420 & 468 South Service Road East, Oakville, ON

South Service Holding Corp.

Type of Document:
Preliminary Geotechnical Investigation Report

Project Name:
Proposed Highrise Development
420 & 468 South Service Road, Oakville, ON

Project Number:
HAM-23006348-F0 Rev. 1

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Date Submitted:
August 9, 2025

Table of Contents

List of Appendices

1. Introduction and Background

This report presents the results of a geotechnical investigation carried out at the site of the proposed development at 420 and 468 South Service Road East in Oakville, Ontario. The development is expected to consist of four blocks but was in the preliminary stages of design at the time of the investigation. Blocks 1 to 4 will include between three and four high-rise towers connected by low rise podiums and 4-levels of underground parking (with the fourth level consisting of a partial floor). The blocks will include internal driveways and public spaces and be separated by arterial and collector roads. It is further understood that a bridge is proposed to be constructed at the north end of the site which will span across South Service Road and Queen Elizabeth Way/Highway 403. The investigation was authorized by Mr. Amir Hazar on behalf of South Service Holding Corp.

No previous geotechnical reports were available for the site, but the borehole data obtained as part of two previous environmental studies were reviewed by EXP and the general findings are incorporated into this report. The subject studies include the following:

- AECOM Draft Phase II Environmental Assessment, Project No. 60277052, dated January 31, 2014. One-hundred and six (106) boreholes and forty-one (41) test pits were completed.

- Pinchin Ltd. Phase II Environmental Assessment (*only borehole logs were provided*), Project No. 93868.003, completed February 2015. Fourteen (14) shallow boreholes were advanced.

The investigation was carried out in two stages. An initial preliminary investigation was completed for due diligence purposes and consisted of eleven (11) boreholes, with the results presented in our *Preliminary Geotechnical Investigation Report* under Project No. GTR-23006348-C0, dated March 13, 2024. The current investigation was completed to further evaluate the subsoil, bedrock, and groundwater conditions. Ten (10) additional boreholes were advanced for this purpose and based on an assessment of the factual data, a more comprehensive engineering report containing additional geotechnical recommendations pertinent to the proposed construction is provided. It should be noted that the development details were not finalized at the time of the current investigation and EXP must be contacted to review the details and determine the scope of work for additional fieldwork and reporting.

Additional fieldwork and testing was carried out for the project by EXP for a hydrogeological study and environmental investigation, the results of which are presented under separate cover.

1.1 Site Description & Geological Setting

The western portion of the site (420 South Service Road East) was initially developed in 1948 for industrial manufacturing purposes by General Electric and the eastern portion of the site (468 South Service Road East) was developed in the 1940s as a gas station and service centre. The overall site is approximately 28.3 acres and is currently vacant, aside from a portion of the former General Electric building at the north side of the site which was designated as historically significant. The site is situated south of the Queen Elizabeth Way and South Service Road, with commercial properties to the east and west, and a railway to the south. The site is mostly covered by granular fill material, asphalt pavement, or concrete slabs, with several green spaces with grasses and mature trees.

Based on the Ontario Geological Survey (OGS) Map 2509, Quaternary Geology, Hamilton Area, the overburden at the site consists of lacustrine and outwash sand at the southern portion of the site, but the boreholes more typically encountered soils consistent with the nearby Halton Till (silt or clay). According to the OGS mapping, the northern portion of the site consists of shallow Georgian Bay Shale bedrock.

2. Field Investigation

A total of twenty-one (21) boreholes were advanced for the geotechnical study. In the initial investigation completed between August 11 and 14, 2023, EXP advanced eleven (11) boreholes at the site, numbered as follows: MW-312 to MW-320 and MW-324 to MW-326. Subsequently, from July 16 to August 1, 2024, ten (10) additional boreholes were advanced and are numbered as follows: MW-332D to MW-334, MW-327 to MW-339 and BH-401 to BH-404. The boreholes were advanced to depths ranging from 2.9 to 15.4 m below grade and, except for MW-326, all boreholes were terminated in shale bedrock.

Drilling and sampling operations were completed by a combination of auger and split-spoon techniques using track mounted drilling equipment owned and operated by a specialist drilling subcontractor. Prior to the commencement of the drilling, the public and private-owned underground services were located to minimize the risk of contacting any such services during the investigation.

Soil samples were obtained using a 51 mm (2 inch) outside diameter split-spoon sampler driven in conjunction with Standard Penetration Test procedure (ASTM D1586) at the depths noted graphically on the borehole logs. The retained soil samples were logged in the field and then carefully packaged and transported to our Hamilton laboratory for detailed visual, textural, and olfactory classification. The Standard Penetration Test (SPT) N values and pocket penetrometer measurements were recorded and used to provide an assessment of the compactness condition or consistency of the in-situ soils. During the current investigation, the bedrock was cored using HQ sized core barrels. The bedrock cores were visually examined in the field for rock classification including the rock type, colour, Total Core Recovery (TCR), and Rock Quality Designation (RQD). The rock cores were subsequently characterized by a geologist and selected samples were tested for point loads at EXP's Hamilton laboratory.

Groundwater levels within the boreholes were measured prior to backfilling and groundwater levels in existing wells were also measured by EXP. Seventeen (17) of the twenty-one (21) boreholes were equipped with 50 mm diameter monitoring wells. The boreholes were located in accessible areas on site by EXP field personnel and were surveyed to a geodetic benchmark using Trimble GPS equipment.

3. Subsurface Conditions

Details of the subsurface conditions encountered during the drilling program are summarized on the borehole logs in Appendix A. The logs include textural descriptions of the subsoil and groundwater conditions and indicate the soil boundaries inferred from non-continuous sampling and observations during drilling. These boundaries reflect approximate transition zones for the purpose of geotechnical design and should not be interpreted as exact planes of geological change. The "Notes on Sample Description" preceding the borehole logs form an integral part of and should be read in conjunction with this report.

3.1 Soil Stratigraphy

The previous investigations generally encountered an upper layer of variable fill material overlying native clayey silt till, with shallow bedrock; this was consistent with the findings of the EXP investigation, which are further detailed in the subsections below.

3.1.1 Asphalt, Concrete, Granular Fill

The boreholes were each advanced through surficial asphalt, concrete, and/or granular fill. Asphalt was encountered at Boreholes MW-312, MW-315, MW-317, MW-320, MW-324 and BH-404 and ranged in thickness from 25 to 100 mm. Concrete was encountered at Boreholes MW-319, MW-325, MW-332D to MW-334 and MW-339 with thicknesses from 75 and 165 mm, respectively. Granular fill was encountered at the ground surface or below the asphalt or concrete in most of the boreholes and ranged in thickness from 50 to 350 mm.

3.1.2 Topsoil

Surficial topsoil was encountered at Boreholes BH-337, BH-338, and BH-403 with thicknesses ranging from about 120 to 230 mm. Note that the topsoil thicknesses should be expected to further vary across the site and so EXP can be contacted to complete a shallow test pit program if topsoil thicknesses are required for volume calculations.

3.1.3 Fill / Reworked Native Soil

A layer of fill or reworked native soil was encountered below the pavement structure or topsoil at most boreholes and extended to depths ranging from 0.8 to 3.1 m below grade. The fill was variable and consisted of silty clay, silty sand, sand, or sand and gravel, and had traces of deleterious materials (rootlets/organics, asphalt, or concrete fragments); the colour was variable and was brown, dark brown, reddish brown, grey, dark grey, or black; the moisture condition ranged from damp to wet.

3.1.4 Sand

A native sand stratum was encountered at Boreholes MW-315, MW-332D, MW-333, MW-334, and MW-339 below the pavement structure, extending to depths ranging from 1.0 to 2.0 m. The sand contained traces of silt with occasional silt seams; was brown in colour; and in a very moist state. Based on SPT N values ranging from 7 to 33 blows per 305 mm of penetration, the stratum is classified as loose to dense.

3.1.5 Silty Clay Till

Silty clay till was encountered at all boreholes, except for Boreholes MW-337 and BH-401, below the pavement structure or fill and extended to the bedrock surface or borehole termination at depths ranging from 1.8 to 4.0 m. The stratum contained traces of sand, gravel, and shale fragments; was brown to reddish brown to grey in colour; and in a damp to moist state. SPT N values ranged from 9 to greater than 100 blows per 305 mm penetration. Based on undrained shear strengths ranging from 75 kPa to greater than 225 kPa as determined by pocket penetrometer measurements, the silty clay till is classified as stiff to hard in consistency.

3.1.6 Bedrock

All (except MW-326) encountered bedrock at depths ranging from 1.5 to 4.0 m below existing grade as summarized in the table below. These contact elevations should not be interpreted as the exact planes of the bedrock surface since the auger will frequently penetrate some distance into the weathered rock before noticeable resistance is encountered. Further, the distinction between highly weathered shale and the overlying stratum, particularly if the latter contains abundant shale fragments, is not always clear and consequently, some of the soil resting on the surface of the bedrock might be very weak and highly weathered shale.

Table 3-1: Depths and Elevations of Bedrock Surface, Bedrock Quality and Strength

Borehole No.	Depth of Bedrock Surface (m)	Elevation of Bedrock Surface (m)	Rock Quality Designation (RQD)	Point Load (MPa)
MW-312	2.3	101.7	---	---
MW-313	3.0	102.4	---	---
MW-314	4.0	101.0	---	---
MW-315	3.7	102.1	---	---
MW-316	3.9	101.9	---	---
MW-317	3.1	101.3	---	---
MW-319	2.8	101.5	---	---
MW-320	2.4	100.4	---	---
MW-324	2.5	101.2	---	---
MW-325	3.0	101.2	---	---
MW-326	---	---	---	---
MW-322D	3.8	101.9	15-94%	6.8-183.3 (avg. 46.9)
MW-333	3.4	102.4	21-92%	3.4-80.8 (avg. 16.2)
MW-334	2.5	101.7	0-64%	6.9-131.4 (avg. 30.3)
MW-337	1.5	102.5	0-95%	2.6-41.2 (avg. 15.4)
MW-338	2.2	101.8	38-69%	7.3-59.3 (avg. 24.9)
MW-339	2.5	103.2	8-84%	7.2-140.9 (avg. 39.0)
BH-401	1.5	104.3	0-87%	4.4-18.9 (avg. 14.0)
BH-402	1.8	103.8	0-72%	7.5-96.9 (avg. 26.9)
BH-403	2.7	101.9	34-99%	6.5-67.2 (avg. 26.4)
BH-404	3.0	101.3	27-91%	8-33.8 (avg. 16.5)

Bedrock was confirmed by HQ-gauge, rotary coring at MW-322D to MW-339 and BH-401 to BH-404. Based on the Ontario Geological Survey (OGS) Map 2544, *Bedrock Geology of Ontario, Southern Sheet*, the bedrock comprises predominantly grey shale of the Georgian Bay Formation. The rock cores were typically highly weathered in the upper 1 to 2 m, becoming moderately weathered to fresh below. In general, the upper portion of the Georgian Bay Shale bedrock is usually highly weathered to weathered in the upper layers, generally to depths of about 0.5 to 1.5 m and occasionally the highly weathered/fractured zones can extend to more than 3 m depth.

The rock contained clay infilling along natural fractures as well as more significant clay seams and highly weathered/broken rock zones (typically about 1 to 10 cm thick). Harder siltstone and limestone interbeds were commonly found and were as thick as about 350 mm. Photographs of the rock cores are included in Appendix C.

3.2 Groundwater Conditions

Monitoring wells were installed as part of the hydrogeological investigation and static water levels in the monitoring wells were recorded over several events. Reference should be made to the hydrogeological report for additional groundwater comments and the complete set of groundwater level measurements. The water levels in the monitoring wells during the current investigation ranged from about 1.4 to 6.0 m below grade.

Seasonal variations in the water table should be anticipated, with higher levels occurring during wet weather conditions (spring thaw and late fall) and lower levels occurring during dry weather conditions.

4. Discussion and Recommendations

The development is expected to consist of four blocks but was in the preliminary stages of design at the time of the investigation. Blocks 1 to 4 will include between three and four high-rise towers connected by low rise podiums and 4-levels of underground parking (with the fourth level consisting of a partial floor). The blocks will include internal driveways and public spaces and be separated by arterial and collector roads.

It is further understood that a new underpass is proposed at the north end of the site which will be constructed below South Service Road and Queen Elizabeth Way/Highway 403.

The recommendations provided are based on the proposed site plan drawings and general design information for the development. Additional investigation and geotechnical reporting will be required once the full development details become available. We offer the following preliminary comments and recommendations for the proposed construction.

4.1 Site Grading

The proposed site grading was not available at the time of this report. However, based on the variation in site grades and presence of fill materials, it is anticipated that regrading (cut and fill operations) will be carried out. The following procedures are recommended for the construction of building and pavement areas at the site, where required:

- All existing pavements, fill, disturbed soils, and organic/deleterious materials should be removed from the proposed building and pavement areas. Pavement areas should be excavated to undisturbed native soil and building areas to competent bedrock (see Section 4.2).

- The exposed native subgrade surface should be proof-rolled with a heavy roller or partially loaded truck and reviewed by a geotechnical representative. Any soft areas detected during the proof-rolling process should be sub-excavated and replaced with approved material compacted to at least 98% Standard Proctor Maximum Dry Density (SPMDD).

- Low areas can then be brought up to final subgrade level with approved on-site or imported material placed in lifts not exceeding 200 mm. Fill placed in pavement areas should be compacted to at least 95% SPMDD, with the upper 600 mm compacted to at least 98% SPMDD. The moisture content of the fill should be at or near its optimum moisture content to ensure the specified densities can be achieved with reasonable compactive effort.

- All imported borrow fill material from local sources should be free from organic material and foreign objects (trees, roots, debris, etc.) and should be approved by EXP prior to transport to the site. In addition, the chemical quality of the borrowed fill material should be assessed by EXP in accordance with the current applicable Ministry of Environment, Conservation, and Parks (MECP) regulations and guidelines.

- All excavation, backfilling and compaction operations should be monitored on a full-time basis by EXP's geotechnical staff to approve materials and to ensure the specified degrees of compaction have been obtained.

4.2 Building Construction

As the Town of Oakville does not allow discharge of groundwater to the sewer system and given the relatively high groundwater table, a fully waterproofed raft foundation is required for buildings with 3 to 4-level parking garages.

4.2.1 Raft Foundation

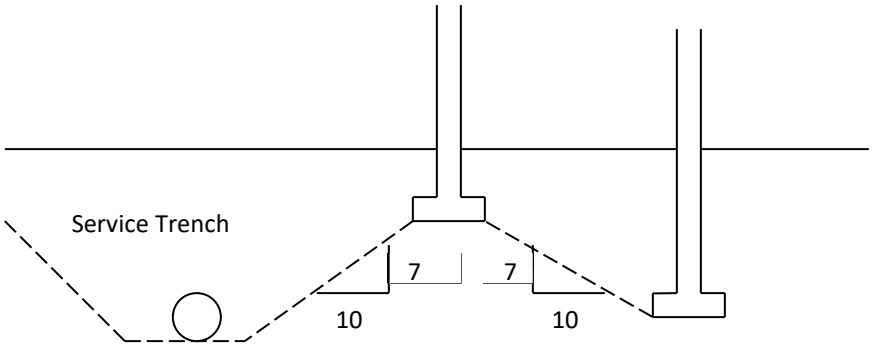
As noted above, a fully waterproofing raft foundation would be required to resist hydrostatic uplift pressure. At the assumed founding depths, the raft foundations are expected to be constructed below the highly weathered shale and into the typically slightly weathered to fresh bedrock.

The raft foundations constructed in slightly weathered/sound shale bedrock below any highly weathered material at the proposed founding elevations can be designed using a factored geotechnical resistance of 2.5 MPa at Ultimate Limit State (ULS). Bearing capacity at Serviceability Limit State (SLS) need not be considered. The expected deformation of the shale bedrock is less than the normally tolerated limits of 25 mm and therefore ULS governs. Prior to placement of foundation concrete, all existing fill, native soil, and weathered/fractured shale bedrock must be removed down to the sound shale bedrock. The exposed bearing surface is to be reviewed by EXP and must be protected by weathering and disturbance; this can be accomplished by placing a skim coat of concrete (mud slab) shortly after excavation.

Any shallow foundations on the weathered shale bedrock surface (approximately 0 to 4.5 m below rock surface) can be designed with a reduced factored capacity of 500 kPa at ULS, and foundations on undisturbed native soils below any existing fill can be designed using 200 kPa at SLS and 300 kPa at factored ULS on a preliminary basis.

4.2.2 General Foundation Recommendations

Conventional foundations *in soil (or weathered rock)* at different elevations should be located such that higher footings are set below a line drawn up at 10:7, horizontal to vertical from the near edge of the lower footing. This requirement is not applicable for foundations in sound bedrock. This concept should also be applied to excavations for new foundations in relation to existing foundations or underground services.



FOOTINGS NEAR SERVICE TRENCHES OR AT DIFFERENT ELEVATIONS

All foundations exposed to freezing conditions must be provided with a minimum of 1.2 m of earth cover or equivalent insulation for frost protection, depending on the final grade requirements. Provided that the ground is not disturbed due to groundwater, precipitation, traffic, etc., and the aforementioned geotechnical resistance values

are not exceeded, then total and differential settlements should be small and within the normally tolerated limits of 25 mm and 19 mm, respectively.

The recommended geotechnical resistances have been calculated by EXP from the borehole information for the design stage only. The investigation and comments are necessarily on-going as new information of underground conditions becomes available. For example, it should be appreciated that modifications to bearing levels may be required if unforeseen subsoil conditions are revealed after the excavation is exposed to full view or if final design decisions differ from those assumed in this report. For this reason, this office should be retained to review final foundation drawings and to provide field inspections during the construction stage.

4.2.3 Excavations

Excavations across the site are expected to extend as deep as about 13 to 14 m below existing grade. Excavations will be carried out through the existing fill, silty clay till, and into the shale bedrock. Excavation of the soil at this site is generally not expected to pose major difficulty and can be carried out with heavy hydraulic excavators, though it should be noted that the till is a non-sorted sediment and occasional cobbles or boulders may be encountered during construction.

Excavations proceeding into the weathered bedrock (Georgian Bay Shale) will likely require the excavator be equipped with rock teeth. Limestone lenses are commonly encountered in the shale and so will be found during construction. The bedrock is expected to become more sound with depth. Excavations through limestone lenses and below the weathered shale will proceed at a slower rate and require the use of rock breaking equipment, e.g. rippers or pneumatic rock hammers. The contractor should review the rock core logs and strength testing to assess the excavation rates.

All excavations must be completed in accordance with the most recent regulations of the Ontario Occupation Health and Safety Act (OHSA). The encountered native silty clay till and highly weathered shale bedrock may generally be classified as Type 2 Soil, and the fill and compact native sand may generally be classified as Type 3 Soil above the groundwater level. In accordance with the OHSA regulations if the excavation contains more than one type of soil, the soil shall be classified as the type with the highest number. The OSHA requires that excavation slopes be cut at predetermined inclinations, based on the soil types encountered. Excavations below the highly weathered shale bedrock can generally be carried out with side slopes of approximately 1H:6V, provided all loose rock is removed from the face of the excavation and it is monitored for seepage/sloughing. Netting and/or shotcrete covering may be required to prevent loose rock fragments from falling into the excavation and injuring the work crew.

The need to excavate flatter side slopes if excessively wet or soft/loose materials, or concentrated seepage zones are encountered, should not be overlooked. Water (i.e. surface water runoff) should not be permitted to enter and/or pond within the construction area.

4.2.4 Temporary Shoring

If required, the shoring method chosen by the structural engineer and/or contractor will depend on the settlement tolerance of the surrounding structures and infrastructure. Where settlement sensitive structures or services are located within a distance from the excavation equal or less than the overburden excavation depth, the use of a rigid retaining structure will be required.

In general, temporary shoring can be laterally restrained with tieback anchors, rakers, struts, or corner braces. The shoring system should be designed in accordance with the guidelines provided in the Canadian Foundation

Engineering Manual (CFEM). Based on the manual, the following earth-pressure coefficients are recommended in the overburden soils:

0.25 Where minor movements can be tolerated.

0.35 Where utilities, roads, sidewalks must be protected from significant movement or where vibration from traffic is a factor.

0.45 Where movements are to be minimized such as near adjacent building footings or movement sensitive services (i.e. gas and watermains).

A natural unit weight of 21.0 kN/m^3 of the soil on site may be used.

Lateral support for the shoring system can be obtained by using rakers with a geotechnical resistance on the bedrock surface of 500 kPa or by using tiebacks. Tieback anchors should be installed in the soil or rock behind the excavation to a sufficient distance to allow mobilizing the desired lateral load resistance. The minimum horizontal spacing between anchors should be 1.2 m to ensure that group effects between adjacent ground anchors are minimized and that anchor intersection (due to drilling deviations) is avoided. Group effects will reduce the load-carrying capacity of individual ground anchors. The anchors may be installed in the silty clay till utilizing an equivalent bond stress of 50 kPa, or in the shale bedrock with a bond stress of 150 kPa. Higher bond values may be considered if the anchors are constructed using re-groutable techniques. The actual value should be based on the results of pullout tests conducted in the early phases of construction.

The recommended design parameters should be confirmed by load testing a number of anchors to 200% design load in accordance with the current edition of the CFEM. The design for the production anchors should then be modified based on the test results, where necessary. All remaining anchors must be installed using similar procedures and proof tested to 1.5 times the design load.

EXP should be retained to review the shoring design, to monitor installation and testing of the system, and to monitor the shoring movements during all phases of the excavation. Inclinometers should be installed at locations where buildings or services lie close to the excavation. Careful monitoring is needed in any shored excavation, especially when buildings are located in close proximity. This is necessary to anticipate when and if additional support is needed.

4.2.5 Lateral Earth Pressure

Under certain conditions, Georgian Bay Shale has been found to have time dependent deformation characteristics which could impose higher lateral pressures on the basement walls. However, EXP has completed testing on this rock type in numerous previous projects and found that most of the rock swelling should occur within approximate 90 days of excavation. Therefore, if the basement walls are backfilled after 90 days, they should not suffer swelling pressures. Notwithstanding, it is suggested that the use of oversized excavations or compressible backfill material be used or additional site-specific testing be carried out.

The lateral earth pressure acting on that section of the basement walls in overburden soils above the bedrock due to soil backfill may be calculated using the following equations:

Above groundwater table:

$$p = K(\gamma h + q)$$

where p = lateral earth pressure intensity at depth h (kPa)
K = earth pressure coefficient (assume 0.30 for granular backfill, 0.36 for silty clay backfill)
γ = unit weight of retained soil (assume 22.0 kN/m^3 for granular backfill, 21.0 kN/m^3 for silty clay)
h = depth to point of interest (m)
h_w = height of water (m)
q = surcharge load acting adjacent to the wall at the ground surface (kPa)

Below groundwater table:

$$p = K [(\gamma h_w) + (\gamma' (h - h_w) + q)] + (\gamma_w (h - h_w))$$

where p = lateral earth pressure and hydrostatic pressure acting at depth h (kPa)
K = active earth pressure coefficient (see above equation)
γ_w = unit weight of water (9.8 kN/m^3)
γ = unit weight of soil backfill surrounding the structure (see above equation)
γ' = effective unit weight of retained soil ($\gamma - \gamma_w$)
h = depth to point of interest (m)
h_w = height of water (m)
q = equivalent value of surcharge on the ground surface (kPa)

The effect of compaction surcharge should be considered by assuming 12 kPa pressure at the surface, linearly decreasing with depth to zero at the depth where the active (or at rest) pressure is equal to 12 kPa. Notwithstanding the compaction surcharge, lighter compaction equipment and smaller lifts should be used adjacent to the abutment walls to prevent overstressing.

4.3 Groundwater Control

Excavations below the groundwater level are anticipated. However, given the predominantly fine-grained nature of the encountered soils and that the excavation will be predominantly the shale bedrock, the groundwater is expected to be controllable using conventional methods, i.e. oversized excavations, ditching, and construction sump pumps. Reference should be made to the hydrogeological report for the anticipated dewatering rates.

Dewatering requirements will be governed by the time of year the construction is performed. It is the responsibility of the contractor to propose a suitable dewatering system based on the time of construction and the groundwater levels. The method used should not undermine adjacent structures.

4.4 Building Floor Slab-on-Grade and Permanent Drainage

The proposed buildings are expected to include a 3 to 4-level underground parage garage and so the building will be founded below the groundwater level. The Town of Oakville does not permit groundwater discharge to the sewer system, therefore a waterproofed raft slab capable of resisting hydrostatic pressure will be required.

The top of the raft slab may serve as the floor slab and no perimeter drain or under floor drains are needed. The top of the raft can be sloped towards drainage pipes cast within the slab. Otherwise, a space of about 600-750 mm will

be needed to accommodate services above the raft and 19 mm clear stone can be used as backfill between the raft foundation and the floor slab. In this scenario, underfloor drainage pipe should be installed on top of the raft to collect any seepage though the slab on grade or the perimeter walls.

4.5 Backfill

Backfill used to satisfy under slab requirements and service trenches, etc. should be compactible fill, i.e. inorganic soil with its moisture content close to its optimum moisture content as determined in the Standard Proctor test. To minimize potential problem, any trench backfilling operations should follow closely after excavation so that only minimal length of trench slope is exposed. This will minimize wetting of the subgrade material. Should construction extend to the winter season, particular attention should be given to ensure that frozen material is not used as backfill.

Backfill behind any retaining structures, including abutments and wingwalls should consist of free draining granular material (e.g. Granular A or Granular B in accordance with OPSS 1010). Free draining backfill materials and perforated drains which drain to a suitable frost-free outlet should be provided in order to prevent hydrostatic pressure build-up. Otherwise the structure must be designed to resist this additional load.

All granular backfill materials should be placed in thin lifts (i.e. not exceeding 300 mm before compaction) and each lift should be compacted to at least 95% Standard Proctor Maximum Dry Density (SPMDD), with the upper 600 mm below roadway areas compacted to at least 98% SPMDD.

For fills immediately below any roadway, it is recommended that Granular A or Granular B materials be used. Frost tapers in accordance with the applicable OPSD should be provided. Below a depth of about 1.2 m from the finished road grade, approved compactable fill, such as select subgrade material (OPSS 1010) or imported fill can be used for general embankment construction.

Re-use of the on-site fill should be at the discretion of the geotechnical consultant during construction. Some adjustment of moisture content may be required to facilitate compaction of re-used materials. Re-used materials must also be free from organics and deleterious materials. Additional characterization of the existing soils would be required, but in general, the fill was noted to contain deleterious materials and be above the optimum moisture content and so would require sorting, spreading, and drying prior to re-use and may not be practical. The excavated shale bedrock should not be re-used as backfill.

In general, the overburden soils are not free draining and therefore should not be used where this characteristic is required, or in confined areas. Imported granular material conforming to OPSS Granular B Type I or II would be suitable for these purposes.

All backfilling and compaction operations must be closely examined by a qualified geotechnical consultant to ensure uniform compaction to specification requirements, especially in the vicinity of manholes and catch basins, and in all areas that are not readily accessible to compaction equipment.

4.6 Earthquake Considerations

The subsoil and groundwater information at this site have been examined in relation to Section 4.1.8.4 of the OBC 2012. Building foundations are anticipated to be founded directly on the shale bedrock. The reported N values for the shale level were over 100 blows per 305 mm penetration. There have been no shear wave velocity measurements

carried out at this site and therefore, N values and EXP's knowledge of the soil conditions in the area have been used to determine the site classification.

Based on the above assumptions and interpretations and the known soil conditions, the Site Class for this site is "C" as per Table 4.1.8.4.A, Site Classification for Seismic Site Response, OBC 2020. It should be noted that an improved site classification is likely achievable for foundations constructed on bedrock if shear wave velocity testing is carried out. EXP can be contacted to provide this service if required.

4.7 Underpass Structure

It is understood that a new underpass will be constructed from the development and will span across South Service Road and Queen Elizabeth Way/Highway 403. Borehole BH-401 was advanced in the general area of the anticipated approach and encountered approximately 1.5 m of sand and silty clay fill materials overlying shale bedrock.

Reference can be made to the preceding sections for recommendations for excavations, backfilling, groundwater control, and lateral earth pressures. An additional investigation will be required to verify the soil/rock conditions throughout the construction area.

Foundations for the retaining structures may be supported on bedrock using shallow foundations. Shallow foundations below the highly weathered shale, at approximately 2 m below the rock surface can be designed using a factored geotechnical resistance of 2.5 MPa at Ultimate Limit State (ULS). Bearing pressure at SLS need not be considered.

4.8 Roadway Construction

It is understood that new arterial and collector roadways as well as internal driveways will be constructed at the site. The recommended pavement structures are provided in the table below and are based on the Town of Oakville requirements as well as an estimate of the subgrade soil properties determined from visual examination and textural classification of the soil samples. Consequently, the recommended pavement structures should be considered for preliminary design purposes only and a more refined pavement design could be carried out by EXP if traffic data is provided.

Table 4-1: Recommended Pavement Structure Thicknesses

Pavement Layer	Compaction Requirements	Private Medium-Duty Roadways/Parking	Arterial/Collector Roads, Heavy-Traffic Routes
Asphaltic Concrete (OPSS 1150)	Min 92.0% Maximum Relative Density (MRD)	40 mm HL3 50 mm HL8	40 mm HL3 HS 100 mm HDBC
Granular A Crusher Run Limestone (OPSS 1010)	100% SPMDD	150 mm	150 mm
Granular B Type II (OPSS 1010)	100% SPMDD	250 mm	350 mm

The granular base and sub-base must be placed in maximum 200 mm lifts and compacted to 100% of the Standard Proctor Maximum Dry Density (SPMDD) at a moisture content within 2% of the optimum moisture content. The

subgrade should be compacted to 98% SPMDD for at least the upper 600 mm and 95% SPMDD below. The recommended pavement structures outlined assume adequate provision for drainage.

The foregoing design assumes construction is carried out during dry periods and the subgrade is prepared according to Section 4.1 (Site Grading) of this report. If construction is carried out during wet weather, and heaving or rolling of the subgrade is experienced, additional thickness of sub-base course material may be required.

The long-term performance of the pavement structure is highly dependent upon the subgrade support conditions. Stringent construction control procedures should be maintained to ensure uniform subgrade moisture and density conditions are achieved. In addition, the need for adequate drainage cannot be over emphasized. The finished pavement surface and underlying subgrade should be free of depressions and should be sloped to provide effective surface drainage toward catch basins. Surface water should not be allowed to pond adjacent to the outside edges of pavement areas. Subdrains should be installed to intercept excess subsurface moisture and prevent subgrade softening.

Additional comments on the construction of the paved areas are as follows:

- The location and extent of sub-drainage required within the paved areas should be reviewed by this office in conjunction with the proposed site grading. In view of the fine-grained nature of the subgrade soils, subdrains should be installed on both sides of roadways and radially to catch basins in parking areas.

- To minimize problems of differential movement between the pavement and catch basins/manholes due to frost action, the backfill around the structures should consist of free draining granular fill.

- The most severe loading conditions on pavement areas and the subgrade may occur during construction. Consequently, special provisions such as half loads during paving, etc. may be required, especially if construction is carried out during unfavourable weather.

- The subgrade should be properly shaped, crowned, and then proof-rolled in the full-time presence of a representative of this office. Soft or spongy subgrade areas should be sub-excavated and properly replaced with suitable approved backfill compacted to at least 98% SPMDD.

5. General Comments

The information presented in this report is based on a limited investigation designed to provide information to support an overall assessment of the current geotechnical conditions of the subject property. The conclusions presented in this report reflect site conditions existing at the time of the investigation.

EXP Services Inc. should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, EXP Services Inc. will assume no responsibility for interpretation of the recommendations in the report.

The comments given in this report are intended only for the guidance of design engineers. The number of boreholes required to determine the localized underground conditions between boreholes affecting construction costs, techniques, sequencing, equipment, scheduling, etc., would be much greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should, in this light, decide on their own investigations, as well as their own interpretations of the factual borehole results, so that they may draw their own conclusions as to how the subsurface conditions may affect them.

More specific information, with respect to the conditions between samples, or the lateral and vertical extent of materials, may become apparent during excavation operations. Consequently, during the future development of the property, conditions not observed during this investigation may become apparent; should this occur, EXP Services Inc. should be contacted to assess the situation and additional testing and reporting may be required. EXP Services Inc. has qualified personnel to assist in regard to future geotechnical and environmental issues related to this property.

We trust this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

Cedric Ramos, B.A.Sc.
Geotechnical Engineer-in-Training

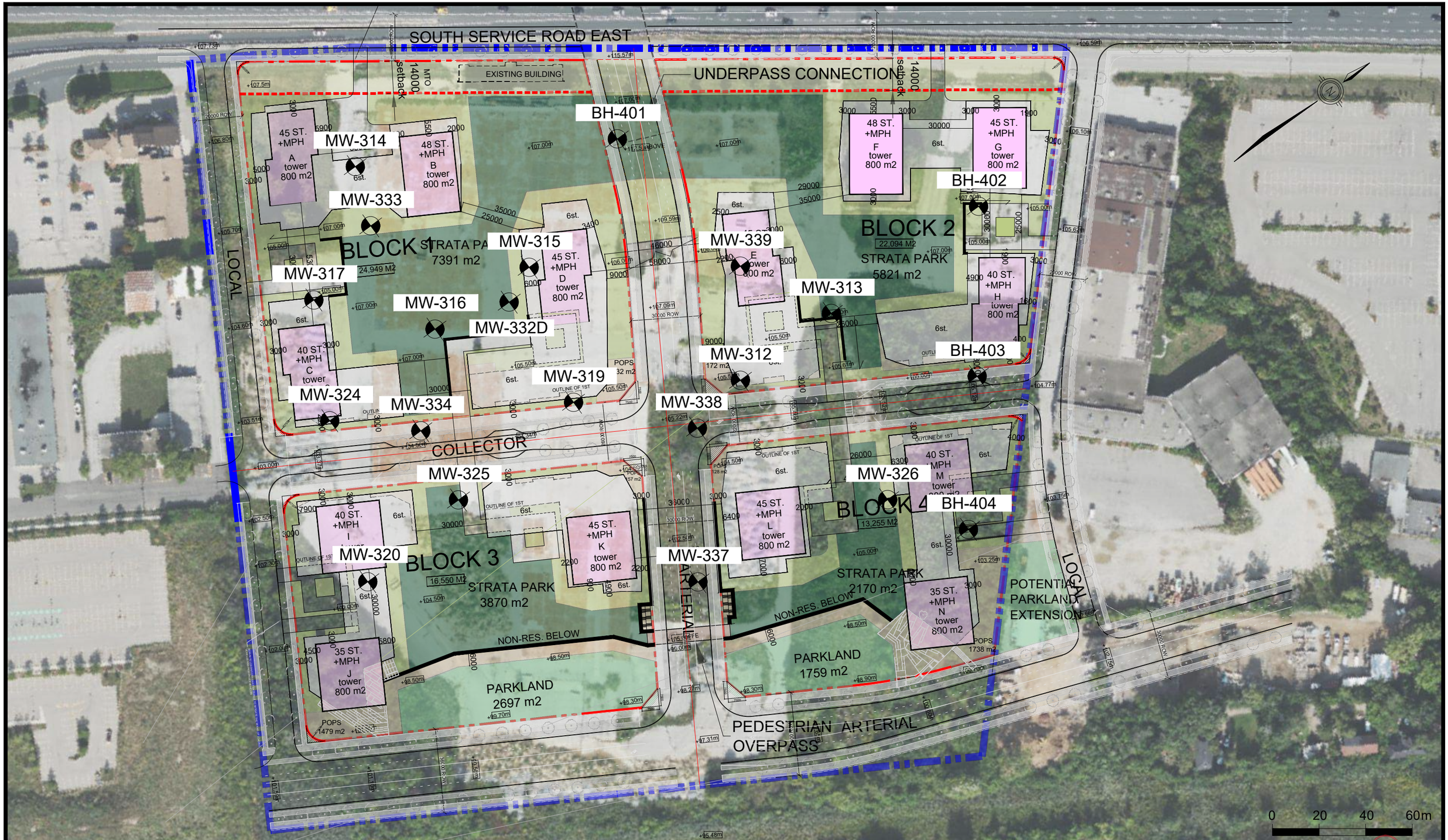
Jeffrey Golder, P.Eng.
Manager, Hamilton Geotechnical Services

LICENSED PROFESSIONAL ENGINEER
J. K. GOLDER
100155552
PROVINCE OF ONTARIO

James Ng, P.Eng.
Geotechnical Manager, Infrastructure Projects

Appendix A

Borehole Plan & Borehole Logs



EXP Services Inc.
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1266 South Service Road
Stoney Creek, ON L8E 5R9
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www.exp.com
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LEGEND:

APPROXIMATE BOREHOLE LOCATION

TITLE AND LOCATION:

BOREHOLE LOCATION PLAN
GEOTECHNICAL INVESTIGATION
PROPOSED HIGHRISE DEVELOPMENT
420 AND 468 SOUTH SERVICE ROAD EAST, OAKVILLE, ON

JOB NO.: HAM-23006348-F0	DRAWN BY: CR
SCALE: 1:1500	CHECKED BY: JG
DATE: SEPTEMBER 2025	DWG NO.: 1

Notes on Sample Descriptions

1. All sample descriptions included in this report follow the International Society for Soil Mechanics and Foundation Engineering (ISSMFE), as outlined in the Canadian Foundation Engineering Manual. Note, however, that behavioral properties (i.e. plasticity, permeability) take precedence over particle gradation when classifying soil. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

UNIFIED SOIL CLASSIFICATION

CLAY (PLASTIC) TO	FINE	MEDIUM	CRS.	FINE	COARSE
SILT (NONPLASTIC)	SAND			GRAVEL	

EQUIVALENT GRAIN DIAMETER IN MILLIMETRES

ISSMFE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE		

2. Fill: Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc., none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.

3. Till: The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (75 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

Notes On Soil Descriptions

4. The following table gives a description of the soil based on particle sizes. With the exception of those samples where grain size analyses have been performed, all samples are classified visually. The accuracy of visual examination is not sufficient to differentiate between this classification system or exact grain size.

Soil Classification		Terminology	Proportion
Clay and Silt	<0.060 mm	"trace" (e.g. Trace sand)	1% to 10%
Sand	0.060 to 2.0 mm	"some" (e.g. Some sand)	10% to 20%
Gravel	2.0 to 75 mm	adjective (e.g. sandy, silty)	20% to 35%
Cobbles	75 to 200 mm	"and" (e.g. and sand)	35% to 50%
Boulders	>200 mm		

The compactness of Cohesionless soils and the consistency of the cohesive soils are defined by the following:

Cohesionless Soil		Cohesive Soil		
Compactness	**Standard Penetration Resistance "N" Blows / 0.3 m**	**Consistency**	**Undrained Shear Strength (kPa)**	**Standard Penetration Resistance "N" Blows / 0.3 m**
Very Loose	0 to 4	Very soft	<12	<2
Loose	4 to 10	Soft	12 to 25	2 to 4
Compact	10 to 30	Firm	25 to 50	4 to 8
Dense	30 to 50	Stiff	50 to 100	8 to 15
Very Dense	Over 50	Very Stiff	100 to 200	15 to 30
		Hard	>200	>30

5. **ROCK CORING**

Where rock drilling was carried out, the term RQD (Rock Quality Designation) is used. The RQD is an indirect measure of the number of fractures and soundless of the rock mass. It is obtained from the rock cores by summing the length of the core covered, counting only those pieces of sound core that are 100 mm or more length. The RQD value is expressed as a percentage and is the ratio of the summed core lengths to the total length of core run. The classification based on the RQD value is given below.

RQD Classification	RQD (%)
Very Poor Quality	<25
Poor Quality	25 to 50
Fair Quality	50 to 75
Good Quality	75 to 90
Excellent Quality	90 to 100

$$\text{Recovery Designation \% Recovery} = \frac{\text{Length of Core Per Run}}{\text{Total Length of Run}} \times 100$$

Log of Borehole MW-312

Project No. HAM-23006348-F0 | Drawing No. 3

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: August 14, 2023

Drill Type: CME-75 Track Mount. Solid Stem

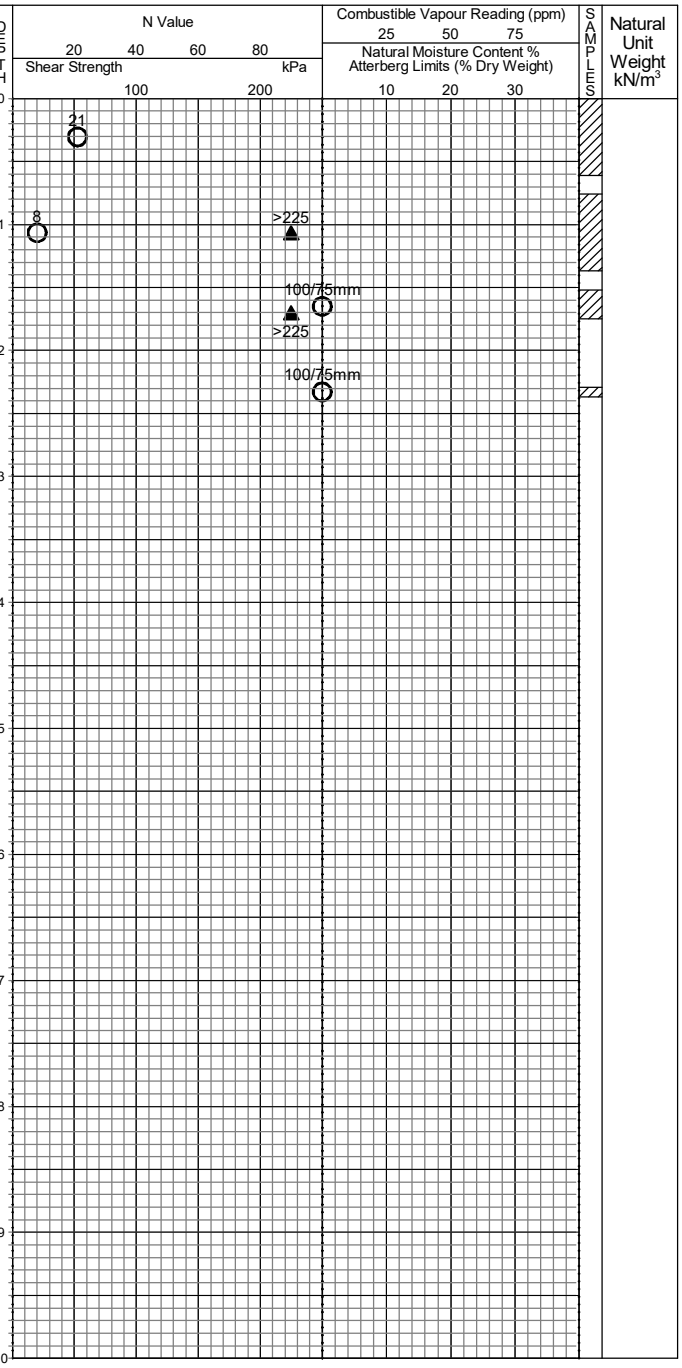
Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
			104.03
		ASPHALT: (~75 mm thick)	~104.0
		GRANULAR: (~180 mm thick)	~103.8
		FILL: silty clay, trace sand, brown, moist (possible reworked native)	
			~103.0
		SILTY CLAY TILL: trace sand, brown to grey, moist, hard	
		some shale inclusions below 1.5 m	~102.5
		SHALE BEDROCK: highly weathered, some silty clay till layers, grey	~101.7
		Borehole terminated at 2.9 m depth below existing grade.	~101.1

NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.



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EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
September 10, 2024	1.5	-

Log of Borehole MW-313

Project No. HAM-23006348-F0 | Drawing No. 4

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

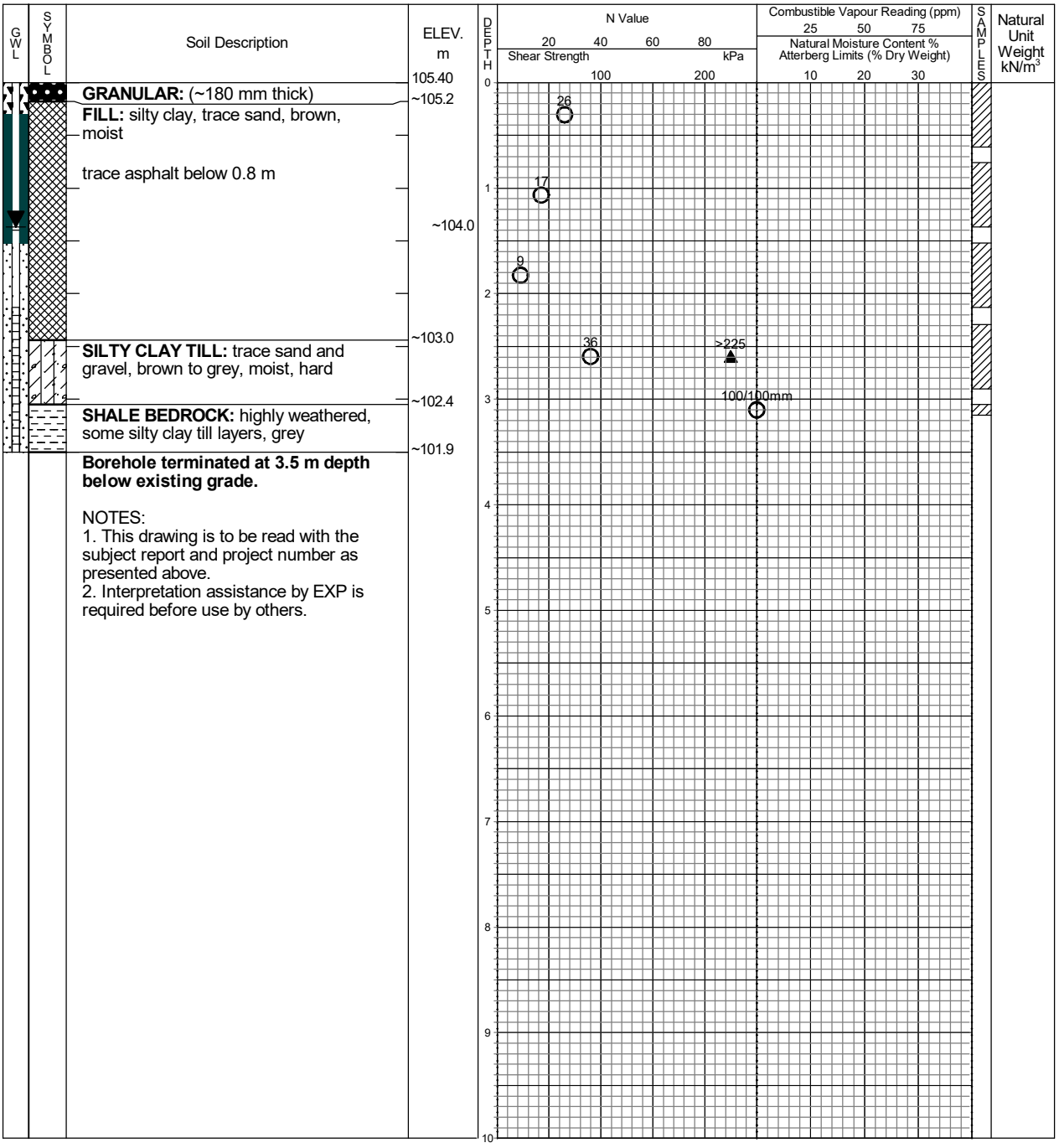
Date Drilled: August 14, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



NOTES:
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EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
September 10, 2024	1.4	-

Log of Borehole MW-314

Project No. HAM-23006348-F0 Drawing No. 5

Project: Proposed Site Redevelopment Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

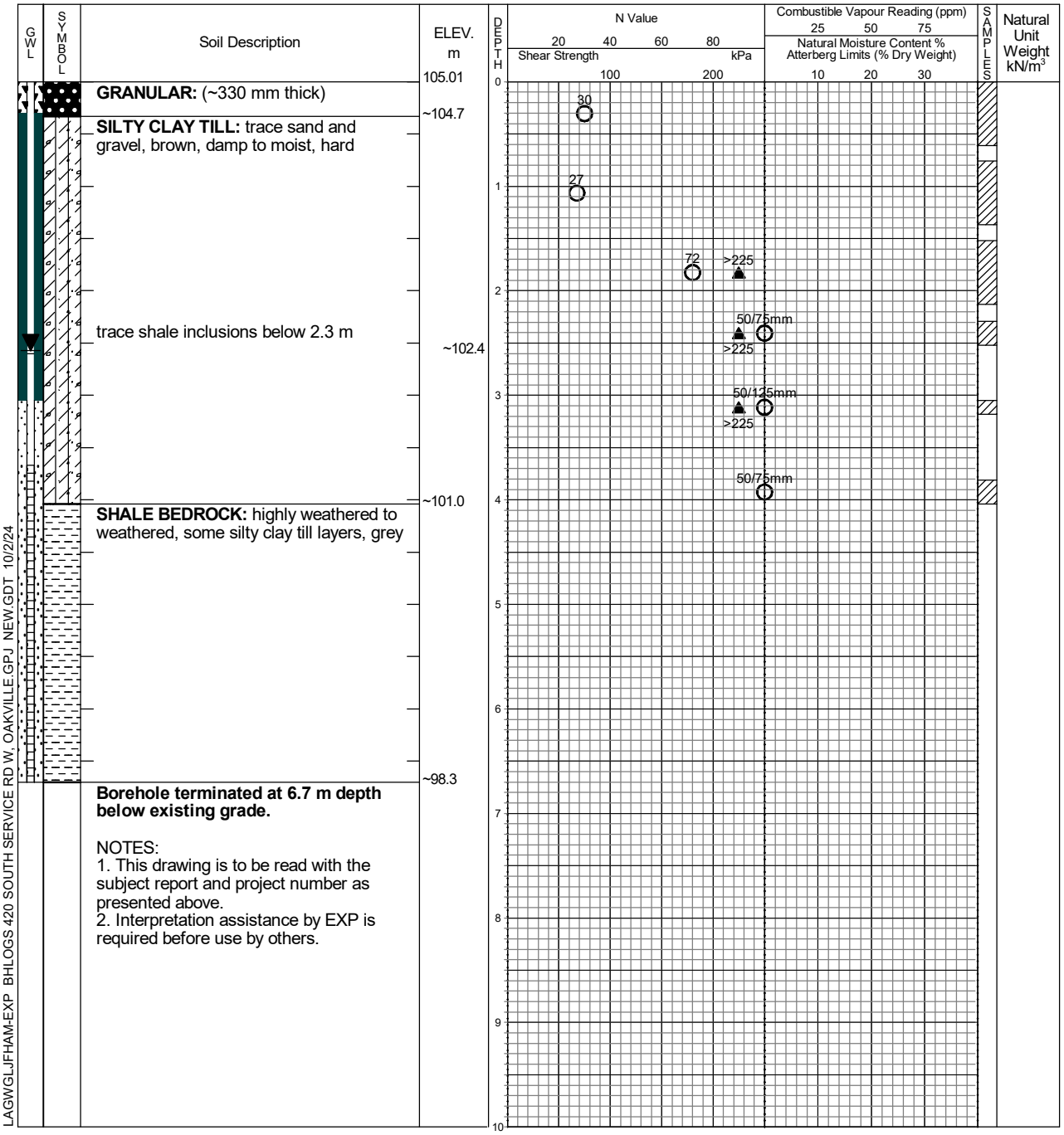
Date Drilled: August 11, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



Borehole terminated at 6.7 m depth below existing grade.

NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.

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EXP Services Inc.
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Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	3.5	open
September 10, 2024	2.6	-

Log of Borehole MW-315

Project No. HAM-23006348-F0 | Drawing No. 6

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

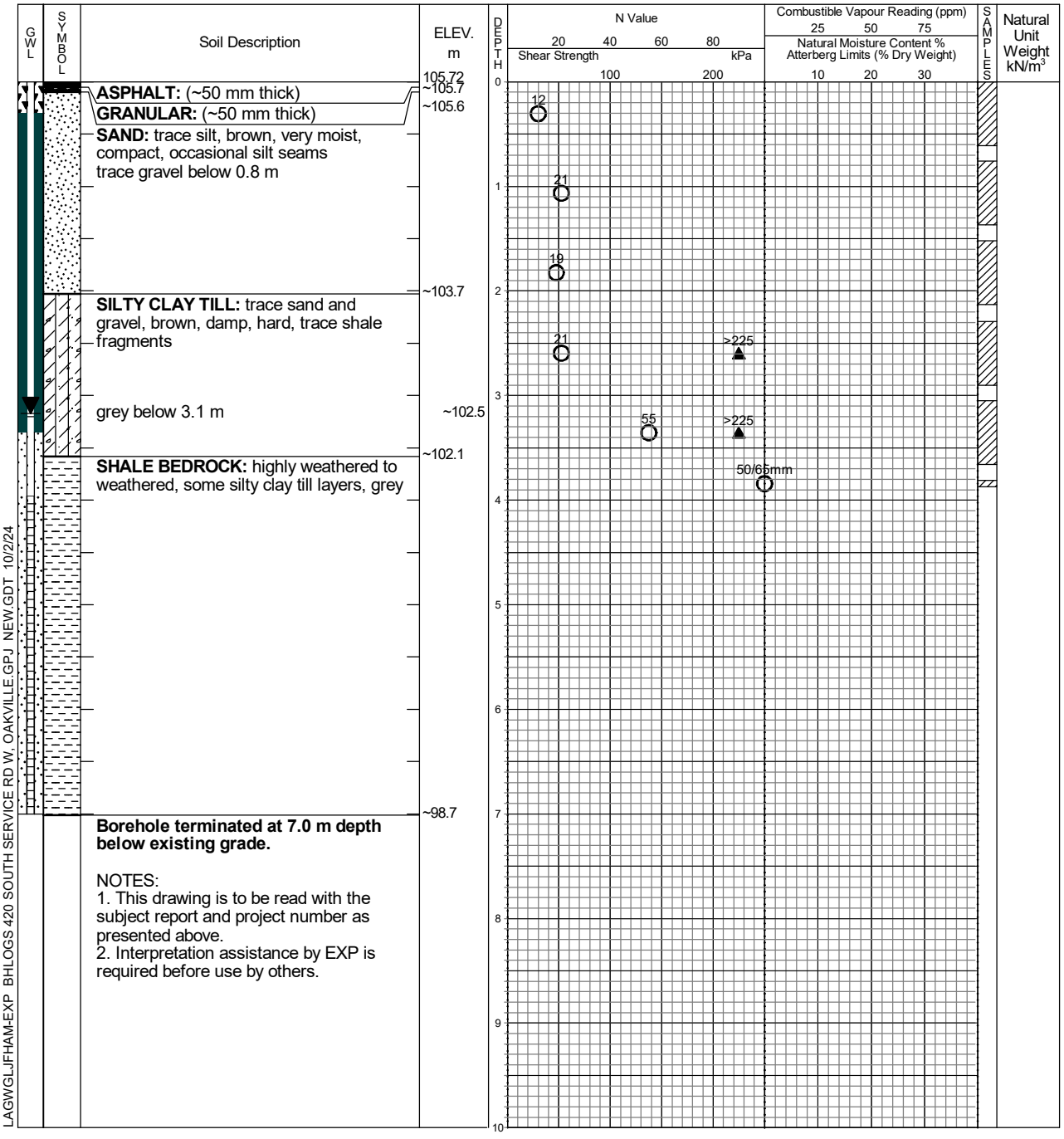
Date Drilled: August 11, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



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Telephone: 905.573.4000
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Time	Water Level (m)	Depth to Cave (m)
on completion	3.1	open
September 10, 2024	3.2	-

Log of Borehole MW-316

Project No. HAM-23006348-F0 | Drawing No. 7

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

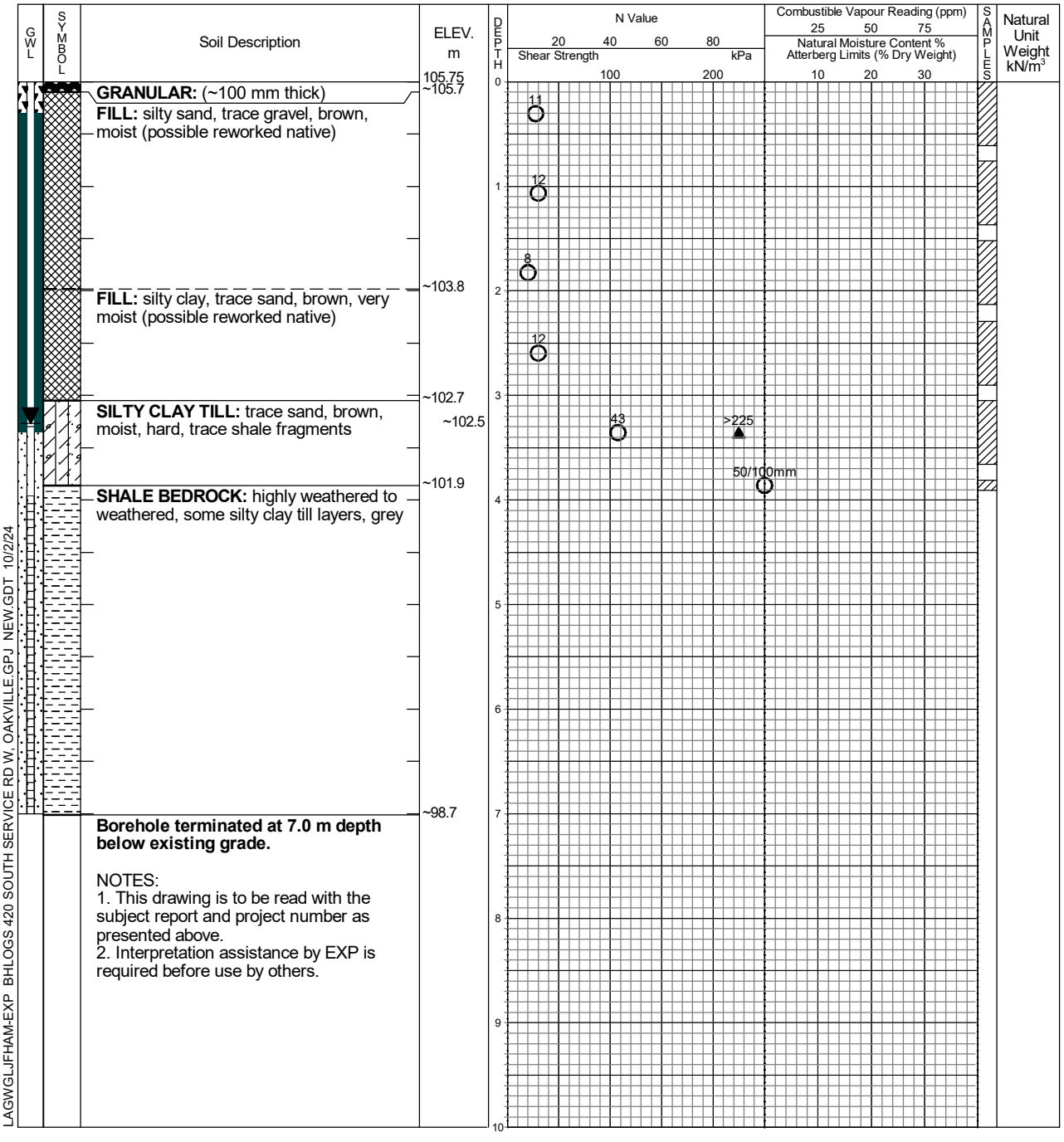
Date Drilled: August 11, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.

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EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	3.7	open
September 10, 2024	3.3	-

Log of Borehole MW-317

Project No. HAM-23006348-F0 | Drawing No. 8

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

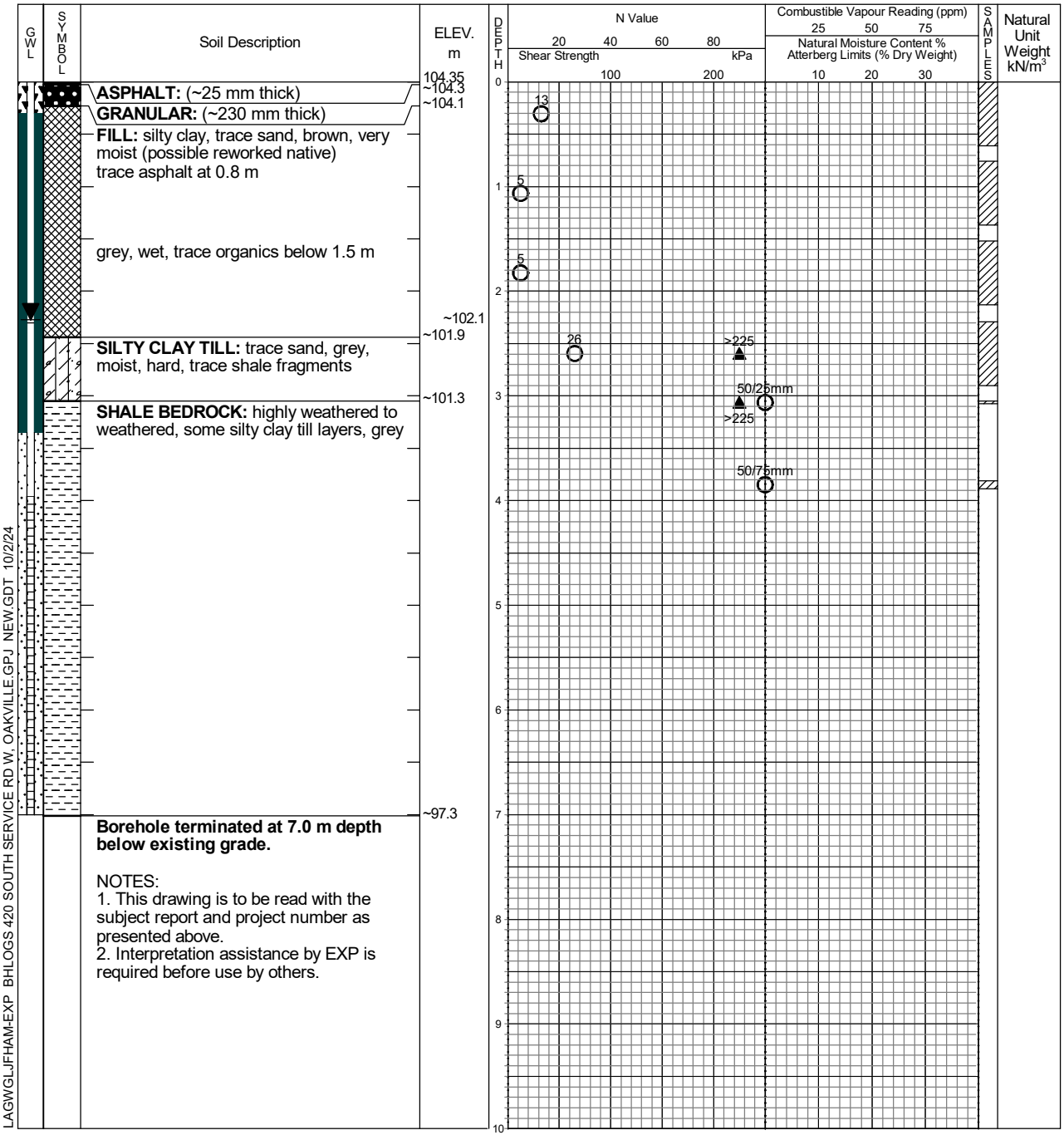
Date Drilled: August 11, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
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EXP Services Inc.
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Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	2.7	open
September 10, 2024	2.3	-

Log of Borehole MW-319

Project No. HAM-23006348-F0 | Drawing No. 9

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: August 11, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
			104.25
		CONCRETE: (~75 mm thick)	~104.2
		FILL: sand, trace silt, trace gravel, brown, moist	
		FILL: silty clay, trace sand and gravel, brown, very moist, trace black staining	~103.5
		SILTY CLAY TILL: trace sand and gravel, grey, moist, stiff, occasional sand seams hard below 2.3 m	~102.4 (102.5)
		SHALE BEDROCK: highly weathered to weathered, some silty clay till layers, grey	~101.5
		Borehole terminated at 5.5 m depth below existing grade.	~98.8

NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
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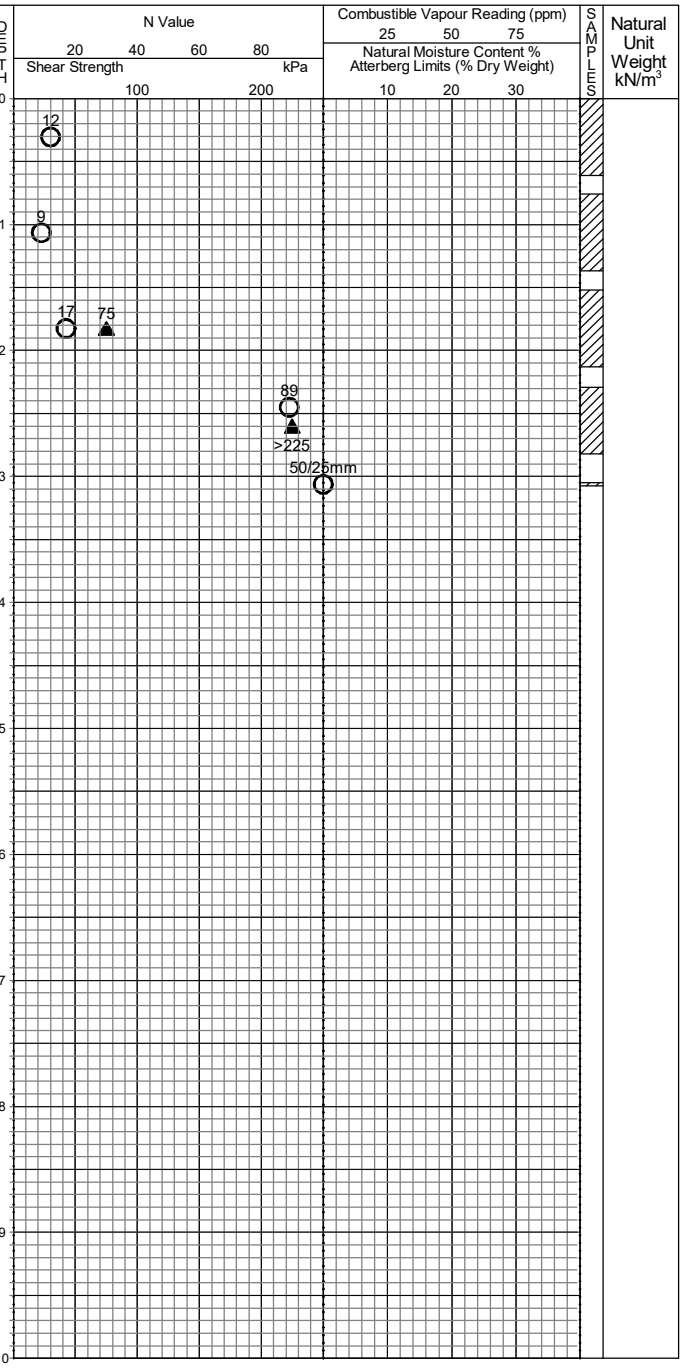

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EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	2.7	open
September 10, 2024	1.8	-

Log of Borehole MW-320

Project No. HAM-23006348-F0 | Drawing No. 10

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: August 14, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
			102.79
		ASPHALT: (~100 mm thick)	~102.7
		GRANULAR: (~350 mm thick)	
		FILL: silty clay, trace sand and gravel, dark grey to black, moist, trace rootlets	~102.3
		SILTY CLAY TILL: trace sand, brown to grey, moist, very stiff, trace shale fragments trace gravel, hard below 1.5 m	~101.6
		SHALE BEDROCK: highly weathered to weathered, some silty clay till layers, grey	~100.7 ~100.4
		Borehole terminated at 7.6 m depth below existing grade.	~95.2

NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
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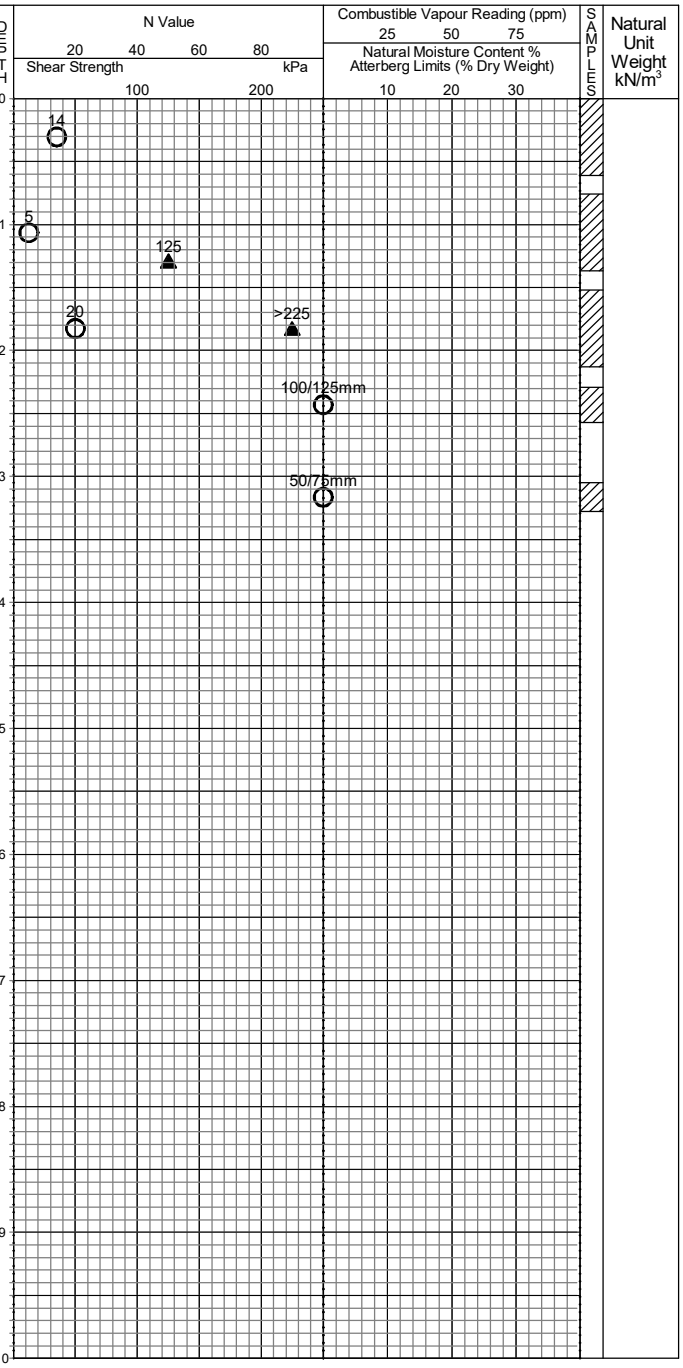

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Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	3.7	open
September 10, 2024	2.1	-

Log of Borehole MW-324

Project No. HAM-23006348-F0 | Drawing No. 11

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: August 11, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
			103.66
		ASPHALT: (~25 mm thick)	~103.6
		GRANULAR: (~115 mm thick)	~103.4
		FILL: silty clay, trace sand and gravel, brown, trace black staining	
			~102.5
		SILTY CLAY TILL: trace sand, brown, moist, hard, trace shale fragments grey below 1.5 m	
			~101.7
			~101.2
		SHALE BEDROCK: highly weathered, some silty clay till layers, grey	
			~98.2
		Borehole terminated at 5.5 m depth below existing grade.	

NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.

DEPTH | N Value (20, 40, 60, 80) | Shear Strength kPa (100, 200) | Combustible Vapour Reading (ppm) (25, 50, 75) | Natural Moisture Content % Atterberg Limits (% Dry Weight) (10, 20, 30) | SAMPLES | Natural Unit Weight kN/m³

7
100/215mm
51
>225
100/75mm
>225
50/140mm

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EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	2.1	open
September 10, 2024	2.0	-

Log of Borehole MW-325

Project No. HAM-23006348-F0 | Drawing No. 12

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

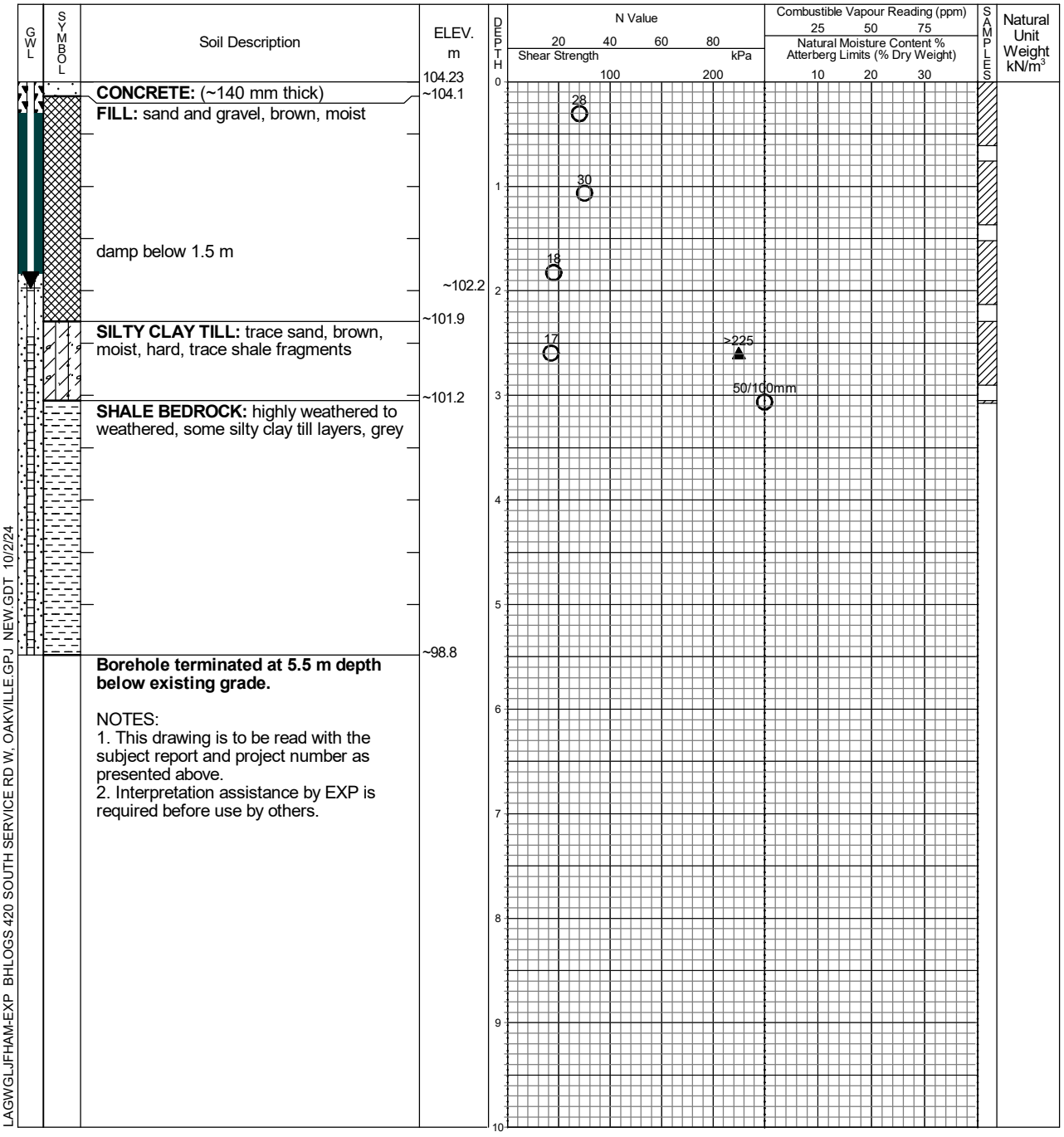
Date Drilled: August 14, 2023

Drill Type: CME-75 Track Mount. Solid Stem

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



NOTES:
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EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	2.7	open
September 10, 2024	2.0	-

Log of Borehole MW-326

Project No. HAM-23006348-F0 Drawing No. 13

Project: Proposed Site Redevelopment Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: August 14, 2023

Drill Type: CME-75 Track Mount. Solid Stem

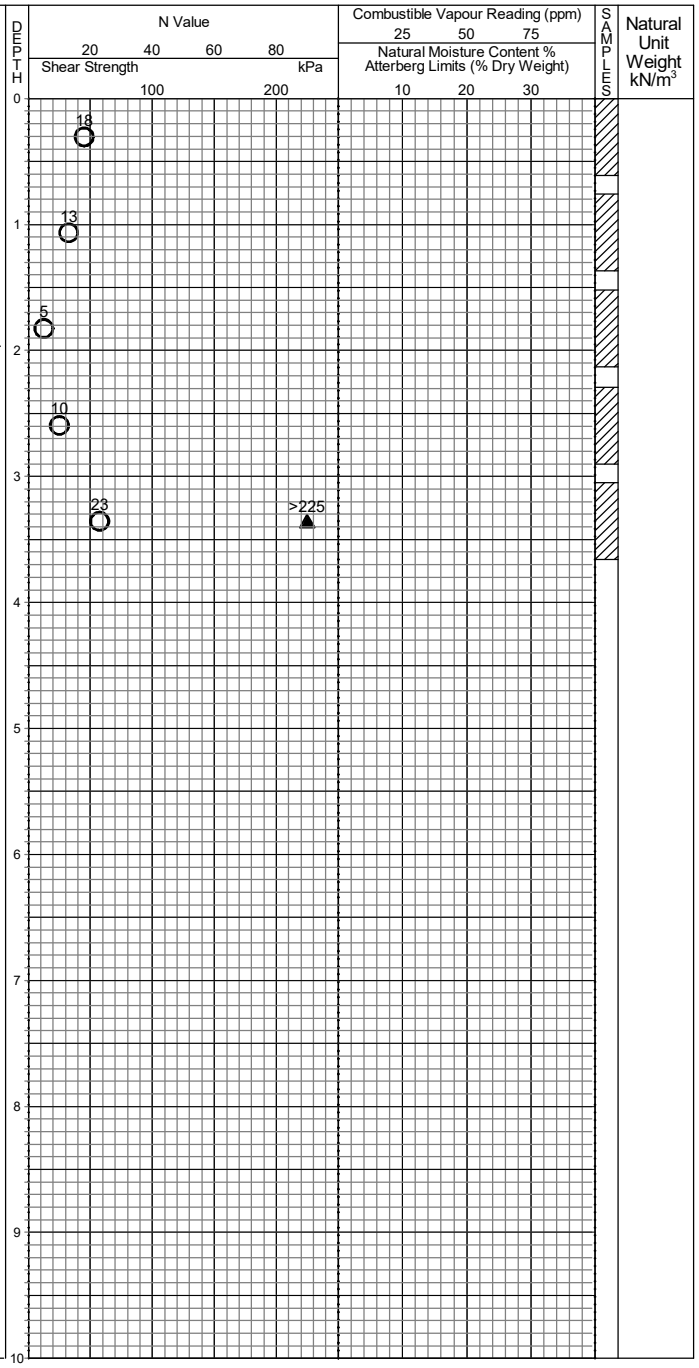
Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
			105.42
		GRANULAR: (~75 mm thick)	~105.3
		FILL: silty clay, trace sand and gravel, brown to reddish brown, damp to moist	
		trace organics below 1.5 m	~103.4
		SILTY CLAY TILL: trace sand, brown, moist, hard, trace shale fragments	~102.4
			~101.8
		Borehole terminated at 3.7 m depth below existing grade.	

NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.



LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
September 10, 2024	2.0	-

Log of Borehole MW-332D

Project No. HAM-23006348-F0 | Drawing No. 14

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

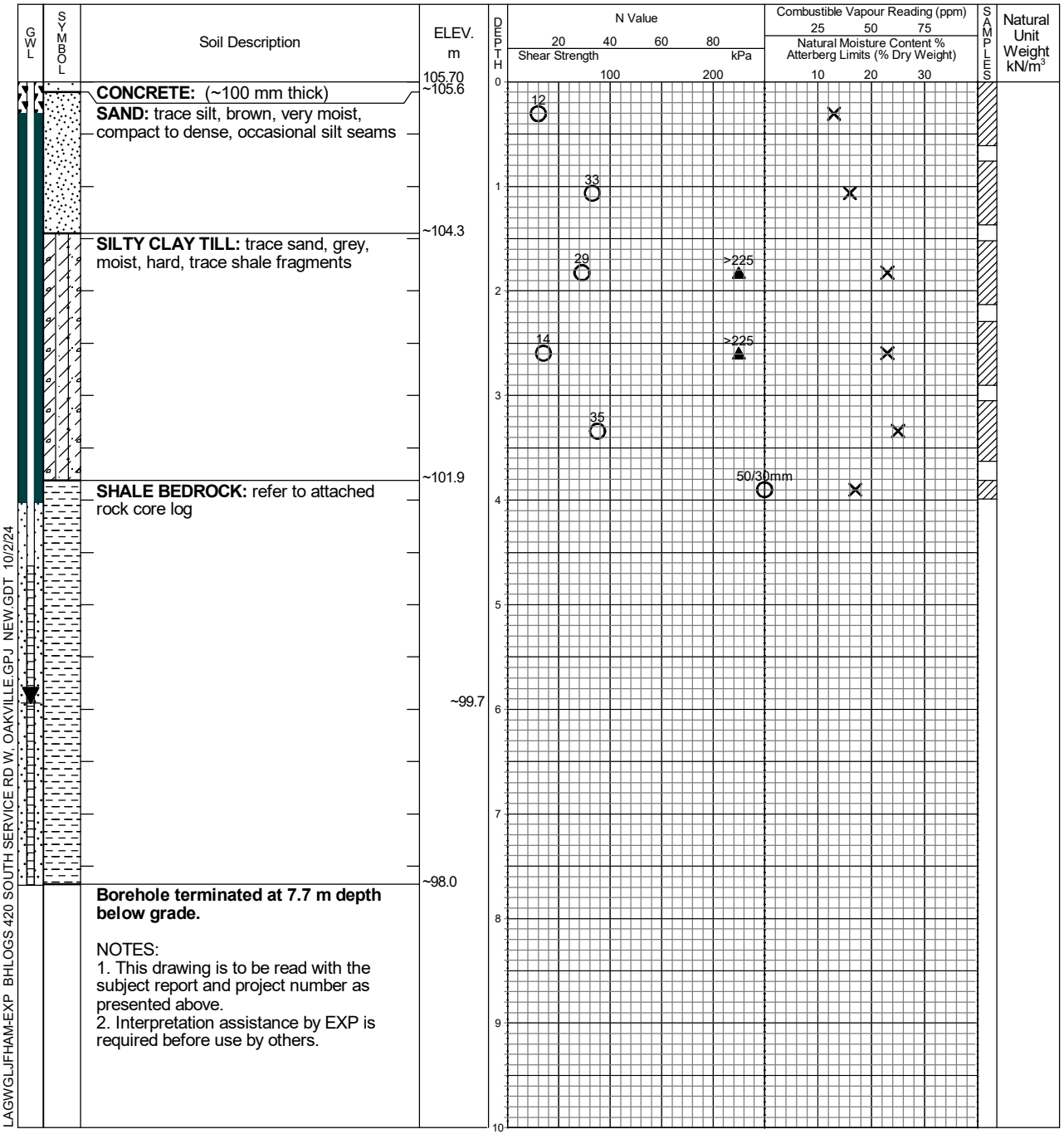
Date Drilled: July 19, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	5.9	-
August 27, 2024	5.9	-
August 29, 2024	6.0	-

ROCK CORE LOG

BH NO. 332D

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/19/24	07/19/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
101.1			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<240 mm in interbedded thickness)	19	B	F	C	RP	NC	<1 mm								
	5		Run 1: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<30 mm in interbedded thickness) Broken rock: 4.57 to 4.88 m Point Load: 4.93 m (12.7 MPa) 5.50 m (7.3 MPa) 5.64 m (183.3 MPa)											1	74	15		Grey
	6																	
99.6			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<100 mm in interbedded thickness)	16	B	F	C	RP	NC	<1 mm								
	7		Run 2: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness) Broken rock: 6.45 to 6.50 m 6.66 to 6.71 m Highly weathered zone: 7.24 to 7.37 m Point Load: 6.17 m (108.0 MPa) 6.85 m (10.1 MPa)											2	80	17		Grey
98.1			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<20 mm in interbedded thickness)	7	B	F	C	RP	NC	<1 mm								
	8		Run 3: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness) Highly weathered zone: 7.91 to 8.06 m Broken rock: 7.67 to 7.84 m 8.33 to 8.34 m 8.87 to 8.91 m 6.66 to 6.71 m											3	86	57		Grey
	9		Point Load:															

ROCK CORE LOG

BH NO. 332D

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/19/24	07/19/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
96.6			8.08 m (22.1 MPa) 8.90 m (86.7 MPa) 8.51 m (65.6 MPa) Slightly weathered (W1), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<100 mm in interbedded thickness)	9	B	F	C	RP	NC	<1 mm								
	10		Run 4: Shale (100%) Presence of clay infill along natural fractures; minor presence of calcite nodules (<1 mm in diameter) Broken rock: 9.53 to 9.60 m Point Load: 9.21 m (32.6 MPa) 9.88 m (31.2 MPa) 10.29 m (6.8 MPa))												4	94	87		Grey
95.0			Slightly weathered (W1), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<170 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<190 mm in interbedded thickness)	15	B	F	C	RP	NC	<1 mm								
	11		Run 5: Shale (80%) / Siltstone 20%) Presence of clay infill along natural fractures; increase in siltstone lithology at 10.82 m Point Load: 10.83 m (87.0 MPa) 11.43 m (15.4 MPa) 11.76 m (22.1 MPa)												5	100	72		Grey
93.4	12		Slightly weathered (W1), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE Run 6: Shale (40%) / Siltstone 60%) Minor presence of maroon shale interbeds (<10 mm in interbedded thickness) Point Load: 12.90 m (12.3 MPa)	3	B	F	M	RP	T					6	98	94		Grey
92.4	13		End of Borehole at 13.3 m															

Log of Borehole MW-333

Project No. HAM-23006348-F0 | Drawing No. 15

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

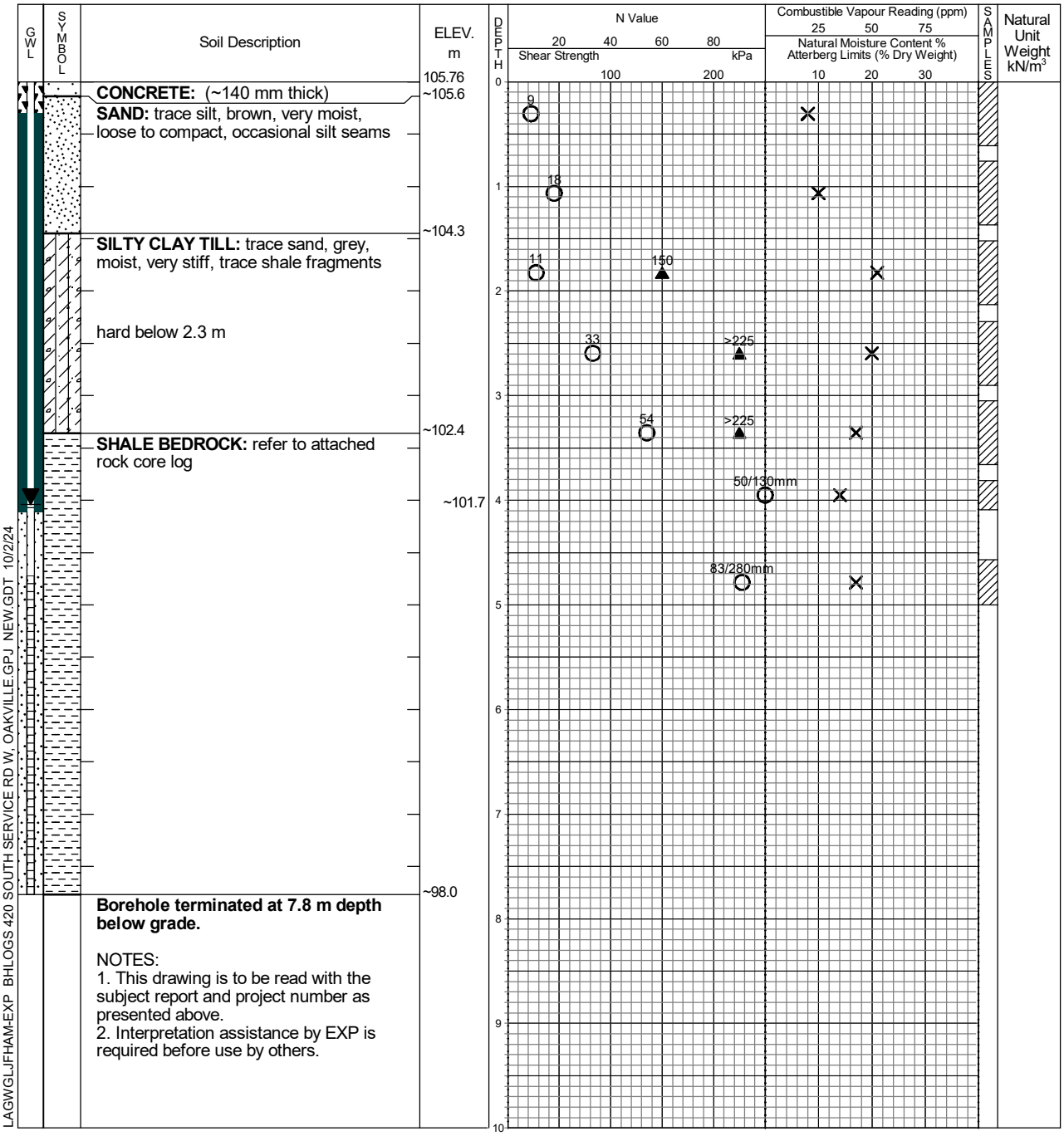
Date Drilled: July 18, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test S

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	4.0	-
August 27, 2024	4.2	-
August 29, 2024	4.1	-

ROCK CORE LOG

BH NO. 333

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.8	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/18/24	07/18/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
100.9																		
	5		Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<55 mm in interbedded thickness) Run 1: Shale (100%) Presence of clay infill along natural fractures Clay seam: 4.90 to 5.13 m 5.19 to 5.37 m 5.65 to 5.78 m Highly weathered zone: 5.79 to 6.10 m Point Load: 5.13 m (3.4 MPa) 5.31 m (4.7 MPa) 6.19 m (11.1 MPa)	19	B	F	C	RP	NC	<1 mm				1	84	21		Grey
99.3																		
	7		Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<55 mm in interbedded thickness) Run 2: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<6 mm in interbedded thickness) Highly weathered zone: 6.50 to 6.63 m Point Load: 6.78 m (8.1 MPa) 6.97 m (7.2 MPa) 7.20 m (7.6 MPa) 7.47 m (5.2 MPa)	12	B	F	C	RP	NC	<20 mm				2	94	38		Grey
98.0																		
	8		Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<130 mm in interbedded thickness) Run 3: Shale (100%) Presence of clay infill along natural fractures; minor presence of light grey siltstone interbeds (<130 mm in interbedded thickness) Highly weathered zone: 8.17 to 8.19 m 8.33 to 8.36 m 8.47 to 8.61 m Broken rock: 7.77 to 7.92 m	5	B	F	C	RP	NC	<1 mm				3	71	27		Grey
96.6	9		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded	10	B	F	C	RP	NC	<1 mm								

ROCK CORE LOG

BH NO. 333

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.8	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/18/24	07/18/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	10		slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<130 mm in interbedded thickness) Run 4: Shale (100%) Presence of clay infill along natural fractures; minor presence of light grey siltstone interbeds (<130 mm in interbedded thickness) Highly weathered zone: 9.16 to 9.22 m 9.61 to 9.70 m 9.84 to 9.89 m 10.20 to 10.31 m Point Load: 9.22 m (19.9 MPa) 10.48 m (14.1 MPa)											4	100	45		Grey
95.1	11		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<90 mm in interbedded thickness) Run 5: Shale (100%) Presence of clay infill along natural fractures Highly weathered zone: 11.30 to 11.32 m 11.51 to 11.84 m Point Load: 11.00 m (25.9 MPa) 11.15 m (11.0 MPa)	9	B	F	C	RP	NC	<1 mm				5	95	38		Grey
93.8	12		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<830 mm in interbedded thickness) Run 6: Shale (30%) / Siltsone (70%) Presence of clay infill along natural fractures; increase in siltstone lithology at 11.94 m; minor presence of maroon shale interbeds (<10 mm in interbedded thickness) Clay seam: 12.34 to 12.36 m Point Load: 12.78 m (80.8 MPa) 12.97 m (12.1 MPa)	5	B	F	C	RP	NC	<1 mm				6	96	92		Grey
92.6	13		End of Borehole at 13.1 m															

Log of Borehole MW-334

Project No. HAM-23006348-F0 | Drawing No. 16

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

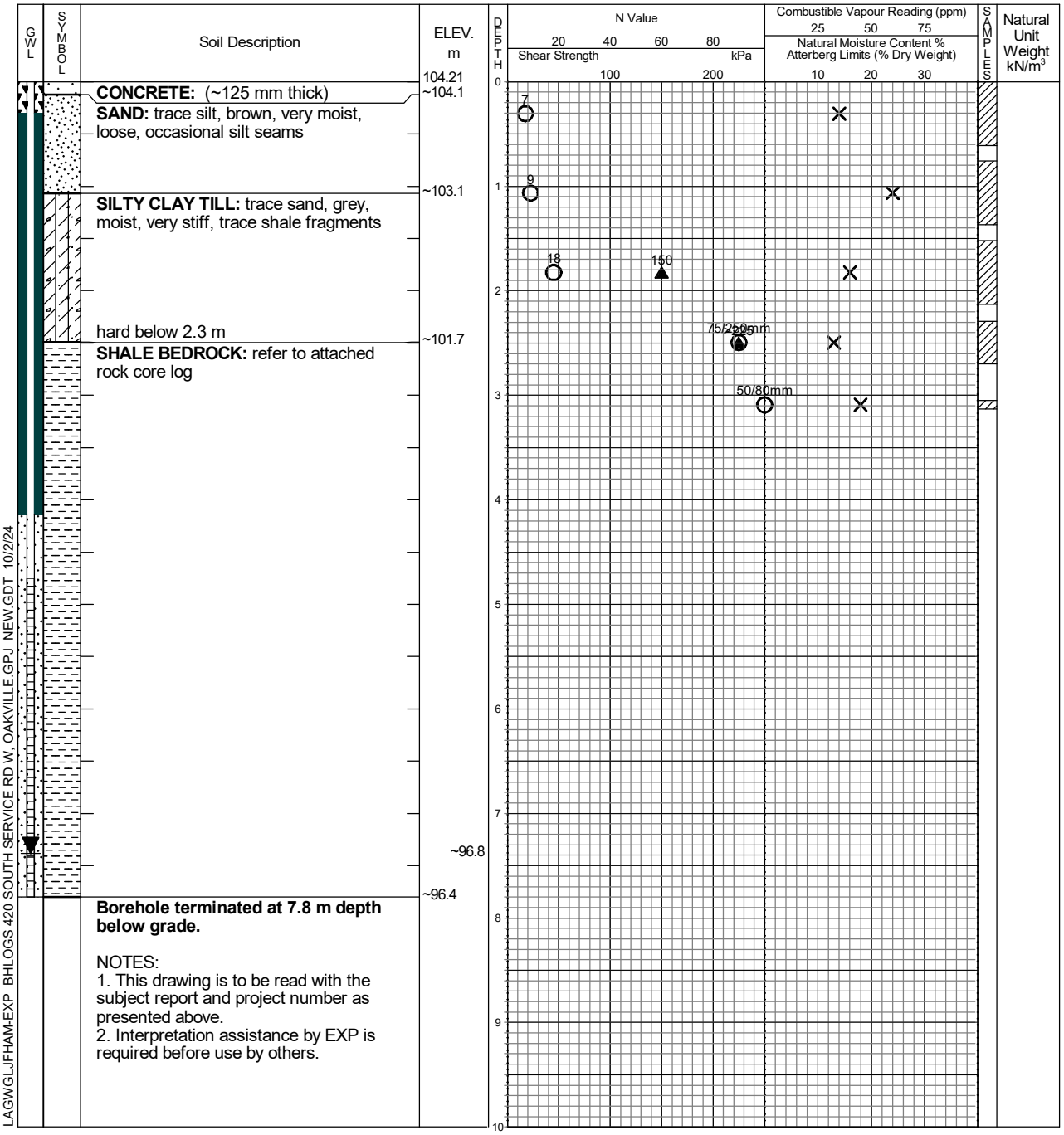
Date Drilled: July 16, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	7.4	-
August 27, 2024	7.4	-
August 29, 2024	7.4	-

ROCK CORE LOG

BH NO. 334

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.2	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/16/24	07/16/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
101.0			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<25 mm in interbedded thickness) Run 1: Shale (100%) Presence of clay infill along natural fractures Highly weathered zone: 3.33 to 3.40 m 3.51 to 3.58 m 4.27 to 4.32 m	4	B	F	C	RP	NC	<1 mm				1	34	0		Grey
99.5	4		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<55 mm in interbedded thickness) Run 2: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Highly weathered zone: 4.75 to 5.07 m 5.53 to 5.55 m 5.64 to 5.70 m 5.97 to 5.99 m 6.12 to 6.17 m Point Load: 4.57 m (13.6 MPa) 5.64 m (12.1 MPa) 5.97 m (29.9 MPa)	10	B	F	C	RP	NC	<1 mm				2	100	30		Grey
97.9	5 6 7		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<90 mm in interbedded thickness) Run 3: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Highly weathered zone: 6.48 to 6.50 m 7.18 to 7.29 m 7.39 to 7.42 m 7.72 to 7.75 m Point Load: 6.59 m (36.2 MPa) 6.92 m (15.6 MPa)	10	B	F	C	RP	NC	<1 mm				3	100	64		Grey

ROCK CORE LOG

BH NO. 334

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.2	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/16/24	07/16/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			7.59 m (15.7 MPa)															
96.4			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<85 mm in interbedded thickness)	12	B	F	C	RP	NC	<1 mm								
	8		Run 4: Shale (100%) Presence of clay infill along natural fractures; minor presence of grey siltstone interbeds (<140 mm in interbedded thickness) Broken rock and highly weathered zone: 8.48 to 8.65 m Point Load: 8.08 m (24.3 MPa) 8.56 m (15.4 MPa)											4	90	59		Grey
	9																	
95.1			Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<170 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<300 mm in interbedded thickness)	14	B	F	C	RP	NC	<1 mm								
	10		Run 5: Shale (65%) / Siltstone (35%) Presence of clay infill along natural fractures; increase in siltstone lithology at 10.13 m; minor presence of calcite seams (<2 mm in thickness) Broken rock and highly weathered zone: 9.35 to 9.40 m 9.54 to 9.69 m 10.11 to 10.14 m Point Load: 10.13 m (18.5 MPa) 9.70 m (131.4 MPa)											5	100	42		Grey
93.5			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<15 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<470 mm in interbedded thickness)	10	B	F	C	RP	NC	<1 mm								
	11		Run 6: Shale (70%) / Siltstone (30%) Presence of clay infill along natural fractures; increase in siltstone lithology at 10.13 m; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Highly weathered zone: 10.68 to 10.71 m 11.56 to 11.86 m 12.01 to 12.10 m											6	94	51		Grey
	12																	

ROCK CORE LOG

BH NO. 334

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.2	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/16/24	07/16/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
91.9			Point Load: 11.40 m (9.0 MPa) 11.85 m (10.9 MPa) 12.08 m (124.2 MPa) Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<40 mm in interbedded thickness)	4	B	F	C	RP	NC	<1 mm								
	13		Run 7: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)											7	96	32		Grey
91.1			Broken rock : 12.34 to 12.41 m Highly weathered zone: 12.51 to 12.59 m 12.95 to 13.00 m Point Load: 12.46 m (9.9 MPa) 12.97 m (6.9 MPa) 12.76 m (11.8 MPa)															
	14		End of Borehole at 13.1 m															
	15																	
	16																	

Log of Borehole MW-337

Project No. HAM-23006348-F0 | Drawing No. 17

Project: Proposed Site Redevelopment | Sheet No. 1 of 2

Location: 420 & 468 South Service Road East, Oakville, Ontario

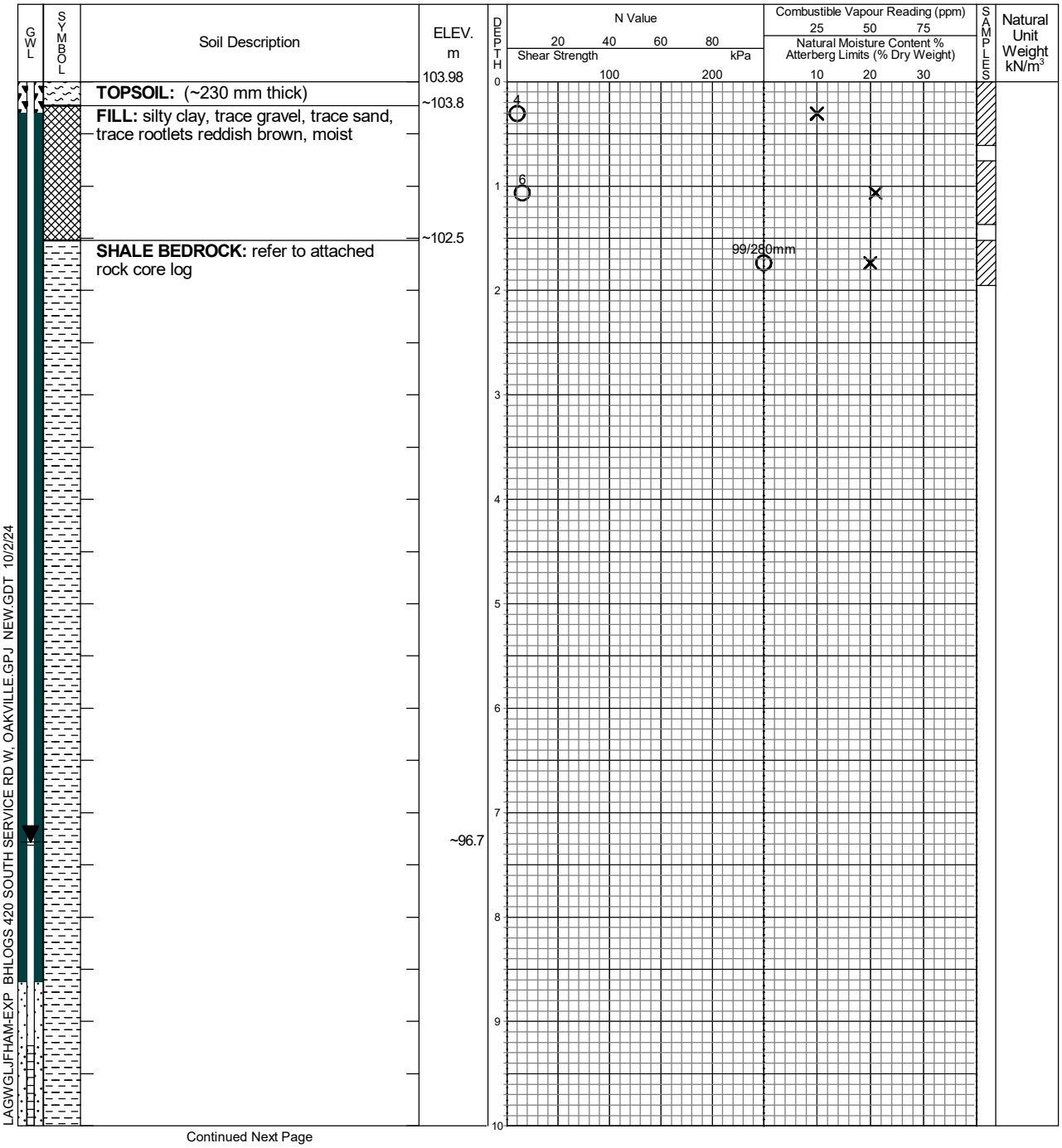
Date Drilled: July 23 to 26, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



Continued Next Page

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	7.0	-
August 27, 2024	7.2	-
August 29, 2024	7.3	-

Log of Borehole MW-337

Project No. HAM-23006348-F0 Drawing No. 17

Project: Proposed Site Redevelopment Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			93.98	10	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				11				
				12				
			~91.7	13				
		Borehole terminated at 12.3 m depth below grade.		14				
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		15				
				16				
				17				
				18				
				19				
				20				
				21				
				22				

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	7.0	-
August 27, 2024	7.2	-
August 29, 2024	7.3	-

ROCK CORE LOG

BH NO. 337

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.0	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/23/24	07/26/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
101.1			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE	3	B	F	C	RP	NC	<1 mm								
	3		Run 1: Shale (100%) Presence of clay infill along natural fractures Broken rock: 2.90 to 3.00 m 3.15 to 3.33 m											1	60	0		Grey
100.4			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE	14	B	F	C	RP	NC	<1 mm								
	4		Run 2: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<30 mm interbedded thickness) Highly weathered zone: 3.61 to 3.84 m 4.04 to 4.09 m Broken rock: 4.64 to 4.66 m 4.74 to 4.76 m Point Load: 3.91 m (4.7 MPa) 4.45 m(10.1 MPa) 4.88 m (16.4 MPa)											2	100	40		Grey
99.2			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<65 mm in interbedded thickness)	9	B	F	C	RP	NC	<1 mm								
	5		Run 3: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Broken rock: 5.09 to 5.19 mm 5.99 to 6.02 m											3	100	48		Grey
	6		Broken rock and highly weathered zone: 5.72 to 5.83 m Point Load: 5.84 m (7.8 MPa) 5.97 m (10.1 MPa)															
97.7			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<100 mm in interbedded thickness)	6	B	F	C	RP	NC	<1 mm								
	7		Run 4: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Clay seam:											4	98	55		Grey

CORE LOG SOUTH SERVICE ROCK LOG.GPJ CORE_LOG.GDT 10/2/24

ROCK CORE LOG

BH NO. 337

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.0	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/23/24	07/26/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			6.35 to 6.45 m Highly weathered zone: 6.60 to 6.68 m 7.63 to 7.65 m Point Load:															
96.2			6.90 m (16.4 MPa) 7.33 m (38.8 MPa)	7	B	F	C	RP	NC	<1 mm								
	8		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<350 mm in interbedded thickness) Run 5: Shale (100%) Presence of clay infill along natural fractures	1	B	V	W	RP	T				5	85	44		Grey
			Broken rock and highly weathered zone: 7.77 to 7.95 m Broken rock: 8.53 to 8.62 m	1	B	D	W	RP	T									
	9		Point Load: 8.09 m (9.0 MPa) 8.32 m (41.2 MPa)															
94.8			Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<175 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<370 mm in interbedded thickness)	9	B	F	C	RP	NC	<1 mm								
	10		Run 6: Shale (80%) / Siltstone (20%) Presence of clay infill along natural fractures; increase in siltstone lithology at 10.02 m Broken rock: 9.78 to 9.80 m Point Load: 9.30 m (32.6 MPa) 9.66 m (13.2 MPa)	1	B	D	W	RP	T				6	94	68		Grey
93.1			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<150 mm in interbedded thickness)	3	B	F	M	RP	NC	<1 mm								
	11		Run 7: Shale (100%) Presence of clay infill and iron staining along natural fractures Highly weathered zone: 11.20 to 11.25 m 11.30 yo 11.33 m	1	B	V	W	RP	T				7	100	87		Grey

ROCK CORE LOG

BH NO. 337

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.0	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/23/24	07/26/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	12		11.54 to 11.57 m Point Load: 11.09 m (7.6 MPa) 11.84 m (11.9 MPa) 12.29 m (7.8 MPa)															
91.7			Slighlty weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<20 mm in interbedded thickness) Run 8: Shale (100%) Presence iron staining along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)	1	B	F	M	RP	T					8	100	95		Grey
	13																	
90.9			Weathered zone with clay: 12.32 to 12.36 m Point Load: 12.50 m (24.2 MPa) 12.93 m (2.6 MPa) End of Borehole at 13.1 m															
	14																	
	15																	
	16																	

Log of Borehole MW-338

Project No. HAM-23006348-F0 | Drawing No. 18

Project: Proposed Site Redevelopment | Sheet No. 1 of 2

Location: 420 & 468 South Service Road East, Oakville, Ontario

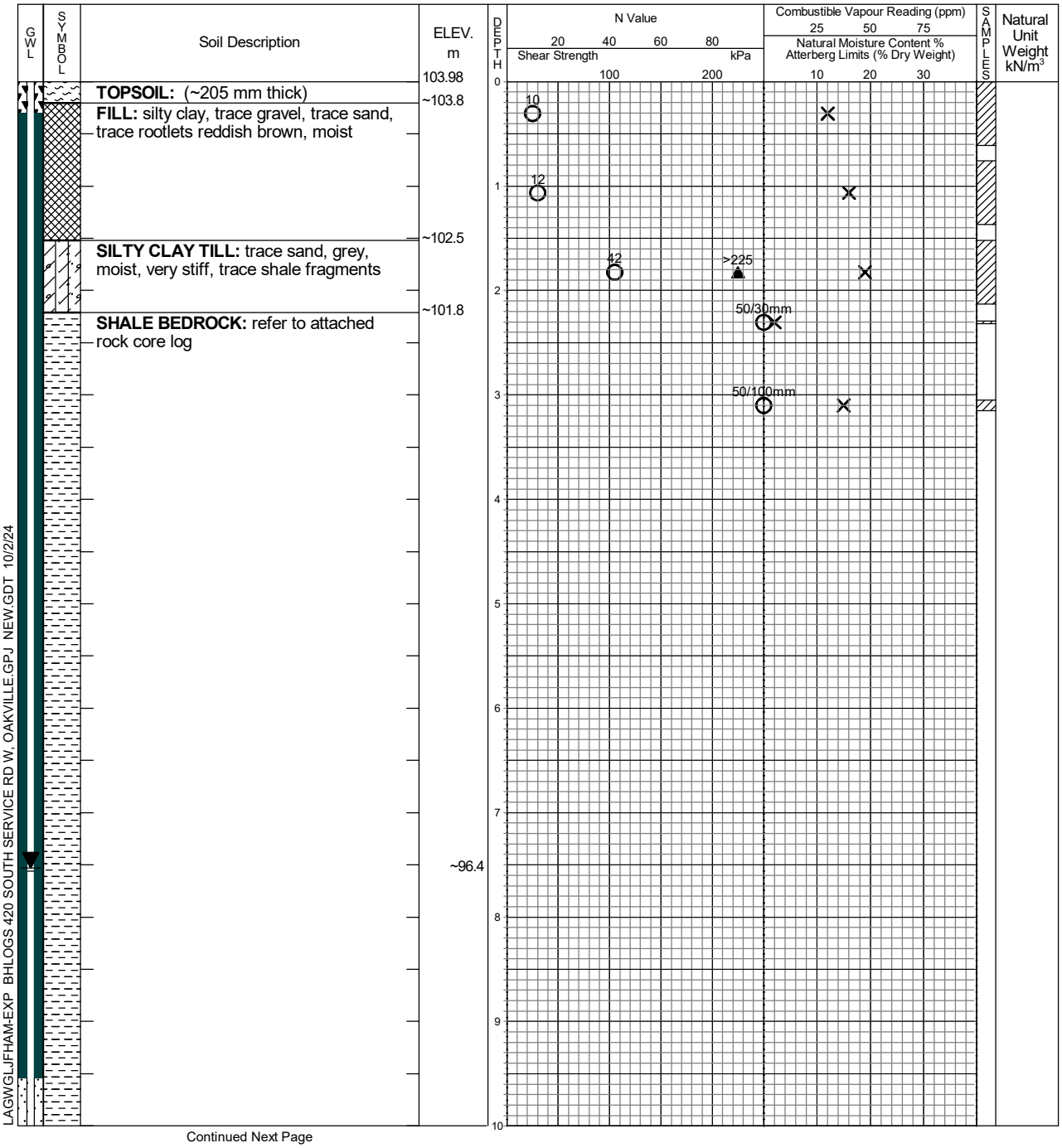
Date Drilled: July 22 to 26, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Field Vane Test (S)

Combustible Vapour Reading | Natural Moisture | Plastic and Liquid Limit | Undrained Triaxial at % Strain at Failure | Penetrometer



Continued Next Page

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	7.2	-
August 27, 2024	7.5	-
August 29, 2024	7.6	-

Log of Borehole MW-338

Project No. HAM-23006348-F0 Drawing No. 18

Project: Proposed Site Redevelopment Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			93.98	10	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				11				
				12				
				13				
			~90.8	14				
		Borehole terminated at 13.2 m depth below grade.		15				
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		16				
				17				
				18				
				19				
				20				
				21				
				22				

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	7.2	-
August 27, 2024	7.5	-
August 29, 2024	7.6	-

ROCK CORE LOG

BH NO. 338

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.0	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/22/24	07/01/80	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
100.6			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<70 mm in interbedded thickness) Run 1: Shale (100%)	10	B	F	C	RP	NC	<1 mm								
	4		Presence of clay infill along natural fractures Broken rock: 3.37 to 3.61 m 3.96 to 4.10 m Highly weathered zone: 3.61 to 3.68 m Point Load: 3.73 m (13.1 MPa) 4.24 m (21.8 MPa) 4.67 m (25.0 MPa)											1	86	45		Grey
99.0	5		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE Run 2: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<25 mm in interbedded thickness) Broken rock: 5.33 to 5.36 m Highly weathered zone: 4.93 to 4.97 m 5.51 to 5.54 m	11	B	F	C	RP	NC	<1 mm				2	98	49		Grey
	6		Point Load: 5.50 m (27.8 MPa) 5.93 m (11.9 MPa)															
97.6			Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<70 mm in interbedded thickness) Run 3: Shale (100%)	9	B	F	C	RP	NC	<1 mm								
	7		Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Broken rock: 6.64 to 6.66 m Highly weathered zone: 7.33 to 7.38 m Point Load: 6.68 m (44.4 MPa) 7.18 m (59.3 MPa) 7.48 m (27.2 MPa)											3	100	53		Grey
96.2																		

ROCK CORE LOG

BH NO. 338

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.0	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/22/24	07/01/80	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	8		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<110 mm in interbedded thickness) Run 4: Shale (100%) Presence of clay and silt infill along natural fractures; minor presence of calcite seams (<2 mm in thickness) Highly weathered zone: 7.80 to 7.90 m Clay seam: 8.28 to 8.30 m	8	B	F	C	RP	NC	<1 mm				4	100	63		Grey
	9		Broken rock: 8.66 to 8.73 m															
94.8			Point Load: 8.46 m (14.2 MPa) 8.78 m (12.0 MPa) Slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey GEOGIAN BAY LIMESTONE with interbedded slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey SHALE (<70 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<370 mm in interbedded thickness)	6 1 1	B B B	F D V	C W W	RP RP RP	NC NC T	<1 mm <1 mm				5	99	69		Grey
	10		Run 5: Shale (10%) / Limestone (70%) / Siltstone (20%) Presence of clay infill along natural fractures; minor presence of calcite seams (<4 mm in thickness); increase in siltstone lithology at 10.41 m Broken rock: 9.36 to 9.41 m															
93.2			Point Load: 9.96 m (37.7 MPa) Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<165 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<430 mm in interbedded thickness)	4	B	F	M	RP	NC	<1 mm				6	100	38		Grey
	11		Run 6: Shale (75%) / Siltstone (25%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)															
	12		Highly weathered zone: 11.25 to 11.30 m 11.84 to 11.88m Point Load:															

ROCK CORE LOG

BH NO. 338

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.0	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/22/24	07/01/80	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
91.6			11.62 m (7.3 MPa) 11.79 m (13.3 MPa) Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<25 mm in interbedded thickness)	6	B	F	C	RP	NC	<1 mm				7	96	65		Grey
	13		Run 7: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)															
90.8			Highly weathered zone: 12.62 to 12.64 m Point Load: 12.47 m (12.4 MPa) 12.75 m (38.9 MPa) 12.90 m (32.0 MPa) End of Borehole at 13.2 m															
	14																	
	15																	
	16																	

Log of Borehole MW-339

Project No. HAM-23006348-F0 | Drawing No. 19

Project: Proposed Site Redevelopment | Sheet No. 1 of 2

Location: 420 & 468 South Service Road East, Oakville, Ontario

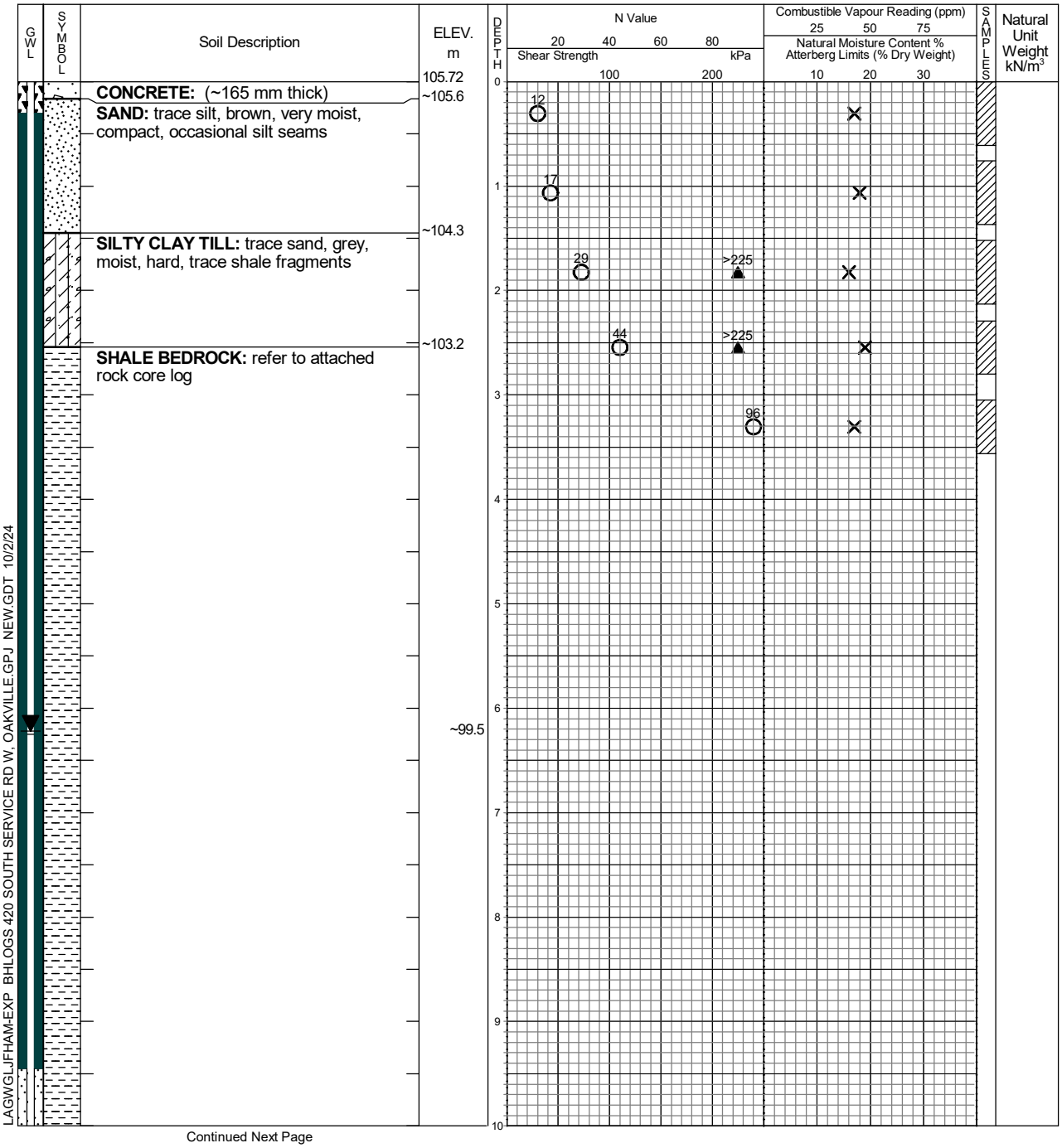
Date Drilled: July 22 to 25, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W. OAKVILLE.GPJ NEW.GDT 10/2/24

Continued Next Page

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	6.6	-
August 27, 2024	6.3	-
August 29, 2024	6.3	-

Log of Borehole MW-339

Project No. HAM-23006348-F0 Drawing No. 19

Project: Proposed Site Redevelopment Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			95.72	10	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				11				
				12				
				13				
			~92.6	14				
		Borehole terminated at 13.1 m depth below grade.		15				
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		16				
				17				
				18				
				19				
				20				
				21				
				22				

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open
August 26, 2024	6.6	-
August 27, 2024	6.3	-
August 29, 2024	6.3	-

ROCK CORE LOG

BH NO. 339

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/22/24	07/25/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
102.4			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<10 mm in interbedded thickness) Run 1: Shale (100%)	1	B	F	W	RP	NC	<1 mm								
	4		Presence of clay infill along natural fractures Broken rock and highly weathered zone: 3.33 to 3.91 m 4.41 to 4.47 m Broken rock: 4.15 to 4.24 m 4.49 to 4.60 m											1	92	8		Grey
101.1			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<70 mm in interbedded thickness) Run 2: Shale (100%)	13	B	F	C	RP	NC	<1 mm								
	5		Presence of clay infill along natural fractures Highly weathered zone: 4.72 to 4.78 m 5.42 to 5.45 m Broken rock: 6.02 to 6.05 m Point Load: 5.11 m (7.2 MPa) 5.21 m (7.5 MPa) 5.66 m (126.8 MPa)											2	86	33		Grey
99.4			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<60 mm in interbedded thickness) Run 3: Shale (100%)	8	B	F	C	RP	NC	<1 mm								
	7		Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<15 mm in interbedded thickness) Highly weathered zone: 6.63 to 6.69 m Broken rock: 6.86 to 6.91 m 7.35 to 7.37 m 7.59 to 7.62 m											3	100	65		Grey
98.1			Point Load: 6.68 m (140.9 MPa)	17	B	F	C	RP	NC	<1 mm								

ROCK CORE LOG

BH NO. 339

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/22/24	07/25/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			6.97 m (16.9 MPa) 7.25 m (26.1 MPa)															
	8		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<60 mm in interbedded thickness) Run 4: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness) Highly weathered zone: 7.67 to 7.82 m 8.81 to 8.86 m											4	98	49		Grey
	9		Point Load: 7.99 m (13.0 MPa) 8.43 m (25.2 MPa) 8.69 m (33.9 MPa)															
96.6			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<250 mm in interbedded thickness)	6	B	F	C	RP	NC	<1 mm								
	10		Run 5: Shale (100%) Presence of clay infill along natural fractures; minor presence of grey siltstone interbeds (<150 mm in interbedded thickness); minor presence of calcite seams (<3 mm in thickness) Broken rock: 9.09 to 9.13 m Highly weathered zone: 9.90 to 9.92 m 10.08 to 10.11 m											5	100	84		Grey
			Point Load: 9.63 m (63.7 MPa) 10.82 m (10.1 MPa)															
95.0			Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<200 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<500 mm in interbedded thickness)	11	B	F	C	RP	NC	<1 mm								
	11		Run 6: Shale (70%) / Siltstone (30%) Presence of clay infill along natural fractures; minor presence of calcite seams (<3 mm in thickness); increase in siltstone lithology at 11.84 m											6	98	72		Grey
	12		Highly weathered zone: 10.69 to 10.83 m Point Load: 11.06 m (16.3 MPa) 11.23 m (50.8 MPa)															

ROCK CORE LOG

BH NO. 339

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/22/24	07/25/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
93.4			Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<270 mm in interbedded thickness) Run 7: Shale (65%) / Siltstone (35%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in thickness)	3	B	F	C	RP	NC	<1 mm				7	100	82		Grey
	13																	
92.6			Point Load: 12.85 m (14.7 MPa) 12.56 m (32.0 MPa) End of Borehole at 13.1 m															
	14																	
	15																	
	16																	

CORE LOG SOUTH SERVICE ROCK LOG.GPJ CORE_LOG.GDT 10/2/24

Log of Borehole BH-401

Project No. HAM-23006348-F0 | Drawing No. 20

Project: Proposed Site Redevelopment | Sheet No. 1 of 1

Location: 420 & 468 South Service Road East, Oakville, Ontario

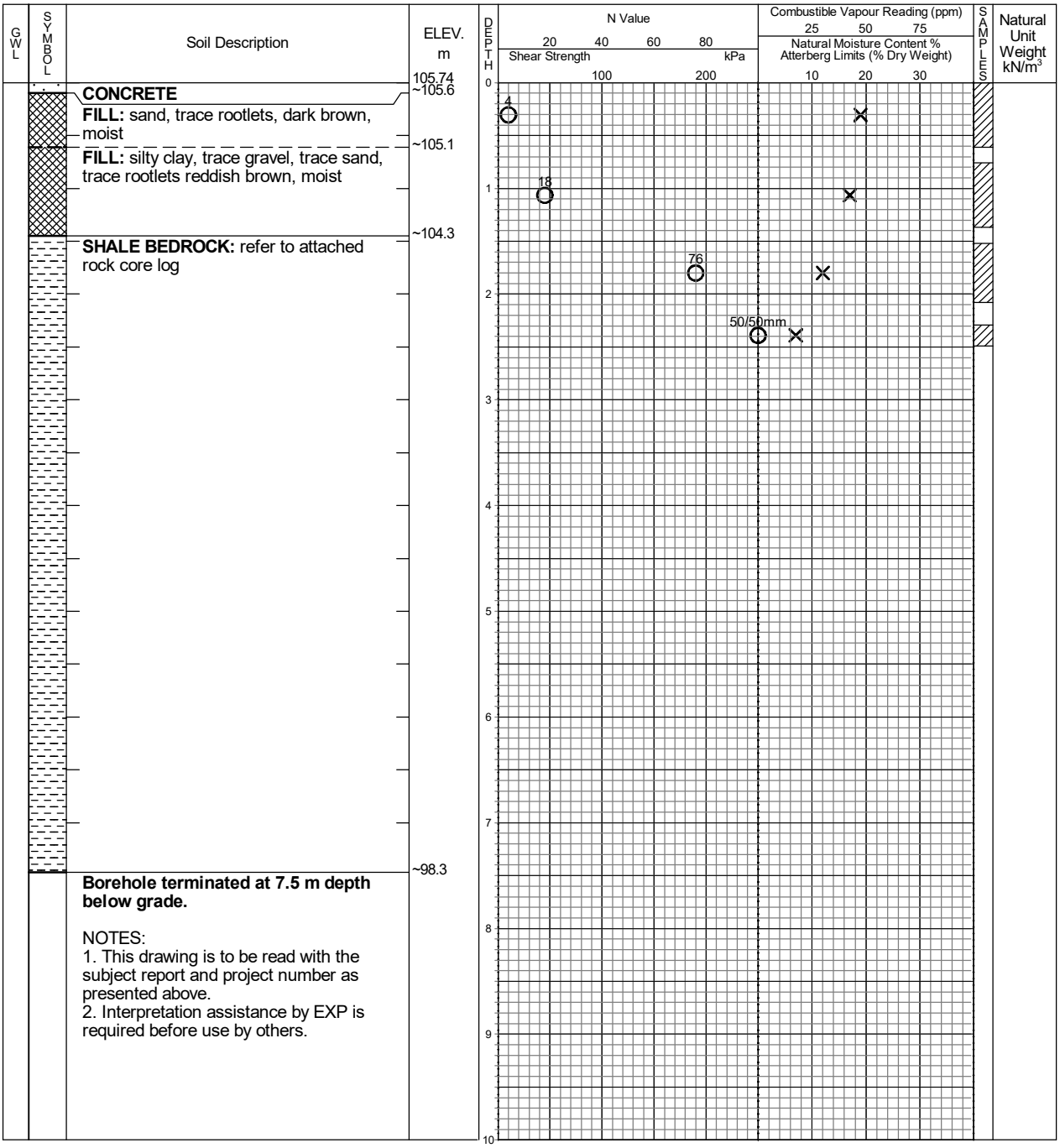
Date Drilled: July 25, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

ROCK CORE LOG

BH NO. 401

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/25/24	07/25/24	DP/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
103.0			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE	1	B	F	W	RP	NC	<1 mm								
	3													1	52	0		Grey
102.5			Run 1: Shale (20%) / Limestone (80%)	5	B	F	C	RP	NC	<1 mm								
			Presence of iron staining within limestone lithology; presence of clay infill along natural fractures															
			Clay seam: 2.96 to 2.99 m															
			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE	1	B	V	W	RP	T									
	4													2	40	0		Grey
			Run 2: Shale (5%) / Limestone (95%)															
			Presence of iron staining within limestone lithology; presence of clay infill along natural fractures															
			Broken rock: 3.20 to 3.56 m															
101.0			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)	19	B	F	VC	RP	NC	<1 mm								
	5													3	99	87		Grey
			Run 3: Shale (100%)															
			Presence of iron staining within limestone interbed natural fractures; presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)															
			Clay seam: 5.49 to 5.50 m															
			Highly weathered zone: 5.74 to 5.77 m															
99.8	6		5.82 to 5.84 m	6	B	F	C	RP	NC	<1 mm								
			Point Load: 5.11 m (18.9 MPa) 5.45 m (18.4 MPa)															
			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded unweathered (W1), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)	1	B	V	W	RP	T									
			Run 4: Shale (100%)															
			Presence of clay infill along natural fractures															
	7		Broken rock: 6.08 to 6.13 m 6.26 to 6.31 m											4	82	22		Grey

ROCK CORE LOG

BH NO. 401

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.7	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/25/24	07/25/24	DP/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
98.3			Highly weathered zone: 6.74 to 6.79 m Point Load: 6.17 m (14.5 MPa) 6.53 m (14.0 MPa) 6.99 m (4.0 MPa) End of Borehole at 7.5 m															
	8																	
	9																	
	10																	
	11																	

CORE LOG SOUTH SERVICE ROCK LOG.GPJ CORE_LOG.GDT 10/2/24

Log of Borehole BH-402

Project No. HAM-23006348-F0 | Drawing No. 21

Project: Proposed Site Redevelopment | Sheet No. 1 of 2

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: July 25, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
		GRANULAR FILL: (~255 mm thick)	105.61
		FILL: sand, trace concrete fragments, grey, moist	~105.4
		SILTY CLAY TILL: trace sand, reddish brown to grey, moist, hard, trace shale fragments	~104.9
		SHALE BEDROCK: refer to attached rock core log	~103.8

DEPTH

N Value
20 40 60 80
Shear Strength kPa
100 200

Combustible Vapour Reading (ppm)
25 50 75
Natural Moisture Content %
Atterberg Limits (% Dry Weight)
10 20 30

SAMPLES

Natural Unit Weight kN/m³

0 1 2 3 4 5 6 7 8 9 10

8
9
>225
43
>225
50/130mm

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

Continued Next Page

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

Log of Borehole BH-402

Project No. HAM-23006348-F0 Drawing No. 21

Project: Proposed Site Redevelopment Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength (kPa)	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			95.61	10	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				11				
				12				
				13				
				14				
				15				
			~90.0	16				
		Borehole terminated at 15.6 m depth below grade.		17				
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		18				
				19				
				20				
				21				
				22				

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

ROCK CORE LOG

BH NO. 402

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.6	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/25/24	07/25/24	DP/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
102.9			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)															
	3		Run 1: Shale (100%)											1	56	0		Grey
102.3			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<150 mm in interbedded thickness)	3	B	F	M	RP	T									
			Run 2: Shale (100%)															
	4		Broken rock and highly weathered zone: 3.28 to 3.58 m 3.71 to 3.80 m 3.87 to 3.92 m 3.99 to 4.01 m 4.19 to 4.37 m											2	77	17		Grey
			Point Load: 4.15 m (28.0 MPa)															
100.9			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<150 mm in interbedded thickness)	5	B	F	M	RP	T									
	5		Run 3: Shale (100%)															
			Broken rock and highly weathered zone: 4.72 to 4.89 m															
			Broken rock: 4.92 to 4.95 m 5.44 to 5.51 m 5.53 to 5.56 m											3	94	43		Grey
			Point Load: 5.12 m (10.9 MPa) 5.35 m (19.1 MPa)															
	6		5.85 m (10.1 MPa)															
99.3			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<90 mm in interbedded thickness)	6	B	F	C	RP	NC	<1 mm								
			Run 4: Shale (100%)															
	7		Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<20 mm in interbedded thickness)											4	94	44		Grey

ROCK CORE LOG

BH NO. 402

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.6	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/25/24	07/25/24	DP/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Broken rock: 6.40 to 6.42 m 6.49 to 6.55 m 6.78 to 6.80 m 6.86 to 6.95 m 7.37 to 7.47 m 7.60 to 7.65 m															
97.9			Point Load: 6.60 m (13.0 MPa) 7.07 m (19.2 MPa) 7.45 m (19.3 MPa)	17	B	F	C	RP	NC	<1 mm								
	8		Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<115 mm in interbedded thickness) Run 5: Shale (100%) Presence of clay infill along natural fractures Broken rock: 7.65 to 7.72 m Point Load: 8.17 m (96.9 MPa) 8.59 m (56.8 MPa)	1	B	V	W	RP	T					5	88	44		Grey
	9																	
96.3			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<140 mm in interbedded thickness) Run 6: Shale (100%) Broken rock: 10.06 to 10.10 m Clay seam: 10.15 to 10.18 m Point Load: 9.44 m (21.1 MPa) 10.25 m (11.9 MPa) 10.34 m (33.9 MPa)	11	B	F	C	RP	T					6	73	44		Grey
	10																	
94.7	11		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<180 mm in interbedded thickness) Run 7: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10	7	B	F	C	RP	NC	<1 mm								

ROCK CORE LOG

BH NO. 402

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	105.6	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/25/24	07/25/24	DP/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			mm in interbedded thickness); minor presence of pinkish grey siltstone interbeds (<45 mm in interbedded thickness) Clay seam: 10.99 to 11.00 m Highly weathered zone: 11.02 to 11.06 m Point Load: 12.15 m (71.1 MPa) 12.33 m (10.2 MPa) 11.04 m (12.6 MPa)											7	96	72		Grey
93.1	12		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<150 mm in interbedded thickness) Run 8: Shale (100%) Minor presence of maroon shale interbeds (<15 mm in interbedded thickness) Clay seam: 12.51 to 12.52 m Highly weathered zone: 12.88 to 12.90 m Point Load: 12.99 m (8.6 MPa) 13.35 m (15.5 MPa) 13.70 m (7.5 MPa)	14	B	F	C	RP	T					8	96	35		Grey
91.5	14		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<115 mm in interbedded thickness) Run 9: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<150 mm in interbedded thickness) Clay seam: 14.64 to 14.65 m Point Load: 14.22 m (30.1 MPa) 15.05 m (27.3 MPa) 15.30 m (42.7 MPa)	17	B	F	C	RP	NC	<1 mm				9	97	36		Grey
90.0	16		End of Borehole at 15.6 m															

CORE LOG SOUTH SERVICE ROCK LOG.GPJ CORE_LOG.GDT 10/2/24

Log of Borehole BH-403

Project No. HAM-23006348-F0 | Drawing No. 22

Project: Proposed Site Redevelopment | Sheet No. 1 of 2

Location: 420 & 468 South Service Road East, Oakville, Ontario

Date Drilled: August 1, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m
		FILL: silty clay, trace gravel, trace sand, trace rootlets reddish brown to grey, moist	104.62
		SILTY CLAY TILL: trace gravel, trace sand, brown to grey, moist, hard	~103.1
		SHALE BEDROCK: refer to attached rock core log	~101.9

DEPTH

N Value
20 40 60 80
Shear Strength kPa
100 200

Combustible Vapour Reading (ppm)
25 50 75
Natural Moisture Content % / Atterberg Limits (% Dry Weight)
10 20 30

SAMPLES

Natural Unit Weight kN/m³

0 1 2 3 4 5 6 7 8 9 10

3
11
20
>225
>225
50/100mm
50/80mm

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

Continued Next Page

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

Log of Borehole BH-403

Project No. HAM-23006348-F0 Drawing No. 22

Project: Proposed Site Redevelopment Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			94.62	10	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				11				
				12				
				13				
				14				
				15				
			~89.3	16				
		Borehole terminated at 15.3 m depth below grade.		17				
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		18				
				19				
				20				
				21				
				22				

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

ROCK CORE LOG

BH NO. 403

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.6	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	08/01/24	08/01/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
101.4			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)	3	B	F	C	RP	NC	<1 mm								
			Run 1: Shale (100%)											1	100	34		Grey
			Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)															
	4		Broken rock and highly weathered zone: 3.20 to 3.84 m 3.94 to 3.98 m															
100.3			Point Load: 3.89 m (6.5 MPa) 4.14 m (8.6 MPa)	11	B	F	C	RP	NC	<1 mm								
			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)															
	5		Run 2: Shale (100%)											2	97	56		Grey
			Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<10 mm in interbedded thickness)															
			Broken rock: 4.34 to 4.50 m 5.08 to 5.09 m															
			Point Load: 4.52 m (18.1 MPa) 4.93 m (14.7 MPa) 5.66 m (12.4 MPa)															
98.7			Highly weathered (W4) to moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)	6	B	F	M	RP	NC	<1 mm								
	6		Run 3: Shale (100%)											3	97	63		Grey
			Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<30 mm in interbedded thickness)															
			Broken rock: 6.02 to 6.08 m 6.43 to 6.44															
	7		Clay seam: 6.44 to 6.45 m															
			Highly weathered zone: 6.83 to 6.87 m 7.01 to 7.11 m															
			Broken rock and highly weathered zone: 7.29 to 7.39 m															
97.0				5	B	F	M	RP	NC	<1								

ROCK CORE LOG

BH NO. 403

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.6	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	08/01/24	08/01/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Point Load: 7.07 m (36.3 MPa) 7.37 m (67.2 MPa)							mm								
	8		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<60 mm in interbedded thickness) Run 4: Shale (100%) Presence of clay infill along natural fractures Broken rock: 7.75 to 7.77 m Weathered zone: 8.23 to 8.27 m 8.31 to 8.32 m											4	94	77		Grey
	9		Point Load: 7.56 m (29.3 MPa) 7.80 m (22.3 MPa) 7.91 m (24.2 MPa)															
95.4				5	B	F	M	RP	NC	<1 mm								
	10		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<140 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<250 mm in interbedded thickness) Run 5: Shale (85%) / Siltsone (15%) Presence of clay infill along natural fractures; minor presence of calcite seams (<5 mm in thickness); increase in siltstone lithology at 10.24 m Point Load: 10.02 m (9.6 MPa) 10.19 m (29.4 MPa)											5	100	91		Grey
93.8				7	B	F	C	RP	NC	<1 mm								
	11		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<130 mm in interbedded thickness) and interbedded slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE (<380 mm in interbedded thickness) Run 6: Shale (75%) / Siltstone (25%) Presence of clay infill along natural fractures; increase in pinkish grey siltstone lithology at 11.51 m; minor presence of maroon shale interbeds (<10 mm in interbedded thickness) Broken rock: 11.89 to 11.94 m											6	100	74		Grey
	12																	

CORE LOG SOUTH SERVICE ROCK LOG.GPJ CORE_LOG.GDT 10/2/24

ROCK CORE LOG

BH NO. 403

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.6	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	08/01/24	08/01/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Point Load: 11.32 m (44.7 MPa) 12.09 m (38.7 MPa)															
92.3			Slightly weathered (W2) to unweathered/fresh (W1), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded unweathered/fresh (W1), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<50 mm in interbedded thickness)	2	B	F	M	RP	NC	<1 mm								
	13		Run 7: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<50 mm in interbedded thickness) Point Load: 12.73 m (24.2 MPa) 13.30 m (33.6 MPa)											7	100	99		Grey
90.8			Slightly weathered (W2) to unweathered/fresh (W1), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded unweathered/fresh (W1), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<115 mm in interbedded thickness)	6	B	F	C	RP	NC	<1 mm								
	14		Run 8: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<40 mm in interbedded thickness) Point Load: 14.01 m (44.6 MPa) 14.82 m (19.4 MPa) 15.07 m (17.5 MPa)											8	99	98		Grey
	15																	
89.3			End of Borehole at 15.3 m															
	16																	

Log of Borehole BH-404

Project No. HAM-23006348-F0 | Drawing No. 23

Project: Proposed Site Redevelopment | Sheet No. 1 of 2

Location: 420 & 468 South Service Road East, Oakville, Ontario

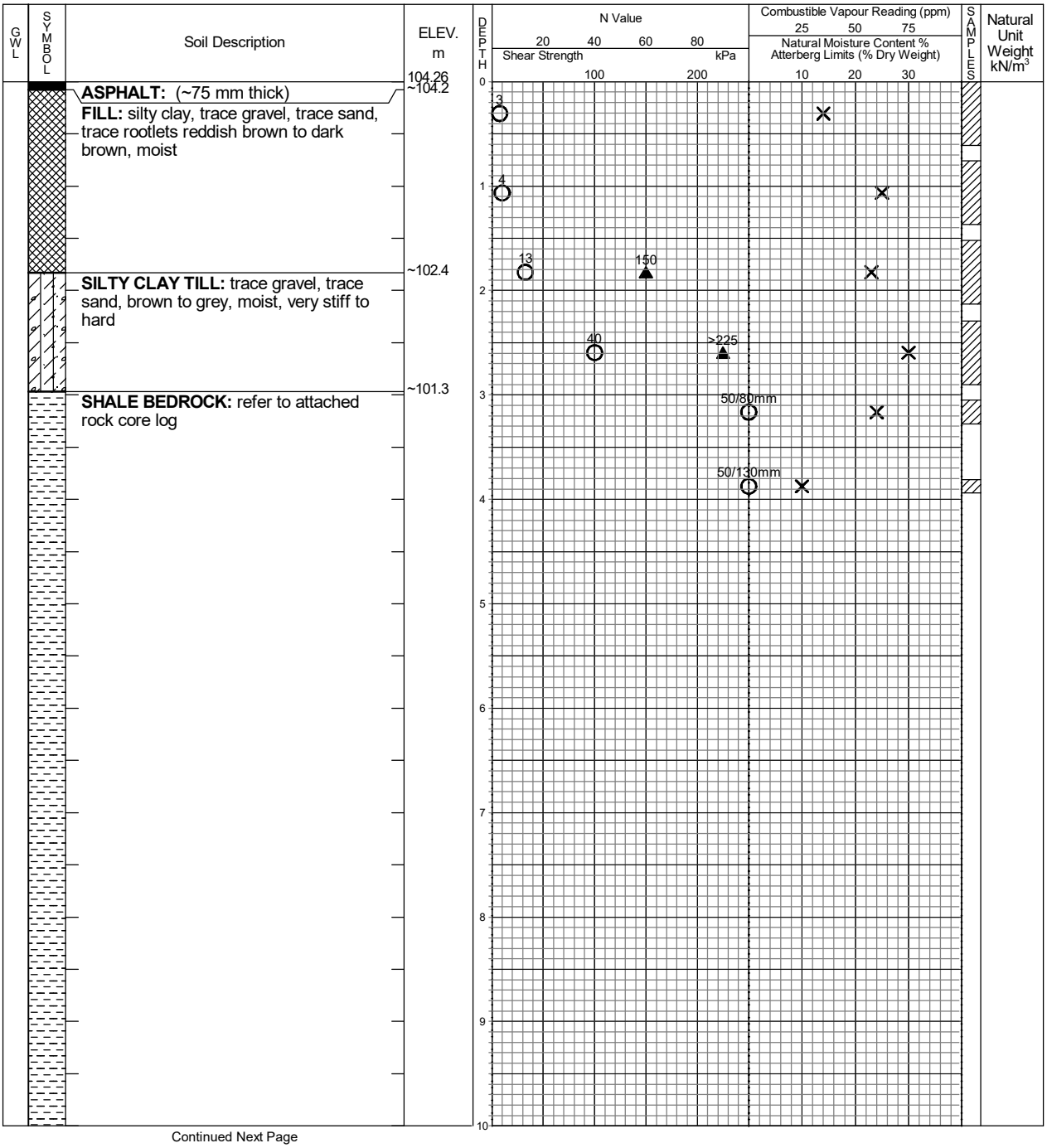
Date Drilled: July 31, 2024

Drill Type: Geoprobe 3230DT

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

Continued Next Page

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

Log of Borehole BH-404

Project No. HAM-23006348-F0 Drawing No. 23

Project: Proposed Site Redevelopment Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			94.26	10	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				11				
				12				
				13				
				14				
				15				
			~88.9	16				
		Borehole terminated at 15.4 m depth below grade.		17				
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		18				
				19				
				20				
				21				
				22				

LAGWGLJFHAM-EXP BHLOGS 420 SOUTH SERVICE RD W, OAKVILLE.GPJ NEW.GDT 10/2/24

EXP Services Inc.
Hamilton, Ontario
Telephone: 905.573.4000
Facsimile: 905.573.9693

Time	Water Level (m)	Depth to Cave (m)
on completion	dry	open

ROCK CORE LOG

BH NO. 404

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.3	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/31/24	07/31/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	1 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
99.7			Highly weathered (W4), very weak (R1) to weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<60 mm in interbedded thickness)	9	B	F	C	RP	NC	<1 mm								
	5		Run 1: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<15 mm in interbedded thickness) Broken rock and highly weathered zone: 4.55 to 4.62 m 5.16 to 5.52 m 5.91 to 5.94 m Point Load: 5.26 m (8.0 MPa)											1	100	27		Grey
	6																	
98.1			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<70 mm in interbedded thickness)	5	B	F	M	RP	NC	<1 mm								
	7		Run 2: Shale (100%) Presence of clay infill along natural fractures Broken rock and weathered zone: 6.55 to 6.57 m 6.64 to 6.67 m 7.47 to 7.65 m Point Load: 6.32 m (17.5 MPa) 6.86 m (17.0 MPa)											2	95	39		Grey
96.5			Moderately weathered (W3), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<190 mm in interbedded thickness)	12	B	F	C	RP	NC	<1 mm								
	8		Run 3: Shale (100%) Presence of clay infill along natural fractures Point Load: 7.80 m (33.8 MPa)	1	B	D	W	RP	T					3	100	73		Grey
	9																	

ROCK CORE LOG

BH NO. 404

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.3	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/31/24	07/31/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	2 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
94.9			Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and slightly weathered (W2), medium strong (R3), medium bedded, medium grained; calcareous pinkish grey SILTSTONE with interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<165 mm in interbedded thickness)	4	B	F	C	RP	NC	<1 mm								
	10		Run 4: Shale (50%) / Siltsone (50%) Presence of clay infill along natural fractures; increase in siltstone lithology at 9.37 m; minor presence of maroon shale interbeds (<10 mm in interbedded thickness) Point Load: 10.64 m (10.7 MPa)											4	96	91		Grey
93.5			Moderately weathered (W3) to slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<60 mm in interbedded thickness)	15	B	F	C	RP	NC	<1 mm								
	11		Run 5: Shale (100%) Presence of clay infill along natural fractures Point Load: 11.51 m (15.0 MPa) 11.87 m (12.8 MPa)											5	88	31		Grey
	12																	
91.8			Moderately weathered (W3) to slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<110 mm in interbedded thickness)	7	B	F	C	RP	NC	<1 mm								
	13		Run 6: Shale (100%) Presence of clay infill along natural fractures Broken rock: 12.39 to 12.56 m Point Load: 12.47 m (18.5 MPa)											6	100	66		Grey

ROCK CORE LOG

BH NO. 404

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Proposed Site Redevelopment	Vertical	104.3	Geodetic	HAM-23006348-A0
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
420 & 468 South Service Road East, Oakville, Ontario	07/31/24	07/31/24	CH/HR	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
420 South Service Limited Partnership		Geoprobe 7822 DT	HQ	3 of 3

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			12.73 m (25.8 MPa)															
90.4	14		Slightly weathered (W2), weak (R2), thinly laminated, fissile, slightly calcareous, grey GEORGIAN BAY SHALE and interbedded slightly weathered (W2), medium strong (R3), thin to medium bedded, very fine grained, calcareous, fossiliferous, grey LIMESTONE (<200 mm in interbedded thickness) Run 7: Shale (100%) Presence of clay infill along natural fractures; minor presence of maroon shale interbeds (<30 mm in interbedded thickness) Point Load: 13.93 m (14.5 MPa) 14.38 m (11.7 MPa) 14.90 m (12.4 MPa)	9	B	F	C	RP	NC	<1 mm				7	99	90		Grey
15																		
88.9			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	

Appendix B

Laboratory Results

Uniaxial Compressive Strength Test Results

Sample No.	Test Type	Diameter (D) mm	Width (W) mm	Load (P) kN	I_s MPa	F	$I_{s(50)}$ MPa	Uniaxial Compressive Strength MPa (See Note*)
BH 332 D Run 1 @ 4.93 m	axial	62.0	32.0	2.00	0.52	1.10	0.57	12.7
BH 332 D Run 1 @ 5.50 m	axial	62.0	38.0	1.15	0.30	1.10	0.33	7.3
BH 332 D Run 1 @ 5.64 m	axial	62.0	58.0	28.76	7.48	1.10	8.24	183.3
BH 332 D Run 2 @ 6.17 m	axial	62.0	35.0	16.95	4.41	1.10	4.86	108.0
BH 332 D Run 2 @ 6.85 m	axial	62.0	30.0	1.59	0.41	1.10	0.46	10.1
BH 332 D Run 3 @ 8.08 m	axial	62.0	42.0	3.47	0.90	1.10	0.99	22.1
BH 332 D Run 3 @ 8.51 m	axial	62.0	41.0	13.61	3.54	1.10	3.90	86.7
BH 332 D Run 3 @ 8.90 m	axial	62.0	36.0	10.30	2.68	1.10	2.95	65.6
BH 332 D Run 4 @ 9.21 m	axial	62.0	48.0	5.12	1.33	1.10	1.47	32.6
BH 332 D Run 4 @ 9.88 m	axial	62.0	59.0	4.90	1.27	1.10	1.40	31.2
BH 332 D Run 4 @ 10.29 m	axial	62.0	40.0	1.06	0.28	1.10	0.30	6.8
BH 332 D Run 5 @ 10.83 m	axial	62.0	52.0	13.65	3.55	1.10	3.91	87.0
BH 332 D Run 5 @ 11.43 m	axial	62.0	41.0	2.42	0.63	1.10	0.69	15.4
BH 332 D Run 5 @ 11.76 m	axial	62.0	58.0	3.46	0.90	1.10	0.99	22.1
BH 332 D Run 6 @ 12.90 m	axial	62.0	41.0	1.93	0.50	1.10	0.55	12.3
BH 333 Run 1 @ 5.13 m	axial	62.0	45.0	0.54	0.14	1.10	0.15	3.4
BH 333 Run 1 @ 5.31 m	axial	62.0	58.0	0.73	0.19	1.10	0.21	4.7
BH 333 Run 1 @ 6.19 m	axial	62.0	52.0	1.74	0.45	1.10	0.50	11.1
BH 333 Run 2 @ 6.78 m	axial	62.0	42.0	1.27	0.33	1.10	0.36	8.1
BH 333 Run 2 @ 6.97 m	axial	62.0	40.0	1.13	0.29	1.10	0.32	7.2
BH 333 Run 2 @ 7.20 m	axial	62.0	41.0	1.19	0.31	1.10	0.34	7.6
BH 333 Run 2 @ 7.47 m	axial	62.0	35.0	0.82	0.21	1.10	0.24	5.2
BH 333 Run 4 @ 9.22 m	axial	62.0	30.0	3.13	0.81	1.10	0.90	19.9
BH 333 Run 4 @ 10.48 m	axial	62.0	44.0	2.21	0.57	1.10	0.63	14.1
BH 333 Run 5 @ 11.00 m	axial	62.0	35.0	4.07	1.06	1.10	1.17	25.9
BH 333 Run 5 @ 11.15 m	axial	62.0	53.0	1.73	0.45	1.10	0.50	11.0

Sample No.	Test Type	Diameter (D) mm	Width (W) mm	Load (P) kN	I_s MPa	F	$I_{s(50)}$ MPa	Uniaxial Compressive Strength MPa (See Note*)
BH 333 Run 6 @ 12.78 m	axial	62.0	31.0	12.67	3.30	1.10	3.63	80.8
BH 333 Run 6 @ 12.97 m	axial	62.0	32.0	1.90	0.49	1.10	0.54	12.1
BH 334 Run 2 @ 4.57 m	axial	62.0	42.0	2.13	0.55	1.10	0.61	13.6
BH 334 Run 2 @ 5.64 m	axial	62.0	48.0	1.90	0.49	1.10	0.54	12.1
BH 334 Run 2 @ 5.97 m	axial	62.0	32.0	4.69	1.22	1.10	1.34	29.9
BH 334 Run 3 @ 6.59 m	axial	62.0	45.0	5.68	1.48	1.10	1.63	36.2
BH 334 Run 3 @ 6.92 m	axial	62.0	34.0	2.45	0.64	1.10	0.70	15.6
BH 334 Run 3 @ 7.59 m	axial	62.0	35.0	2.47	0.64	1.10	0.71	15.7
BH 334 Run 4 @ 8.08 m	axial	62.0	57.0	3.82	0.99	1.10	1.09	24.3
BH 334 Run 4 @ 8.56 m	axial	62.0	48.0	2.41	0.63	1.10	0.69	15.4
BH 334 Run 5 @ 9.70 m	axial	62.0	50.0	2.90	0.75	1.10	0.83	18.5
BH 334 Run 5 @ 10.13 m	axial	62.0	60.0	20.62	5.36	1.10	5.91	131.4
BH 334 Run 6 @ 11.40 m	axial	62.0	33.0	1.41	0.37	1.10	0.40	9.0
BH 334 Run 6 @ 11.85 m	axial	62.0	60.0	1.71	0.44	1.10	0.49	10.9
BH 334 Run 6 @ 12.08 m	axial	62.0	60.0	19.49	5.07	1.10	5.59	124.2
BH 334 Run 7 @ 12.46 m	axial	62.0	43.0	1.55	0.40	1.10	0.44	9.9
BH 334 Run 7 @ 12.76 m	axial	62.0	32.0	1.08	0.28	1.10	0.31	6.9
BH 334 Run 7 @ 12.97 m	axial	62.0	33.0	1.85	0.48	1.10	0.53	11.8
BH 337 Run 2 @ 3.91 m	axial	62.0	30.0	0.74	0.19	1.10	0.21	4.7
BH 337 Run 2 @ 4.45 m	axial	62.0	49.0	1.58	0.41	1.10	0.45	10.1
BH 337 Run 2 @ 4.88 m	axial	62.0	35.0	1.36	0.35	1.10	0.39	8.7
BH 337 Run 3 @ 5.84 m	axial	62.0	49.0	1.23	0.32	1.10	0.35	7.8
BH 337 Run 3 @ 5.97 m	axial	62.0	49.0	1.58	0.41	1.10	0.45	10.1
BH 337 Run 4 @ 6.90 m	axial	62.0	52.0	2.57	0.67	1.10	0.74	16.4
BH 337 Run 4 @ 7.33 m	axial	62.0	50.0	6.08	1.58	1.10	1.74	38.8
BH 337 Run 5 @ 8.09 m	axial	62.0	26.0	1.41	0.37	1.10	0.40	9.0
BH 337 Run 5 @ 8.32 m	axial	62.0	35.0	6.47	1.68	1.10	1.85	41.2
BH 337 Run 6 @ 9.30 m	axial	62.0	42.0	5.11	1.33	1.10	1.46	32.6
BH 337 Run 6 @ 9.66 m	axial	62.0	30.0	2.07	0.54	1.10	0.59	13.2

Sample No.	Test Type	Diameter (D) mm	Width (W) mm	Load (P) kN	I_s MPa	F	$I_{s(50)}$ MPa	Uniaxial Compressive Strength MPa (See Note*)
BH 337 Run 7 @ 11.09 m	axial	62.0	30.0	1.19	0.31	1.10	0.34	7.6
BH 337 Run 7 @ 11.84 m	axial	62.0	37.0	1.87	0.49	1.10	0.54	11.9
BH 337 Run 7 @ 12.29 m	axial	62.0	38.0	1.23	0.32	1.10	0.35	7.8
BH 337 Run 8 @ 12.50 m	axial	62.0	45.0	3.80	0.99	1.10	1.09	24.2
BH 337 Run 8 @ 12.93 m	axial	62.0	30.0	0.41	0.11	1.10	0.12	2.6
BH 338 Run 1 @ 3.73 m	axial	62.0	30.0	2.05	0.53	1.10	0.59	13.1
BH 338 Run 1 @ 4.24 m	axial	62.0	35.0	3.42	0.89	1.10	0.98	21.8
BH 338 Run 1 @ 4.67 m	axial	62.0	45.0	3.93	1.02	1.10	1.13	25.0
BH 338 Run 2 @ 5.50 m	axial	62.0	57.0	4.36	1.13	1.10	1.25	27.8
BH 338 Run 2 @ 5.93 m	axial	62.0	35.0	1.86	0.48	1.10	0.53	11.9
BH 338 Run 3 @ 6.68 m	axial	62.0	45.0	6.96	1.81	1.10	1.99	44.4
BH 338 Run 3 @ 7.18 m	axial	62.0	60.0	9.31	2.42	1.10	2.67	59.3
BH 338 Run 3 @ 7.48 m	axial	62.0	35.0	4.26	1.11	1.10	1.22	27.2
BH 338 Run 4 @ 8.46 m	axial	62.0	30.0	2.23	0.58	1.10	0.64	14.2
BH 338 Run 4 @ 8.78 m	axial	62.0	30.0	1.88	0.49	1.10	0.54	12.0
BH 338 Run 5 @ 9.96 m	axial	62.0	39.0	5.92	1.54	1.10	1.70	37.7
BH 338 Run 6 @ 11.62 m	axial	62.0	40.0	1.15	0.30	1.10	0.33	7.3
BH 338 Run 6 @ 11.79 m	axial	62.0	35.0	2.09	0.54	1.10	0.60	13.3
BH 338 Run 7 @ 12.47 m	axial	62.0	40.0	1.95	0.51	1.10	0.56	12.4
BH 338 Run 7 @ 12.75 m	axial	62.0	48.0	6.10	1.59	1.10	1.75	38.9
BH 338 Run 7 @ 12.90 m	axial	62.0	36.0	5.02	1.31	1.10	1.44	32.0
BH 339 Run 2 @ 5.11 m	axial	62.0	36.0	1.13	0.29	1.10	0.32	7.2
BH 339 Run 2 @ 5.21 m	axial	62.0	42.0	1.17	0.30	1.10	0.34	7.5
BH 339 Run 2 @ 5.66 m	axial	62.0	43.0	19.90	5.18	1.10	5.70	126.8
BH 339 Run 3 @ 6.68 m	axial	62.0	53.0	22.11	5.75	1.10	6.34	140.9
BH 339 Run 3 @ 6.97 m	axial	62.0	52.0	2.65	0.69	1.10	0.76	16.9
BH 339 Run 3 @ 7.25 m	axial	62.0	52.0	4.09	1.06	1.10	1.17	26.1
BH 339 Run 4 @ 7.99 m	axial	62.0	32.0	2.04	0.53	1.10	0.58	13.0
BH 339 Run 4 @ 8.43 m	axial	62.0	32.0	3.95	1.03	1.10	1.13	25.2

Sample No.	Test Type	Diameter (D) mm	Width (W) mm	Load (P) kN	I_s MPa	F	$I_{s(50)}$ MPa	Uniaxial Compressive Strength MPa (See Note*)
BH 339 Run 4 @ 8.69 m	axial	62.0	30.0	5.32	1.38	1.10	1.52	33.9
BH 339 Run 5 @ 9.63 m	axial	62.0	39.0	9.99	2.60	1.10	2.86	63.7
BH 339 Run 5 @ 10.82 m	axial	62.0	34.0	1.59	0.41	1.10	0.46	10.1
BH 339 Run 6 @ 11.06 m	axial	62.0	37.0	2.56	0.67	1.10	0.73	16.3
BH 339 Run 6 @ 11.23 m	axial	62.0	51.0	7.97	2.07	1.10	2.28	50.8
BH 339 Run 7 @ 12.85 m	axial	62.0	52.0	2.30	0.60	1.10	0.66	14.7
BH 339 Run 7 @ 12.56 m	axial	62.0	30.0	5.02	1.31	1.10	1.44	32.0
BH 401 Run 3 @ 5.11 m	axial	47.0	27.0	1.82	0.82	0.97	0.80	18.9
BH 401 Run 3 @ 5.45 m	axial	47.0	38.0	1.77	0.80	0.97	0.78	18.4
BH 401 Run 4 @ 6.17 m	axial	47.0	29.0	1.39	0.63	0.97	0.61	14.5
BH 401 Run 4 @ 6.53 m	axial	47.0	28.0	1.34	0.61	0.97	0.59	14.0
BH 401 Run 4 @ 6.99 m	axial	47.0	21.0	0.42	0.19	0.97	0.18	4.4
BH 402 Run 2 @ 4.15 m	axial	47.0	33.0	2.69	1.22	0.97	1.18	28.0
BH 402 Run 3 @ 5.12 m	axial	47.0	24.0	1.05	0.48	0.97	0.46	10.9
BH 402 Run 3 @ 5.35 m	axial	47.0	31.0	1.83	0.83	0.97	0.81	19.1
BH 402 Run 3 @ 5.85 m	axial	47.0	21.0	0.97	0.44	0.97	0.43	10.1
BH 402 Run 4 @ 6.60 m	axial	47.0	41.0	1.25	0.57	0.97	0.55	13.0
BH 402 Run 4 @ 7.07 m	axial	47.0	25.0	1.84	0.83	0.97	0.81	19.2
BH 402 Run 4 @ 7.45 m	axial	47.0	26.0	1.85	0.84	0.97	0.81	19.3
BH 402 Run 5 @ 8.17 m	axial	47.0	35.0	9.31	4.21	0.97	4.10	96.9
BH 402 Run 5 @ 8.59 m	axial	47.0	41.0	5.46	2.47	0.97	2.40	56.8
BH 402 Run 6 @ 9.44 m	axial	47.0	31.0	2.03	0.92	0.97	0.89	21.1
BH 402 Run 6 @ 10.25 m	axial	47.0	21.0	1.14	0.52	0.97	0.50	11.9
BH 402 Run 6 @ 10.34 m	axial	47.0	29.0	3.26	1.48	0.97	1.44	33.9
BH 402 Run 7 @ 12.15 m	axial	47.0	20.0	6.83	3.09	0.97	3.01	71.1
BH 402 Run 7 @ 12.33 m	axial	47.0	30.0	0.98	0.44	0.97	0.43	10.2
BH 402 Run 7 @ 11.04 m	axial	47.0	31.0	1.21	0.55	0.97	0.53	12.6
BH 402 Run 8 @ 12.99 m	axial	47.0	34.0	0.83	0.38	0.97	0.37	8.6
BH 402 Run 8 @ 13.35 m	axial	47.0	31.0	1.49	0.67	0.97	0.66	15.5

Sample No.	Test Type	Diameter (D) mm	Width (W) mm	Load (P) kN	I_s MPa	F	$I_{s(50)}$ MPa	Uniaxial Compressive Strength MPa (See Note*)
BH 402 Run 8 @ 13.70 m	axial	47.0	35.0	0.72	0.33	0.97	0.32	7.5
BH 402 Run 9 @ 14.22 m	axial	47.0	40.0	2.89	1.31	0.97	1.27	30.1
BH 402 Run 9 @ 15.05 m	axial	47.0	26.0	2.62	1.19	0.97	1.15	27.3
BH 402 Run 9 @ 15.30 m	axial	47.0	34.0	4.10	1.86	0.97	1.81	42.7
BH 403 Run 1 @ 3.89 m	axial	62.0	30.0	1.02	0.27	1.10	0.29	6.5
BH 403 Run 1 @ 4.14 m	axial	62.0	34.0	1.35	0.35	1.10	0.39	8.6
BH 403 Run 2 @ 4.52 m	axial	62.0	40.0	2.84	0.74	1.10	0.81	18.1
BH 403 Run 2 @ 4.93 m	axial	62.0	24.0	2.31	0.60	1.10	0.66	14.7
BH 403 Run 2 @ 5.66 m	axial	62.0	49.0	1.94	0.50	1.10	0.56	12.4
BH 403 Run 3 @ 7.07 m	axial	62.0	50.0	5.69	1.48	1.10	1.63	36.3
BH 403 Run 3 @ 7.37 m	axial	62.0	34.0	10.54	2.74	1.10	3.02	67.2
BH 403 Run 4 @ 7.56 m	axial	62.0	37.0	4.59	1.19	1.10	1.32	29.3
BH 403 Run 4 @ 7.80 m	axial	62.0	47.0	3.50	0.91	1.10	1.00	22.3
BH 403 Run 4 @ 7.91 m	axial	62.0	50.0	3.80	0.99	1.10	1.09	24.2
BH 403 Run 5 @ 10.02 m	axial	62.0	52.0	1.50	0.39	1.10	0.43	9.6
BH 403 Run 5 @ 10.19 m	axial	62.0	40.0	4.61	1.20	1.10	1.32	29.4
BH 403 Run 6 @ 11.32 m	axial	62.0	57.0	7.01	1.82	1.10	2.01	44.7
BH 403 Run 6 @ 12.09 m	axial	62.0	58.0	6.07	1.58	1.10	1.74	38.7
BH 403 Run 7 @ 12.73 m	axial	62.0	50.0	3.80	0.99	1.10	1.09	24.2
BH 403 Run 7 @ 13.30 m	axial	62.0	32.0	5.27	1.37	1.10	1.51	33.6
BH 403 Run 8 @ 14.01 m	axial	62.0	44.0	7.00	1.82	1.10	2.01	44.6
BH 403 Run 8 @ 14.82 m	axial	62.0	42.0	3.05	0.79	1.10	0.87	19.4
BH 403 Run 8 @ 15.07 m	axial	62.0	37.0	2.75	0.72	1.10	0.79	17.5
BH 404 Run 1 @ 5.26 m	axial	62.0	26.0	1.26	0.33	1.10	0.36	8.0
BH 404 Run 2 @ 6.32 m	axial	62.0	37.0	2.74	0.71	1.10	0.79	17.5
BH 404 Run 2 @ 6.86 m	axial	62.0	35.0	2.67	0.69	1.10	0.77	17.0
BH 404 Run 3 @ 7.80 m	axial	62.0	42.0	5.31	1.38	1.10	1.52	33.8
BH 404 Run 4 @ 10.64 m	axial	62.0	40.0	1.68	0.44	1.10	0.48	10.7
BH 404 Run 5 @ 11.51 m	axial	62.0	34.0	2.36	0.61	1.10	0.68	15.0

Sample No.	Test Type	Diameter (D) mm	Width (W) mm	Load (P) kN	I_s MPa	F	$I_{s(50)}$ MPa	Uniaxial Compressive Strength MPa (See Note*)
BH 404 Run 5 @ 11.87 m	axial	62.0	37.0	2.01	0.52	1.10	0.58	12.8
BH 404 Run 6 @ 12.47 m	axial	62.0	48.0	2.91	0.76	1.10	0.83	18.5
BH 404 Run 6 @ 12.73 m	axial	62.0	45.0	4.05	1.05	1.10	1.16	25.8
BH 404 Run 7 @ 13.93 m	axial	62.0	31.0	2.28	0.59	1.10	0.65	14.5
BH 404 Run 7 @ 14.38 m	axial	62.0	47.0	1.83	0.48	1.10	0.52	11.7
BH 404 Run 7 @ 14.90 m	axial	62.0	51.0	1.94	0.50	1.10	0.56	12.4

Note: Obtained from Table 1 in ASTM D5731

TABLE 1 Generalized Index to Strength Conversion Factor (K) for[A]

Core Size, mm	Value of "K" (Generalized)
21.5 (EX Core)	18
30	19
42 (BX Core)	21
50	23
54 (NX Core)	24
60	24.5

[A]Bieniawski, Z.T. The Point-Load Test in Geotechnical Practice, Engineering Geology (9) 1-11.

Appendix C

Rock Core Photographs

Borehole MW-332D: Run 1 (4.58 to 6.10 m) and Run 2 (6.10 to 7.62 m)

Borehole MW-332D: Run 3 (7.62 to 9.14 m) and Run 4 (9.14 to 10.72 m)

Borehole MW-332D: Run 5 (10.72 to 12.29 m) and Run 6 (12.29 to 13.26 m)

Borehole MW-333: Run 1 (4.90 to 6.44 m) and Run 2 (6.44 to 7.77 m)

Borehole MW-333: Run 3 (7.77 to 9.14 m) and Run 4 (9.14 to 10.66)

Borehole MW-333: Run 5 (10.66 to 11.94 m) and Run 6 (11.94 to 13.13 m)

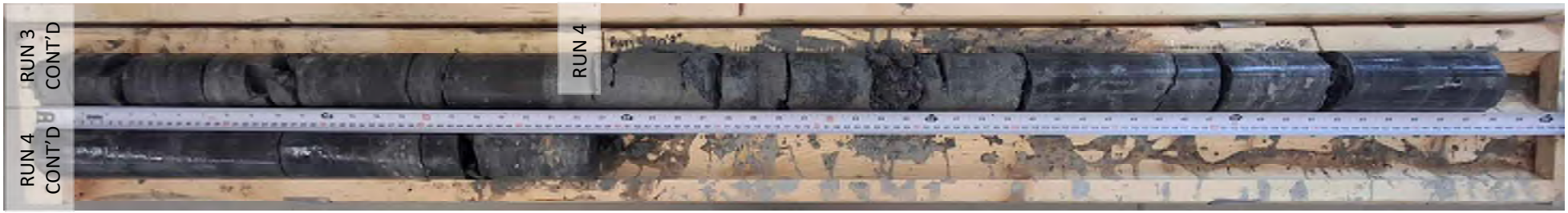
Borehole MW-334: Run 1 (3.20 to 4.75 m), Run 2 (4.75 to 6.27 m) and Run 3 (6.27 to 7.79 m)

Borehole MW-334: Run 3 (6.27 to 7.79 m)

Borehole MW-334: Run 4 (7.79 to 9.14 m) and Run 5 (9.14 to 10.72 m)

Borehole MW-334: Run 6 (10.72 to 12.34 m) and Run 7 (12.34 to 13.13 m)

Borehole MW-337: Run 1 (2.84 to 3.61 m), Run 2 (3.61 to 4.78 m) and Run 3 (4.78 to 6.32 m)



Borehole MW-337: Run 3 (4.78 to 6.32 m) and Run 4 (6.32 to 7.77 m)

Borehole MW-337: Run 5 (7.77 to 9.17 m) and Run 6 (9.17 to 10.87 m)

Borehole MW-337: Run 6 (9.17 to 10.87 m), Run 7 (10.87 to 12.27 m) and Run 8 (12.27 to 13.11 m)

Borehole MW-338: Run 1 (3.55 to 5.00 m) and Run 2 (5.00 to 6.40 m)

Borehole MW-338: Run 3 (6.40 to 7.80 m)

Borehole MW-338: Run 4 (7.80 to 9.17 m) and Run 5 (9.17 to 10.82 m)

Borehole MW-338: Run 5 (9.17 to 10.82 m), Run 6 (10.82 to 12.34 m) and Run 7 (12.34 to 13.23 m)

Borehole MW-339: Run 1 (3.33 to 4.67 m) and Run 2 (4.67 to 6.35 m)

Borehole MW-339: Run 3 (6.35 to 7.67 m)

Borehole MW-339: Run 4 (7.67 to 9.09 m) and Run 5 (9.09 to 10.69 m)

Borehole MW-339: Run 5 (9.09 to 10.69 m) and Run 6 (10.69 to 12.34 m)

Borehole MW-339: Run 6 (10.69 to 12.34 m) and Run 7 (12.34 to 13.13 m)

Borehole BH-401: Run 1 (2.74 to 3.20 m), Run 2 (3.20 to 4.72 m) and Run 3 (4.27 to 5.95 m)

Borehole BH-401: Run 4 (5.95 to 7.47 m)

Borehole BH-402: Run 1 (2.67 to 3.28 m), Run 2 (3.28 to 4.72 m) and Run 3 (4.72 to 6.32 m)

Borehole BH-402: Run 4 (6.32 to 7.70 m), Run 5 (7.70 to 9.32 m) and Run 6 (9.32 to 10.92 m)

Borehole BH-402: Run 7 (10.92 to 12.50 m), Run 8 (12.50 to 14.07 m) and Run 9 (14.07 to 15.59 m)

Borehole BH-403: Run 1 (3.20 to 4.34 m) and Run 2 (4.34 to 5.94 m)

Borehole BH-403: Run 2 (4.34 to 5.94 m), Run 3 (5.94 to 7.62 m) and Run 4 (7.62 to 9.19 m)

Borehole BH-403: Run 4 (7.62 to 9.19 m), Run 5 (9.19 to 10.82 m) and Run 6 (10.82 to 12.37 m)

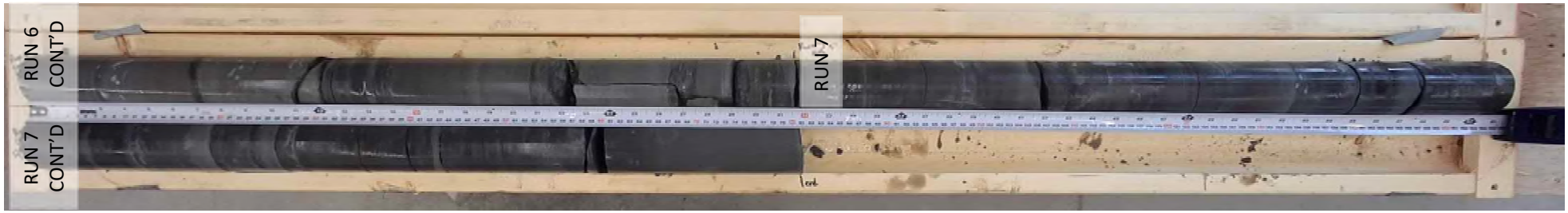
Borehole BH-403: Run 6 (10.82 to 12.37 m) and Run 7 (13.37 to 13.84 m)

Borehole BH-403: Run 8 (13.84 to 15.34 m)

Borehole BH-404: Run 1 (4.55 to 6.12 m) and Run 2 (6.12 to 7.80 m)

Borehole BH-404: Run 2 (6.12 to 7.80 m), Run 3 (7.80 to 9.32 m) and Run 4 (9.32 to 10.77 m)

Borehole BH-404: Run 4 (9.32 to 10.77 m), Run 5 (10.77 to 12.42 m) and Run 6 (12.42 to 13.84 m)



Borehole BH-404: Run 6 (12.42 to 13.84 m) and Run 7 (13.84 to 15.27 m)