AU 1			28			
Very stiff, brown **SILTY CLAY**		1	SS 2	83	2-2-2-9	36			94
1.22m [93.72m]					4	15			
GLACIAL TILL: Very dense, brown silty sand with clay, gravel, cobbles and boulders			SS 3	99	5-19-50-/ 69/0.15	7			
2.03m [92.91m]		2							93
End of Borehole									
Practical refusal to augering at 2.03 m depth		3							92
		4							91
		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361261.77 **NORTHING:** 5014283.41 **ELEVATION:** 94.96

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH18A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 18-25									
2.29m [92.67m]									
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders			SS 4	25	1-2-2-5 4	10			
			SS 5	50	2-3-6-13 9	9			
			SS 6	50	2-3-4-13 7	9			
			SS 7	58	1-8-5-5 13	9			
			SS 8	50	4-12-11-10 23	8			
			SS 9	42	3-3-10-12 13	9			
6.71m [88.25m]									
End of Borehole									
(GWL at 1.80 m depth - October 24, 2025)									

1.80 m 2025-10-24

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361250.36 **NORTHING:** 5014264.12 **ELEVATION:** 94.82

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH19-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [94.57m]									
Stiff, brown **SILTY CLAY**			AU 1			33			
1.22m [93.60m]		1					△10 ▲89		94
GLACIAL TILL: Boulders 1.24m [93.58m]									
End of Borehole		2							93
Practical refusal to augering at 1.24 m depth		3							92
		4							91
		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361247.98 **NORTHING:** 5014265.52 **ELEVATION:** 94.83

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH19A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 19-25									
1.52m [93.31m]									
GLACIAL TILL: Very stiff, brown silty sand with gravel, cobbles and boulders, trace clay		1	SS 2	25	3-11-14-50 25/0.05	8	○		94
2.03m [92.80m]		2							93
End of Borehole									
Practical refusal to augering at 2.03 m depth		3							92
		4							91
		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361228.18 **NORTHING:** 5014271.13 **ELEVATION:** 94.71

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH20-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL with sand, trace crushed stone 0.30m [94.41m]			AU 1			21			94
Stiff, brown **SILTY CLAY** 1.45m [93.26m]		1	SS 2	50	1-1-1-1 2	39		1.36 m, 2025-10-24	93
GLACIAL TILL: Stiff, brown silty clay with sand, gravel, cobbles and boulders 2.21m [92.50m]		2	SS 3	46	2-2-2-2 4	16			92
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders 4.57m [90.14m]		3	SS 4	62	1-2-3-3 5	13			91
		4	SS 5	58	3-6-2-1 8	12			90
			SS 6	92	1-1-2-1 3	27			89
End of Borehole (GWL at 1.36 m depth - October 24, 2025)		5							88
		6							87
		7							86
		8							85
		9							84
		10							
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361223.44 **NORTHING:** 5014299.10 **ELEVATION:** 94.71

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 10, 2025

FILE NO. : PG7725

HOLE NO. : BH21-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.28m [94.43m]			AU 1			27			94
Stiff, brown **SILTY CLAY**		1					△22 ▲87	1.37 m 2025-10-24	
2.06m [92.65m]		2					△10 ▲72		93
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders			SS 2	37	2-2-3-3 5	10			92
		3	SS 3	33	3-2-3-9 5	10			91
		4	SS 4	58	1-4-2-3 6	14			
		5	SS 5	71	6-4-4-6 8	10			90
- Rock fragments by 5.9 m depth		6	SS 6	62	10-12-21-50 33	9			89
6.10m [88.61m]			SS 7	0	50-/-/-/ 50/0				
End of Borehole									88
Practical refusal to augering at 6.10 m depth		7							
(GWL at 1.37 m depth - October 24, 2025)		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361248.63 **NORTHING:** 5014224.36 **ELEVATION:** 94.58

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 14, 2025

FILE NO. : PG7725

HOLE NO. : BH22-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [94.33m]			AU 1			20			94
Very stiff, brown **SILTY CLAY**		1					25		
1.52m [93.06m]							8 43		93
Firm to stiff, grey **SILTY CLAY**		2					2 39		
2.97m [91.61m]							17 68		92
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders		3							
		4	SS 2		P	16			91
		5	SS 3	83	9-2-4-4 6	12			90
		6	SS 4	33	1-1-4-4 5	11			89
			SS 5		4-22-8-9 30	9	3		88
6.71m [87.87m]		7					10		
Dynamic cone penetration test commenced at 6.71 m depth							26		87
		8					24		
							31		
8.71m [85.87m]							64		86
End of Borehole		9					80		
Practical refusal to DCPT at 8.71 m depth							96		85
(GWL at 1.24 m depth - October 24, 2025)		10							
		11							84

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1.24 m 2025-10-24

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361284.38 **NORTHING:** 5014240.56 **ELEVATION:** 94.92

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 14, 2025

FILE NO. : PG7725

HOLE NO. : BH23-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
TOPSOIL 0.20m [94.72m]			AU 1			18					
Brown **SILTY CLAY** 0.69m [94.23m]											
GLACIAL TILL: Very dense, brown silty sand with gravel, cobbles, boulders, trace clay		1	SS 2	44	20-50-/-/ 50/0.08	7					94
		2	SS 3	25	15-22-21-18 43	8					93
- Grey by 2.3 m depth		3	SS 4	33	3-5-5-8 10	10					92
			SS 5	50	2-5-3-5 8	11					
		4	SS 6	42	2-5-5-4 10	9					91
										4.40 m 2025-10-24	
		5	SS 7	83	4-5-8-11 13	9					90
			SS 8	46	17-22-50-/ 72/0.28	9					
		6									89
6.71m [88.21m]			SS 9	58	4-31-20-24 51	8					
End of Borehole		7									88
(GWL at 4.40 m depth - October 24, 2025)		8									87
		9									86
		10									85
		11									84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361370.05 **NORTHING:** 5014285.09 **ELEVATION:** 94.65

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 14, 2025

FILE NO. : PG7725

HOLE NO. : BH24-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL trace crushed stone 0.28m [94.37m]		0	AU 1			22			94
Very stiff, brown **SILTY CLAY**		1					△10 ▲154 △12 ▲85	1.57 m 2025-10-24	93
2.13m [92.52m]		2							
GLACIAL TILL: Dense, grey silty sand with gravel, cobbles and boulders, trace clay		3	SS 2	75	4-10-11-16 21	9			92
		4	SS 3	33	5-10-9-12 19	9			91
		5	SS 4	50	1-3-5-3 8	11			90
		6	SS 5	50	2-3-4-10 7	10			89
		7	SS 6	83	5-6-11-11 17	9			88
6.71m [87.94m]		8	SS 7	58	3-11-14-26 25	9			87
End of Borehole		9							86
(GWL at 1.57 m depth - October 24, 2025)		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361351.89 **NORTHING:** 5014308.66 **ELEVATION:** 94.64

PROJECT: Proposed Commercial Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: October 14, 2025

FILE NO. : PG7725

HOLE NO. : BH25-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) / PL (%) WATER CONTENT (%) LL (%)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							20 40 60 80		
TOPSOIL 0.25m [94.39m]		0							94
Very stiff to stiff, brown **SILTY CLAY**		1	AU 1			19	△45 ▲58 △7	199	93
2.13m [92.52m]		2						1.60 m 2025-10-24	92
GLACIAL TILL: Dense, grey silty sand with gravel, cobbles and boulders 2.57m [92.08m]		3	SS 2	91	7-37-18-20 55	4			91
End of Borehole		4							90
Practical refusal to augering at 2.57 m depth		5							89
(GWL at 1.60 m depth - October 24, 2025)		6							88
		7							87
		8							86
		9							85
		10							84
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361362.42 **NORTHING:** 5014298.71 **ELEVATION:** 94.58

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 14, 2025

FILE NO. : PG7725

HOLE NO. : BH26-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.28m [94.30m]			AU 1			21			94
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	100	3-2-3-3 5	42			93
2.21m [92.38m]		2	SS 3	100	2-1-2-2 3	42			92
GLACIAL TILL: Compact, grey silty sand with gravel, occasional cobbles and boulders		3	SS 4	58	8-5-10-22 15	11			91
3.81m [90.77m]			SS 5	50	4-22-16-10 38	9			90
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders		4	SS 6	58	2-2-4-3 6	8			89
5.94m [88.64m]		5	SS 7	25	1-1-2-3 3	11			88
End of Borehole		6	SS 8	33	1-2-4-4 6	8			87
		7							86
		8							85
		9							84
		10							
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361339.51 **NORTHING:** 5014354.37 **ELEVATION:** 94.58

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : PG7725

HOLE NO. : BH27-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) / PL (%) WATER CONTENT (%) LL (%)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							20 40 60 80		
TOPSOIL 0.25m [94.33m]		0	AU 1			25			94
Very stiff, brown **SILTY CLAY**		1					17		93
2.29m [92.29m]		2					7		92
GLACIAL TILL: Dense, grey silty sand with gravel, occasional cobbles and boulders, trace clay		3	SS 2	42	5-8-21-40 29	8	7		91
		4	SS 3	92	4-14-10-12 24	7	34		90
		5	SS 4	58	2-2-12-11 14	9	72		89
		6	SS 5	58	2-10-20-22 30	9	149	1.26 m 2025-10-24	88
6.71m [87.87m]		7	SS 6	50	11-17-12-7 29	10			87
End of Borehole		8							86
(GWL at 1.26 m depth - October 24, 2025)		9							85
		10							84
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361327.75 **NORTHING:** 5014360.23 **ELEVATION:** 94.51

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : PG7725

HOLE NO. : BH28-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL, trace crushed stone			AU 1			19			94
0.25m [94.26m]									
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	100	2-1-3-2 4	52			
		2	SS 3	100	1-1-1-1 2	48			93
2.59m [91.92m]			SS 4	100	1-2-14-5 16	48 43			92
GLACIAL TILL: Compact to dense, grey silty sand with clay, gravel, cobbles and boulders		3	SS 5	58	9-16-19-22 35	8			91
4.42m [90.09m]		4	SS 6	67	10-13-7-5 20	8			90
End of Borehole		5							89
(GWL at 1.25 m depth - October 24, 2025)		6							88
		7							87
		8							86
		9							85
		10							84
		11							

1.25 m 2025-10-24

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361336.52 **NORTHING:** 5014383.90 **ELEVATION:** 95.30

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : **PG7725**

HOLE NO. : **BH29-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.20m [95.10m]									
FILL: Brown silty clay, trace sand and organics			SS 1	33	2-5-6-7 11	23			
1.07m [94.23m]									
Very stiff to firm, brown **SILTY CLAY**		1	SS 2	100	6-7-9-9 16	23 / 31			
		2	SS 3	100	2-2-2-2 4	46		2.00 m 2025-10-24	
2.50m [92.80m]									
Firm to stiff, grey **SILTY CLAY**		3					△6 ▲60 △5 ▲39 ▲53		
4.42m [90.88m]									
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders, trace clay		4	SS 4	54	2-50-/-/ 50/0.15	8			
		5	SS 5	92	10-23-21-16 44	7			
6.71m [88.59m]		6	SS 6	58	8-11-4-4 15	10			
End of Borehole		7							
(GWL at 2.00 m depth - October 24, 2025)		8							
		9							
		10							
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361338.36 **NORTHING:** 5014384.66 **ELEVATION:** 95.30

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH29A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 29-25		1							95
		2							94
3.05m [92.25m]									93
Firm, grey **SILTY CLAY**		3	TW 1	100					92
3.66m [91.64m]									
End of Borehole		4							91
		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361302.85 **NORTHING:** 5014426.21 **ELEVATION:** 94.76

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : **PG7725**

HOLE NO. : **BH30-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [94.51m]									
Very stiff to stiff, brown **SILTY CLAY**		1	SS 1	25	4-7-5-5 12	27	○		94
			SS 2	67	4-4-4-3 8	38	○		
		2	SS 3	100	3-2-2-2 4	48	○	1.72 m 2025-10-24	93
			SS 4	100	1-2-1-1 3	63	○		92
3.10m [91.66m]		3							
Firm, grey **SILTY CLAY**			SS 5	100	0-1-0-1 1	56	○		91
3.73m [91.03m]		4							
GLACIAL TILL: Firm, grey silty clay with sand, gravel, cobbles and boulders 4.42m [90.34m]			SS 6	100	1-1-1-1 2	23	○		90
End of Borehole		5							
(GWL at 1.72 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361310.12 **NORTHING:** 5014436.17 **ELEVATION:** 95.14

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : PG7725

HOLE NO. : BH31-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.23m [94.91m]			SS 1	17	2-4-4-9 8	23			95
FILL: Compact, brown silty clay with sand, trace topsoil and organics 0.69m [94.45m]		1	SS 2	50	5-6-10-9 16	31			94
Very stiff to stiff, brown **SILTY CLAY**		2	SS 3	67	2-2-3-2 5	45			93
2.50m [92.64m]									
Firm to stiff, grey **SILTY CLAY**		3					5 2 7 11 / 53 48 39 53		92
4.42m [90.72m]		4							91
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders		5	SS 4	32	50-/-/-/ 50/0.08	11		4.28 m 2025-10-24	90
5.56m [89.58m]									
End of Borehole		6							89
Practical refusal to augering at 5.56 m depth		7							88
(GWL at 4.28 m depth - October 24, 2025)		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361311.95 **NORTHING:** 5014436.98 **ELEVATION:** 95.14

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH31A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 31-25		1							95
		2							94
		3							93
3.81m [91.33m]									92
Frim, grey **SILTY CLAY**		4	TW 1	100					91
4.42m [90.72m]									
End of Borehole		5							90
		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361259.51 **NORTHING:** 5014242.31 **ELEVATION:** 94.97

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : PG7725

HOLE NO. : BH32-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.20m [94.77m]		0	SS 1	75	5-9-8-8 17	28 8			94
Very stiff, brown **SILTY CLAY** with sand 0.69m [94.28m]		1	SS 2	50	3-3-15-50 18/0.1	21			93
GLACIAL TILL: Compact, brown silty sand with gravel, cobbles and boulders 1.42m [93.55m]		2							92
End of Borehole		3							91
Practical refusal to augering at 1.42 m depth		4							90
		5							89
		6							88
		7							87
		8							86
		9							85
		10							84
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361254.35 **NORTHING:** 5014240.75 **ELEVATION:** 94.97

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 15, 2025

FILE NO. : PG7725

HOLE NO. : BH32A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
For soil profile refer to BH 32-25											
1.52m [93.45m]											
GLACIAL TILL: Very dense, brown silty sand with gravel, cobbles and boulders			SS 1	56	3-5-11-50 16/0.08						
1.63m [93.34m]											
End of Borehole											
Practical refusal to augering at 1.63 m depth											

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361267.72 **NORTHING:** 5014215.42 **ELEVATION:** 95.13

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 16, 2025

FILE NO. : PG7725

HOLE NO. : BH33-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.20m [94.93m]			SS 1	42	2-8-8-14 16				95
Very stiff, brown **SILTY CLAY** with sand 0.69m [94.44m]		1	SS 2	67	4-6-6-7 12				94
GLACIAL TILL: Very stiff to stiff, brown silty clay with sand, gravel, cobbles and boulders 2.21m [92.92m]		2	SS 3	58	6-6-8-8 14			1.84 m 2025-10-24	93
GLACIAL TILL: Grey silty sand with gravel, cobbles and boulders, trace clay		3	SS 4	17	3-4-6-5 10			2.22m	92
4.42m [90.71m]		4	SS 5	50	2-3-4-3 7			3.74m	91
End of Borehole		5	SS 6	42	2-2-12-13 14				90
(GWL at 1.84 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361309.84 **NORTHING:** 5014280.94 **ELEVATION:** 94.93

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 16, 2025

FILE NO. : PG7725

HOLE NO. : BH34-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.63m]									
Hard, brown **SILTY CLAY**		1	SS 1	50	6-7-7-7 14		△30	239 / 249	94
1.37m [93.56m]								1.97 m 2025-10-24	
GLACIAL TILL: Compact, grey silty sand with clay, gravel, cobbles and boulders		2	SS 2	50	5-6-5-4 11			2.38m	92
2.97m [91.96m]		3	SS 3	50	2-2-3-4 5				
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders		4	SS 4	58	2-5-8-11 13			3.90m	91
4.42m [90.51m]									
End of Borehole		5							90
(GWL at 1.97 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361285.50 **NORTHING:** 5014336.11 **ELEVATION:** 94.73

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

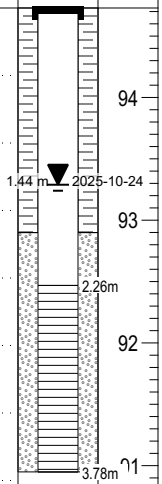
REMARKS:

DATE: October 16, 2025

FILE NO. : PG7725

HOLE NO. : BH35-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.43m]									
Very stiff to stiff, brown **SILTY CLAY**			SS 1	42	5-4-4-5 8				
		1	SS 2	67	2-2-2-3 4				
2.13m [92.60m]		2					△5 ▲58		
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders, trace clay			SS 3	17	11-22-13-16 35				
2.97m [91.76m]		3							
GLACIAL TILL: Stiff, grey silty clay with sand, gravel, cobbles and boulders			SS 4	50	2-2-3-2 5				
		4	SS 5	42	15-21-25-23 46				
4.42m [90.31m]									
End of Borehole		5							
(GWL at 1.44 m depth - October 24, 2025)		6							
		7							
		8							
		9							
		10							
		11							



SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361264.61 **NORTHING:** 5014387.52 **ELEVATION:** 94.75

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

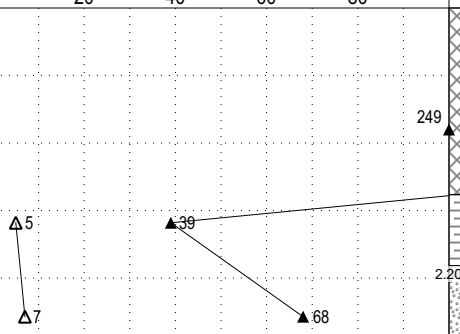
REMARKS:

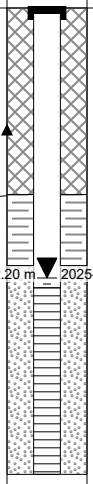
DATE: October 16, 2025

FILE NO. : PG7725

HOLE NO. : BH36-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [94.50m]									94
Hard to stiff, brown **SILTY CLAY**		1	SS 1	50	5-4-5-5 9				93
			SS 2	100	3-4-4-4 8				
2.90m [91.85m]		2							92
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders 3.45m [91.30m]		3	SS 3	21	8-29-50-/ 79/0.03				91
End of Borehole		4							90
Practical refusal to augering at 3.45 m depth		5							89
(GWL at 2.20 m depth - October 24, 2025)		6							88
		7							87
		8							86
		9							85
		10							84
		11							





SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361262.51 **NORTHING:** 5014392.34 **ELEVATION:** 94.75

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 16, 2025

FILE NO. : PG7725

HOLE NO. : BH36A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
For soil profile refer to BH 36-25		1							94
		2							93
2.90m [91.85m]		3							92
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders			SS 1	67	5-15-13-13 28				91
4.42m [90.33m]		4							
End of Borehole		5							90
Practical refusal to augering at 1.63 m depth		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361237.10 **NORTHING:** 5014447.21 **ELEVATION:** 94.86

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 16, 2025

FILE NO. : PG7725

HOLE NO. : BH37-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) / PL (%) WATER CONTENT (%) LL (%)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							20 40 60 80		
TOPSOIL 0.30m [94.56m]		0	SS 1	50	3-5-5-6 10				94
Very stiff to stiff, brown **SILTY CLAY**		1	SS 2	17	5-3-3-3 6				93
2.50m [92.36m]		2					△10 ▲72 △5 ▲53 △2 ▲48 △7 ▲39	2.30m	92
Stiff to firm, grey **SILTY CLAY**		3						3.36 m 2025-10-24	91
4.27m [90.59m]		4						3.82m	
End of Borehole		5							90
(GWL at 3.36 m depth - October 24, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361157.65 **NORTHING:** 5014480.31 **ELEVATION:** 96.30

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

REMARKS:

DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH38-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
TOPSOIL 0.23m [96.07m]											
FILL: Very stiff, brown silty clay, some gravel and organics			SS 1	50	3-3-5-4 8						
1.45m [94.85m]		1	SS 2	21	3-4-6-8 10						
Stiff, brown **SILTY CLAY**		2	SS 3	100	3-4-6-6 10						
2.50m [93.80m]											
Firm to stiff, grey **SILTY CLAY**		3					5 7 7	48 53 53		2.69m 2.95 m 2025-10-24	96 95 94 93
4.24m [92.06m]		4								4.21m	92
End of Borehole		5									91
Practical refusal to augering at 4.24 m depth		6									90
(GWL at 2.95 m depth - October 24, 2025)		7									89
		8									88
		9									87
		10									86
		11									

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4175 Strandherd Drive, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 361315.95 **NORTHING:** 5014409.81 **ELEVATION:** 94.78

PROJECT: Proposed Commercial Development

ADVANCED BY: Track Mounted Drill Rig

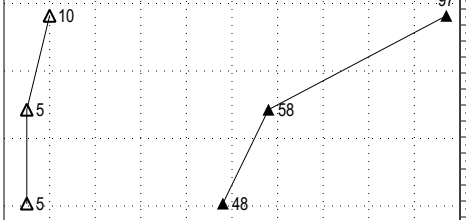
REMARKS:

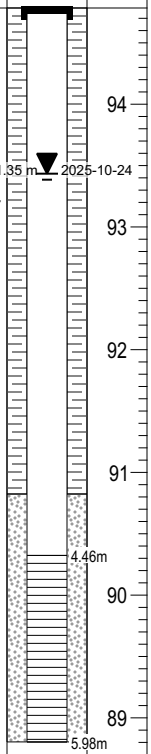
DATE: October 17, 2025

FILE NO. : PG7725

HOLE NO. : BH39-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.30m [94.48m]									
Very stiff to stiff, brown **SILTY CLAY**			SS 1	8	3-5-6-7 11				
		1	SS 2	67	4-4-5-5 9				
2.50m [92.28m]		2							
Stiff to firm, grey **SILTY CLAY**		3							
3.66m [91.12m]									
GLACIAL TILL: Compact, grey silty sand with clay, gravel, cobbles and boulders		4	SS 3	33	2-2-9-18 11				
		5	SS 4	67	21-12-19-16 31				
			SS 5	8	2-6-6-9 12				
		6	SS 6		2-25-16-10 41				
6.71m [88.07m]		7							
End of Borehole		8							
(GWL at 1.35 m depth - October 24, 2025)		9							
		10							
		11							





patersongroup

Consulting Engineers

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Prop. Commercial Development-4337/4225 Strandherd Dr.
Ottawa, Ontario

DATUM Ground surface elevations provided Novatech Engineering Consultants Limited.

FILE NO. PG2449

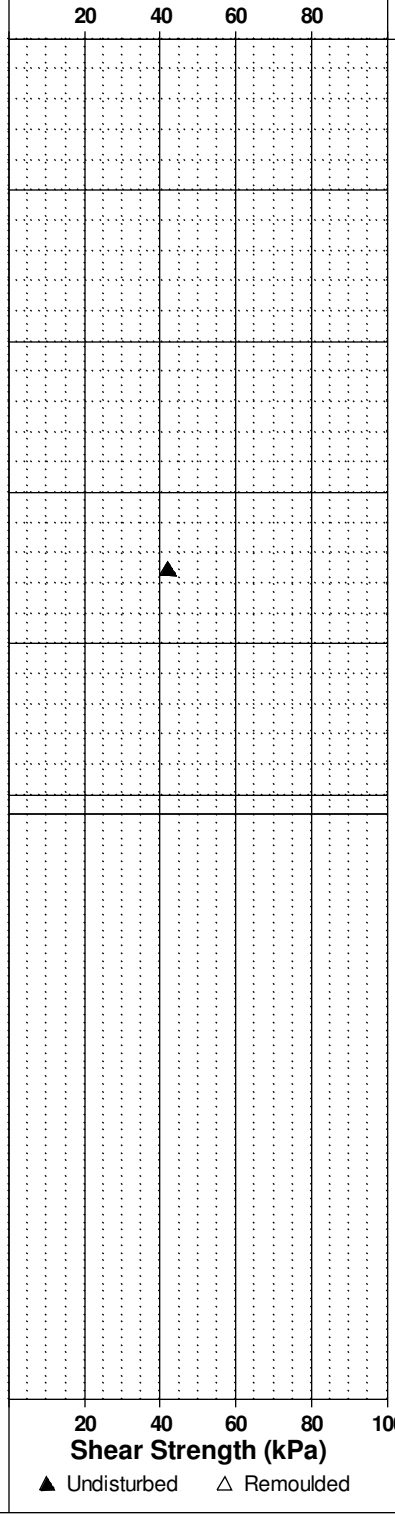
REMARKS

HOLE NO. TP 2

BORINGS BY Hydraulic Shovel **DATE** May 28, 2012

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	94.60
TOPSOIL 0.30		G	1				
						1	93.60
Stiff to firm, brown **SILTY CLAY**		G	2				
						2	92.60
- very stiff by 2.9m depth						3	91.60
3.81							
GLACIAL TILL: Brown silty sand with clay, gravel, cobbles, boulders		G	3			4	90.60
- grey by 4.3m depth						5	89.60
5.13							
End of Test Pit							
(Groundwater infiltration at 0.9m depth)							

Pen. Resist. Blows/0.3m
● 50 mm Dia. Cone
○ Water Content %



Piezometer Construction

patersongroup

Consulting Engineers

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Prop. Commercial Development-4337/4225 Strandherd Dr.
Ottawa, Ontario

DATUM Ground surface elevations provided Novatech Engineering Consultants Limited.

FILE NO. PG2449

REMARKS

HOLE NO. TP 5

BORINGS BY Hydraulic Shovel **DATE** May 28, 2012

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	94.95
Brown **SILTY SAND** with clay		G	1				
0.30							
Stiff, brown **SILTY CLAY**						1	93.95
1.01		G	2				
GLACIAL TILL: Dense, brown silty clay with sand, gravel, cobbles, boulders						2	92.95
		G	3			3	91.95
- grey by 2.7m depth						4	90.95
						5	89.95
5.84							
End of Test Pit							
(Groundwater infiltration at 3.8m depth)							

Pen. Resist. Blows/0.3m
● 50 mm Dia. Cone
○ Water Content %

20 40 60 80

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

Piezometer Construction

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Consulting Engineers

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Prop. Commercial Development-4337/4225 Strandherd Dr.
Ottawa, Ontario

DATUM Ground surface elevations provided Novatech Engineering Consultants Limited.

FILE NO. PG2449

REMARKS

HOLE NO. TP 8

BORINGS BY Hydraulic Shovel **DATE** May 28, 2012

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	95.49
TOPSOIL 0.36		G	1				
						1	94.49
Stiff, brown **SILTY CLAY**						2	93.49
						3	92.49
3.96		G	2			4	91.49
GLACIAL TILL: Grey silty clay with sand, gravel, cobbles, boulders						5	90.49
						6	89.49
6.10							
End of Test Pit							
(Groundwater infiltration at 1.5m depth)							

Pen. Resist. Blows/0.3m
● 50 mm Dia. Cone
○ Water Content %

20 40 60 80

Piezometer Construction

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

JOHN D. PATERSON & ASSOCIATES LTD.
Consulting Geotechnical and Environmental Engineers
28 Concourse Gate, Nepean, Ont. K2E 7T7

SOIL PROFILE & TEST DATA

Preliminary Geotechnical Investigation
Proposed Nortel Campus, Catizzone Property
Strandherd Drive, Nepean, Ontario

DATUM Ground surface elevations provided by Webster and Simmonds Surveying Limited.
REMARKS
BORINGS BY Hydraulic Shovel **DATE** 24 October 00

FILE NO. **G7892**
HOLE NO. **TP61**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone ○ Water Content %	PIEZOMETER CONSTRUCTION
GROUND SURFACE						0	94.98		
TOPSOIL 0.20									
Stiff to firm, brown SILTY CLAY						1	93.98		
						2	92.98		
2.40									
Firm to soft, grey SILTY CLAY						3	91.98		
						4	90.98		
5.00						5	89.98		
End of Test Pit									
(Open hole WL @ 1.2m depth)									

Pen. Resist. Blows/0.3m: ● 50 mm Dia. Cone; ○ Water Content %
20 40 60 80

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

JOHN D. PATERSON & ASSOCIATES LTD.
Consulting Geotechnical and Environmental Engineers
28 Concourse Gate, Nepean, Ont. K2E 7T7

SOIL PROFILE & TEST DATA

Preliminary Geotechnical Investigation
Proposed Nortel Campus, Catizzone Property
Strandherd Drive, Nepean, Ontario

DATUM Ground surface elevations provided by Webster and Simmonds Surveying Limited.
FILE NO. **G7892**
REMARKS
HOLE NO. **TP63**
BORINGS BY Hydraulic Shovel DATE 24 October 00

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone / ○ Water Content %	PIEZOMETER CONSTRUCTION
GROUND SURFACE						0	94.77		
TOPSOIL 0.20									
Stiff to firm, brown SILTY CLAY						1	93.77		
2.80						2	92.77		
Firm, grey SILTY CLAY									
3.80						3	91.77		
GLACIAL TILL: Silty sand to sandy silt, some boulders, cobbles and gravel 4.20						4	90.77		
End of Test Pit									
Refusal on boulders @ 4.20m depth									
(Open hole WL @ 1.2m depth)									

Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone / ○ Water Content %: 20 40 60 80

Shear Strength (kPa): 20 40 60 80 100
▲ Undisturbed △ Remoulded

JOHN D. PATERSON & ASSOCIATES LTD.
Consulting Geotechnical and Environmental Engineers
28 Concourse Gate, Nepean, Ont. K2E 7T7

SOIL PROFILE & TEST DATA

Preliminary Geotechnical Investigation
Proposed Nortel Campus, Catizzone Property
Strandherd Drive, Nepean, Ontario

DATUM Ground surface elevations provided by Webster and Simmonds Surveying Limited.

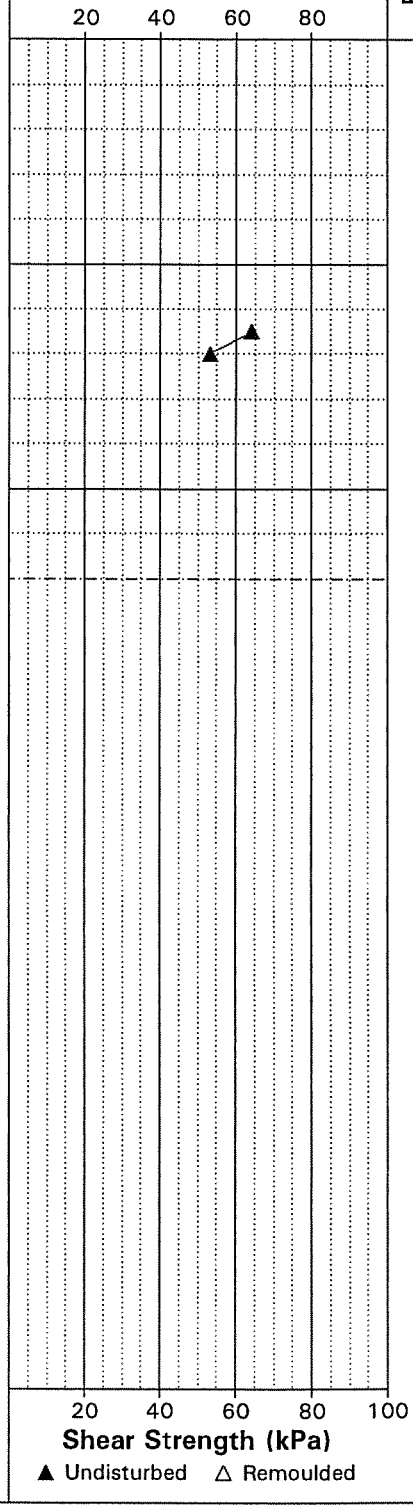
FILE NO. **G7892**

REMARKS

HOLE NO. **TP65**

BORINGS BY Hydraulic Shovel **DATE** 24 October 00

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone; ○ Water Content %	PIEZOMETER CONSTRUCTION
GROUND SURFACE						0	95.08		
Brown **TOPSOIL** 0.20									
Stiff, brownish grey SILTY **CLAY**						1	94.08		
1.80									
GLACIAL TILL: Grey silty sand to sandy silt, some boulders, cobbles and gravel						2	93.08		
2.40									
End of Test Pit									
Refusal on boulders @ 2.40m depth									
(Open hole WL @ 1.4m depth)									



JOHN D. PATERSON & ASSOCIATES LTD.
Consulting Geotechnical and Environmental Engineers
28 Concourse Gate, Nepean, Ont. K2E 7T7

SOIL PROFILE & TEST DATA

Preliminary Geotechnical Investigation
Proposed Nortel Campus, Catizzone Property
Strandherd Drive, Nepean, Ontario

DATUM Ground surface elevations provided by Webster and Simmonds Surveying Limited.

FILE NO. **G7892**

REMARKS

HOLE NO. **TP66**

BORINGS BY Hydraulic Shovel DATE 24 October 00

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone ○ Water Content %	PIEZOMETER CONSTRUCTION
GROUND SURFACE						0	94.75		
Brown TOPSOIL 0.20									
Stiff to firm, brownish grey **SILTY CLAY**						1	93.75		
						2	92.75		
2.40									
GLACIAL TILL: Silty sand to sandy silt, some boulders, cobbles and gravel						3	91.75		
3.80									
End of Test Pit									
Refusal on boulders @ 3.80m depth.									
(Open hole WL @ 1.1m depth)									

Pen. Resist. Blows/0.3m: 20 40 60 80
Water Content %: 20 40 60 80
Shear Strength (kPa): 20 40 60 80 100
▲ Undisturbed △ Remoulded

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Consulting Geotechnical and Environmental Engineers
28 Concourse Gate, Nepean, Ont. K2E 7T7

SOIL PROFILE & TEST DATA

Preliminary Geotechnical Investigation
Proposed Nortel Campus, Catizzone Property
Strandherd Drive, Nepean, Ontario

DATUM Ground surface elevations provided by Webster and Simmonds Surveying Limited.

FILE NO. G7892

REMARKS

HOLE NO. TP68

BORINGS BY Hydraulic Shovel **DATE** 24 October 00

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone ○ Water Content %	PIEZOMETER CONSTRUCTION
GROUND SURFACE						0	95.01	20 40 60 80	
Brown TOPSOIL									
0.50									
Stiff, brown SILTY CLAY						1	94.01		
1.40									
GLACIAL TILL: Grey silty sand to sandy silt, some boulders, cobbles and gravel						2	93.01		▽
						3	92.01		
4.00						4	91.01		
End of Test Pit									
(Open hole WL @ 3.5m depth)									

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

SYMBOLS AND TERMS

SOIL DESCRIPTION

Behavioural properties, such as structure and strength, take precedence over particle gradation in describing soils. Terminology describing soil structure are as follows:

Desiccated	-	having visible signs of weathering by oxidation of clay minerals, shrinkage cracks, etc.
Fissured	-	having cracks, and hence a blocky structure.
Varved	-	composed of regular alternating layers of silt and clay.
Stratified	-	composed of alternating layers of different soil types, e.g. silt and sand or silt and clay.
Well-Graded	-	Having wide range in grain sizes and substantial amounts of all intermediate particle sizes (see Grain Size Distribution).
Uniformly-Graded	-	Predominantly of one grain size (see Grain Size Distribution).

The standard terminology to describe the strength of cohesionless soils is the relative density, usually inferred from the results of the Standard Penetration Test (SPT) 'N' value. The SPT N value is the number of blows of a 63.5 kg hammer, falling 760 mm, required to drive a 51 mm O.D. split spoon sampler 300 mm into the soil after an initial penetration of 150 mm.

Relative Density	'N' Value	Relative Density %
Very Loose	<4	<15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	>50	>85

The standard terminology to describe the strength of cohesive soils is the consistency, which is based on the undisturbed undrained shear strength as measured by the in situ or laboratory vane tests, penetrometer tests, unconfined compression tests, or occasionally by Standard Penetration Tests.

Consistency	Undrained Shear Strength (kPa)	'N' Value
Very Soft	<12	<2
Soft	12-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very Stiff	100-200	15-30
Hard	>200	>30

SYMBOLS AND TERMS (continued)

SOIL DESCRIPTION (continued)

Cohesive soils can also be classified according to their “sensitivity”. The sensitivity is the ratio between the undisturbed undrained shear strength and the remoulded undrained shear strength of the soil.

Terminology used for describing soil strata based upon texture, or the proportion of individual particle sizes present is provided on the Textural Soil Classification Chart at the end of this information package.

ROCK DESCRIPTION

The structural description of the bedrock mass is based on the Rock Quality Designation (RQD).

The RQD classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be a result of closely-spaced discontinuities (resulting from shearing, jointing, faulting, or weathering) in the rock mass and are not counted. RQD is ideally determined from NXL size core. However, it can be used on smaller core sizes, such as BX, if the bulk of the fractures caused by drilling stresses (called “mechanical breaks”) are easily distinguishable from the normal in situ fractures.

RQD %	ROCK QUALITY
90-100	Excellent, intact, very sound
75-90	Good, massive, moderately jointed or sound
50-75	Fair, blocky and seamy, fractured
25-50	Poor, shattered and very seamy or blocky, severely fractured
0-25	Very poor, crushed, very severely fractured

SAMPLE TYPES

SS	-	Split spoon sample (obtained in conjunction with the performing of the Standard Penetration Test (SPT))
TW	-	Thin wall tube or Shelby tube
PS	-	Piston sample
AU	-	Auger sample or bulk sample
WS	-	Wash sample
RC	-	Rock core sample (Core bit size AXT, BXL, etc.). Rock core samples are obtained with the use of standard diamond drilling bits.

SYMBOLS AND TERMS (continued)

GRAIN SIZE DISTRIBUTION

MC%	-	Natural moisture content or water content of sample, %
LL	-	Liquid Limit, % (water content above which soil behaves as a liquid)
PL	-	Plastic limit, % (water content above which soil behaves plastically)
PI	-	Plasticity index, % (difference between LL and PL)
Dxx	-	Grain size which xx% of the soil, by weight, is of finer grain sizes These grain size descriptions are not used below 0.075 mm grain size
D10	-	Grain size at which 10% of the soil is finer (effective grain size)
D60	-	Grain size at which 60% of the soil is finer
Cc	-	Concavity coefficient = $(D30)^2$ / (D10 x D60)
Cu	-	Uniformity coefficient = D60 / D10

Cc and Cu are used to assess the grading of sands and gravels:
Well-graded gravels have: $1 < Cc < 3$ and $Cu > 4$
Well-graded sands have: $1 < Cc < 3$ and $Cu > 6$
Sands and gravels not meeting the above requirements are poorly-graded or uniformly-graded.
Cc and Cu are not applicable for the description of soils with more than 10% silt and clay
(more than 10% finer than 0.075 mm or the #200 sieve)

CONSOLIDATION TEST

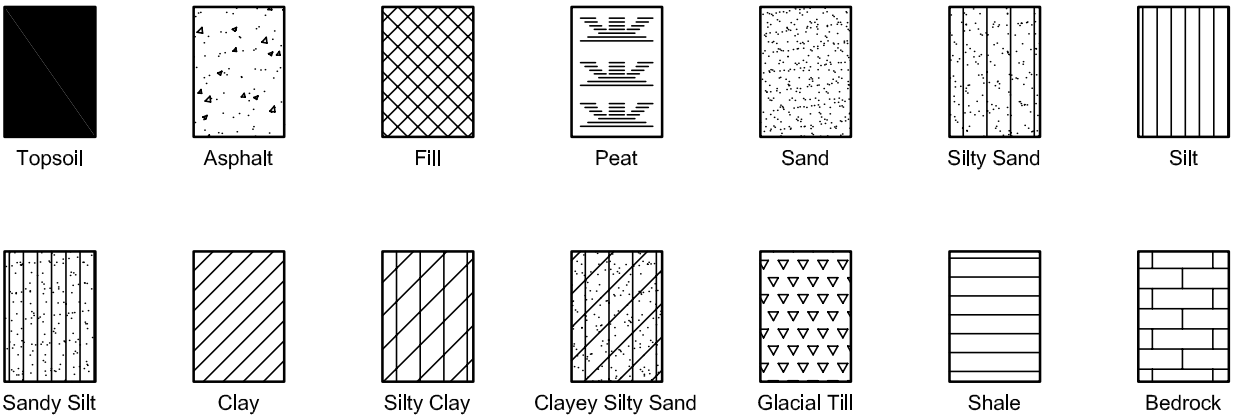
p'_o	-	Present effective overburden pressure at sample depth
p'_c	-	Preconsolidation pressure of (maximum past pressure on) sample
Ccr	-	Recompression index (in effect at pressures below p'_c)
Cc	-	Compression index (in effect at pressures above p'_c)
OC Ratio		Overconsolidaton ratio = p'_c / p'_o
Void Ratio		Initial sample void ratio = volume of voids / volume of solids
Wo	-	Initial water content (at start of consolidation test)

PERMEABILITY TEST

k	-	Coefficient of permeability or hydraulic conductivity is a measure of the ability of water to flow through the sample. The value of k is measured at a specified unit weight for (remoulded) cohesionless soil samples, because its value will vary with the unit weight or density of the sample during the test.

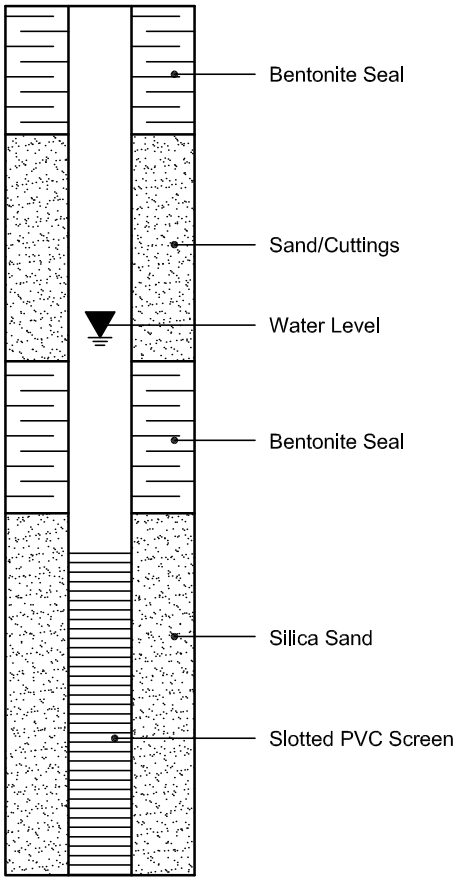
SYMBOLS AND TERMS (continued)

STRATA PLOT

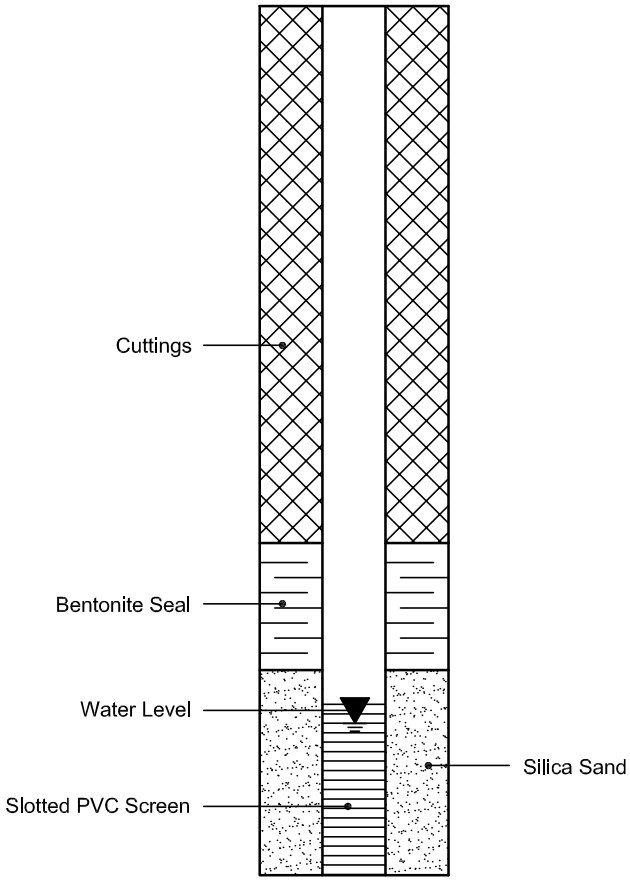


MONITORING WELL AND PIEZOMETER CONSTRUCTION

MONITORING WELL CONSTRUCTION



PIEZOMETER CONSTRUCTION



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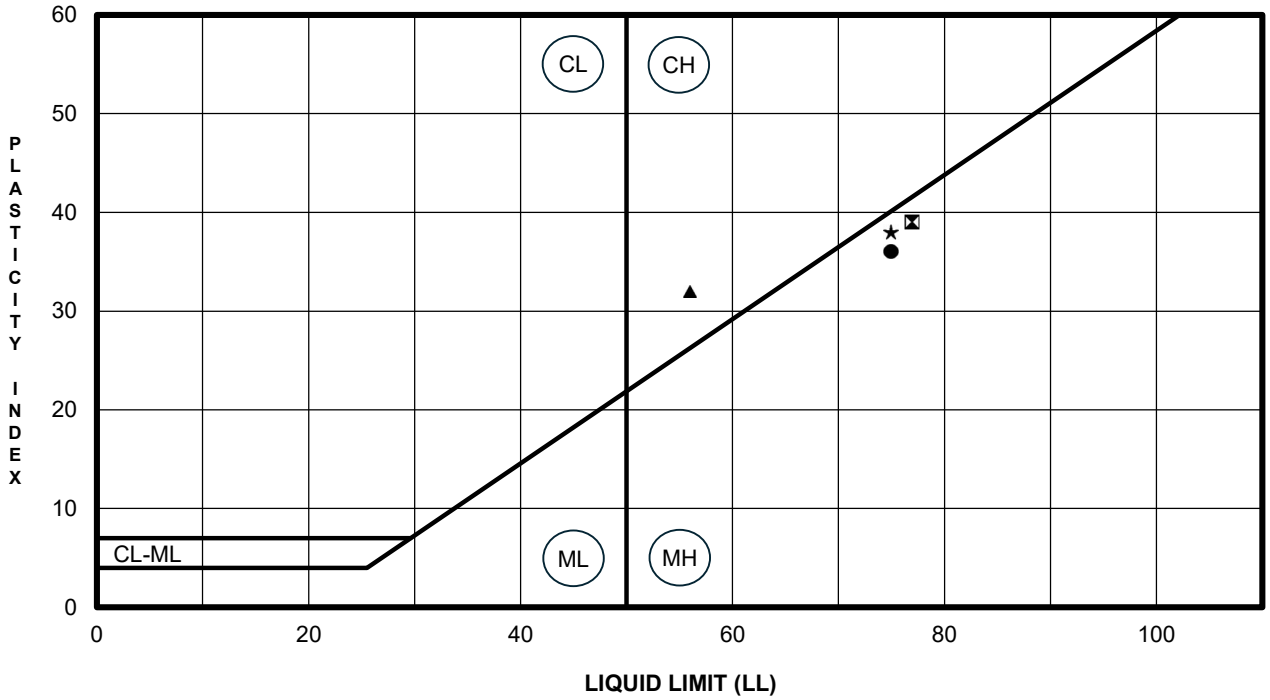
ATTERBERG LIMITS' RESULTS



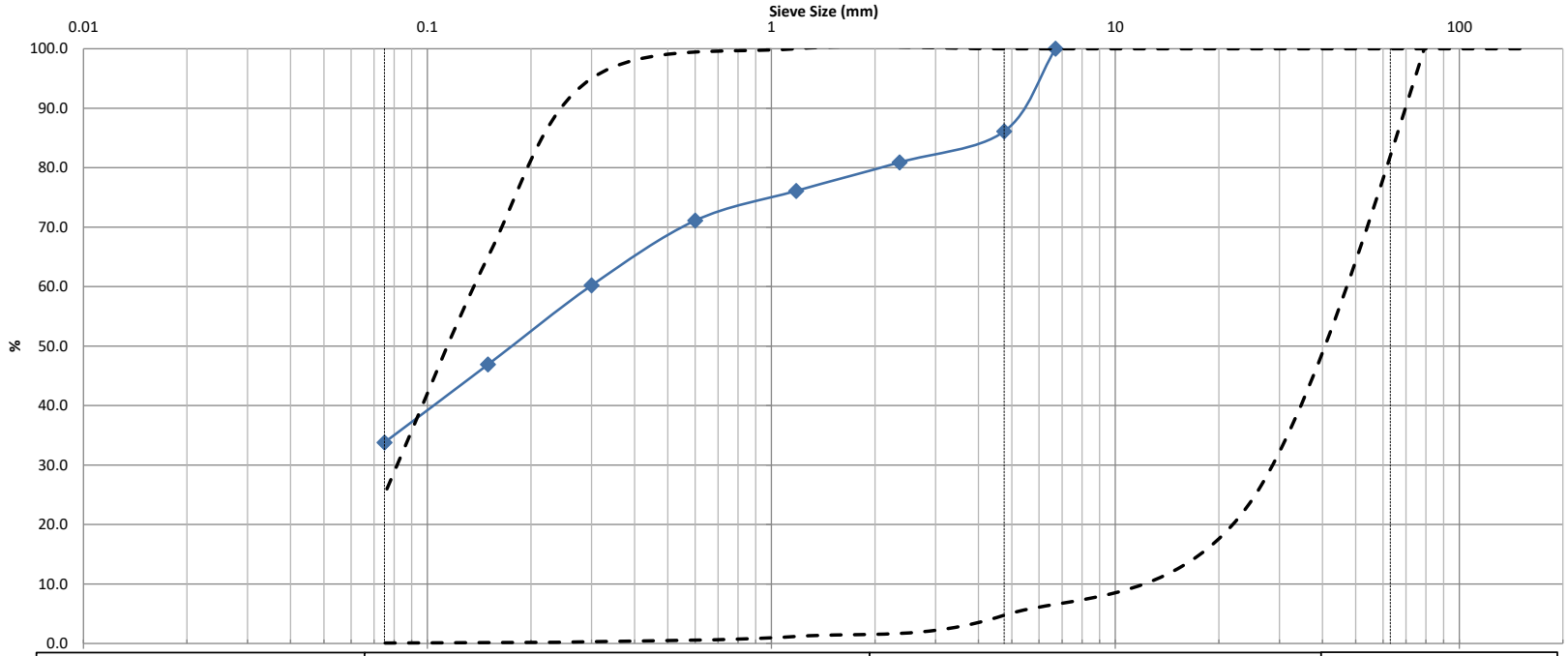
Specimen Identificacation			LL	PL	PI	Fines	Classification
●	BH 1-25	SS1	75	39	36		MH - Inorganic silts of high plasticity
⊠	BH 8-25	SS3	77	38	39		MH - Inorganic silts of high plasticity
▲	BH 20-25	SS2	56	24	32		CH - Inorganic clays of high plasticity
★	BH 29-25	SS3	75	37	38		MH - Inorganic silts of high plasticity

CLIENT	Choice Properties	FILE NO.	PG7725
PROJECT	Geotechnical Investigation Proposed Development 4175 Strandherd Drive, Ottawa, ON	DATE	15-Oct-25

PATERSON GROUP

SIEVE ANALYSIS
ASTM C136

CLIENT:	Choice Properties	DESCRIPTION:	Glacial Till	FILE NO:	PG7725
CONTRACT NO.:	-	SPECIFICATION:		LAB NO:	64172
PROJECT:	4175 Strandherd Drive	INTENDED USE:		DATE RECEIVED:	9-Oct-25
		PIT OR QUARRY:	-	DATE TESTED:	11-Oct-25
DATE SAMPLED:	9-Oct-25	SOURCE LOCATION:	BH14-25 SS5	DATE REPORTED:	6-Nov-25
SAMPLED BY:	N.V	SAMPLE LOCATION:	12'6" - 14'6"	TESTED BY:	CP/AG/GL



Silt and Clay	Sand			Gravel		Cobble
	Fine	Medium	Coarse	Fine	Coarse	

Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
										1.20	30.0
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	6.9	0.3	0.06	0.01	19.1	47.1		33.8			

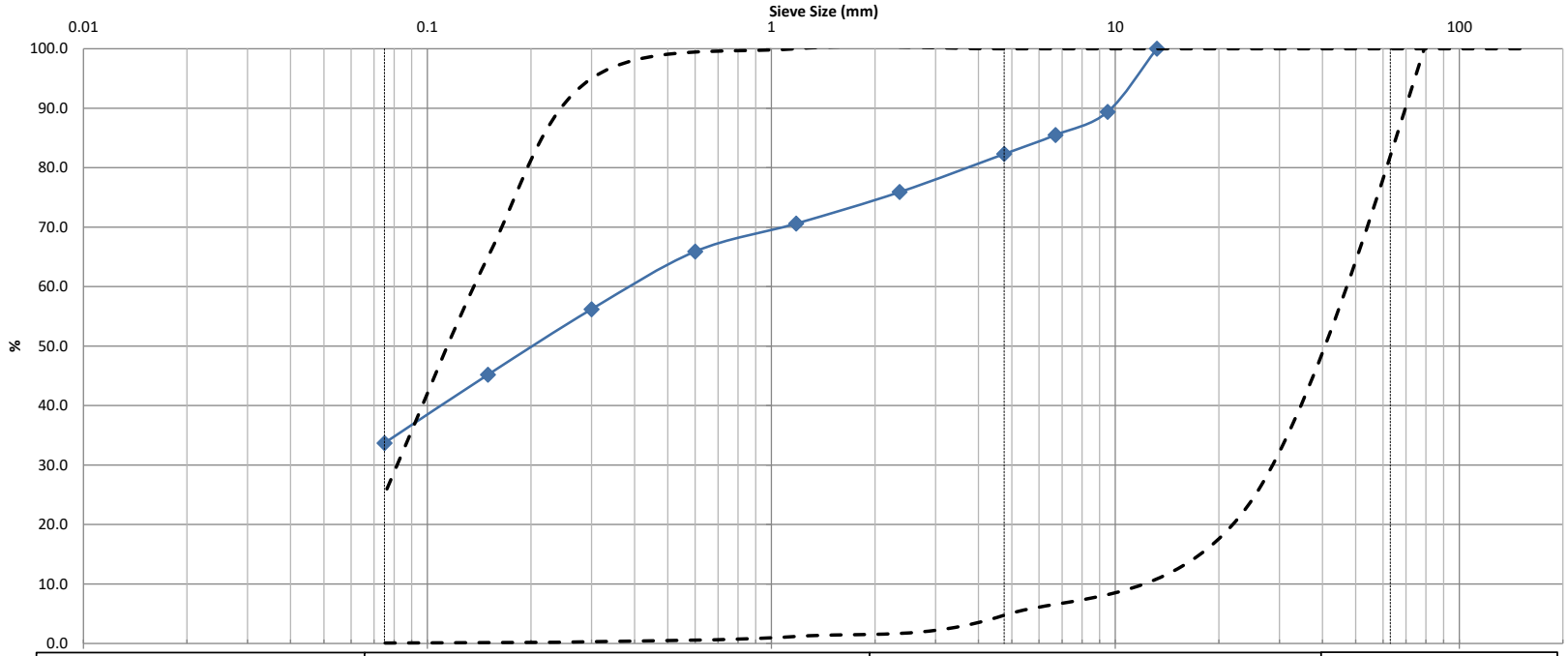
Comments:

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.

PATERSON GROUP

SIEVE ANALYSIS
ASTM C136

CLIENT:	Choice Properties	DESCRIPTION:	Glacial Till	FILE NO:	PG7725
CONTRACT NO.:	-	SPECIFICATION:		LAB NO:	64173
PROJECT:	4175 Strandherd Drive	INTENDED USE:		DATE RECEIVED:	10-Oct-25
		PIT OR QUARRY:	-	DATE TESTED:	11-Oct-25
DATE SAMPLED:	10-Oct-25	SOURCE LOCATION:	BH17-25 SS5	DATE REPORTED:	6-Nov-25
SAMPLED BY:	N.V	SAMPLE LOCATION:	10' - 12'	TESTED BY:	CP/AG/GL



Silt and Clay	Sand			Gravel		Cobble
	Fine	Medium	Coarse	Fine	Coarse	

Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
										1.24	29.0
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	13	0.29	0.06	0.01	24.1	42.2		33.7			

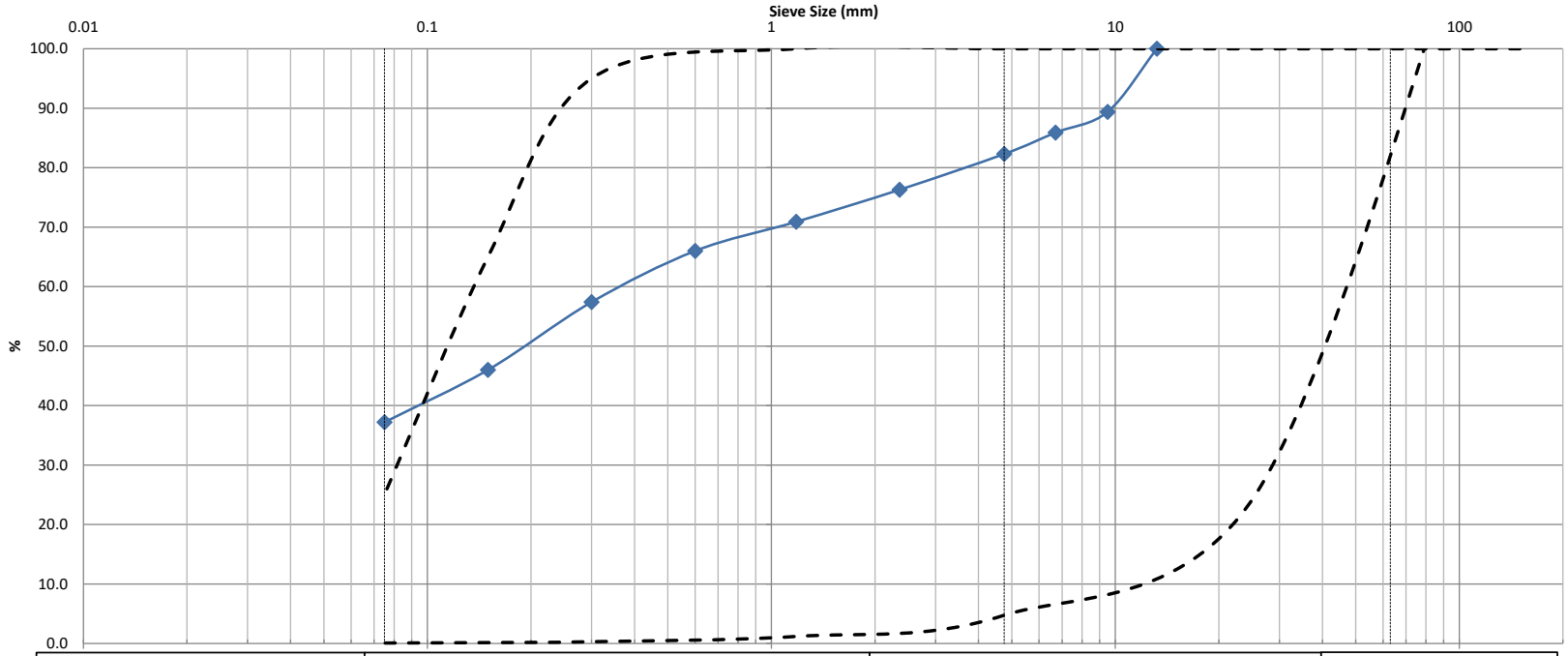
Comments:

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.

PATERSON GROUP

SIEVE ANALYSIS
ASTM C136

CLIENT:	Choice Properties	DESCRIPTION:	Glacial Till	FILE NO:	PG7725
CONTRACT NO.:	-	SPECIFICATION:		LAB NO:	64174
PROJECT:	4175 Strandherd Drive	INTENDED USE:		DATE RECEIVED:	14-Oct-25
		PIT OR QUARRY:	-	DATE TESTED:	15-Oct-25
DATE SAMPLED:	14-Oct-25	SOURCE LOCATION:	BH22-25 SS4	DATE REPORTED:	6-Nov-25
SAMPLED BY:	N.V	SAMPLE LOCATION:	17'6" - 19'6"	TESTED BY:	CP/AG/GL



Silt and Clay	Sand			Gravel		Cobble
	Fine	Medium	Coarse	Fine	Coarse	

Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
						-				0.35	35.0
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	14	0.35	0.035	0.01	23.7	39.1		37.2			

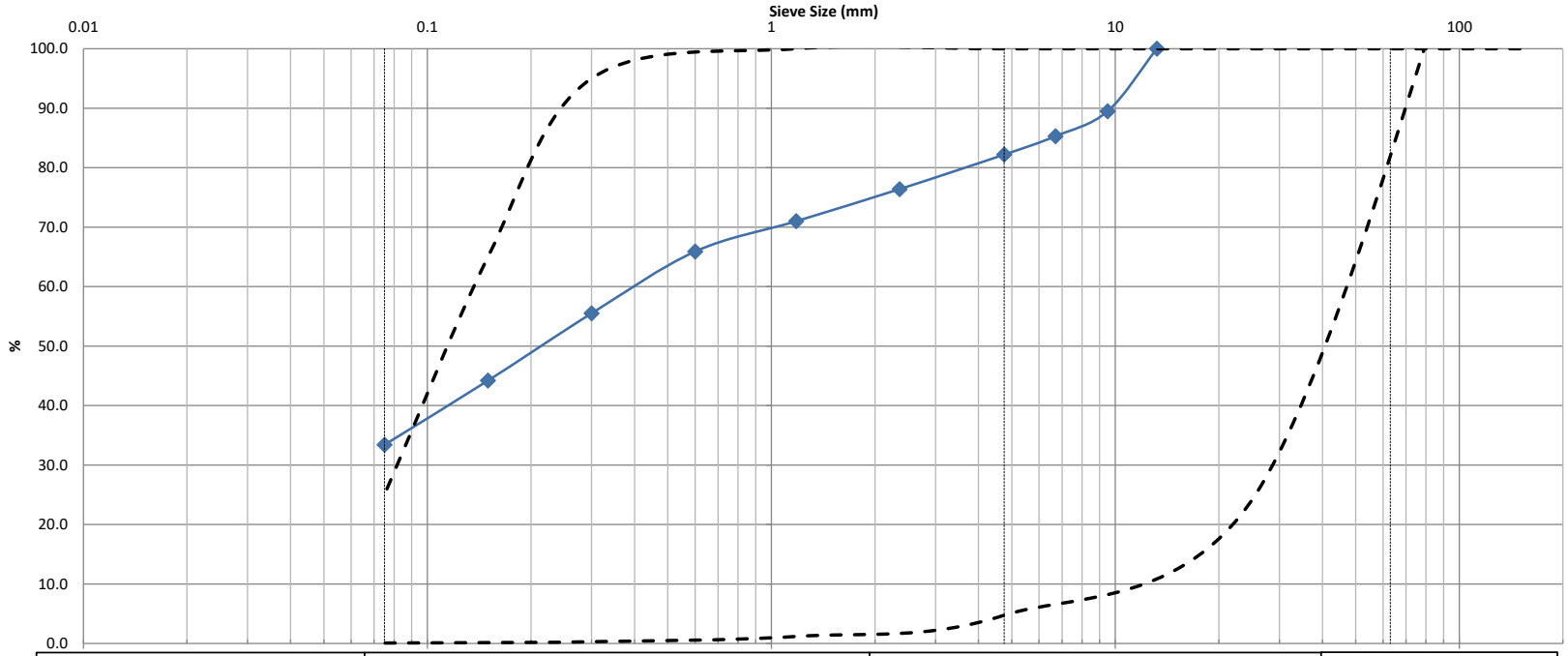
Comments:

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.

PATERSON GROUP

SIEVE ANALYSIS
ASTM C136

CLIENT:	Choice Properties	DESCRIPTION:	Glacial Till	FILE NO:	PG7725
CONTRACT NO.:	-	SPECIFICATION:		LAB NO:	64175
PROJECT:	4175 Strandherd Drive	INTENDED USE:		DATE RECEIVED:	14-Oct-25
		PIT OR QUARRY:	-	DATE TESTED:	15-Oct-25
DATE SAMPLED:	14-Oct-25	SOURCE LOCATION:	BH26-25 SS7	DATE REPORTED:	6-Nov-25
SAMPLED BY:	N.V	SAMPLE LOCATION:	15' - 17'	TESTED BY:	CP/AG/GL



Silt and Clay	Sand			Gravel		Cobble
	Fine	Medium	Coarse	Fine	Coarse	

Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
						-				0.90	40.0
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	13	0.4	0.06	0.01	23.6	43.0		33.4			

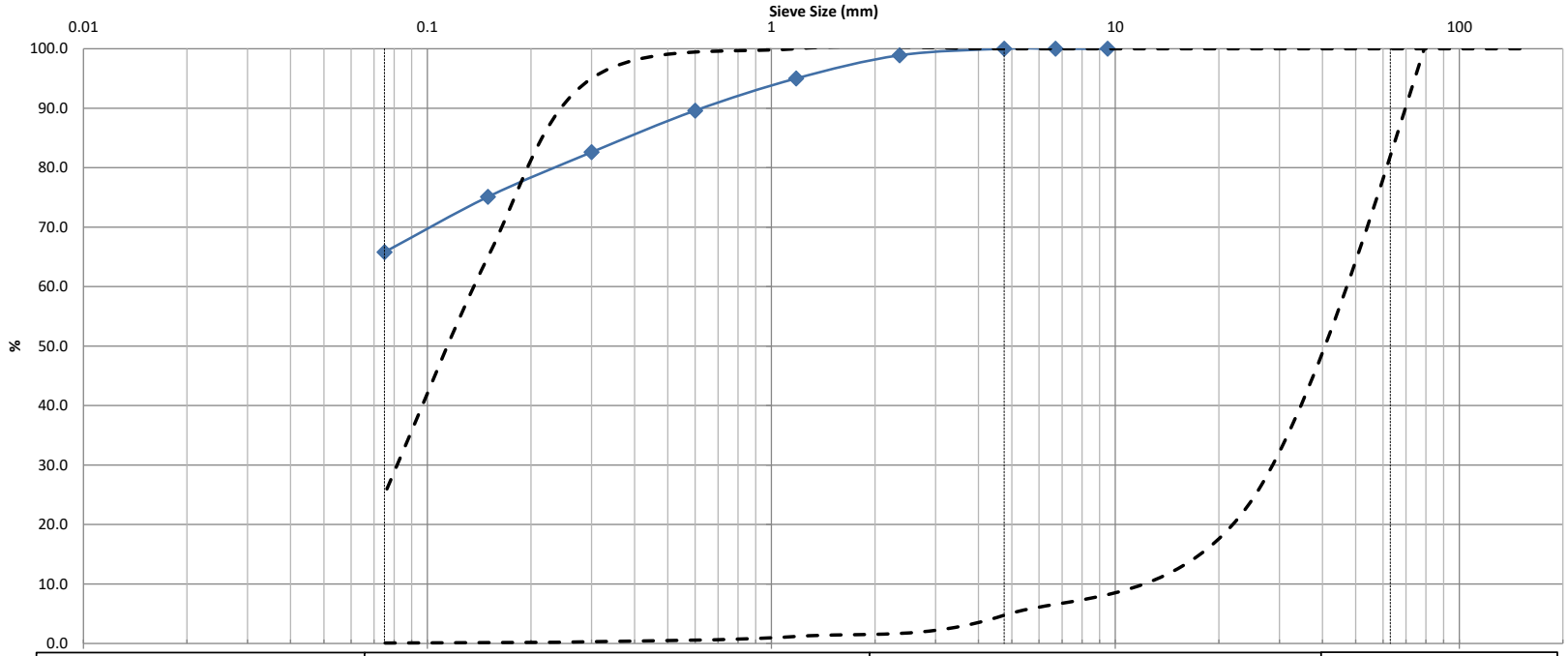
Comments:

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.

PATERSON GROUP

SIEVE ANALYSIS
ASTM C136

CLIENT:	Choice Properties	DESCRIPTION:	Fill	FILE NO:	PG7725
CONTRACT NO.:	-	SPECIFICATION:		LAB NO:	64176
PROJECT:	4175 Strandherd Drive	INTENDED USE:		DATE RECEIVED:	15-Oct-25
		PIT OR QUARRY:	-	DATE TESTED:	17-Oct-25
DATE SAMPLED:	15-Oct-25	SOURCE LOCATION:	BH29-25 SS2 TOP	DATE REPORTED:	6-Nov-25
SAMPLED BY:	N.V	SAMPLE LOCATION:	2'6" - 4'6"	TESTED BY:	CP/AG/GL



Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
						-				0.08	50.0
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	9	0.5	0.02	0.01	1.1	33.1		65.8			

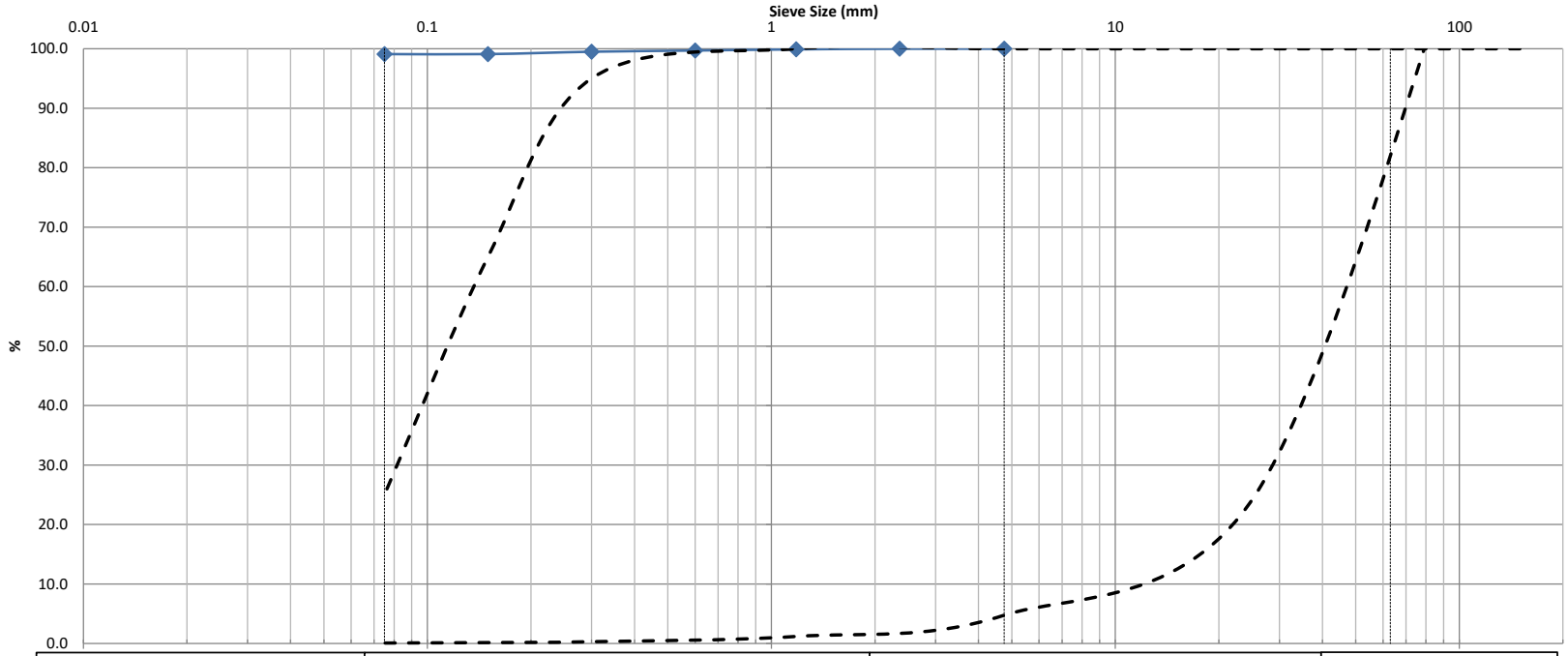
Comments:

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.

PATERSON GROUP

SIEVE ANALYSIS
ASTM C136

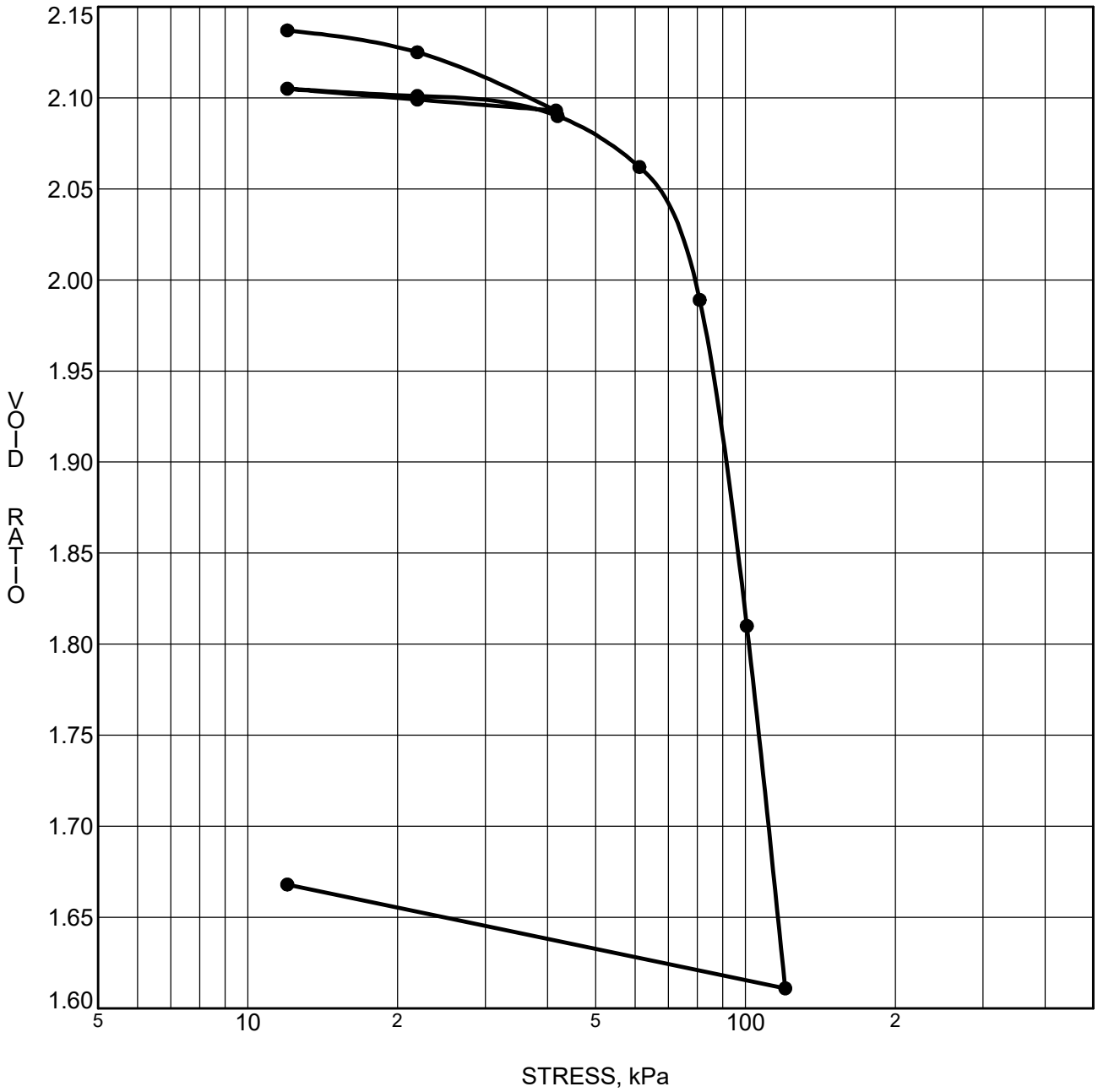
CLIENT:	Choice Properties	DESCRIPTION:	Silty Clay	FILE NO:	PG7725
CONTRACT NO.:	-	SPECIFICATION:		LAB NO:	64199
PROJECT:	4175 Strandherd Drive	INTENDED USE:		DATE RECEIVED:	15-Oct-25
		PIT OR QUARRY:	-	DATE TESTED:	17-Oct-25
DATE SAMPLED:	15-Oct-25	SOURCE LOCATION:	BH29-25 SS2 BOT	DATE REPORTED:	6-Nov-25
SAMPLED BY:	N.V	SAMPLE LOCATION:	2'6" - 4'6"	TESTED BY:	CP/AG/GL



Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
						-				1.00	1.0
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	1	0.01	0.01	0.01	0.0	0.9		99.1			

Comments:

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.



CONSOLIDATION TEST DATA SUMMARY					
Borehole No.	**BH 1A-25**	p'o	**49.11** kPa	Ccr	**0.024**
Sample No.	**TW1**	p'c	**77.37** kPa	Cc	**2.196**
Sample Depth	**3.43** m	OC Ratio	**1.6**	Wo	**78.5** %
Sample Elev.	**92.07** m	Void Ratio	**2.159**	Unit Wt.	kN/m ^{3}

CLIENT **Choice Properties** FILE NO. **PG7725**

PROJECT **Lab Testing** DATE **27/10/2025**

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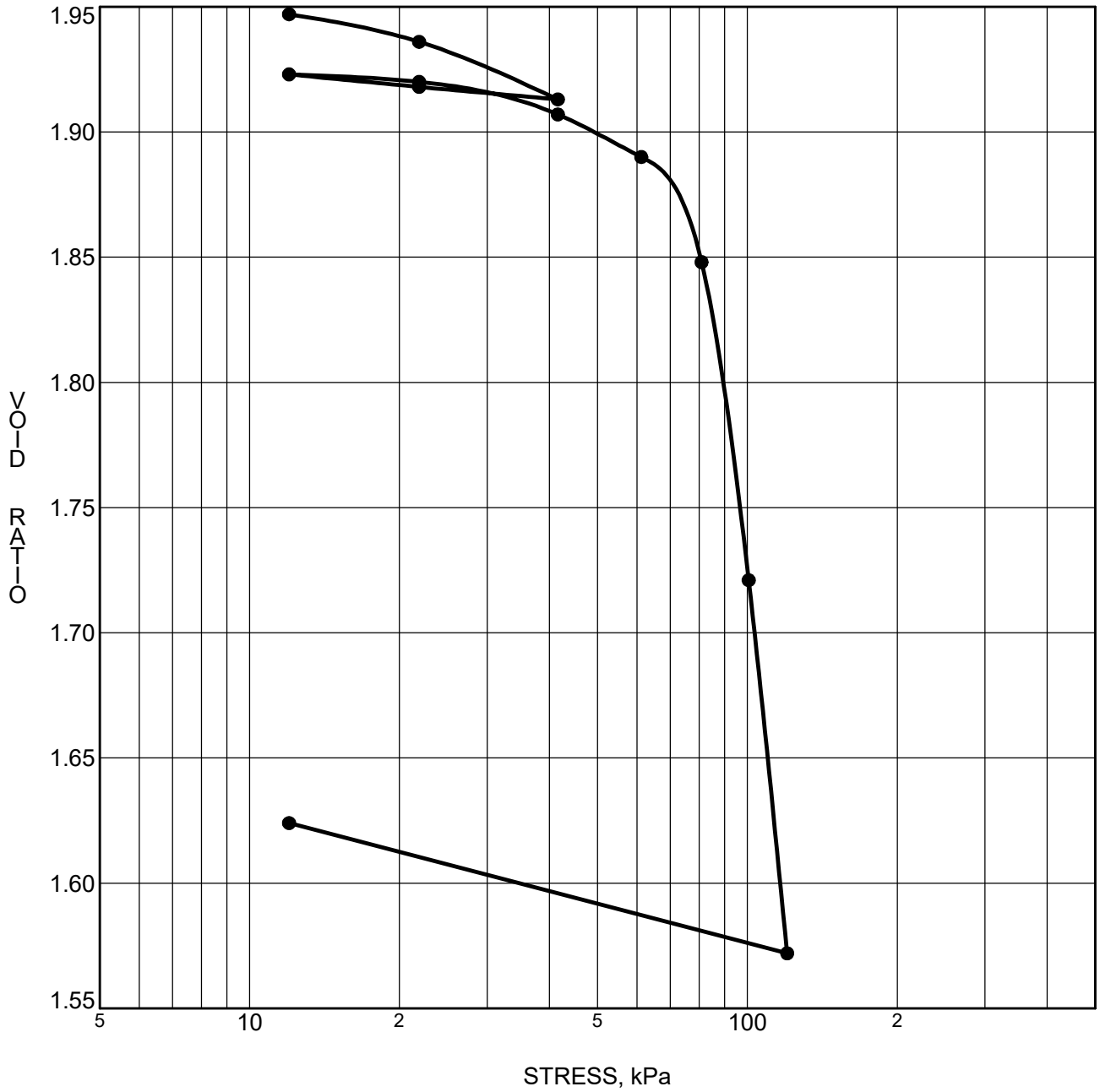
CONSOLIDATION TEST



CONSOLIDATION TEST DATA SUMMARY					
Borehole No.	**BH 9A-25**	p'o	**49.44** kPa	Ccr	**0.031**
Sample No.	**TW1**	p'c	**80** kPa	Cc	**1.723**
Sample Depth	**4.04** m	OC Ratio	**1.6**	Wo	**71.3** %
Sample Elev.	**91.26** m	Void Ratio	**1.961**	Unit Wt.	kN/m ^{3}

CLIENT **Choice Properties** FILE NO. **PG7725**

PROJECT **Lab Testing** DATE **27/10/2025**

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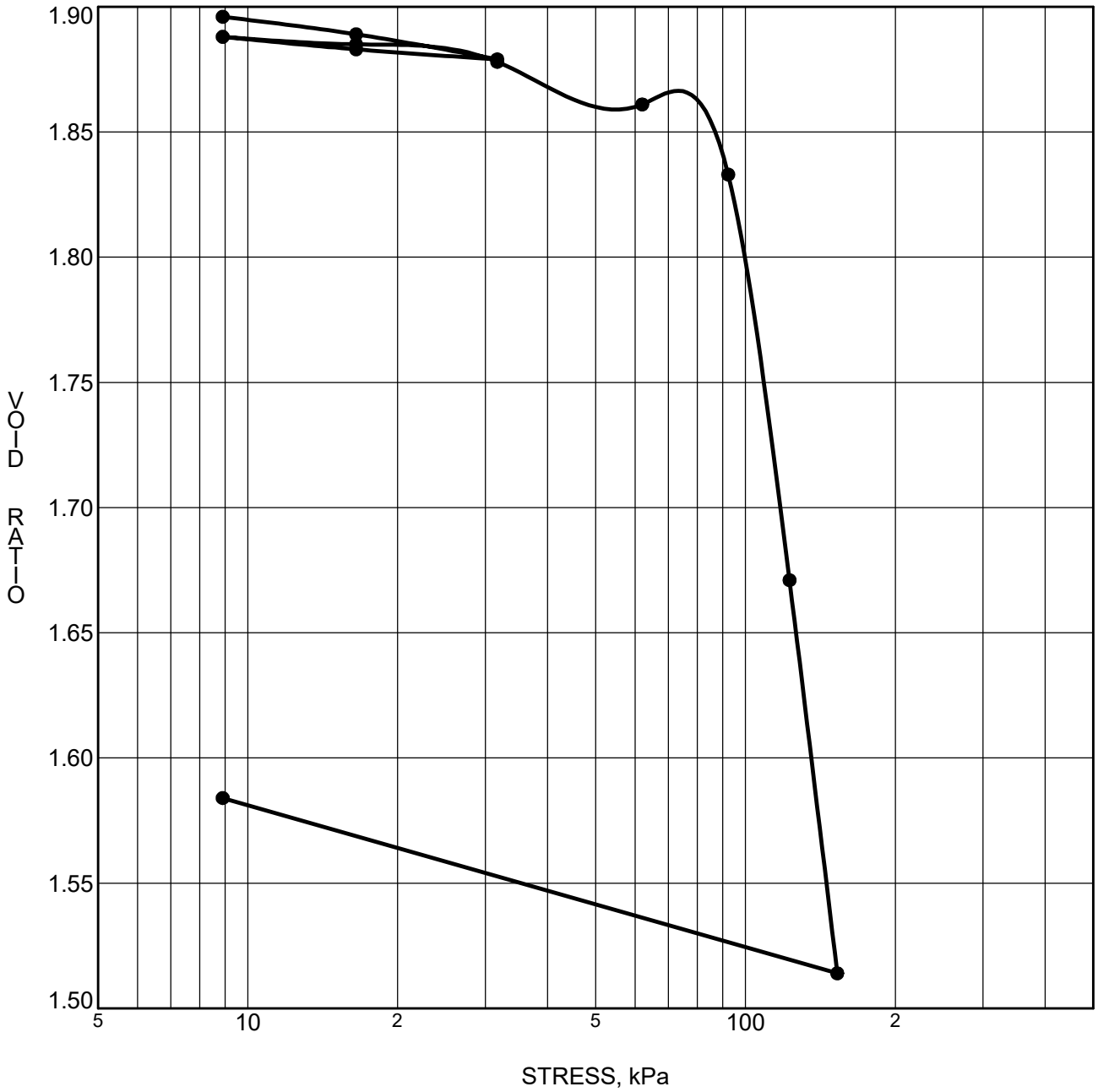
CONSOLIDATION TEST



CONSOLIDATION TEST DATA SUMMARY					
Borehole No.	**BH29A-25**	p'o	**49.79** kPa	Ccr	**0.014**
Sample No.	**TW1**	p'c	**92.91** kPa	Cc	**1.438**
Sample Depth	**3.35** m	OC Ratio	**1.9**	Wo	**69.0** %
Sample Elev.	**92.34** m	Void Ratio	**1.897**	Unit Wt.	kN/m ^{3}

CLIENT **Choice Properties** FILE NO. **PG7725**

PROJECT **Lab Testing** DATE **27/10/2025**

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CONSOLIDATION TEST

Certificate of Analysis

Report Date: 28-Oct-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 22-Oct-2025

Client PO: 65304

Project Description: PG7725

	Client ID:	BH3-25 SS2	BH23-25 SS2	-	-	-	-
	Sample Date:	07-Oct-25 09:00	14-Oct-25 09:00	-	-		
	Sample ID:	2543309-01	2543309-02	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	78.9	93.5	-	-	-	-
General Inorganics							
pH	0.05 pH Units	7.05	7.80	-	-	-	-
Resistivity	0.1 Ohm.m	87.7	66.7	-	-	-	-
Anions							
Chloride	10 ug/g	<10	<10	-	-	-	-
Sulphate	10 ug/g	<10	<10	-	-	-	-

APPENDIX 2

FIGURE 1 – KEY PLAN

FIGURES 2 & 3 – SEISMIC SHEAR WAVE VELOCITY PROFILES

FIGURE 4 – TYPICAL EPS BLOCK INSTALLATION FOR SLAB-ON-GRADE BUILDINGS

DRAWING PG7643-1 – TEST HOLE LOCATION PLAN

DRAWING PG7643-2 – PERMISSIBLE GRADE RAISE PLAN

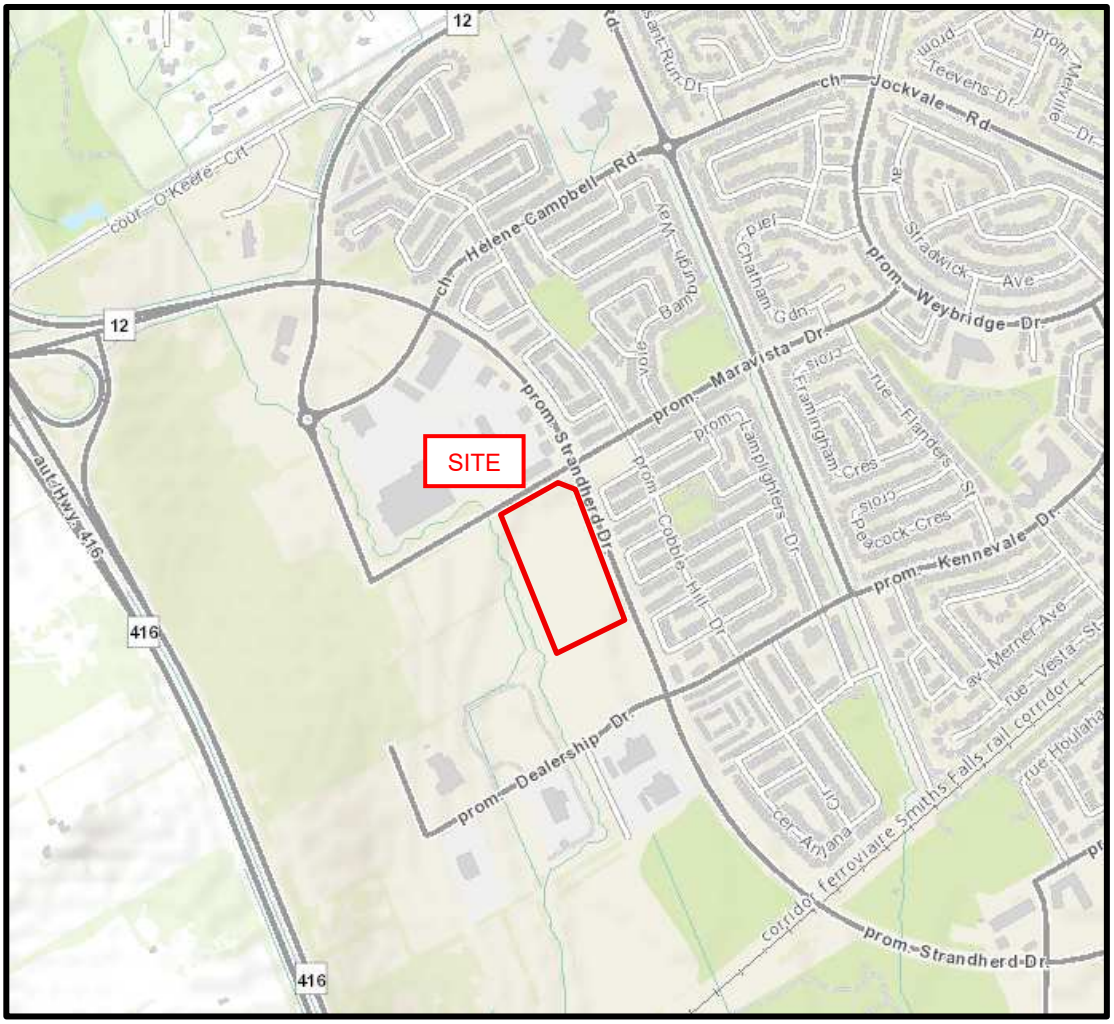


FIGURE 1

KEY PLAN

PATERSON GROUP

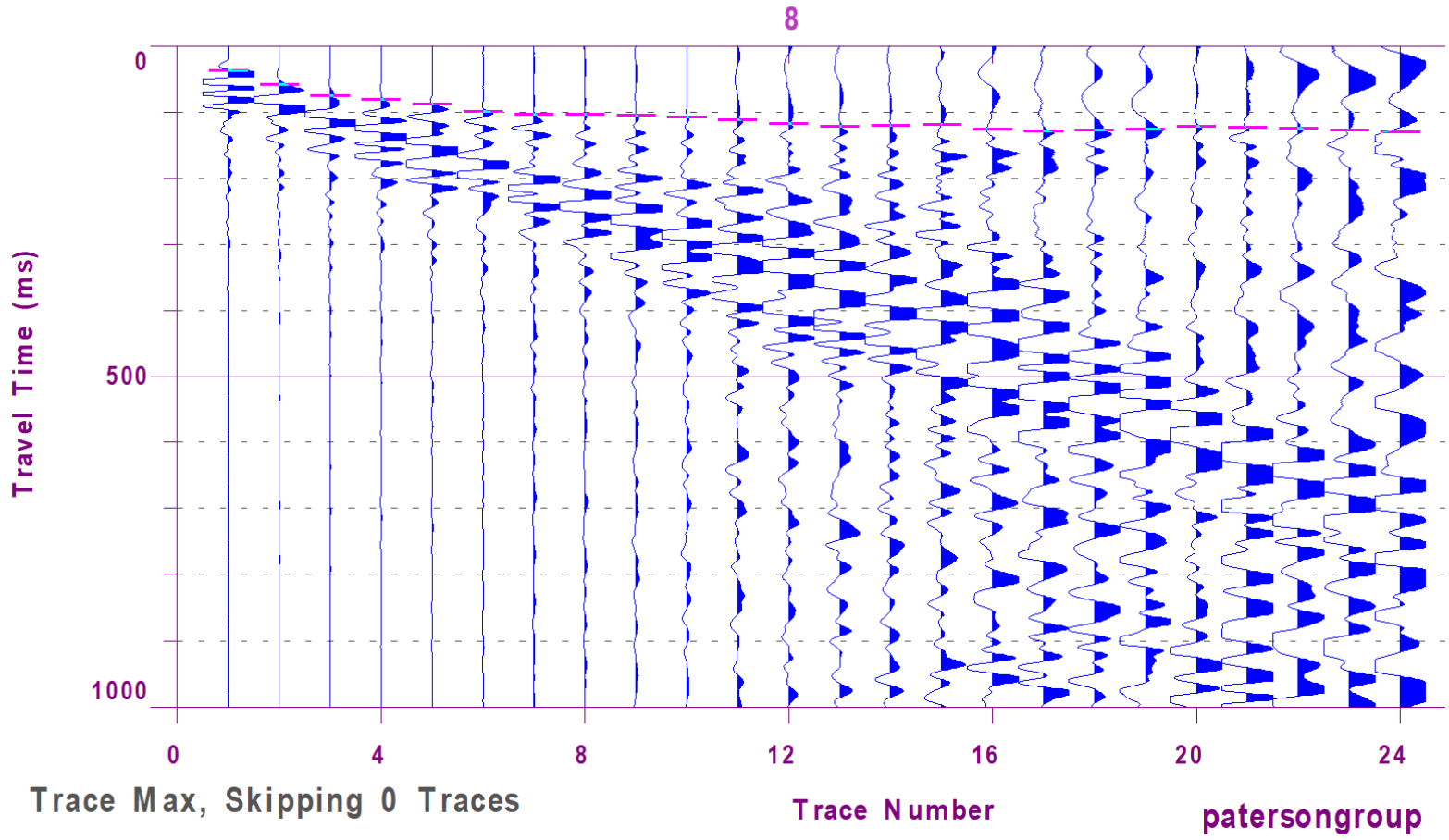


Figure 2 - Shear Wave Velocity Profile at Shot Location -4.5 m

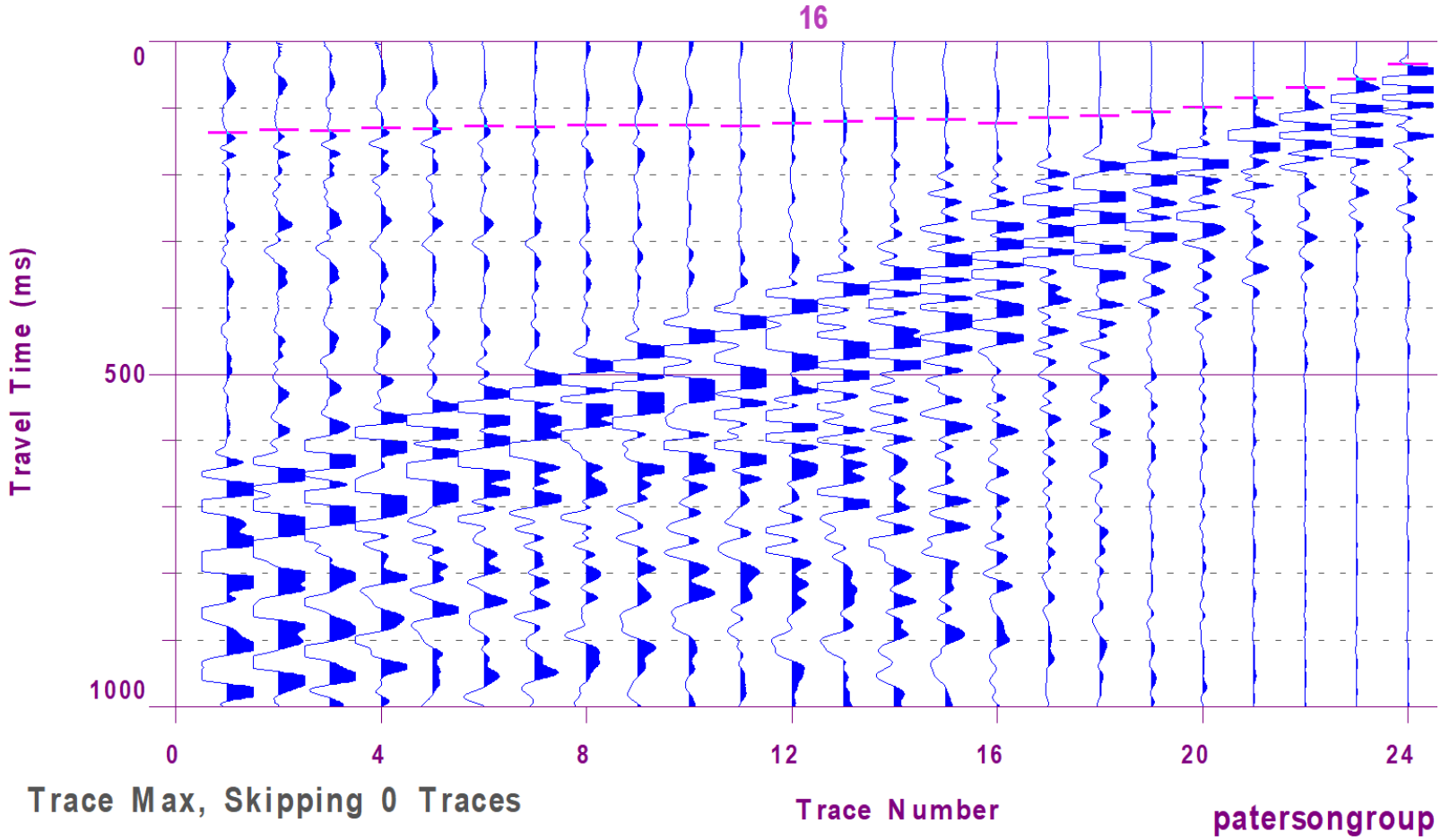
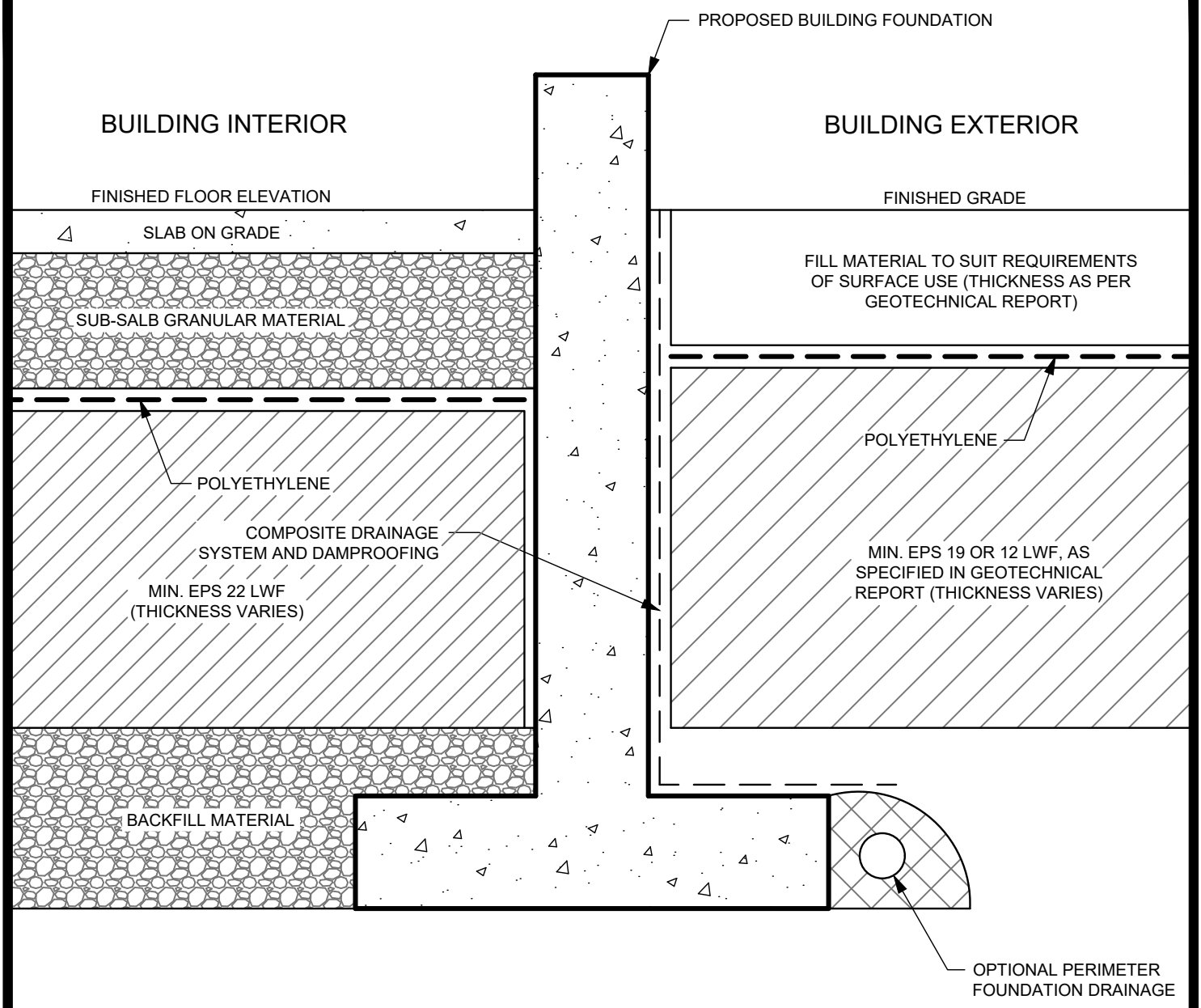


Figure 3 - Shear Wave Velocity Profile at Shot Location 73.5 m



NOTES:

1. USE EPS 22 BELOW INTERIOR SLAB
2. USE EPS 19 BELOW HARDSCAPED AREAS
3. USE EPS 12 BELOW LANDSCAPED AREAS
4. REFERENCE SHOULD BE MADE TO PATERSON GROUP REPORT PG7725-REP.01 FOR LWF RECOMMENDATIONS
5. PLACEMENT OF LWF SHOULD BE ON A LEVELED SURFACE (SAND CAN BE USED TO PROVIDE AN ADEQUATE LEVELLING SURFACE).

PATERSON GROUP

Title:

TYPICAL EPS BLOCK INSTALLATION FOR SLAB-ON-GRADE BUILDINGS

Scale:	Date:
N.T.S.	11/2025

Drawn by:	Checked by:	Drawing No.:
NFRV	DP	FIGURE 4

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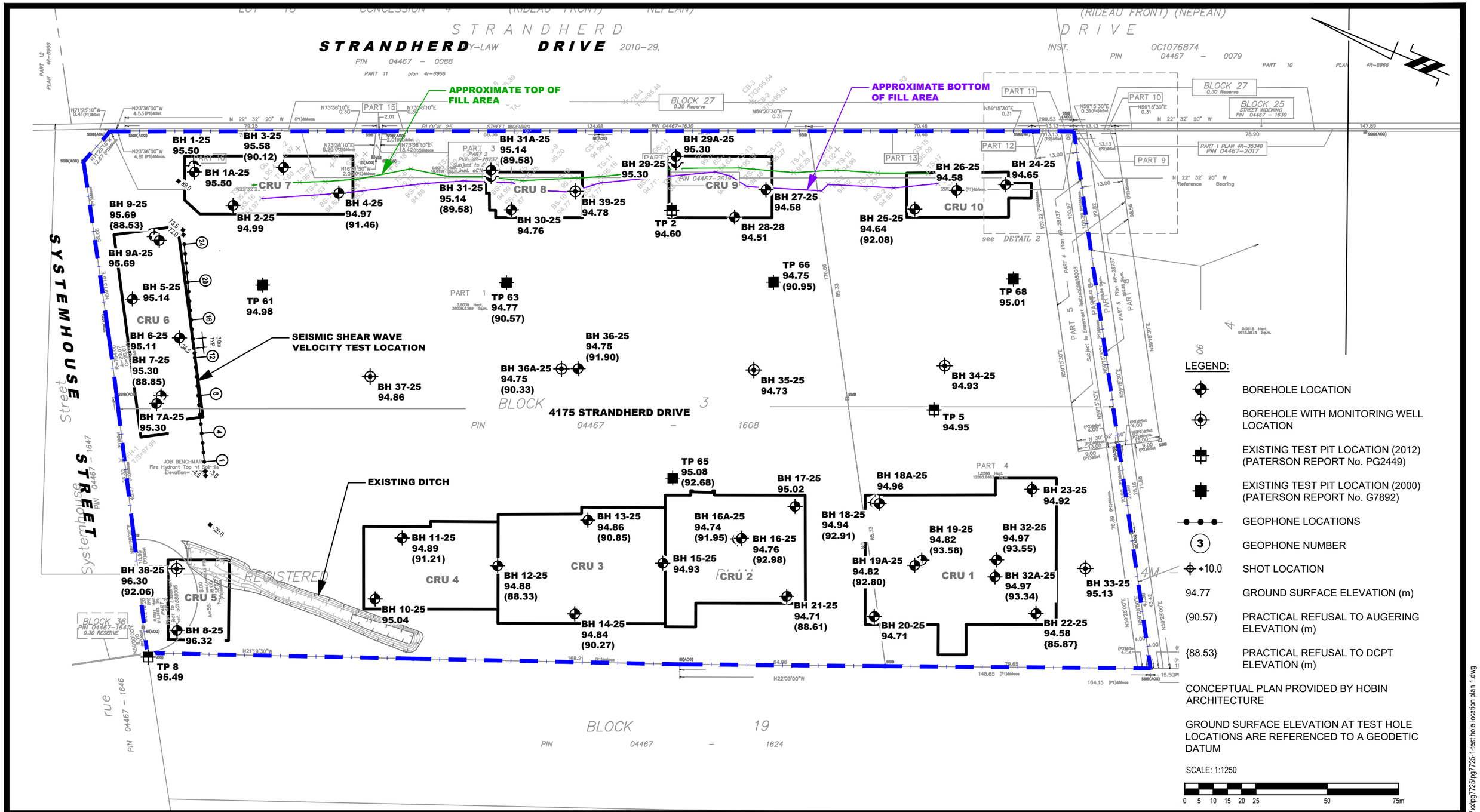

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
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TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

CHP MANAGEMENT LP AS AGENT FOR STRANDHERD LP

GEOTECHNICAL INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT
4175 STRANDHERD DRIVE

OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:1250	Date: 09/2025
Drawn by: GK	Report No.: PG7725-1
Checked by: NFRV	Dwg. No.: PG7725-1
Approved by: DP	Revision No.:

11x17

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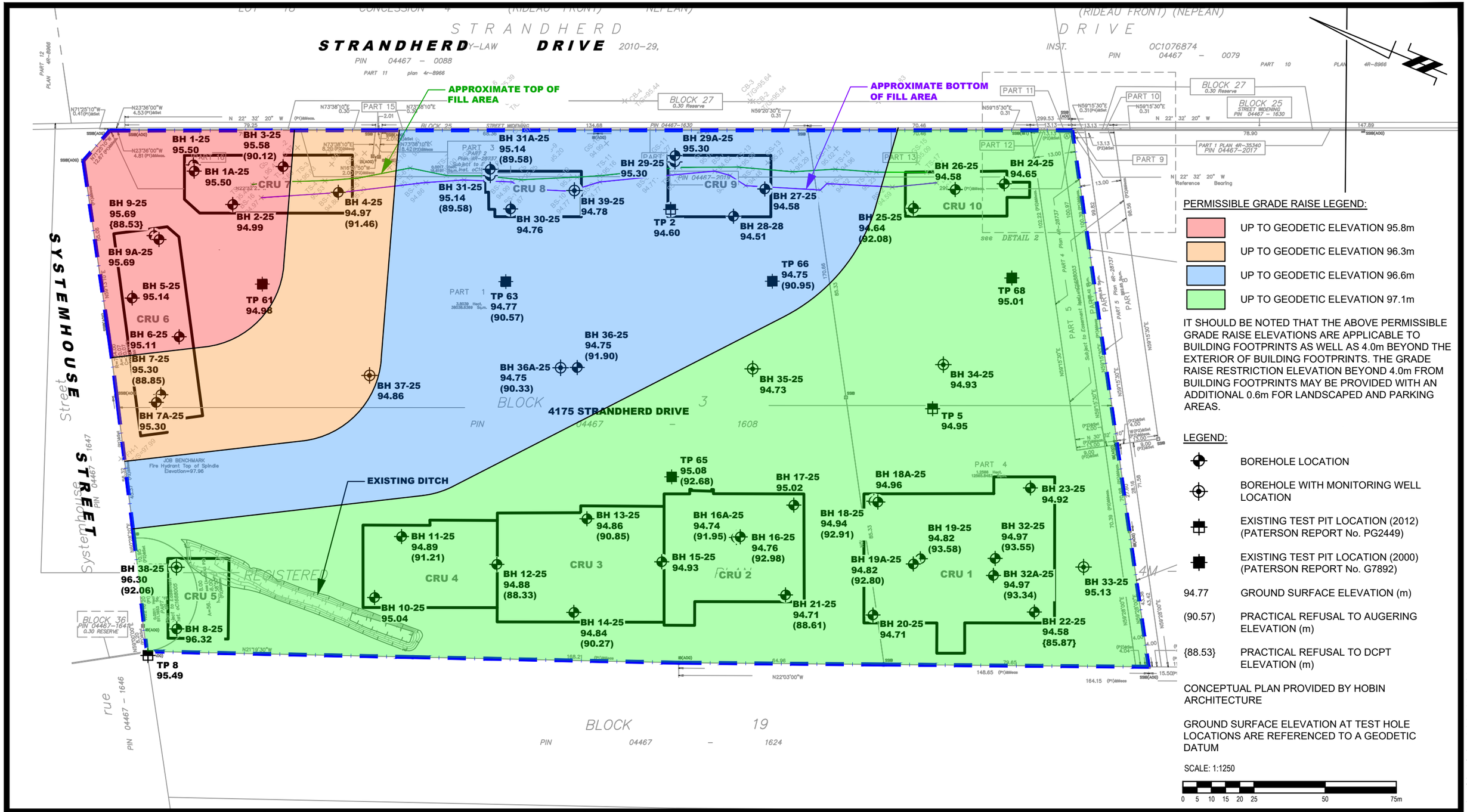

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

CHP MANAGEMENT LP AS AGENT FOR STRANDHERD LP

GEOTECHNICAL INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT
4175 STRANDHERD DRIVE

OTTAWA, ONTARIO

Title:

PERMISSIBLE GRADE RAISE PLAN

Scale: 1:1250	Date: 09/2025
Drawn by: NFRV	Report No.: PG7725-1
Checked by: NFRV	Dwg. No.: PG7725-2
Approved by: DP	Revision No.:

11x17

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