PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT
DUNDAS/BLOOR PROPOSED DEVELOPMENT
2280 DUNDAS STREET WEST
TORONTO
ONTARIO

PREPARED FOR

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1.0 INTRODUCTION

This report presents the results of a preliminary geotechnical investigation that was completed by GeoTerre Limited (GeoTerre) in relation to the Dundas/Bloor Proposed Development as comprised of properties 2238, 2252, 2264, 2280, 2288 and 2290 Dundas Street West, Toronto, Ontario and 104-105 Ritchie Street, Toronto, Ontario and collectively referred to 2280 Dundas St W, Toronto Ontario as indicated on attached Figure 1. The purpose of the investigation was to establish the prevalent soil, bedrock and groundwater conditions within the proposed development and based on that information, prepare a preliminary geotechnical investigation report for the proposed development. This report is subject to "*Limitations and Information Regarding Use of Report*" of attached Appendix A.

2.0 PROJECT AND SITE DESCRIPTION

It is understood that Choice Properties Limited Partnership (Choice) wishes to obtain general site planning approval for a proposed development at 2280 Dundas St W, Toronto to details of attached Figure 2. Accordingly, as part of SLR Consulting (Canada) Ltd. (SLR) works to address environmental development issues, GeoTerre was retained by SLR to undertake a preliminary geotechnical investigation to a level deemed suitable for preliminary geotechnical design and construction planning purposes.

The site in question is approximately 4.4 hectares in size and is presently occupied by a series of low-rise retail type buildings and associated large exterior paved areas that is bounded to the west by Dundas St W, to the east by a Metrolinx Rail Corridor, to the south by a conventional low rise residential neighborhood and to the north by an existing school. As indicated on the Site Plan of attached Figure 2, the proposed development consists of seven (7) predominantly residential apartment buildings around a proposed interior park area. More specifically, four (4) of the proposed residential apartment buildings will feature residential towers of between 8 and 32 stories high above larger area lower level structures of between 2 and 8 stories, whereas with the remaining three (3) residential apartment buildings will feature constant plan area structures to heights of between 7 and 10 stories.

Six (6) of the seven (7) proposed residential apartment buildings will have two levels of underground parking occupying a total depth of approximately 7.5 m below ground floor level whereas one (1) of the proposed residential apartment buildings, i.e., Building 3, will have three levels of underground parking occupying a total depth of approximately 10.5 m below ground floor level.

Available surficial geology information indicates the site is underlain by surface sandy materials over older deposits of clay and till over shale bedrock of the Georgian Bay Formation at quite deep depths.

3.0 INVESTIGATION METHODOLOGY AND RESULTS

The geotechnical investigation works consisted of the review of existing recent borehole data for the site and completion of supplementary boreholes deemed necessary to address the preliminary geotechnical requirements of the site. More specifically, existing recent borehole consisted of a total of eleven (11) boreholes presented in the following report:

- Report prepared by Toronto Inspection Ltd., for Choice Properties REIT, entitled "Preliminary *Geotechnical Investigation, 2280 Dundas Street West, Toronto, Ontario*" dated October 22, 2018.

Detailed logs and summary stratigraphic sections related to the above noted existing borehole information is presented in attached Appendix E with approximate borehole locations except BH4 where no soil sampling was undertaken, indicated on attached Figure 3A. GeoTerre assessment of the foregoing borehole information resulted in the following general soil profile for the site:

- Reasonably competent water bearing sandy soils from 0 m to 10 m (elevation 112 m to 102 m)
- Weak Clayey Silt materials from 10 m to 16 m (elevation 102 m to 96 m)
- Sandy Silt Till materials from 16 m to 20 m (elevation 96 m to 92 m), with lower 2 m to 3 m confirmed to be quite competent, i.e., Standard Penetration Test (SPT) 'N' values greater than 50.

Based on the foregoing, GeoTerre concluded that supplementary boreholes to confirm the soil/bedrock conditions to depths of at least 30 m (approximate elevation 82 m) below existing site grades were required, with a preference to confirm the depth to bedrock. Ultimately, a total of five (5) supplementary boreholes were completed between April 21 and May 13, 2022 under the full time supervision of GeoTerre at the approximate locations shown on attached Figures 3A and 3B to the following summary details:

- BH22-1: 35.1 m Drilled Depth (presumed shale bedrock over last 0.7 m/below elevation 78.4 m)
- BH22-2: 35.3 m Drilled Depth (presumed shale bedrock over last 2.4 m/top elevation 79.1 m)
- BH22-3: 32.8 m Drilled Depth (shale bedrock confirmed over last 3.0 m/top elevation 82.3 m)
- BH22-4: 34.8 m Drilled Depth (presumed shale bedrock over last 4.2 m/top elevation 81.8 m)
- BH22-5: 31.2 m Drilled Depth (shale bedrock over last 1.4 m/top elevation 82.6 m)

Boreholes were drilled using a combination of truck and track mounted drill rigs and the following general drilling methodologies as deemed appropriate given the projected deep nature of the boreholes:

- Hollow stem augers to depths of between 3 m and 6 m.
- Washboring with a 96 mm outside diameter (OD) tricone until bedrock was reached.
- Bedrock coring using a HQ size coring bit with a 96 mm OD.

At variance to the above was borehole BH22-4 where 106 mm OD steel casing was advanced to the top of the presumed bedrock after initial borehole was advanced using the above noted washboring method.

During drilling of the supplementary boreholes, Standard Penetration Tests (SPT's) and associated split spoon soil samples were generally completed as per the following:

Boreholes BH22-1, 3 and 4 located in previously investigated areas

- Start SPT sampling at 18 m and then every 1.5 m thereafter until bedrock/presumed bedrock.

Boreholes BH22-2 and 5 located in previously uninvestigated areas

- SPT's every 0.76 m to 5 m and then every 1.5 m thereafter until bedrock/presumed bedrock.

SPT's were completed using an automatic SPT hammer that is generally assumed to have an 80% energy efficiency rating and hence, field recorded SPT 'N' values are generally referred to as SPT 'N_{80}' values.

Upon completion of each borehole, 50 mm diameter monitoring wells complete with flush mounted protective covers and well screens sealed within the lower reaches of each borehole were installed except for BH22-4, where a similar proposed well was damaged during its attempted installation.

A log of encountered soil conditions within each borehole, together with the results and locations of all in-situ tests, drilling and borehole backfill details, monitoring well installations and associated water level measurements are presented on the borehole logs of attached Appendix B. A summary of borehole details, monitoring well installation information and water level measurements are also presented in attached Table 1.

Borehole samples were transported to the GeoTerre CCIL (Canadian Council of Independent Laboratories) certified soil testing laboratory for review by a senior engineer and the following soil tests:

- Water Contents on a total of 53 samples were water and soil matrix had not separated
- Twenty-Four (24) grain size analyses on select samples
- Four (4) Atterberg Limits Soil Plasticity Tests on select cohesive samples

The water content data and a summary of the grain size and Atterberg Limits data is presented on the borehole logs of attached Appendix B. Complete grain size distribution data and Atterberg Limits soil plasticity results are presented respectively in attached Appendices C and D.

In addition to the laboratory soil index testing, a total of six (6) samples were submitted to AGAT Laboratories Ltd., Mississauga, Ontario for soluble sulphate content testing the results of which were as follows:

• BH22-2-Sample 5 (upper fine grained cohesionless materials at depth of 4.0 m)	0.005 %
• BH22-2-Sample 10 (weak silty clay materials at depth of 10.9 m)	0.021 %
• BH22-2-Sample 17 (sand and silt till materials at depth of 21.6 m)	0.041 %
• BH22-3-Sample 5 (upper fine grained cohesionless materials at depth of 3.3 m)	0.016 %
• BH22-3-Sample 12 (weak silty clay materials at depth of 12.4 m)	0.017 %
• BH22-3-Sample 20 (sand and silt till materials at depth of 24.6 m)	0.039 %

4.0 SUBSURFACE CONDITIONS

4.1 Summary

Based on the information obtained within the deep supplementary boreholes completed by GeoTerre at the approximate locations shown on the attached Figures 3A and 3B, the general soil profile for the site as previously presented in Section 3.0 based solely on the 2018 boreholes of attached Appendix E, can be updated to the following generalized subsurface profile:

- Reasonably competent fine grained cohesionless soils from surface to 10 m (elevation 112 m to 102 m)
- Weak Silty Clay materials from 10 m to 16 m (elevation 102 m to 96 m)
- Sand and Silt Till materials from 16 m to top of bedrock (elevation 96 m to 80 m)
- Shale Bedrock of Georgian Bay Formation generally below 32 m/approximate elevation 80 m

For completeness and ease of evaluation, the above noted summary subsurface profile is presented on the Stratigraphic Section of attached Figure 4 as developed along east-west Section Line A-A of attached Figure 3B.

Available water level information for monitoring wells that were installed within the upper sandy soils of the aforementioned 2018 boreholes indicate that the water table within the upper fine grained cohesionless materials is typically quite shallow, i.e., between about 2 m and 3 m below existing ground surface or, approximate elevation 110 m. In comparison, water level measurements for the deep monitoring wells associated with the 2022 supplementary boreholes and some deep well installations that were installed in the 2018 boreholes, tend to suggest that the water table in the soil layers below the upper fine grained cohesionless materials is lower, i.e., at or about elevation 105 m to 106 m. However, it should be noted that most water levels in the deep supplementary boreholes to date as summarized in attached Table 1 do not appear to have stabilized at the time of preparation of this draft report. In addition, some seasonal variation should be expected.

A more depth assessment of the foregoing conditions is presented in the following sections. However, for specific information, the reader should consult the attached factual data presented in attached Appendix B to E. In addition, it should be noted that the following summary is based on soil and groundwater conditions that were only confirmed at the borehole locations and that are expected to vary between and beyond those locations.

4.2 Stratigraphic Units

4.2.1 Near Surface Fill Materials

Based on the summarized information presented in the previously referenced 2018 geotechnical report, the pavement structure that overlies a large area of the site consists of between 75 mm and 125 mm of asphalt over pavement granular materials that extended to depths of between 0.1 m to 0.4 m below ground surface. This in turn was reported to be underlain by sandy fill materials mixed with miscellaneous materials such as slag and cinders, pockets of topsoil and pieces of broken concrete that extended to total depths of between 1.2 m and 2.1 m. Surface topsoil can be expected within unpaved areas of the site.

The above noted 2018 summary of near surface materials is somewhat consistent with the asphalt or topsoil thicknesses encountered at the location of the GeoTerre supplementary boreholes. However, supplementary boreholes BH22-2 and BH22-5 that were sampled from surface, generally encountered what are considered to be native silty fine sand materials immediately below the surface pavement structure or topsoil.

4.2.2 Upper Fine Grained Cohesionless Materials

This layer refers to a series of fine grained cohesionless materials that extend from the underside of the surface pavement structure or surface fill materials to confirmed underside depths of between 8.6 m and 11.6 m (elevation 101.0 m to 103.1 m) in the 2018 boreholes. In comparison, the confirmed underside depths of these materials at the location of the GeoTerre supplementary boreholes BH22-2 and BH22-5 were respectively 10.1 m (elevation 101.9 m) and 8.6 m (elevation 103.8 m). Hence, on average the typical underside elevation of these materials is considered to be about 102 m plus/minus 1 m.

The results of six (6) grain size analyses on samples of these materials from within boreholes BH22-2 and 5 are presented on Figure C1 of attached Appendix C.

Field recorded SPT ‘N_{80}’ values obtained in these materials at the locations of BH22-2 and 5 varied from 9 to 76 with a general trend of lower values below an approximate depth of 5 m. Hence, based on this data, these materials are described as having a predominantly compact to dense degree of compactness in the upper 5 m reducing to a loose to compact degree of compactness below this depth.

4.2.3 Weak Silty Clay Materials

This layer refers to a series of low plasticity silty clay materials, most likely deposited in some form of ice marginal lake within the end stages of the last ice age, that extend from the underside of the overlying fine grained cohesionless materials to the top of underlying predominantly sand and silt till materials. Within 2018 boreholes BH1, 2, 5 to 8, 10 and 11 these materials were confirmed to have top depths of between 8.5 m to 11.6 m (elevation 101.0 m to 103.1 m) and underside depths within BH2, 5 to 7, 10 and 11 to between 15.5 m and 16.2 m (elevation 95.9 m to 95.5 m). In comparison, the confirmed top depths of these materials at the location of GeoTerre supplementary boreholes BH22-2 and BH22-5 were respectively 10.1 m (elevation 101.9 m) and 8.6 m (elevation 103.8 m) with respective underside depths of 14.7 m (elevation 97.4 m) and 17.8 m (elevation 94.7 m). Hence, on average the typical underside elevation of these materials is considered to be about 96 m plus/minus 1 m.

The results of two (2) grain size analyses obtained on samples of these materials from within boreholes BH22-2 and 5 are presented on Figure C2 of attached Appendix C. Similarly, the results of Atterberg Limits soil plasticity tests completed on the same samples as presented on Figure D1 of attached Appendix D indicate that these materials can be classified as silty clay of low plasticity.

Field recorded SPT ‘N_{80}’ values obtained in these materials at the locations of BH22-2 and 5 varied from 1 to 18 with most values in the 8 to 12 range. The 2018 field recorded SPT “N” values generally fall within the same general range as that obtained in the supplementary 2022 boreholes. Hence, based on this data these materials are described as having a predominantly firm to stiff consistency with occasional very soft to soft horizons.

4.2.4 Sand and Silt Till Materials

This layer refers to a series of predominantly sand and silt till materials with trace to some gravel and trace to some clay that extends in an uninterrupted fashion from the underside of the weak silty clay materials, i.e., typical underside elevation of 96 m plus/minus 1 m, to the top of the underlying shale bedrock as estimated to be present in the GeoTerre supplementary boreholes at depths of between 29.8 m to 34.4 m (elevation 78.4 m to 82.6 m) below existing ground surface. However, it should be noted that the top of bedrock elevation was only positively confirmed by coring at the location of supplementary BH22-5.

At variance to the above noted general description is a deep layer of silty clay materials with an estimated total thickness of 0.5 m as encountered at a depth of 84.4 m at the location of BH22-1 as described in more detail in Section 4.2.5.

The results of fourteen (14) grain size analyses that were completed on various samples of the sand and silt till materials from within the 2022 GeoTerre boreholes are summarized on Figures C3 to C5 of attached Appendix C as per the following:

- Figure C3: Sand and Silt Till to Sandy Silt Till Materials (9 samples)
- Figure C4: Sand and Silt Till to Silty Sand Till Materials (2 samples)
- Figure C5: Silty Sand Till Materials (3 samples)

The results of one (1) Atterberg Limits soil plasticity test obtained on a sample of these materials from BH22-1 as presented on Figure D2 of attached Appendix D revealed a soil plasticity index of 7.

Based on the above referenced soil index data, these materials are described as slightly plastic sand and silt till with trace to some gravel, trace to some clay and occasional more sandy and silty horizons. However, notwithstanding the grain size data presented in the aforementioned grain size figures, some cobbles and occasional boulders should also be expected given the glacial origin of these materials.

Field recorded SPT ‘N_{80}’ values obtained in these materials at the locations of supplementary boreholes BH22-1 to 5 varied from 26 to greater than the equivalent of greater than 100 blows/0.3 m of penetration. On closer inspection, the last two (2) Field recorded SPT ‘N_{80}’ values before encountering presumed bedrock in each borehole were greater than the equivalent of 100 blows/0.3 m of penetration. Otherwise, the Field recorded SPT ‘N_{80}’ values in the supplementary boreholes above the last two (2) SPT ‘N_{80}’ values above bedrock varied as follows when values greater than the equivalent of 100 blows/0.3 m of penetration were ignored:

- BH22-1 – Range 55 to 73 (7 eligible values for numeric average of 60)
- BH22-2 – Range 23 to 97 (10 eligible values for numeric average of 41)
- BH22-3 – Range 53 to 91 (6 eligible values for numeric average of 63)
- BH22-4 – Range 33 to 88 (4 eligible values for numeric average of 56)
- BH22-5 – Range 36 to 84 (5 eligible values for numeric average of 63)

Hence, based on the above noted data the sand and silt till materials are described as having a predominantly dense to very dense degree of compactness becoming consistently very dense over the last 1.5 m above the shale bedrock.

4.2.5 Deep Silty Clay Materials of BH22-1

This stratigraphic unit refers to a layer of silty clay materials with an estimated thickness of 0.5 m that was encountered at an estimated top depth of 28.45 m (elevation 84.4 m) in BH22-1. The results of a grain size distribution analyses as obtained on the retrieved sample of these materials is presented on Figure C6 of attached Appendix C with Atterberg Limit soil plasticity test results presented on Figure D3 of attached Appendix D.

A Field recorded SPT ‘N_{80}’ value of 21 was obtained in these materials and as such, based on this data this layer is described as having a very stiff consistency.

4.2.6 Shale Bedrock

Shale bedrock of the Georgian Bay Formation was positively confirmed at the location of supplementary BH22-5 at a depth of 29.8 m (elevation 82.6 m) and strongly expected to be present at estimated top depths of between 29.8 m to 34.4 m (elevation 78.4 m to 82.6 m) with supplementary boreholes BH22-1 to 4. As indicated on attached Figure 4, the top surface of the shale bedrock appears to increase in depth from east to west. The general characteristics of the Georgian Bay shale bedrock of downtown Toronto and beyond are quite well documented and known to typically consist of grey shale inter-bedded with thin (routinely less than 200 mm, somewhat frequently up to 300 mm thick and very randomly greater than 300 mm) stronger layers of limestone or dolostone. In terms of strength, the upper 1 m to 3 m of the shale is expected to be very weak (UCS [1] between 1 MPa and 5 MPa) becoming weak (UCS between 5 MPa and 25 MPa) below this depth. UCS values for the limestone inter-beds can be expected to vary from 50 MPa to 150 MPA, i.e., strong (UCS of 50 to 100 MPa) to very strong (UCS of 100 to 250 MPa).

Notwithstanding the above noted general bedrock Georgian Bay shale bedrock characteristics, the limited results obtained by completing SPT tests with the shale bedrock and general unsuccessful attempts to core the bedrock, suggests that it is highly to totally weathered as exemplified by the following interlayered sequence of 0.6 m long core that was recovered at the location of BH22-5-Rock (refer also to BH22-5 Rock Core Photo of attached Appendix B):

Strong Limestone:	100’4” to 101’0” (30.58 m to 30.78 m)
Totally Weathered Shale (essentially clay):	101’0” to 101’5” (30.78 m to 30.91 m)
Strong Limestone:	101’5” to 101’7” (30.91 m to 30.96 m)
Highly Weathered Shale:	101’7” to 102’0” (30.96 m to 31.09 m)
Totally Weathered Shale (essentially clay):	102’0” to 102’1” (31.09 m to 31.11 m)
Highly Weathered Shale:	102’1” to 102’4” (31.11 m to 31.19 m)

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[1] Unconfined Compressive Strength

4.3 Groundwater

Available water level information for monitoring wells that were installed within the upper sandy soils of the aforementioned 2018 boreholes indicate that the water table within the upper fine grained cohesionless soils is typically quite shallow, i.e., between about 2 m and 3 m below existing ground surface or, approximate elevation 110 m. In comparison, water level measurements for the deep monitoring wells associated with the 2022 supplementary boreholes and some deep well installations that were installed in the 2018 boreholes, tend to suggest that the water table in the soil layers below the upper fine grained cohesionless materials is lower, i.e., at or about elevation 105 m to 106 m. However, it should be noted that most water levels in the deep supplementary boreholes to date as summarized in attached Table 1, do not appear to have stabilized at the time of preparation of this report. In addition, some seasonal variation should be expected.

5.0 GEOTECHNICAL ENGINEERING ASSESSMENT AND RECOMMENDATIONS

5.1 General

As indicated on the Site Plan of attached Figure 2, the proposed development consists of seven (7) predominantly residential apartment buildings around a proposed interior park area. More specifically, four (4) of the proposed residential apartment buildings will feature residential towers of between 8 and 32 stories high above larger area lower level structures of between 2 and 8 stories, whereas with the remaining three (3) residential apartment buildings will feature constant plan area structures to heights of between 6 and 10 stories. Six (6) of the seven (7) proposed residential apartment buildings will have two levels of underground parking occupying a total depth of approximately 7.5 m below ground floor level whereas one (1) of the proposed residential apartment buildings, i.e., Building 3, will have three levels of underground parking occupying a total depth of approximately 10.5 m below ground floor level.

Summary subsurface information for the site as presented on attached Figure 4, indicates that for two (2) level, 7.5 m deep basements as proposed for six (6) of the seven (7) proposed buildings, the founding level for the proposed towers will be in the order of the elevation 103 m or, lower reaches of upper fine grained cohesionless materials/upper reaches of the weak silty clay layer. In the case of Building 3 (3 basement levels), the founding level for the proposed tower will be in the order of the elevation 100 m or, middle reaches of the weak silty clay layer. While the foregoing layers are expected to be suitably strong to utilize slab-on-grade type lower basement level concrete floor slabs, they are not deemed suitable for support of the proposed buildings using traditional pad type shallow foundations. Accordingly, support of the proposed buildings using some form of deep pile foundation support system to the geotechnical design details of Section 5.2 will be required, including site dewatering constraints and related building waterproofing. Geotechnical design inputs related to temporary excavation support and general design and construction considerations are addressed in Sections 5.3 and 5.4 respectively.

Please note that the engineering assessment and design recommendations provided in the following sections are intended for the guidance and sole use of the designers and planners associated with the engineering design of the proposed development. In addition, it should be further noted that the soil and groundwater conditions were only confirmed at the borehole locations and will vary between these locations and on their own are not considered sufficient for the detailed design of all elements associated with the proposed development. Similarly, contractors undertaking or bidding on aspects of the work should make their own assessment of the available soil factual data and its potential impacts on equipment selection, productivity, construction methodology and the like, and any comments provide herein by GeoTerre are only intended for illustration purposes.

5.1 Development Foundation Considerations

5.2.1 Site Dewatering and Building Waterproofing

As presented in Section 4, the following generalized subsurface profile is applicable to the site and most likely, the area immediately surrounding the site:

- Reasonably competent upper layer of fine grained cohesionless soils from surface to 10 m (elevation 112 m to 102 m)
- Weak Silty Clay materials from 10 m to 16 m (elevation 102 m to 96 m)
- Sand and Silt Till materials from 16 m to top of bedrock (elevation 96 m to 80 m)
- Shale Bedrock of Georgian Bay Formation generally below 32 m/approximate elevation 80 m

In terms of groundwater, the ambient groundwater water table in the upper fine grained cohesionless materials, and likely the weak silty clay materials, is between about 2 m and 3 m below existing ground surface or, approximate elevation 110 m. In comparison, water level measurements within the deep sand and silt till materials suggest a groundwater table at or about elevation 105 m to 106 m.

In consideration of above site soil and groundwater model, any significant reduction in the water table level within the upper fine grained cohesionless unit beyond the site limits is expected to induce surface settlement due to increased effective stresses within the weak silty clay unit. Given the extensively built-up nature of the lands surrounding the site, and key railway and subway lines immediately east and a short distance north of the site respectively, such potential settlement cannot be allowed to develop. As such, and by way of complying with the City of Toronto Foundation Drainage Policy dated November 1, 2021, construction of the proposed development must be undertaken such that no short or long-term lowering of the water table beyond the perimeter of each proposed building occurs, which is believed possible provided the following two elements are suitably designed and implemented:

1. Shoring system for underground levels of each proposed building consists of a continuous perimeter interlocking caisson retaining wall system, advanced into the underlying layer of sand and silt till by at least 1.5 m, including filler piles, to create a temporary groundwater cut-off in advance of lowering the groundwater within the perimeter interlocking caisson shoring system of each individual building. This approach will however likely still require localized grouting of any areas on the exposed face of the interlocking caisson shoring wall that displays elevated seepage.
2. Implementation of a suitable, continuous waterproofing system within the full height to the perimeter basement walls and lower level basement floor slab to obtain a suitably watertight structure that can offset the potential for long term groundwater seepage into the building.

The foregoing approach will also offset potential issues associated with the migration of the high silt content materials of the upper fine grained cohesionless materials under the action of flowing water associated with conventional sub-floor drainage systems that drain to a sump.

5.2.2 Building Foundation Support

Summary subsurface information for the site as presented on attached Figure 4, indicates that for two (2) level, 7.5 m deep basements as proposed for six (6) of the seven (7) proposed buildings, the founding level for the proposed towers will be in the order of the elevation 103 m or, lower reaches of upper fine grained cohesionless materials/upper reaches of the weak silty clay layer. In the case of Building 3 (3 basement levels for 10.5 m total depth), the founding level for the proposed tower will be in the order of the elevation 100 m or, middle reaches of the weak silty clay layer. While the foregoing layers are expected to be suitably strong to utilize slab-on-grade type lower basement level concrete floor slabs as discussed in Section 5.2.4, they are not deemed suitable for support of the proposed buildings using traditional pad type foundations. Accordingly, support of the proposed buildings using some form of deep foundation system is deemed necessary to successfully transfer the building loads through the lower reaches of the upper fine grained cohesionless materials and/or underlying weak silty clay materials into the underlying competent sand and silt till materials as expected to generally be present at or just below approximate elevation 95 m with thicknesses of between 12 m and 15 m directly overlying shale bedrock.

In consideration of the depth to bedrock and the apparent highly weathered state of its upper reaches, end bearing caissons into this unit are not considered to be a feasible option at this time, especially given the highly competent nature and thickness of the overlying sand and silt till unit. However, subject to some additional drilling to better confirm the quality of the underlying shale bedrock, end bearing caissons installed into bedrock might be a viable for support system for some of the proposed higher buildings.

Hence, focusing solely on foundation support within the sand and silt till unit the following generic foundation support types are considered suitable for consideration:

- End bearing caissons founded at elevation 90 m (plus/minus 0.3 m) fully within the moderately competent sand and silt till unit designed for SLS (Serviceability Limit State) and ULS (Ultimate Limit State) maximum allowable end bearing pressures of 1,500 kPa and 2,200 kPa respectively. SLS and ULS shaft resistance values of 30 kPa and 35 kPa respectively may be added to the above noted end bearing resistance over the lowermost 3 m of the installed caissons.
- Continuous Flight Auger (CFA) concrete friction piles formed to a minimum depth of 8 m (or deeper) below elevation 93 m designed for SLS and ULS shaft resistance values of 30 kPa and 35 kPa respectively. SLS and ULS end bearing resistance values of 2,000 kPa and 3000 kPa respectively may be incorporated into the overall CFA capacity provided the CFA piles are terminated into the highly competent sand and sill till materials within 2 m of the top of the underlying bedrock.

Suitable load tests should be undertaken to verify the above noted design recommendations, with consideration being given to undertaking appropriate Osterberg Load Cell test or tests, to better confirm the available shaft and end bearing resistance.

Of the foregoing two primary pile types, end bearing caissons seem to be the most appropriate for this site, although CFA piles may be more versatile for support of some of the lower height buildings. Please note that the potential use of deeper end bearing caissons have been discarded due to some sporadic low SPT 'N' values within the lower reaches of the sand and silt till unit, especially at the locations of BH22-1 and BH22-2 and to a lesser extent, BH22-3. In addition, end bearing caissons formed below approximate elevation 85 m may encounter base stability problems due to the presence of more sandy horizons within the till. However, the completion of additional deep boreholes within the footprint area of each specific building may allow some relaxation on the potential for utilizing more heavily loaded end bearing caissons at greater depths, i.e., termination depths significantly below elevation 90 m.

In terms of installation of either end bearing caissons or CFA's, it is expected that these will be completed from within the base of the completed and/or partially completed underground basement level excavations as supported within a perimeter shoring system to the details of Section 5.3, including removal/unwatering of the stored water within the boundaries of the perimeter shoring. At expected lower level basement depths of approximately 8 m for buildings with two (2) underground levels (6 of the 7 proposed buildings) and 11 m for Building 3 which has three (3) proposed underground levels, the foregoing anticipated soil conditions within the base of each building excavation are expected to create challenges regarding satisfactory foundation support for caisson drilling rigs as required under Section 156.4 of Ontario Regulation 345/15 of the Occupational Health and Safety Act, especially within the lower portions of upper fine grained cohesionless materials and/or upper portions of the weak silty clay materials. Accordingly, foundation installation after completion of some relatively shallow surface excavations within the building footprint should be expected.

Assuming all drilling pad stability issues are appropriately addressed, issues with instability of any remaining upper fine grained cohesionless material limits should be expected during the installation of end bearing caissons or CFA's. However, this is not expected to be a major issue given their anticipated thin depth and normal fully cased approach expected for each caisson excavation and, the recognized importance of maintaining lateral support during CFA pile installation. Caisson (and CFA) excavations within the underlying sand and silt till unit that generally contains about 15% of clay sized materials are expected to be quite stable and not require the use of drilling mud. However, local stability issues may arise when drilling within silty sand till horizons that appear to be randomly present within this overall layer predominantly below elevation 85 m. The possible presence of occasional cobbles and boulders within the sand and silt till materials should also be expected given their glacial origin.

Lateral loads foe either of the foregoing pile types may be based on the assumption that the coefficient of horizontal sub-grade reaction of the soil (k_s) times the diameter of the pile (d) is equal to the following constant values with depth:

Soil Layer	Elevation Intervals	Horizontal Soil Sub-Grade Reaction Modulus k_s (kN/m^2) (1)
Upper Fine Grained Cohesionless Materials	Elevation 104 m to 102 m	0
Weak Silty Clay	Elevation 102 m to 96 m	3,500
Sand and Silt Till	Elevation 96 m to 90 m	35,000
	Elevation 90 to 85 m	95,000
	Below Elevation 85 m	125,000

Note 1) Horizontal spring constant in kN/m for a pile segment of length L, may be determined by the product of k_s as outlined above times L irrespective of the pile diameter being considered

Design of foregoing piles should also adhere to the following design reduction factors relative to the pile spacing, where "d" represents the design diameter of the pile:

- Vertical Capacity:
  Recommended minimum pile spacing as measured centre to centre is 5d, reducing locally to no less than 3d. As long as the 3d absolute minimum spacing requirement is satisfied, no reduction for end bearing is required.

- Allowable bond stress should be varied using the following correction factors:
- Piles spaced at 5d – correction factor for bond stress = 1.0
- Piles spaced at 4d – correction factor for bond stress = 0.9
- Piles spaced at 3d – correction factor for bond stress = 0.75

- Lateral Pile Capacity:
- Piles spaced at 8d – correction factor of 1.0
- Piles spaced at 6d – correction factor of 0.7
- Piles spaced at 4d – correction factor of 0.4
- Piles spaced at 3d – correction factor of 0.3

Total settlements of foundations designed and constructed in accordance with the foregoing recommendations are not expected to exceed 25 mm with maximum differential settlements limited to about 50 % of this value.

The underside of all proposed foundation support elements must be provided with sufficient frost protection provisions as detailed in Sections 5.2.6 and 5.4.1.

All foundation related excavations (and others) must be completed in accordance with the Occupational Health and Safety Act (and Regulations for Construction Projects) as discussed in Section 5.5.2.

5.2.3 Basement Wall Pressures

Given the need to provide watertight basement structures, including the lowermost basement level concrete floor slab as discussed in Section 5.2.5, the permanent basement walls must be designed to support both soil and water pressure loads based on the following, which assumes the lowermost basement level concrete floor slab is not lower than elevation 96 m:

$P = K((\gamma_S D + \gamma'_S(H-D)) + \gamma_W(H-D) + Kq$, where the foregoing terms are defined as follows:

P	- Wall Total Pressure at depth H below final grade, including water pressures below depth “D”.
D	- Design Water Table depth below final grade – assume 2 m or elevation 110 m.
γ_S	- Soil Bulk Density (assume 20 kN/m^3).
γ'_S	- Soil Buoyant Density (assume 10.2 kN/m^3)
γ_W	- Unit Weight of Water (assume 9.8 kN/m^3)
q	- Road (or other) surcharge loads when applied within a distance to the rear of the shoring wall equal to the depth of the proposed shoring wall
K	- Soil At Rest Earth Pressure Coefficient (assume 0.50)

5.2.4 Seismic Site Classification

With respect to the seismic design of the building, based on the average SPT values within the upper 30 m of the site below the proposed foundation level, a Class C site may be assumed as defined in the 2012 version of the Ontario Building Code.

5.2.5 Lowermost Basement Floor Slab

As previously indicated, the FFE (Finished Floor Elevation) of the lowermost basement level of proposed Buildings 1, 2, 4, 5, 6 and 7 will be approximately 7.5 m below existing grade (approximate elevation 104.5 m) deepening to 10.5 m (approximate elevation 101.5 m) for Building 3. In keeping with the City of Toronto “Foundation Drainage Policy” dated November 1, 2021, and the desire to limited potential settlement related to groundwater lowering around the building footprint, construction of a “watertight” basement will be required for each building. Accordingly, in addition to suitably waterproofing the lowermost basement level concrete floor slab, the floor slab will also have to be designed to withstand uplift water pressures based on the recommended long term design water table of 110 m minus the design underside elevation of the proposed floor slab. For Buildings with two (2) underground levels (total of 6), this equates to expected uplift pressures equal to about 6 m of uplift water pressure (say 60 kPa) increasing to approximately 9 m of uplift water pressure (say 90 kPa) for buildings with three (3) underground parking levels. The foregoing pressures will require that the basement floor slab to either designed as a structural floor slab suitably integrated to the overall building foundation support system and/or some tie-down anchors/piles to withstand design uplift water pressures.

In terms of initial basement level concrete floor slab construction, the subgrade of buildings with two (2) basement levels are expected to be formed in the lower reaches of the upper fine grained cohesionless materials. As such, as long as the water level within the sub-grade is maintained at least 0.5 m and preferably 1 m below design subgrade of the lowermost basement floor level, it is expected that suitable sub-grade support for construction of the structural floor slab and related waterproofing can be achieved on top of a suitably graded, nominally compacted natural subgrade as expected to consist of fine grained cohesionless sand and silt materials.

In comparison, the subgrade of Building 3 with three (3) proposed basement levels is expected to be formed in the upper reaches of the weak silty clay materials. As such, difficulties with rutting of the sub-grade could be encountered under the action of even light construction equipment, especially if the surface is wet as a result of precipitation. Accordingly, consideration might have to be given to the installation of a minimum thickness 150 mm layer of Granular A materials (or more) compacted to 95% of Standard Proctor Maximum Dry Density (SPMDD) to allow for waterproofing, steel fixing, concrete placement and the operation of required construction support equipment.

5.2.6 Parking Garage Frost Protection

As detailed in Section 5.4.1, the estimated general depth of frost penetration for the site is 1.2 m and accordingly, the underside of all exposed footings and/or other elements that are prone to freezing should be provided with this amount of soil or equivalent cover. With respect to the anticipated main building foundations that will be formed a short distance below the FFE of the lowermost parking level, design frost penetration depths may be considered to be zero with two or three levels of underground parking. However, within 7.5 m of air intakes and/open access ramp areas, minimum frost penetration depths equal to 50 % of full design frost penetration depths should be assumed.

5.3 Excavation Temporary Support

As detailed in Section 5.2.1, the shoring system for the underground levels of each proposed building must consist of a suitably designed continuous interlocking caisson retaining wall system with the joint objective of acting as temporary cut-off for groundwater located within the aforementioned upper cohesionless materials located on the outside of the shoring system. In addition to the shoring designer selecting the most appropriate caisson overlaps to fulfil the groundwater cut-off objective, the caisson wall king piles and filler piles must be advanced to at least 1.5 m into the underlying sand and silt till layer or elevation 94.0 m (whichever approach yields the deepest caisson). The groundwater cut-off objective will however still require on-going assessments of seepage levels with the face of the shoring wall and related local injection grouting of any areas that display elevated seepage.

While the design of the temporary shoring system is the sole responsibility of the shoring contractor retained to complete the design, as a minimum, the design should allow for earth pressures as per the following recommendations:

Buildings 1, 2, 4, 5, 6 and 7
(Two Underground Levels for Maximum Exposed Height of 8.5 m and Single Row of Tiebacks)

$P = K((\gamma_S D + \gamma'_S(H-D)) + \gamma_W(H-D) + Kq$, where the foregoing terms are defined as follows:

P - wall pressure at depth H below final grade, including water pressures below depth “D”.
D - Design Water Table Depth below final grade – Assume 2 m or Elevation 110 m.
γ_S - Soil Bulk Density (assume 20 kN/m^3)
γ'_S - Soil Buoyant Density (assume 10 kN/m^3)
γ_W - Unit Weight of Water (assume 9.8 kN/m^3)
q - Road (or other) surcharge loads when applied within a distance to the rear of the shoring wall equal to the depth of the proposed shoring wall
K - Soil Earth Pressure Coefficient (assume 0.30 above elevation 107 m; 0.33 elevation 107 m to 102 m; 0.28 elevation 102 m to 96 m

Building 3
(Three Underground Levels for Maximum Exposed Height of 12 m and Twin Rows of Tiebacks)

$P = K((\gamma_S D + \gamma'_S(H-D)) + \gamma_W(H-D) + Kq$, where the foregoing terms are defined as follows:

P - apparent uniform earth design pressure.
D - Design Water Table Depth below final grade – Assume 2 m or Elevation 110 m.
γ_S - Soil Bulk Density (assume 20 kN/m^3)
γ'_S - Soil Buoyant Density (assume 10 kN/m^3)
γ_W - Unit Weight of Water (assume 9.8 kN/m^3)
q - Road (or other) surcharge loads when applied within a distance to the rear of the shoring wall equal to the depth of the proposed shoring wall
K - Apparent Soil Earth Pressure Coefficient (assume 0.2 above elevation 100 m)

The ultimate passive resistance of the embedded portion of the continuous caisson shoring wall may be determined using the following equation in conjunction with a recommended design water elevation equal to the proposed base level of the excavation:

$P_p \quad = [K_p\gamma'_S D_1{}^2/2] + [(K_p\gamma'_S D_1)(D_2\text{-}D_1)] + [(K_p\gamma'_S(D_2 - D_1)^2/2)]\}$, assuming $D_2>D_1$ as defined as per the following:

P_p - Ultimate passive resistance of each embedded 1 m of embedded continuous caisson wall
D_1 - Depth of soils between base of excavation and elevation 96 m
D_2 - Depth of soils between base of excavation and bottom of shoring wall
γ'_S - Buoyant Density of soils below water table (assume 8 kN/m^{3}above elevation 96 m; 11 kN/m^3 below elevation 96 m)
K_p - Passive Earth Pressure (assume 2.7 above elevation 96 m; 4.2 below elevation 96 m)

Notwithstanding the structural design of the system to withstand the foregoing earth pressure loads and related overall global slope stability, the design should also be such that the lateral movements of each shoring walls located around the perimeter of the entire development is consistent with the movement tolerances of existing elements that abut the overall site. Similar rationale should be applied to any internal ground movement constraints that arise as part of the phased construction of the overall development. In addition, and by way of confirmation of the acceptable performance of the excavation support system, actual wall and support level movements should be routinely monitored during and upon completion of the excavation using an appropriate system of survey targets on the face of the support system and inclinometers placed within or closely adjacent to the rear of the shoring wall temporary excavation support system.

With respect to tiebacks, the upper fine grained cohesionless materials are considered to represent a viable layer within which a single row of tiebacks can be developed as expected to be the case for Buildings 1, 2 and 4 to 7 with two proposed basement levels. The same layer is also considered to be suitable for the development of twin rows of supporting tiebacks as expected for Building 3 that has three proposed basement levels. However, the inclination and/or vertical pacing of any twin level tieback system will have to be carefully considered to keep both tieback rows within the more favorable upper fine grained cohesionless layer and thereby prevent the tiebacks from extending into weak silty clay layer that is not considered to be a viable layer for the support of tiebacks. The deep and sand and silt till materials are considered to represent a very favorable layer for the development of tiebacks. However, given their depth, it is not considered to be viable layer for the routine support of most of the proposed shoring systems although it may be suitable for support of locally deeper required excavations such as around expected elevator pits.

While the upper fine grained cohesionless materials are considered to be the tieback target layer of choice, it should also be noted that the somewhat variable degree of compactness of these materials could result in local tieback performance variations, although pressure grouting during installation should address some of these issues.

In summary, and subject to confirmation by the completion of appropriate tieback performance testing, the following allowable preliminary design grout/soil interface equivalent cohesion can be assumed for pressure grouted tiebacks appropriately installed into the upper cohesionless materials or single stage, post-secondary grouted anchors formed with the deep sand and silt till materials, provided the anchor zone of all proposed tiebacks is formed to the rear of the anticipated active soil wedge behind the temporary shoring wall, i.e., to the rear of a line rising from the tip elevation of the installed temporary wall at an inclination of 30 degrees to the vertical:

- Upper Fine Grained Cohesionless Materials: 100 kPa
- Deep Sand and Silt Till Materials: 150 kPa

In terms of tieback installation, attention is drawn to the fact that the existing upper fine grained cohesionless fill materials within and slightly beyond the development limits can generally be assumed to be below the water table and as such, will be very prone to erosion under the action of water based tieback drilling approaches. Hence, it is recommended that all tiebacks be installed using a fully cased "duplex" drilling approach that primarily utilizes "compressed air".

All installed "working" tiebacks must be subjected to "Acceptance Testing" in accordance with OPSS 942 which as a minimum should consist of monitoring the tie-back elongation while the tieback is "Loaded" in an incremental fashion to a load of 1.33 times the design load followed by a 10 minute creep test at the maximum load. In fact it is further recommended that 30 minute creep test at the maximum load of 133% be undertaken on at least the first two (2) tiebacks that are stressed and at every fifth anchor thereafter. The tieback will be deemed to be acceptable if the following two criteria are satisfied:

1. The recorded elastic extension of the tendon exceeds 80 % of the theoretical elastic elongation of the free stressing length of the anchor but does not exceed 100 % of the theoretical elastic elongation of the free stressing length of the tieback plus 50 % of the bond length.
2. The creep movement for the creep test at the maximum applied load does not exceed 1.0 mm between 1 to 10 minutes. If the total creep movement between 1 and 10 minutes exceeds 1 mm, the maximum applied load should be maintained for an additional 50 minutes. The total creep moment at the maximum applied load does not exceed 1.5 mm during the final log cycle, i.e., 6 and 60 minutes.

In addition to the above, confirmation of the tieback design parameters in advance of proceeding to the installation of all general production tiebacks should be undertaken by first completing at least two tieback “Performance Tests” per building. A tieback “Performance Test” should be completed in a similar fashion to that of the tieback "Acceptance Test", except that minimum duration 2 hour, constant load creep tests should be undertaken at anchor loads of 1.33 times the anchor design load followed by a similar minimum duration 2 hour, constant load creep test at a maximum applied load of 2.0 times the anchor design load. Acceptance criteria for the “Acceptance" and “Performance” tests will be the same as that noted above for “Acceptance Test”, except that the maximum creep movement for the “Performance Test” anchors loaded to 2.0 times the design load over the last log cycle should not exceed 2.0 mm.

Finally, during the completion of all tieback tests the tieback loads should be cycled down to the alignment load in advance of re-stressing the tieback to the next incrementally higher load.

All tieback anchor designs and associated temporary retaining walls should be stamped by a professional engineer licensed to practice in Ontario and experienced with the design and construction of such works.

All foundation related excavations (and others) must be completed in accordance with the Occupational Health and Safety Act (and Regulations for Construction Projects) as discussed in more detail in Section 5.5.2.

5.4 General Design and Construction Considerations

5.4.1 Frost Penetration

The estimated depth of frost penetration for the site is 1.2 m. Accordingly, the underside of all exposed footings and/or other elements that are prone to freezing should be provided with this amount of soil or equivalent cover.

5.4.2 Excavation Health and Safety Considerations

Where workmen must enter excavations deeper than 1.2 m, the trench excavations should be suitably sloped and/or braced in accordance with the Occupational Health and Safety Act (and Regulations for Construction Projects) in Ontario. Specifically, as of April 8, 2013, sub-section 226 of the Occupational Health and Safety Act recognize four (4) broad classifications of soils, which are summarized as follows:

TYPE 1 SOIL

- **a.** is hard, very dense and only able to be penetrated with difficulty by a small sharp object;
- **b.** has a low natural moisture content and a high degree of internal strength;
- **c.** has no signs of water seepage; and
- **d.** can be excavated only by mechanical equipment

TYPE 2 SOIL

- **a.** is very stiff, dense and can be penetrated with moderate difficulty by a small sharp object;
- **b.** has a low to medium natural moisture content and a medium degree of internal strength; and
- **c.** has a damp appearance after it is excavated

TYPE 3 SOIL

- a. is stiff to firm and compact to loose in consistency or is previously-excavated soil;
- b. exhibits signs of surface cracking;
- c. exhibits signs of water seepage;
- d. if it is dry, may run easily into a well-defined conical pile; and
- e. has a low degree of internal strength

TYPE 4 SOIL

- a. is soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength;
- b. runs easily or flows, unless it is completely supported before excavating procedures;
- c. has almost no internal strength;
- d. is wet or muddy; and
- e. exerts substantial fluid pressure on its supporting system

The near surface fill materials and upper near fine grained cohesionless materials above the ambient water table level of elevation 110 m are expected to behave as Type 3 material. The upper fine grained cohesionless materials located below the ambient water table level of elevation 110 m is expected to behave as Type 4 soil. The weak silty clay materials as located between approximate elevation of 102 m to 96 m are expected to behave as a Type 3 soil.

5.4.3 Pavement Construction

As indicated on attached Figure 2, arterial streets to form a continuous access/egress loop through the development are proposed. Given that the expected presence of competent upper fine grained cohesionless materials within the subgrade level of all internal roads, it is expected that the soils at the sub-grade level will be fundamentally suitable for the support of conventional flexible pavements. Hence, and subject to confirmation during construction, it may be assumed that the subgrade below all proposed paved areas will be provide suitable support for the overlying pavement structure as long as they are prepared in accordance with the following recommendations immediately in advance of placing pavement granular sub-base materials:

1. All disturbed surface materials and/or recently stockpiled unsuitable surface materials are removed to expose the top surface of underlying competent inorganic materials.
2. The exposed base resulting from 1) above is thoroughly compacted to achieve at least 98 % of its SPMDD in the upper 300 mm, with any soft spots revealed during this process to be removed and backfilled as per item 3) below.
3. Grade raise fill consisting of locally sub-excavated materials and/or imported good quality inorganic fill is placed and compacted in lifts not exceeding 300 mm in thickness to achieve at least 95 % of its SPMDD increasing to 98% SPMDD in the final 300 mm.

Provided the sub-grade area below all proposed footprint area of proposed development access roads are prepared in accordance with the foregoing sub-grade preparations, the following heavy duty pavement structure is recommended for proposed development internal roads:

Entranceways/Fire Routes/Main Throughways

Asphalt	Surface Course (HL3)	40 mm	
	Basecourse (HL8)	80 mm (2 * 40 mm)	
		120 mm	120 mm
Granular Base (19 mm CRL or RCA(Recycled Crushed Aggregate)			150 mm
Granular sub-base (50 mm CRL or RCA)			400 mm
			570 mm

Asphalt materials to be in accordance with the appropriate OPSS and similarly, compacted in accordance with the requirements of OPSS 310. Granular base materials are to be compacted to at least 100 % of their SPMDD, with granular sub-base materials to be compacted to at least 98 % of their SPMDD. Given the generally expected sandy nature of the sub-grade soils, an extensive system of sub-drains is not considered necessary. However, it is recommended that as a precaution that four (4), 5 m long, equally spaced sub-drains be installed around each catchbasin or catchbasin manhole.

5.4.4 Basement Level Excavation Dewatering

As noted previously, due to concerns with potential settlement of the soil profile located on the outside of the proposed continuous interlocking caisson shoring system, widespread dewatering will not be undertaken at the site. However, unwatering and/or the removal of stored water within the upper fine gained cohesionless materials located within the perimeter shoring system can be undertaken using conventional dewatering approaches, i.e., installed wells and/or local sump and pump system. However, disturbance of soil located below the future proposed founding level of the building in response to dewatering must not be allowed to develop. In addition, and again as previously noted, during removal of the dewatered soil materials within each basement level excavation, continuous visual monitoring of seepage through the face of the exposed caisson shorting wall must be undertaken with any areas noted to have excessive seepage suitably grouted and/or otherwise sealed as soon as practical.

All dewatering works, including stored water from within the perimeter caisson shoring system, must be completed in accordance with applicable environmental regulations.

5.4.5 Protection of Existing Structures and Utilities

During the completion of bulk excavation works, particular attention must be given to the design and support of the excavation where existing structures and/or or utilities located within the zone of influence of the proposed temporary shoring excavation to ensure that they are not damaged. Please refer to Section 5.4.8 for recommended additional work considerations to better understand the sensitivity of existing buildings and/or infrastructure located in close proximity to the perimeter of the proposed development.

5.4.6 Concrete Sulphate Requirements

Based on the results of the soluble sulphate content testing presented in Section 3.0, the soils at the site pose no risk of soluble sulphate attack on buried concrete. Accordingly, no special sulphate protection provisions for buried concrete are required for the site and therefore regular "general use" Portland cement may be used.

5.4.7 Off-Site Disposal of Excess Soils

Environmental issues related to the proposed works are beyond the scope of the GeoTerre works and the intent of this section is to highlight that the disposal of excess soils from the site must be undertaken in accordance with the applicable environmental legislation.

5.4.8 Borehole Abandonment

It is recommended that prior to any existing boreholes with installed piezometers/monitoring wells being disturbed during construction, that the installed piezometer/monitoring wells be abandoned in accordance with MOE Regulation 903.

5.4.9 Recommendations for Additional Work

In order to better address some of the data gaps of this preliminary geotechnical report, consideration should be given to the completion of the following as the proposed development moves forward toward construction:

- Development and/or compilation of suitable ground movement design criteria (lateral and vertical) for each proposed shoring wall located around the perimeter of the entire development, to ensure it is consistent with the movement tolerances of the existing elements that abut the overall site. Similar pre-design works should also be developed to address any internal ground movement constraints that arise as part of the phased construction of the overall development.
- Additional deep boreholes with the footprint area of each proposed building to better confirm the uniformity of the deep sand and silt till unit, especially the apparent lateral limits of the weaker deep zones in this layer that were intercepted in boreholes BH22-1 and 2 and to a lesser extent, BH22-3 (refer to Figure 4 for summarized SPT 'N' Values with depth).
- Possible completion of some limited deep bedrock coring to confirm the quality of the existing shale bedrock that underlies the site and related feasibility of using deep caissons to bedrock to support elements with particularly high loads.

5.4.10 Construction Supervision

It is recommended that the works outlined within be completed under the under the direct observation of GeoTerre who have the best familiarity with the soil conditions within the site boundaries and the rationale behind the development of the various geotechnical design recommendations presented within. In addition, and as detailed in the "*Limitations and Information Regarding Use of Report*" of attached Appendix A, retaining GeoTerre to undertake the foregoing observations during construction is considered to be an integral and vital part of the implementation of the various recommendations, opinions and suggestions contained in this report.

6.0 CLOSURE

We trust that this report is sufficient for your present requirements. Should you have any questions or require clarification on any matter, please do not hesitate to contact us.

GeoTerre Limited

LICENSED PROFESSIONAL ENGINEER
I. CORBETT
June 30/22
PROVINCE OF ONTARIO

Ivan Corbett, M.Sc., P.Eng.
President

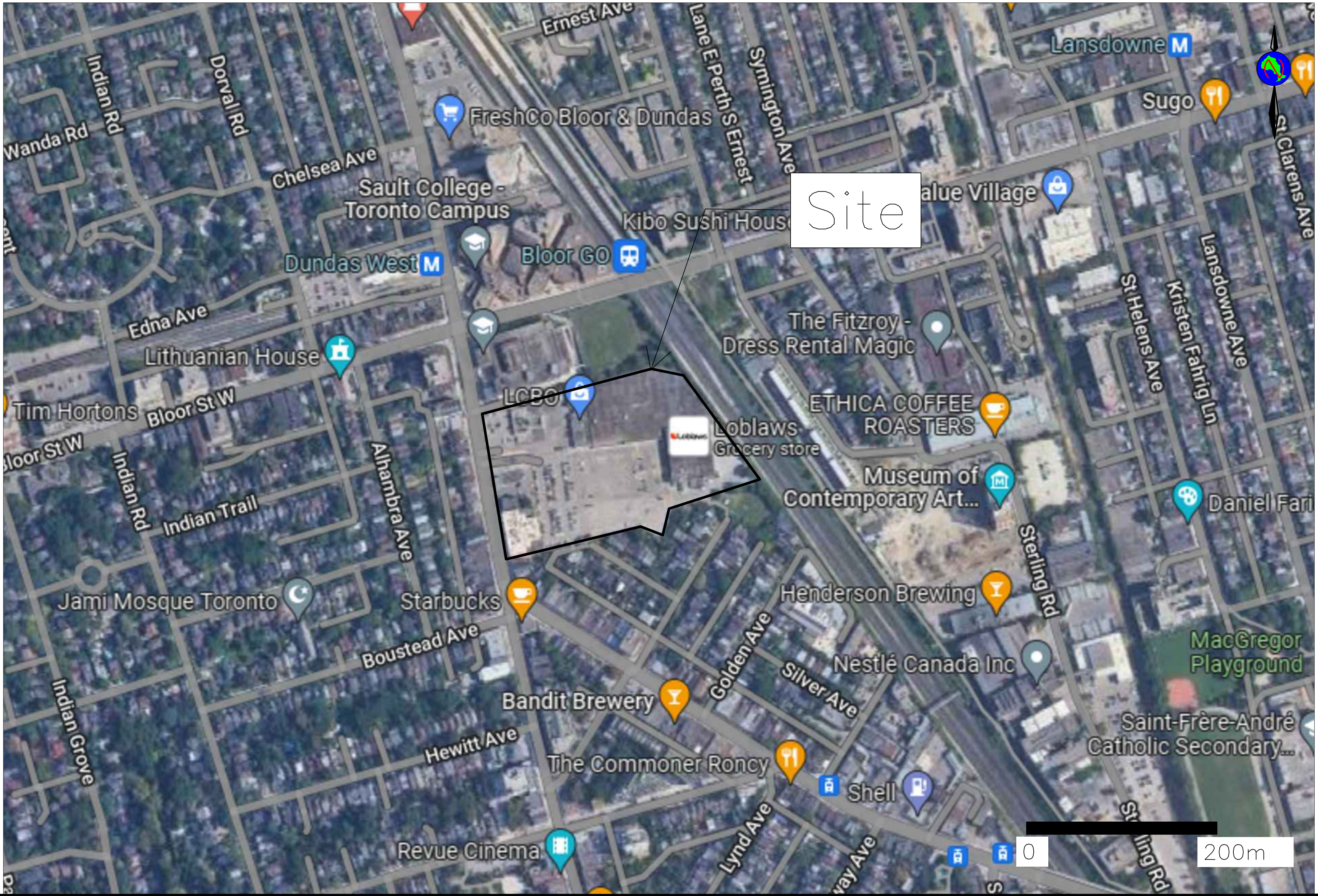
TABLES

TABLE 1
BLOOR/DUNDAS PROPOSED DEVELOPMENT - 2280 DUNDAS STREET WEST, TORONTO
PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT
2022 Borehole Monitoring Well Details and Groundwater Level Measurements to June 10, 2022

Borehole No.	Borehole Depth (m)	Ground Elevation (m)(1)	Monitoring Well Details							Measured Groundwater **Elevation**(Depth(2)) in metres(3)					
			Type	Top of Pipe Elevation (m)	Top of Screen Depth (m)	Screen Length (m)	Borehole Diameter over Screen Limits (mm)	Screened Formation	Installation Date	Upon Installation	18-May-22	10-Jun-22	10-Jun-22		
BH22-1	35.1	112.85	50 mm PVC Pipe	Not Available	32.3	1.5	96.0	Sand and Silt Till	4-May-22	N/A(4)	**106.07** (6.78)	Not Measured	**106.13** (6.72)		
BH22-2	35.3	112.06	No Monitoring Well Installed												
BH22-3	32.8	112.08	50 mm PVC Pipe	111.99	27.9	3.0	96.0	See Note (5)	6-May-22	N/A(4)	**100.51** (11.57)	**97.32** (14.76)	**97.60** (14.76)		
BH22-4	34.8	112.30	50 mm PVC Pipe	112.30	30.8	1.5	96.0	See Note (6)	25-Apr-22	N/A(4)	**99.90** (12.40)	**99.75** (12.55)	**99.77** (12.53)		
BH22-5	31.2	112.45	50 mm PVC Pipe	112.28	29.5	1.5	96.0	See Note (7)	13-May-22	N/A(4)	**111.49** (0.96)	**95.01** (17.44)	**97.36** (15.11)		

Notes: (1) Elevations provided by SLR and are Understood to be Geodetic
(2) Water depth relative to ground surface.
(3) Water levels of June 3, 2022 provided by SLR.
(4) Not applicable due to washboring drilling method.
(5) 27.89 m to 29.82 m - Sand and Silt Till; 29.82 m to 30.94 m - Shale Bedrock
(6) 30.80 m to 30.52 m - Sand and Silt Till; 30.52 m to 32.30 m - Shale Bedrock
(7) 29.52 m to 29.84 m - Sand and Silt Till; 29.84 m to 31.03 m - Shale Bedrock

FIGURES



DUNDAS/BLOOR PROPOSED DEVELOPMENT
2280 DUNDAS STREET WEST, TORONTO
GEOTECHNICAL INVESTIGATION REPORT

SITE LOCATION PLAN

GEOTERRE

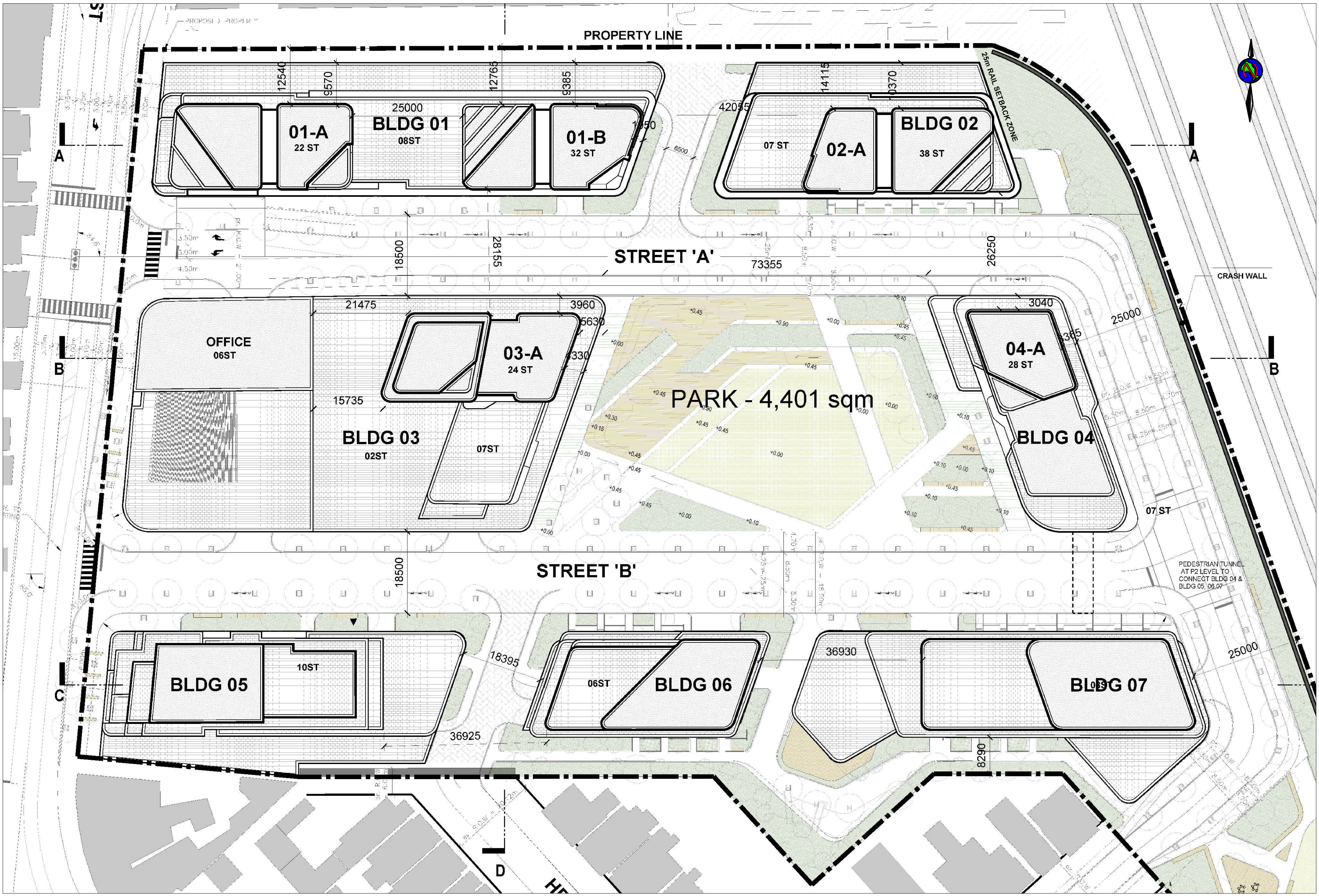
215 ADVANCE BLVD. - UNIT 5/6
BRAMPTON, ONTARIO, L6T 4V9
TEL (905) 455-5666
FAX (905) 455-5639

Date: June 30, 2022

Project No: TG22-020

Scale: AS SHOWN

FIGURE 1



DUNDAS/BLOOR PROPOSED DEVELOPMENT
2280 DUNDAS STREET WEST, TORONTO
GEOTECHNICAL INVESTIGATION REPORT

PROPOSED SITE DEVELOPMENT PLAN

GEOTERRE

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TEL (905) 455-5666
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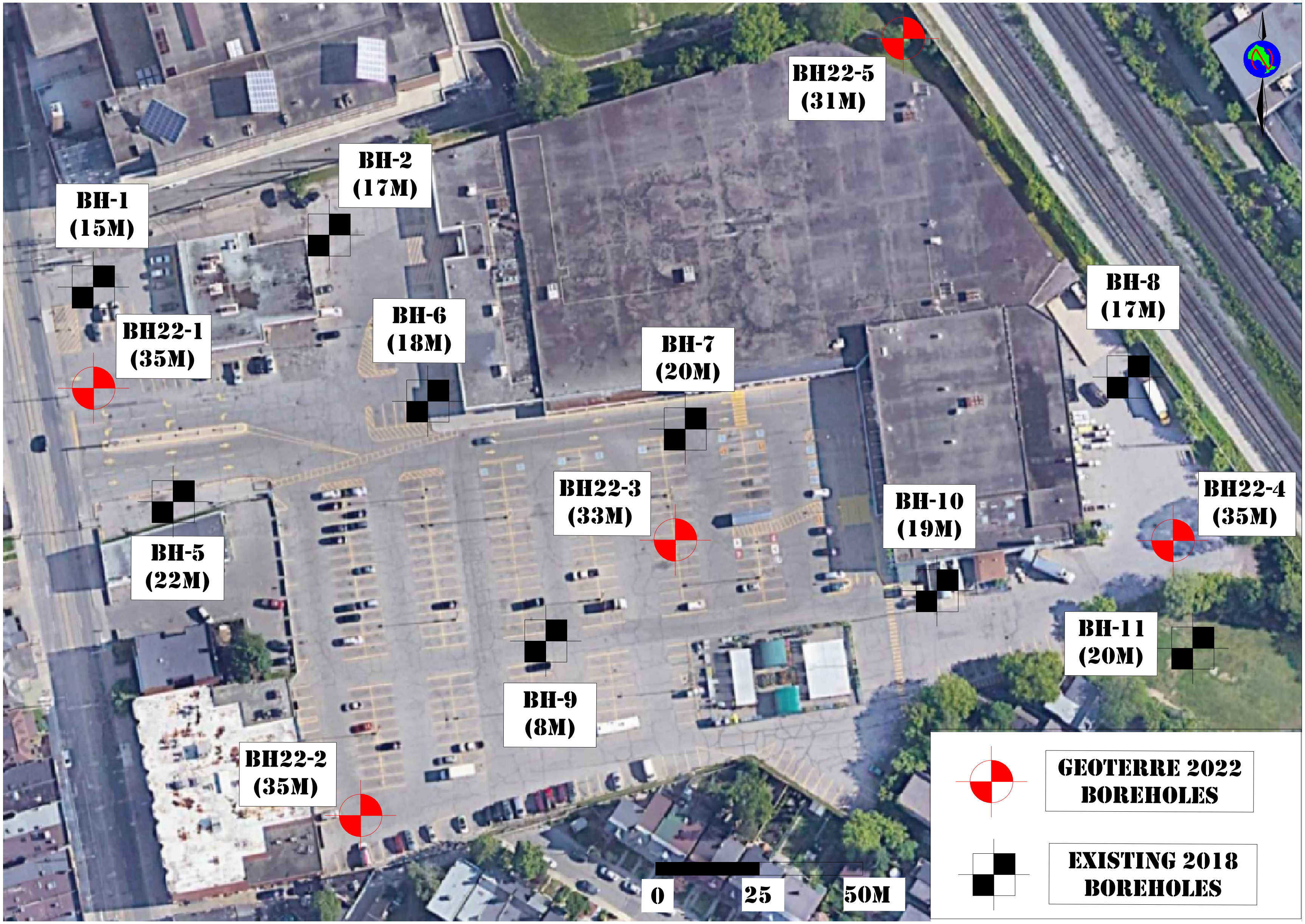
Date: June 30, 2022	Project No: TG22-020
Scale: AS SHOWN	FIGURE 2



BLOOR/DUNDAS PROPOSED DEVELOPMENT
2280 DUNDAS STREET WEST, TORONTO
GEOTECHNICAL INVESTIGATION REPORT

2022 and 2018 BOREHOLE LOCATIONS VS EXISTING CONDITIONS

GEOTERRE

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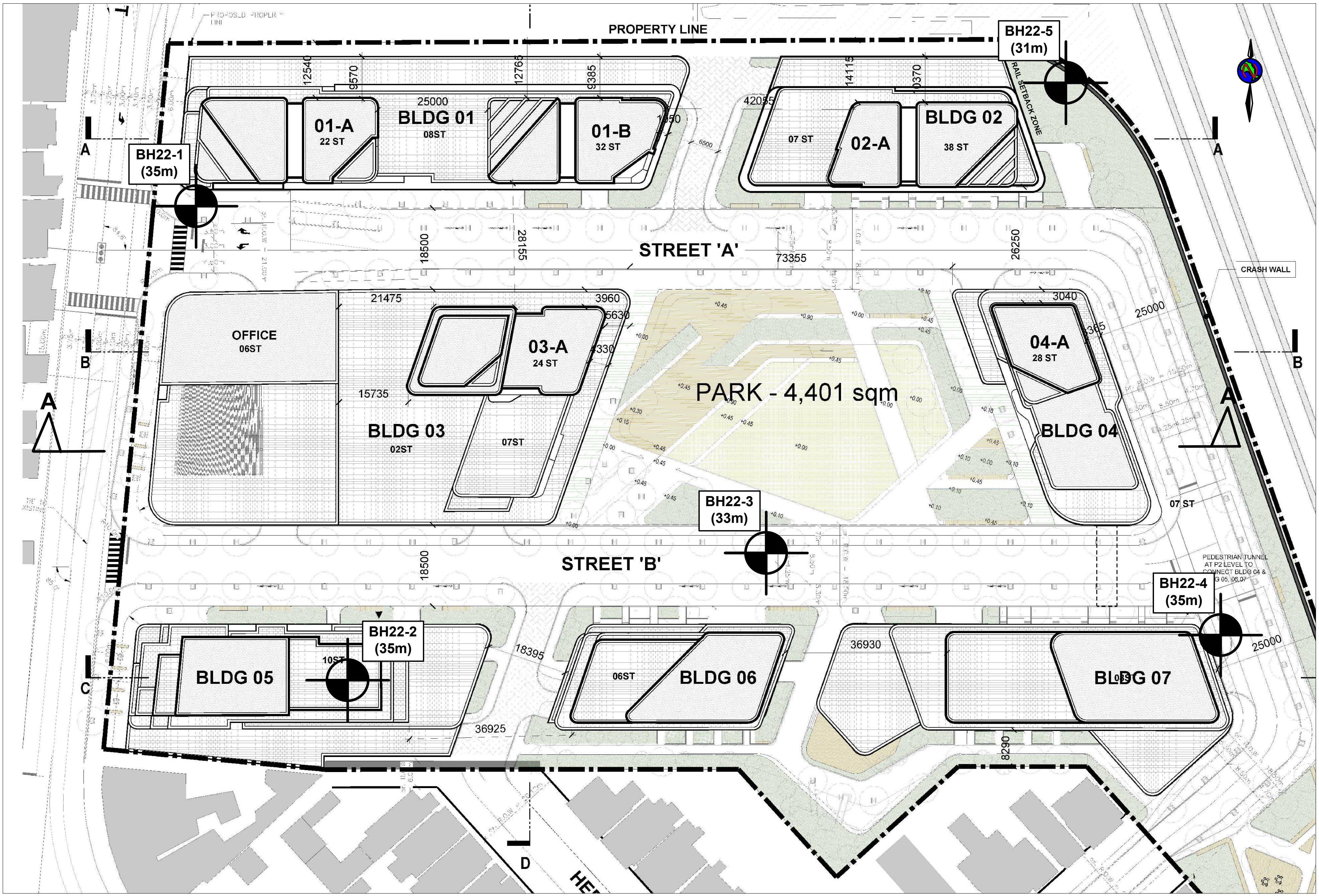
Date:
June 30, 2022

Scale:
AS SHOWN

Project No:
TG22-020

FIGURE 3A



DUNDAS/BLOOR PROPOSED DEVELOPMENT
2280 DUNDAS STREET WEST, TORONTO
GEOTECHNICAL INVESTIGATION REPORT

2022 BOREHOLE LOCATIONS VS PROPOSED DEVELOPMENT

GEOTERRE

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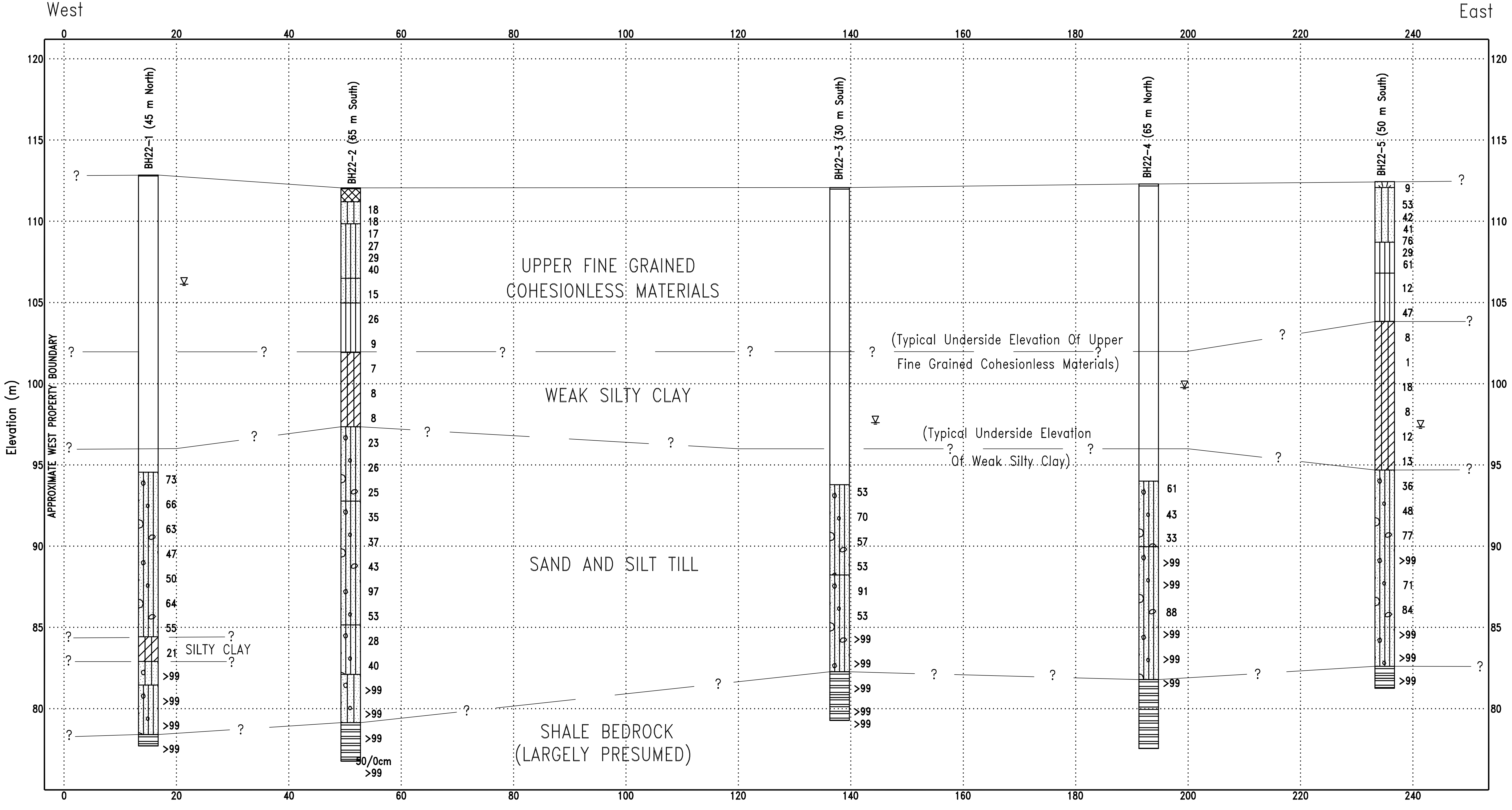
Date: June 30, 2022

Project No: TG22-020

Scale: AS SHOWN

FIGURE 3B



Note: Refer to Figure 3B for Location of Stratigraphic Section A–A

STRATIGRAPHY WITH WATER LEVELS (NO PIEZO SLR–DUNDAS–BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

GEOTERRE

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LITHOLOGY GRAPHICS

- Asphalt
- Fill
- Topsoil
- Sand and Silt Till
- Silty Sand
- ▽ Water Level on June 10, 2022
- Silty Clay
- Sand and Silt
- Silty Sand Till
- Silt
- Shale
- Sandy Silt Till

FIGURE 4 – STRATIGRAPHIC SECTION A–A THRU 2022 BOREHOLES

Project No.: TG22–020
Client: SLR
Project: Dundas/Bloor Proposed Development
Location: 2280 Dundas Street West, Toronto, Ontario

APPENDIX A

LIMITATIONS AND INFORMATION REGARDING USE OF REPORT

GEOTERRE

LIMITATIONS AND INFORMATION REGARDING USE OF REPORT

This report was prepared by GeoTerre Limited (GeoTerre) for the sole use of the named client and for review and use by its designated consultants and government agencies during realization of the project. Any use by a third party of this report other than those named in the preceding sentence, or any reliance on, or decisions to be made based on it, are the responsibility of such third parties. GeoTerre accepts no responsibility for damages, if any, suffered by any third party as of a result of decisions made or actions based on this report.

The conclusions and recommendations presented in this report are intended to be preliminary in nature and are not intended or applicable for detailed design. Furthermore, the preliminary design recommendations given in this report are applicable only to the project described in the text and then only if the project as envisaged during detailed design is substantially in accordance with details stated in this report. Since all details of the final design are not known at this time, we recommend that we be retained during the final design stage to the project to verify that the design is consistent with the preliminary recommendations presented within.

Preliminary comments presented within regarding the prevailing subsurface and groundwater conditions within the limits of the site are provided for illustration only and must be confirmed during the detailed design phase of the project or any elements associated thereto.

Unless otherwise noted, the information contained herein in no way reflects on environmental aspects of either the site or the subsurface conditions.

During construction, we recommend that GeoTerre be retained to perform sufficient and timely observations of encountered conditions to confirm and document that the subsurface conditions do not materially differ from those considered by GeoTerre in the preparation of this report and to confirm and document that construction activities do not adversely affect the recommendations, opinions and suggestions contained in the GeoTerre report.

GEOTERRE LIMITED

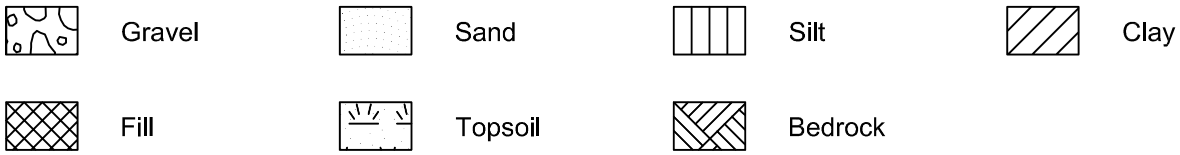
APPENDIX B

GEOTERRE 2022 BOREHOLE LOGS

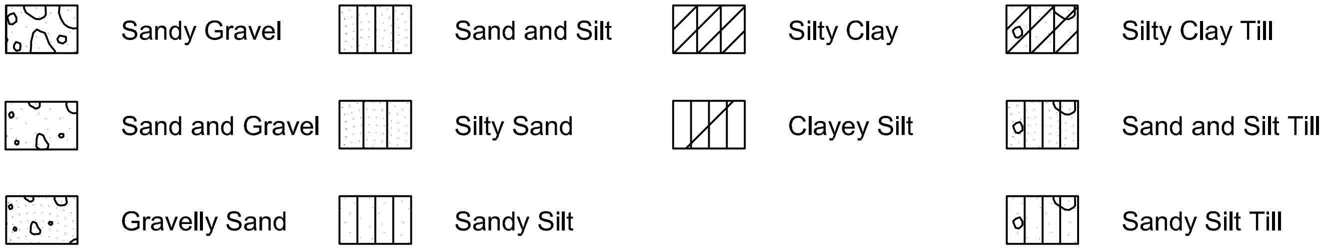
GEOTERRE

SYMBOLS AND TERMS FOR BOREHOLE LOG SOIL DESCRIPTION

BASIC SOIL SYMBOLS



EXAMPLE SOIL REPRESENTATIONS



CLASIFICATION BY PARTICLE SIZE (UNIFIED SOIL CLASSIFICATION SYSTEM)

NAME		PARTICLE SIZE RANGE		
		MM	U. S. STANDARD SIEVE SIZE	
			RETAINED	PASSING
Boulders		>200	8 inch	-
Cobbles		75 to 200	3 inch	8 inch
Gravel	**coarse**	19 to 75	0.75 inch	3 inch
	fine	4.75 to 19	No. 4	0.75 inch
Sand	**coarse**	2 to 4.75	No. 10	No. 4
	medium	0.425 to 2	No. 40	No. 10
	fine	0.075 to 0.425	No. 200	No. 40
Fines (Silt and Clay Particles)		<0.075	-	No. 200

PROPORTION OF MINOR COMPONENTS BY WEIGHT

noun	gravel, sand, silt, clay	>35 % and main fraction
"and"	and gravel, and silt, etc.	35 to 50 %
adjective	gravelly, sandy, silty, clayey, etc.	20 to 35 %
"some"	some sand, some silt, etc.	10 to 20 %
"trace"	trace sand, trace silt, etc.	0 to 10%

DEGREE OF PLASTICITY

DEFINITION	CATEGORY
$W_L<30$	Low
$30<W_L<50$	Medium
$W_L>50$	High

COMPACTNESS OF GRANULAR SOILS BASE ON SPT

COMPACTNESS CONDITION	UNCORRECTED FIELD SPT N-VALUES (BLOWS/300 MM)
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	>50

CONSISTENCY AND UNDRAINED SHEAR STRENGTH OF COHESIVE SOILS

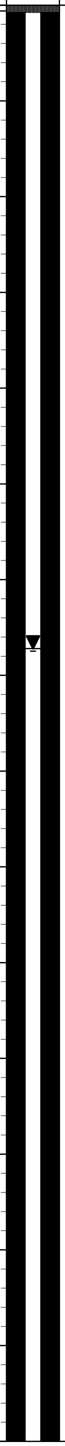
CONSISTENCY OF COHESIVE SOILS	UNDRAINED SHEAR STRENGTH (KPA)	UNCORRECTED FIELD SPT N-VALUES (BLOWS/300 MM)
Very Soft	<12	<2
Soft	12 to 25	2 to 4
Firm	25 to 50	5 to 8
Stiff	50 to 100	9 to 15
Very Stiff	100 to 200	16 to 30
Hard	>200	>30

LOG OF BOREHOLE BH22-1

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.85 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 4 2022**

ELEV. (m) DEPTH (m)	Water/Backfill Data	% MOISTURE W_P ● W □ ● W_L 10 20 30 40	Symbol	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	VANE (kPa) ✖ Pocket Pen (kPa) + 20 40 60 80 SPT (N) ● DCPT ◆ Blows/0.3m 20 40 60 80	GRAIN SIZE DISTRIBUTION (%) Gr Sa Si Cl
112.8 0.1				ASPHALT (55mm)					
				NOT SAMPLED					



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SAMPLE TYPE

▤ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

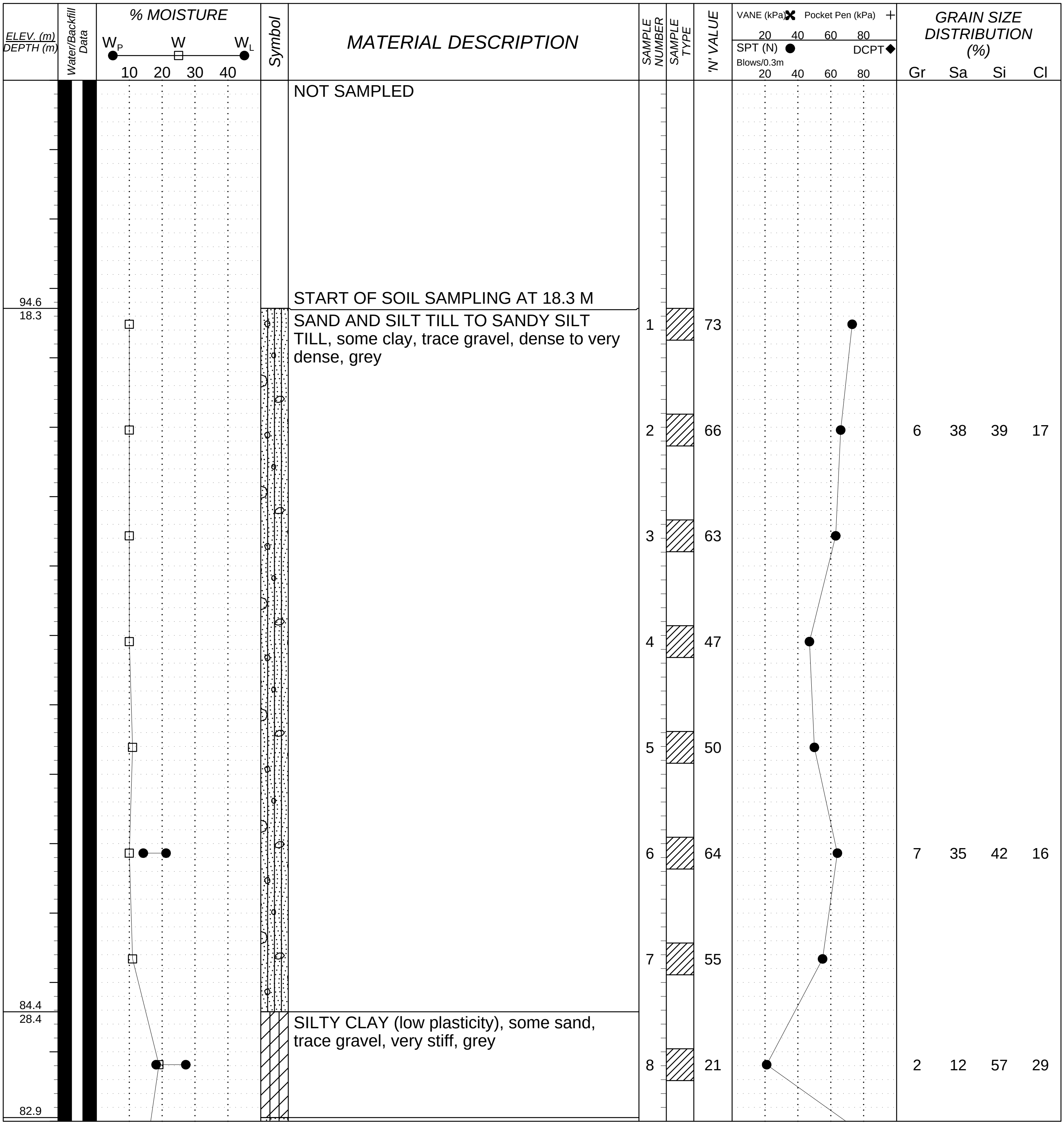
BACKFILL LEGEND

▩ Concrete	■ Bentonite	☒ Grout
▒ Drill Cuttings	⁙ Filter Sand	▦ Slough
▓ Asphalt	▥ Slotted Pipe	

LOG OF BOREHOLE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

LOG OF BOREHOLE BH22-1

PROJECT No.: **TG22-020**	Drilling Data
CLIENT: **SLR**	METHOD: **See Note 1**
PROJECT: **Dundas/Bloor Proposed Development**	DIAMETER:
LOCATION: **2280 Dundas Street West, Toronto, Ontario**	PREP. BY: **PS** APPR. BY: **IC**
SURFACE ELEV.: **112.85 metres (Geodetic)**	DATE: **May 4 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	GRAIN SIZE DISTRIBUTION (%) Gr	Sa	Si	Cl
	NOT SAMPLED							
94.6 18.3	START OF SOIL SAMPLING AT 18.3 M SAND AND SILT TILL TO SANDY SILT TILL, some clay, trace gravel, dense to very dense, grey	1	▨	73				
		2	▨	66	6	38	39	17
		3	▨	63				
		4	▨	47				
		5	▨	50				
		6	▨	64	7	35	42	16
		7	▨	55				
84.4 28.4	SILTY CLAY (low plasticity), some sand, trace gravel, very stiff, grey	8	▨	21	2	12	57	29
82.9								

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SAMPLE TYPE

☰ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

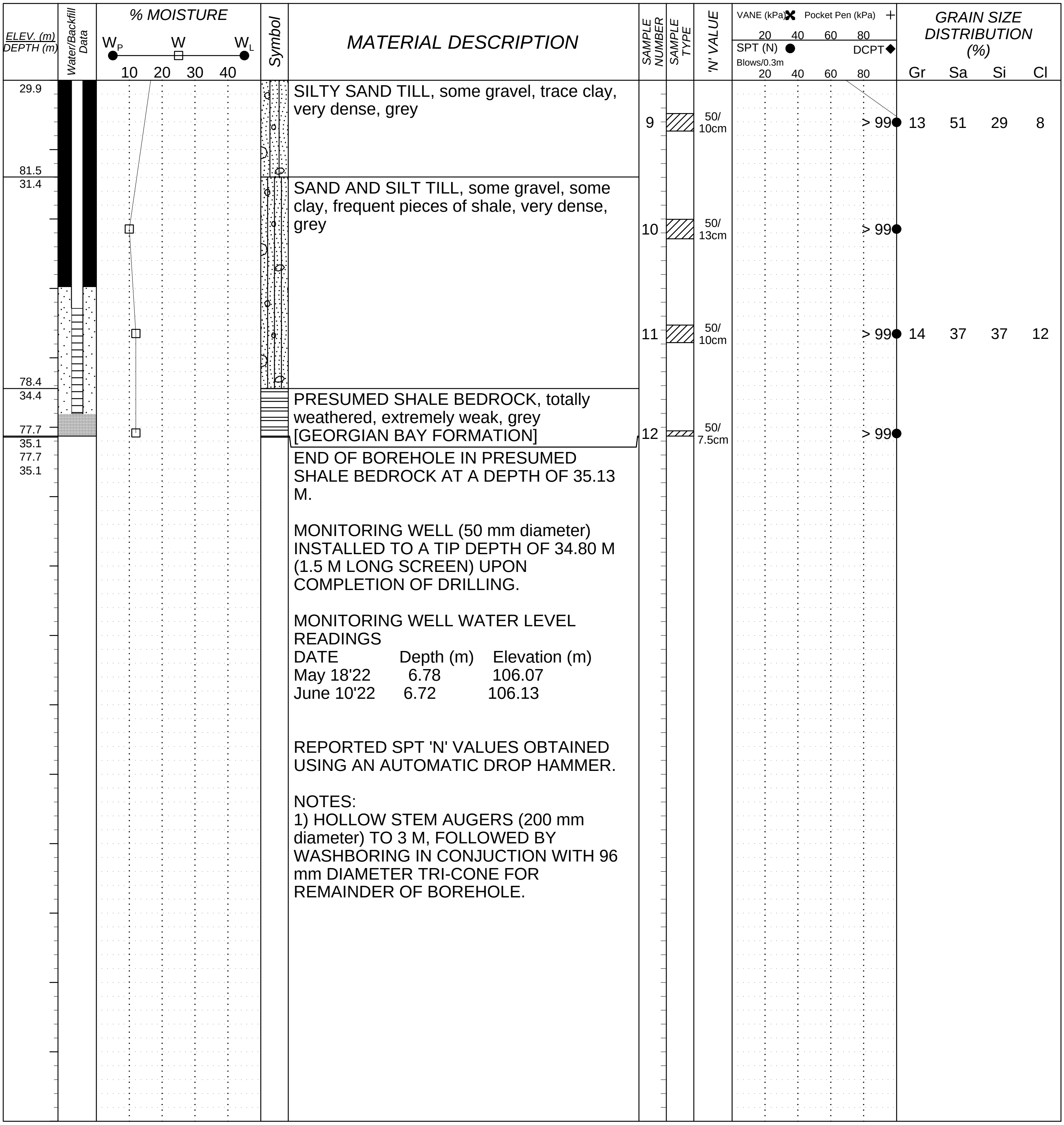
BACKFILL LEGEND

▩ Concrete	■ Bentonite	▧ Grout
▒ Drill Cuttings	⁘ Filter Sand	▦ Slough
▓ Asphalt	▥ Slotted Pipe	

LOG OF BOREHOLE BH22-1

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.85 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 4 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION
29.9	SILTY SAND TILL, some gravel, trace clay, very dense, grey
81.5 31.4	SAND AND SILT TILL, some gravel, some clay, frequent pieces of shale, very dense, grey
78.4 34.4	PRESUMED SHALE BEDROCK, totally weathered, extremely weak, grey [GEORGIAN BAY FORMATION]
77.7 35.1 77.7 35.1	END OF BOREHOLE IN PRESUMED SHALE BEDROCK AT A DEPTH OF 35.13 M.

SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	SPT (N)	Gr	Sa	Si	Cl
9	▨	50/ 10cm	> 99	13	51	29	8
10	▨	50/ 13cm	> 99				
11	▨	50/ 10cm	> 99	14	37	37	12
12	▨	50/ 7.5cm	> 99				

MONITORING WELL (50 mm diameter) INSTALLED TO A TIP DEPTH OF 34.80 M (1.5 M LONG SCREEN) UPON COMPLETION OF DRILLING.

MONITORING WELL WATER LEVEL READINGS

DATE	Depth (m)	Elevation (m)
May 18'22	6.78	106.07
June 10'22	6.72	106.13

REPORTED SPT 'N' VALUES OBTAINED USING AN AUTOMATIC DROP HAMMER.

NOTES:
1) HOLLOW STEM AUGERS (200 mm diameter) TO 3 M, FOLLOWED BY WASHBORING IN CONJUCTION WITH 96 mm DIAMETER TRI-CONE FOR REMAINDER OF BOREHOLE.

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SAMPLE TYPE

☰ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

BACKFILL LEGEND

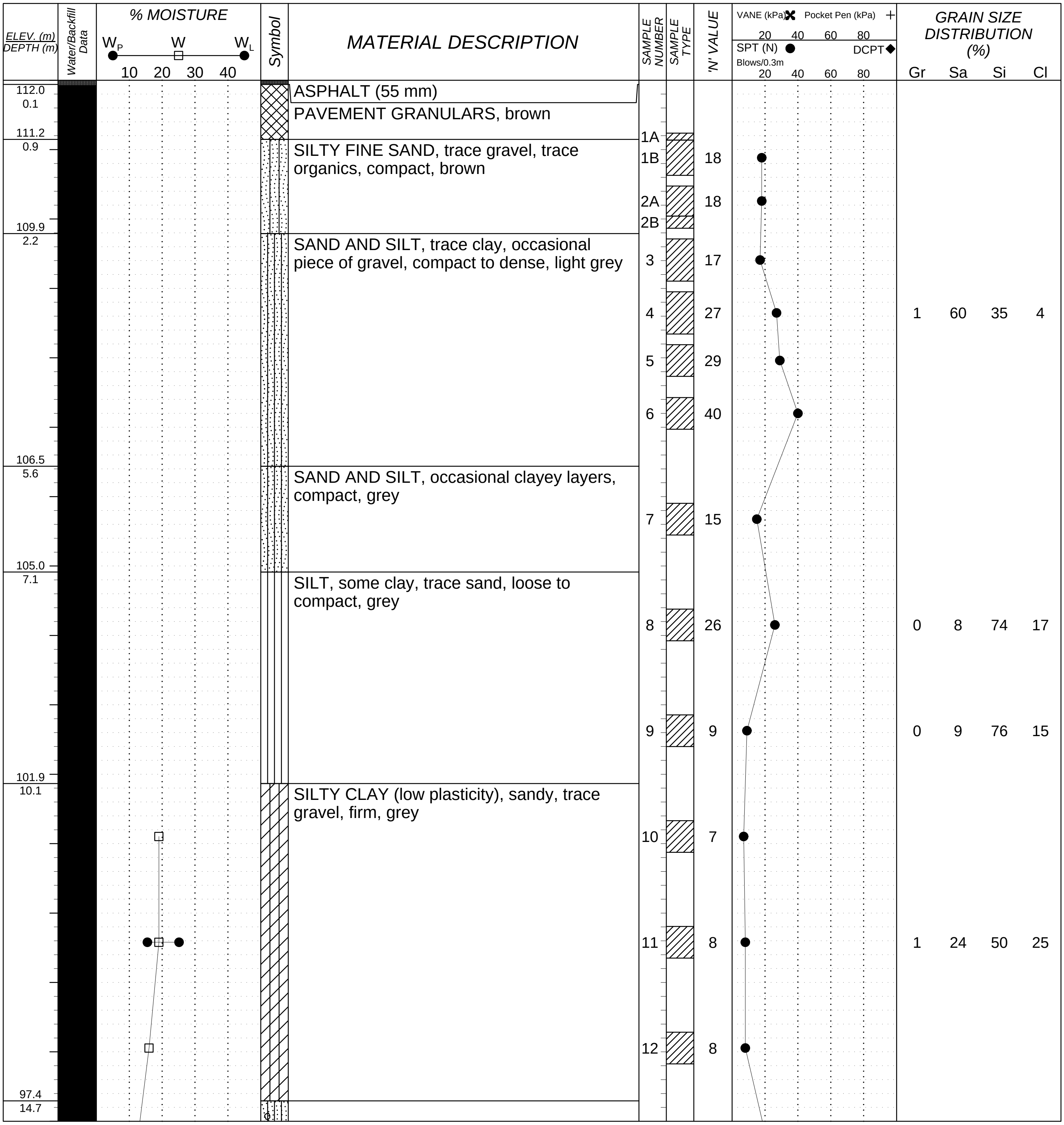
▩ Concrete	■ Bentonite	☒ Grout
▒ Drill Cuttings	⁙ Filter Sand	▦ Slough
▓ Asphalt	▤ Slotted Pipe	

LOG OF BOREHOLE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

LOG OF BOREHOLE BH22-2

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.06 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **April 28 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	GRAIN SIZE DISTRIBUTION (%) Gr	Sa	Si	Cl
112.0 0.1	ASPHALT (55 mm)							
	PAVEMENT GRANULARS, brown	1A	▨					
111.2 0.9	SILTY FINE SAND, trace gravel, trace organics, compact, brown	1B	▨	18				
		2A	▨	18				
		2B	▨					
109.9 2.2	SAND AND SILT, trace clay, occasional piece of gravel, compact to dense, light grey	3	▨	17				
		4	▨	27	1	60	35	4
		5	▨	29				
		6	▨	40				
106.5 5.6	SAND AND SILT, occasional clayey layers, compact, grey	7	▨	15				
105.0 7.1	SILT, some clay, trace sand, loose to compact, grey	8	▨	26	0	8	74	17
		9	▨	9	0	9	76	15
101.9 10.1	SILTY CLAY (low plasticity), sandy, trace gravel, firm, grey	10	▨	7				
		11	▨	8	1	24	50	25
		12	▨	8				
97.4 14.7								

LOG OF BOREHOLE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

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SAMPLE TYPE

☰ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

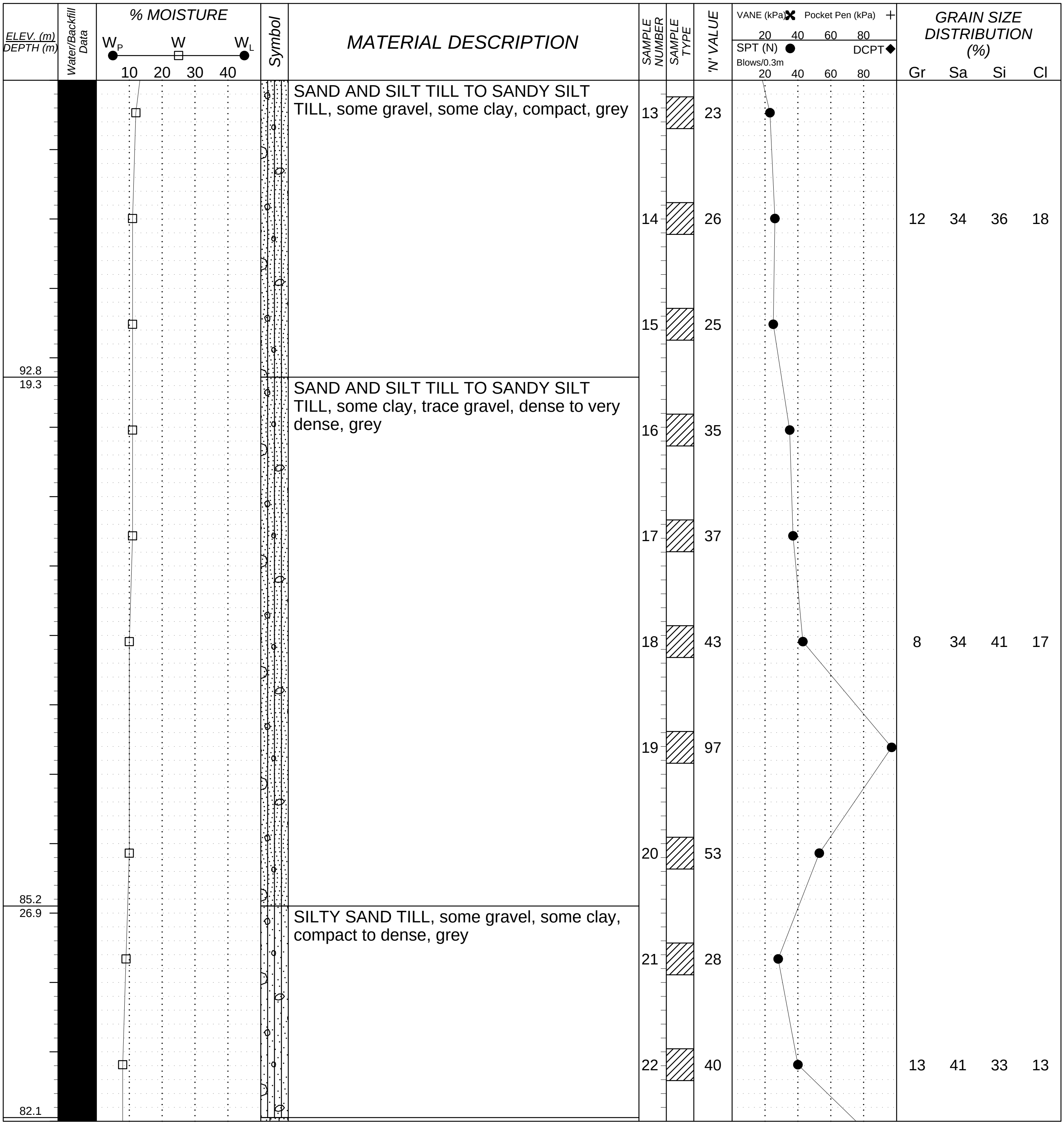
BACKFILL LEGEND

▩ Concrete	■ Bentonite	▧ Grout
▒ Drill Cuttings	⁙ Filter Sand	▦ Slough
▓ Asphalt	▤ Slotted Pipe	

LOG OF BOREHOLE BH22-2

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.06 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **April 28 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	Gr	Sa	Si	Cl
	SAND AND SILT TILL TO SANDY SILT TILL, some gravel, some clay, compact, grey	13	▨	23				
		14	▨	26	12	34	36	18
		15	▨	25				
92.8 19.3	SAND AND SILT TILL TO SANDY SILT TILL, some clay, trace gravel, dense to very dense, grey	16	▨	35				
		17	▨	37				
		18	▨	43	8	34	41	17
		19	▨	97				
		20	▨	53				
85.2 26.9	SILTY SAND TILL, some gravel, some clay, compact to dense, grey	21	▨	28				
		22	▨	40	13	41	33	13
82.1								

GRAIN SIZE DISTRIBUTION (%)

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SAMPLE TYPE
- ▤ Auger Sample
- ▨ Split Spoon Sample
- ░ Bulk Sample
- ☐ Thin Wall Tube Sampler
- ▥ Pionjar Sample
- ☒ Soil Core (PQ)

BACKFILL LEGEND
- ▧ Concrete
- ▒ Drill Cuttings
- ▓ Asphalt
- ■ Bentonite
- ⁘ Filter Sand
- ▤ Slotted Pipe
- ▨ Grout
- ▩ Slough

LOG OF BOREHOLE BH22-2

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.06 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **April 28 2022**

ELEV. (m) DEPTH (m)	Water/Backfill Data	% MOISTURE WP W WL 10 20 30 40	Symbol	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	VANE (kPa) ✖ Pocket Pen (kPa) + / SPT (N) ● Blows/0.3m DCPT ◆ 20 40 60 80	GRAIN SIZE DISTRIBUTION (%) Gr	Sa	Si	Cl
29.9	■			SILTY SAND TILL, trace to some gravel, trace to some clay, frequent small pieces of shale, very dense, grey	23	▨	83/ 25cm	> 99 ●	11	48	31	10
	■				24	▨	50/ 13cm	> 99 ●				
79.1 32.9	■			PRESUMED SHALE BEDROCK, highly to totally weathered, extremely weak to very weak, grey [GEORGIAN BAY FORMATION]	25	▨	50/ 10cm	> 99 ●				
	■				26		50/ 0cm	> 99 ●				
	■				27	▨	50/ 7.5cm	> 99 ●				
76.8 35.3				END OF BOREHOLE AT DEPTH OF 35.28 M IN PRESUMED SHALE BEDROCK.								

PROPOSED MONITORING WELL INSTALLATION FAILED TO RESULT IN A FUNCTIONING WELL.

REPORTED SPT 'N' VALUES OBTAINED USING AN AUTOMATIC DROP HAMMER.

NOTES:
1) HOLLOW STEM AUGERS (200 mm diameter) TO 3 M, FOLLOWED BY WASHBORING IN CONJUCTION WITH 96 mm DIAMETER TRI-CONE FOR REMAINDER OF BOREHOLE.

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SAMPLE TYPE

▤	Auger Sample	☐	Thin Wall Tube Sampler
▨	Split Spoon Sample	▥	Pionjar Sample
░	Bulk Sample	☒	Soil Core (PQ)

BACKFILL LEGEND

▩	Concrete	■	Bentonite	▧	Grout
▒	Drill Cuttings	⁘	Filter Sand	▦	Slough
▓	Asphalt	▥	Slotted Pipe		

LOG OF BOREHOLE BH22-3

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.08 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 6 2022**

ELEV. (m) DEPTH (m)	Water/Backfill Data	% MOISTURE W_P W W_L 10 20 30 40	Symbol	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	VANE (kPa) ✖ Pocket Pen (kPa) + 20 40 60 80 SPT (N) ● DCPT ◆ Blows/0.3m 20 40 60 80	GRAIN SIZE DISTRIBUTION (%) Gr Sa Si Cl
			▓	ASPHALT (95mm)					
112.0 0.1	▼			NOT SAMPLED					

LOG OF BOREHOLE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

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SAMPLE TYPE

▤ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

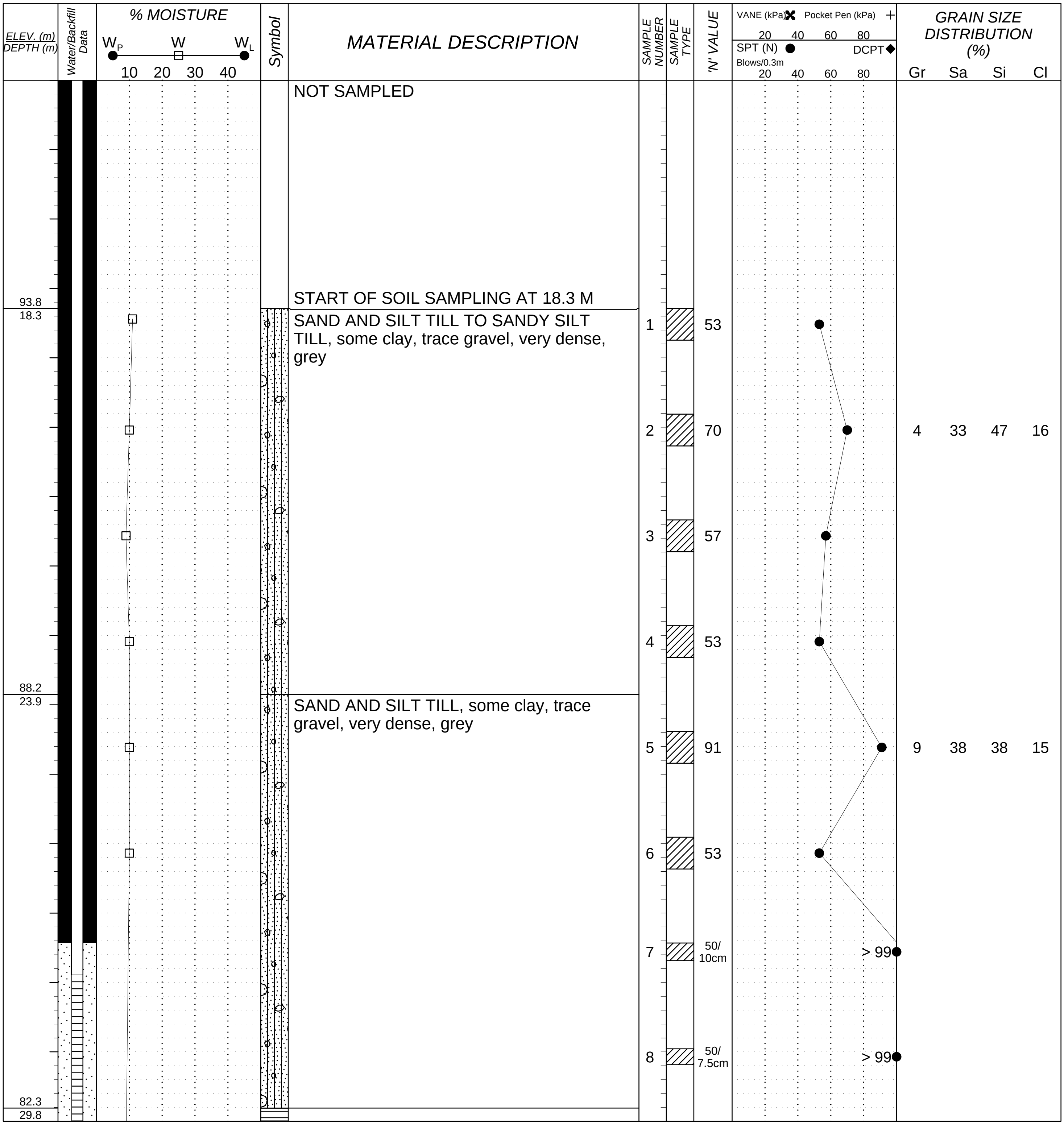
BACKFILL LEGEND

▒ Concrete	■ Bentonite	▧ Grout
░ Drill Cuttings	⁘ Filter Sand	▩ Slough
▓ Asphalt	▥ Slotted Pipe	

LOG OF BOREHOLE BH22-3

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.08 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 6 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	Gr	Sa	Si	Cl
	NOT SAMPLED							
93.8 18.3	START OF SOIL SAMPLING AT 18.3 M							
	SAND AND SILT TILL TO SANDY SILT TILL, some clay, trace gravel, very dense, grey	1	▨	53				
		2	▨	70	4	33	47	16
		3	▨	57				
		4	▨	53				
88.2 23.9	SAND AND SILT TILL, some clay, trace gravel, very dense, grey							
		5	▨	91	9	38	38	15
		6	▨	53				
		7	▨	50/ 10cm				
		8	▨	50/ 7.5cm				
82.3 29.8								

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SAMPLE TYPE

☰	Auger Sample	☐	Thin Wall Tube Sampler
▨	Split Spoon Sample	▥	Pionjar Sample
░	Bulk Sample	☒	Soil Core (PQ)

BACKFILL LEGEND

▩	Concrete	■	Bentonite	▧	Grout
▒	Drill Cuttings	⁘	Filter Sand	▦	Slough
▓	Asphalt	▤	Slotted Pipe		

LOG OF BOREHOLE BH22-3

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.08 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 6 2022**

ELEV. (m) DEPTH (m)	Water/Backfill Data	% MOISTURE W_P W W_L (10 20 30 40)	Symbol	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	VANE (kPa) ✖ Pocket Pen (kPa) + / SPT (N) ● DCPT ◆ Blows/0.3m (20 40 60 80)	GRAIN SIZE DISTRIBUTION (%) Gr Sa Si Cl
	Slotted Pipe / Filter Sand	□		SHALE BEDROCK, totally weathered, extremely weak, grey [GEORGIAN BAY FORMATION]	9	Split Spoon Sample	50/ 7.5cm	> 99●	
80.7 31.4	Filter Sand / Drill Cuttings			SHALE BEDROCK, highly weathered, very weak, grey [GEORGIAN BAY FORMATION]	10		50/ 2.5cm	> 99●	
					11		50/ 2.5cm	> 99●	
79.3 32.8				END OF BOREHOLE IN PRESUMED SHALE BEDROCK AT A DEPTH OF 32.79 M.					

MONITORING WELL (50 mm diameter) INSTALLED TO A TIP DEPTH OF 30.94 M (3.0 M LONG SCREEN) UPON COMPLETION OF DRILLING.

MONITORING WELL WATER LEVEL READINGS

DATE	Depth (m)	Elevation (m)
May 18'22	11.57	100.51
June 3'22	14.76	97.32
June 10'22	14.48	97.60

REPORTED SPT 'N' VALUES OBTAINED USING AN AUTOMATIC DROP HAMMER.

NOTES:
1) HOLLOW STEM AUGERS (200 mm diameter) TO 6 M, FOLLOWED BY WASHBORING IN CONJUCTION WITH 96 mm DIAMETER TRI-CONE FOR REMAINDER OF BOREHOLE.

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SAMPLE TYPE

▤ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

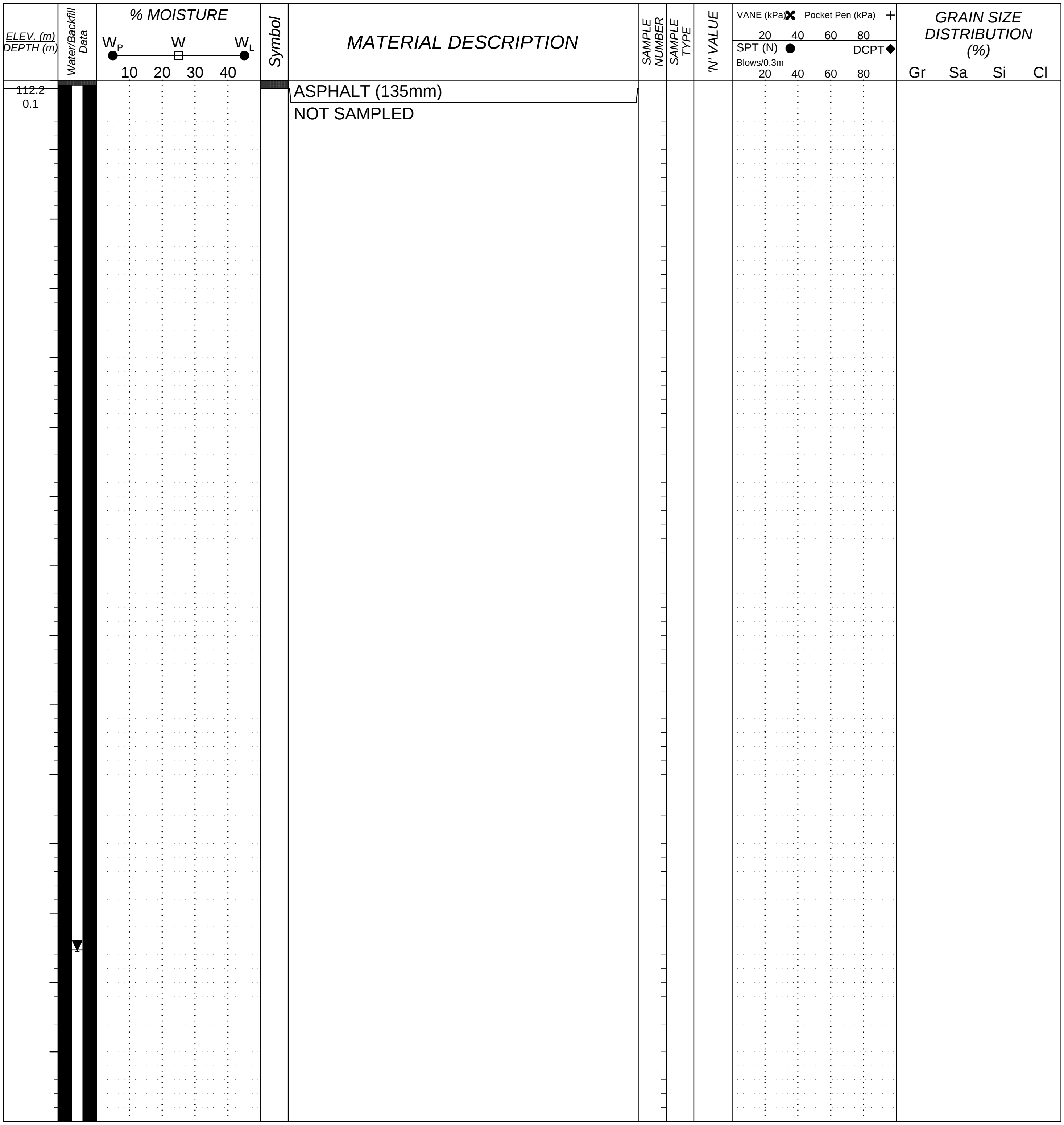
BACKFILL LEGEND

▩ Concrete	■ Bentonite	▧ Grout
░ Drill Cuttings	⁘ Filter Sand	▦ Slough
▓ Asphalt	▥ Slotted Pipe	

LOG OF BOREHOLE BH22-4

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.30 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **April 25 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	GRAIN SIZE DISTRIBUTION (%) Gr	Sa	Si	Cl
112.2 0.1	ASPHALT (135mm)							
	NOT SAMPLED							

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SAMPLE TYPE

- ▤ Auger Sample
- ▨ Split Spoon Sample
- ░ Bulk Sample
- ☐ Thin Wall Tube Sampler
- ▥ Pionjar Sample
- ☒ Soil Core (PQ)

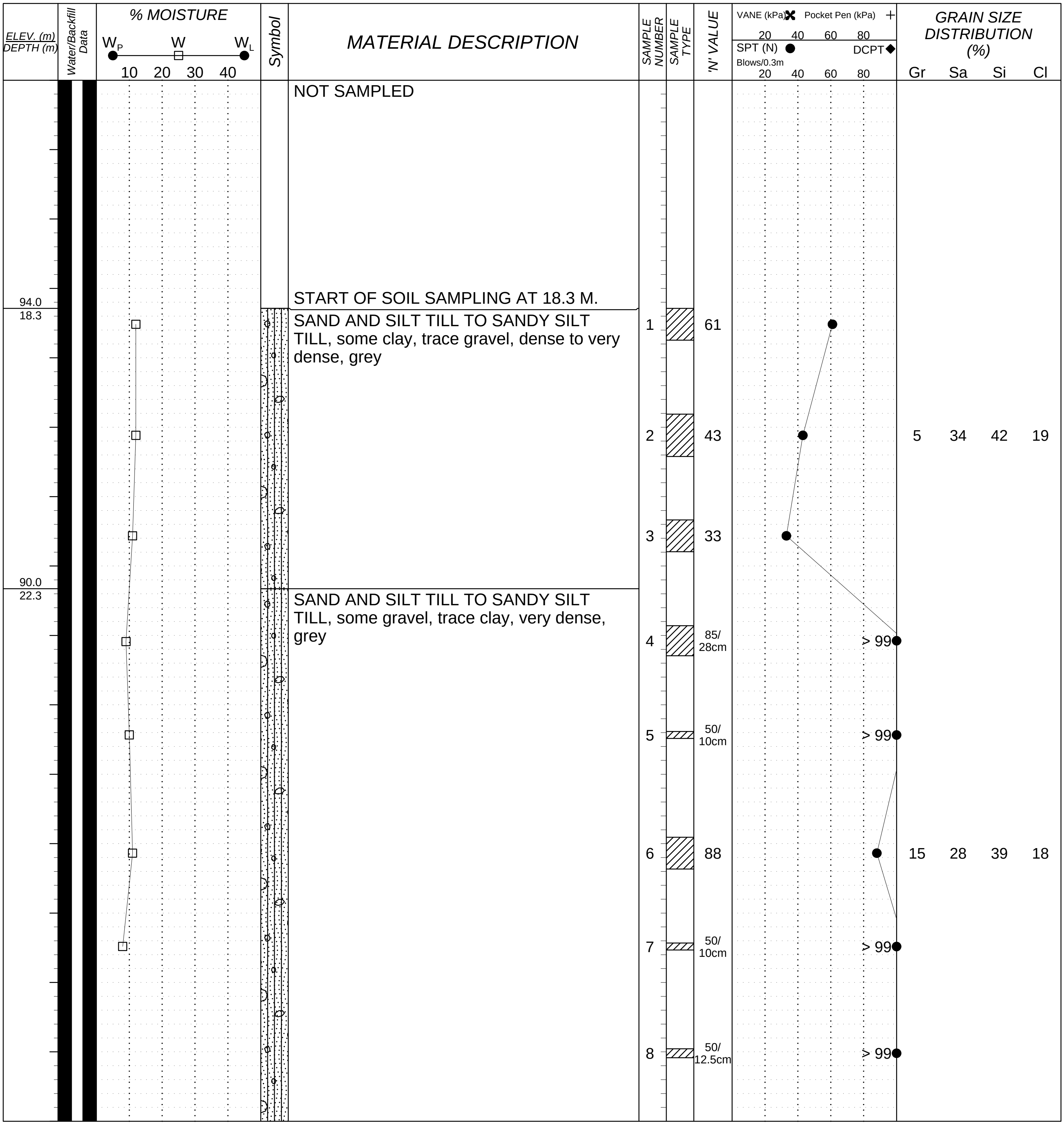
BACKFILL LEGEND

- ▒ Concrete
- ▒ Drill Cuttings
- ▓ Asphalt
- ■ Bentonite
- ⋯ Filter Sand
- ▥ Slotted Pipe
- ▧ Grout
- ▩ Slough

LOG OF BOREHOLE BH22-4

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.30 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **April 25 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	GRAIN SIZE DISTRIBUTION (%) Gr	Sa	Si	Cl
	NOT SAMPLED							
94.0 18.3	START OF SOIL SAMPLING AT 18.3 M.							
	SAND AND SILT TILL TO SANDY SILT TILL, some clay, trace gravel, dense to very dense, grey	1	▨	61				
		2	▨	43	5	34	42	19
		3	▨	33				
90.0 22.3	SAND AND SILT TILL TO SANDY SILT TILL, some gravel, trace clay, very dense, grey	4	▨	85/ 28cm				
		5	▨	50/ 10cm				
		6	▨	88	15	28	39	18
		7	▨	50/ 10cm				
		8	▨	50/ 12.5cm				

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SAMPLE TYPE

☰ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

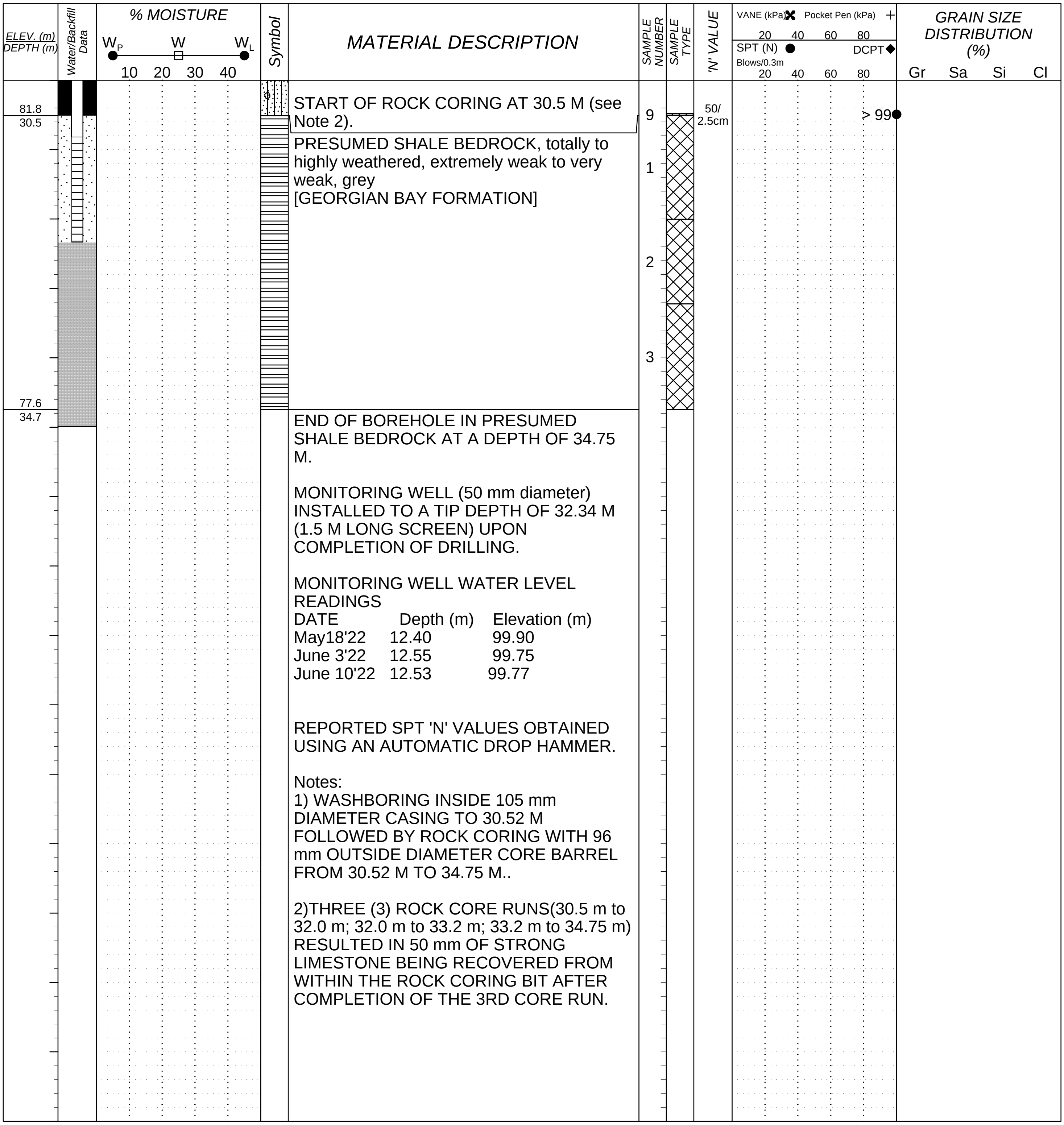
BACKFILL LEGEND

▒ Concrete	■ Bentonite	▧ Grout
▒ Drill Cuttings	⁘ Filter Sand	▩ Slough
▓ Asphalt	▥ Slotted Pipe	

LOG OF BOREHOLE BH22-4

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.30 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **April 25 2022**



MATERIAL DESCRIPTION

START OF ROCK CORING AT 30.5 M (see Note 2).

PRESUMED SHALE BEDROCK, totally to highly weathered, extremely weak to very weak, grey
[GEORGIAN BAY FORMATION]

END OF BOREHOLE IN PRESUMED SHALE BEDROCK AT A DEPTH OF 34.75 M.

MONITORING WELL (50 mm diameter) INSTALLED TO A TIP DEPTH OF 32.34 M (1.5 M LONG SCREEN) UPON COMPLETION OF DRILLING.

MONITORING WELL WATER LEVEL READINGS

DATE	Depth (m)	Elevation (m)
May18'22	12.40	99.90
June 3'22	12.55	99.75
June 10'22	12.53	99.77

REPORTED SPT 'N' VALUES OBTAINED USING AN AUTOMATIC DROP HAMMER.

Notes:
1) WASHBORING INSIDE 105 mm DIAMETER CASING TO 30.52 M FOLLOWED BY ROCK CORING WITH 96 mm OUTSIDE DIAMETER CORE BARREL FROM 30.52 M TO 34.75 M..

2)THREE (3) ROCK CORE RUNS(30.5 m to 32.0 m; 32.0 m to 33.2 m; 33.2 m to 34.75 m) RESULTED IN 50 mm OF STRONG LIMESTONE BEING RECOVERED FROM WITHIN THE ROCK CORING BIT AFTER COMPLETION OF THE 3RD CORE RUN.

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SAMPLE TYPE

▤ Auger Sample
▨ Split Spoon Sample
░ Bulk Sample
☐ Thin Wall Tube Sampler
▥ Pionjar Sample
☒ Soil Core (PQ)

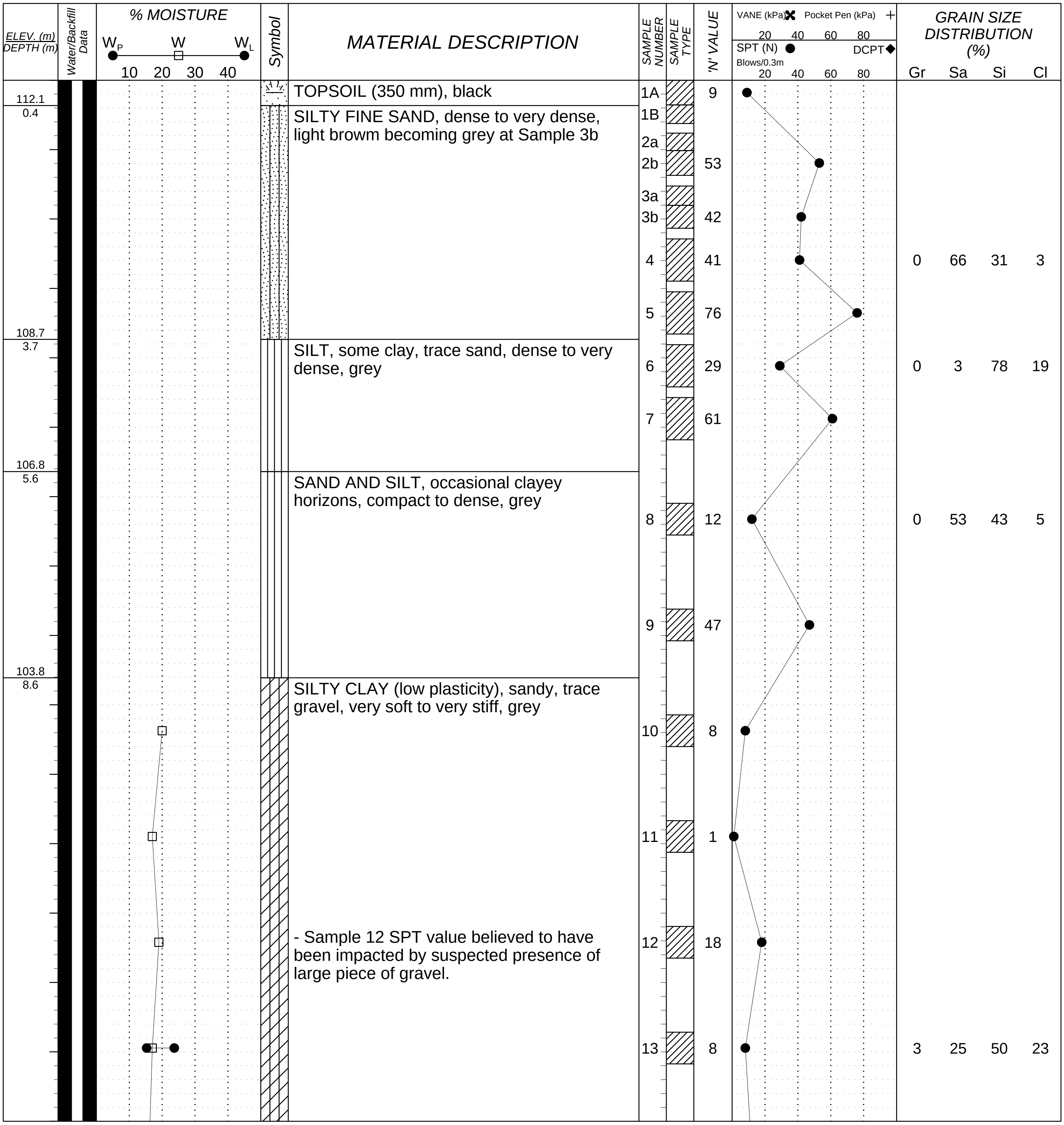
BACKFILL LEGEND

▩ Concrete
░ Drill Cuttings
▓ Asphalt
■ Bentonite
⁘ Filter Sand
▦ Slotted Pipe
☒ Grout
▧ Slough

LOG OF BOREHOLE BH22-5

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.45 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 13 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	GRAIN SIZE DISTRIBUTION (%) Gr	Sa	Si	Cl
	TOPSOIL (350 mm), black	1A	▨	9				
112.1 0.4	SILTY FINE SAND, dense to very dense, light browm becoming grey at Sample 3b	1B	▨					
		2a	▨					
		2b	▨	53				
		3a	▨					
		3b	▨	42				
		4	▨	41	0	66	31	3
		5	▨	76				
108.7 3.7	SILT, some clay, trace sand, dense to very dense, grey	6	▨	29	0	3	78	19
		7	▨	61				
106.8 5.6	SAND AND SILT, occasional clayey horizons, compact to dense, grey	8	▨	12	0	53	43	5
		9	▨	47				
103.8 8.6	SILTY CLAY (low plasticity), sandy, trace gravel, very soft to very stiff, grey	10	▨	8				
		11	▨	1				
	- Sample 12 SPT value believed to have been impacted by suspected presence of large piece of gravel.	12	▨	18				
		13	▨	8	3	25	50	23

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SAMPLE TYPE

☰ Auger Sample	☐ Thin Wall Tube Sampler
▨ Split Spoon Sample	▥ Pionjar Sample
░ Bulk Sample	☒ Soil Core (PQ)

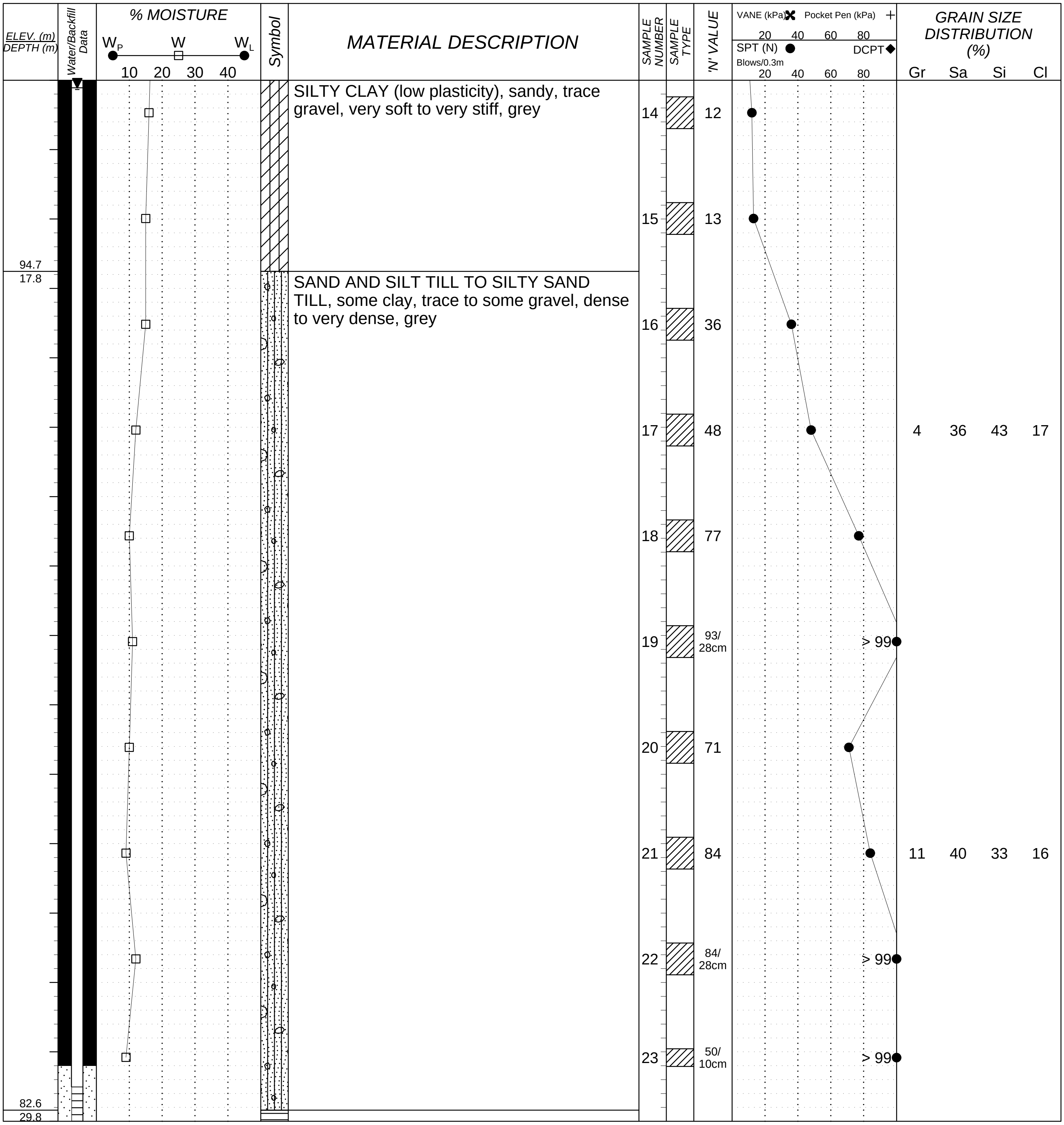
BACKFILL LEGEND

▒ Concrete	■ Bentonite	☒ Grout
▒ Drill Cuttings	⁘ Filter Sand	▩ Slough
▓ Asphalt	▦ Slotted Pipe	

LOG OF BOREHOLE BH22-5

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.45 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 13 2022**



ELEV. (m) DEPTH (m)	MATERIAL DESCRIPTION
	SILTY CLAY (low plasticity), sandy, trace gravel, very soft to very stiff, grey
94.7 17.8	SAND AND SILT TILL TO SILTY SAND TILL, some clay, trace to some gravel, dense to very dense, grey
82.6 29.8	

SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	Gr	Sa	Si	Cl
14	▨	12				
15	▨	13				
16	▨	36				
17	▨	48	4	36	43	17
18	▨	77				
19	▨	93/ 28cm				
20	▨	71				
21	▨	84	11	40	33	16
22	▨	84/ 28cm				
23	▨	50/ 10cm				

GRAIN SIZE DISTRIBUTION (%)

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SAMPLE TYPE

- ▤ Auger Sample
- ▨ Split Spoon Sample
- ░ Bulk Sample
- ☐ Thin Wall Tube Sampler
- ▥ Pionjar Sample
- ☒ Soil Core (PQ)

BACKFILL LEGEND

- ▩ Concrete
- ▒ Drill Cuttings
- ▓ Asphalt
- ■ Bentonite
- ⁘ Filter Sand
- ▦ Slotted Pipe
- ▧ Grout
- ▩ Slough

LOG OF BOREHOLE BH22-5

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **112.45 metres (Geodetic)**

Drilling Data
METHOD: **See Note 1**
DIAMETER:
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 13 2022**

ELEV. (m) DEPTH (m)	Water/Backfill Data	% MOISTURE W_P W W_L 10 20 30 40	Symbol	MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	'N' VALUE	VANE (kPa) ✖ Pocket Pen (kPa) + 20 40 60 80 SPT (N) ● DCPT ◆ Blows/0.3m 20 40 60 80	GRAIN SIZE DISTRIBUTION (%) Gr Sa Si Cl
			▤	SHALE BEDROCK, grey [GEORGIAN BAY FORMATION]	24	▤	50/ 2.5cm	> 99●	
81.9 30.6			▤	START OF CORING AT 30.58 M REFER TO ROCK LOG FOR DETAILS	1	☒			
81.3 31.2				END OF BOREHOLE IN SHALE BEDROCK AT DEPTH OF 31.2 M					

MONITORING WELL (50 mm diameter) INSTALLED TO A TIP DEPTH OF 31.0 M (1.5 M LONG SCREEN) UPON COMPLETION OF DRILLING.

MONITORING WELL WATER LEVEL READINGS

DATE	Depth (m)	Elevation (m)
May 18'22	0.96	111.49
June 3'22	17.44	95.01
June 10'22	15.11	97.36

REPORTED SPT 'N' VALUES OBTAINED USING AN AUTOMATIC DROP HAMMER.

Notes:
1) HOLLOW STEM AUGERS (200mm diameter) TO 6 M; WASHBORING IN CONJUNCTION WITH 96 mm DIAMETER TRI-CONE TO 30.48 M; ADVANCE CASING (106 mm diameter) TO 30.58 M; ROCK CORING WITH HQ SIZE CORE BIT (96 mm diameter) 30.58 M TO 31.19 M.

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SAMPLE TYPE

▤	Auger Sample	☐	Thin Wall Tube Sampler
▨	Split Spoon Sample	▥	Pionjar Sample
░	Bulk Sample	☒	Soil Core (PQ)

BACKFILL LEGEND

▩	Concrete	■	Bentonite	▧	Grout
▒	Drill Cuttings	⁘	Filter Sand	▦	Slough
▓	Asphalt	▥	Slotted Pipe		

ROCK CORE LOG OF BOREHOLE BH22-5-ROCK

PROJECT No.: **TG22-020**
CLIENT: **SLR**
PROJECT: **Dundas/Bloor Proposed Development**
LOCATION: **2280 Dundas Street West, Toronto, Ontario**
SURFACE ELEV.: **87.45 metres (Geodetic)**

Coring Data
METHOD: **Refer To Log**
CORE SIZE: **NQ**
PREP. BY: **PS** APPR. BY: **IC**
DATE: **May 13 2022**

ELEV. (m) DEPTH (m)	Core Run Number	Core Run Limits	TCR %	SCR %	RQD %	Symbol	MATERIAL DESCRIPTION AND REMARKS	FRACTURE INDEX (fractures/0.3 m) 2 4 6 8
							START OF ROCK CORE LOG AT DEPTH OF 25 M (Elevation 87.45 m). REFER TO SOIL LOG FOR OVERBURDEN STRATIGRAPHIC FROM GROUND SURFACE TO DEPTH OF 30.58 M. START OF ROCK CORING USING HQ CORE (96 mm diameter) at 30.58 M.	
81.9 5.6	1	☒	100	71	58	▤	SHALE BEDROCK, interlayered horizons of strong limestone and totally to highly weathered layers of shale (see Note 1 below for details), grey [GEORGIAN BAY FORMATION]	
81.3 6.2							END OF ROCK CORING IN SHALE BEDROCK AT DEPTH OF 31.19 M DUE TO INABILITY TO CORE THE INTERLAYERED NATURE OF THE SHALE BEDROCK. Note 1) Strong Limestone - 30.58 m to 30.78 m Totally Weathered Shale - 30.78 m to 30.91 m (essentially clay) Strong Limestone - 30.91 m to 30.96 m Highly Weathered Shale - 30.96 m to 31.09 m Totally Weathered Shale - 31.09 m to 31.11 m (essentially clay) Highly Weathered Shale - 31.11 m to 31.19 m	

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SAMPLE TYPE LEGEND

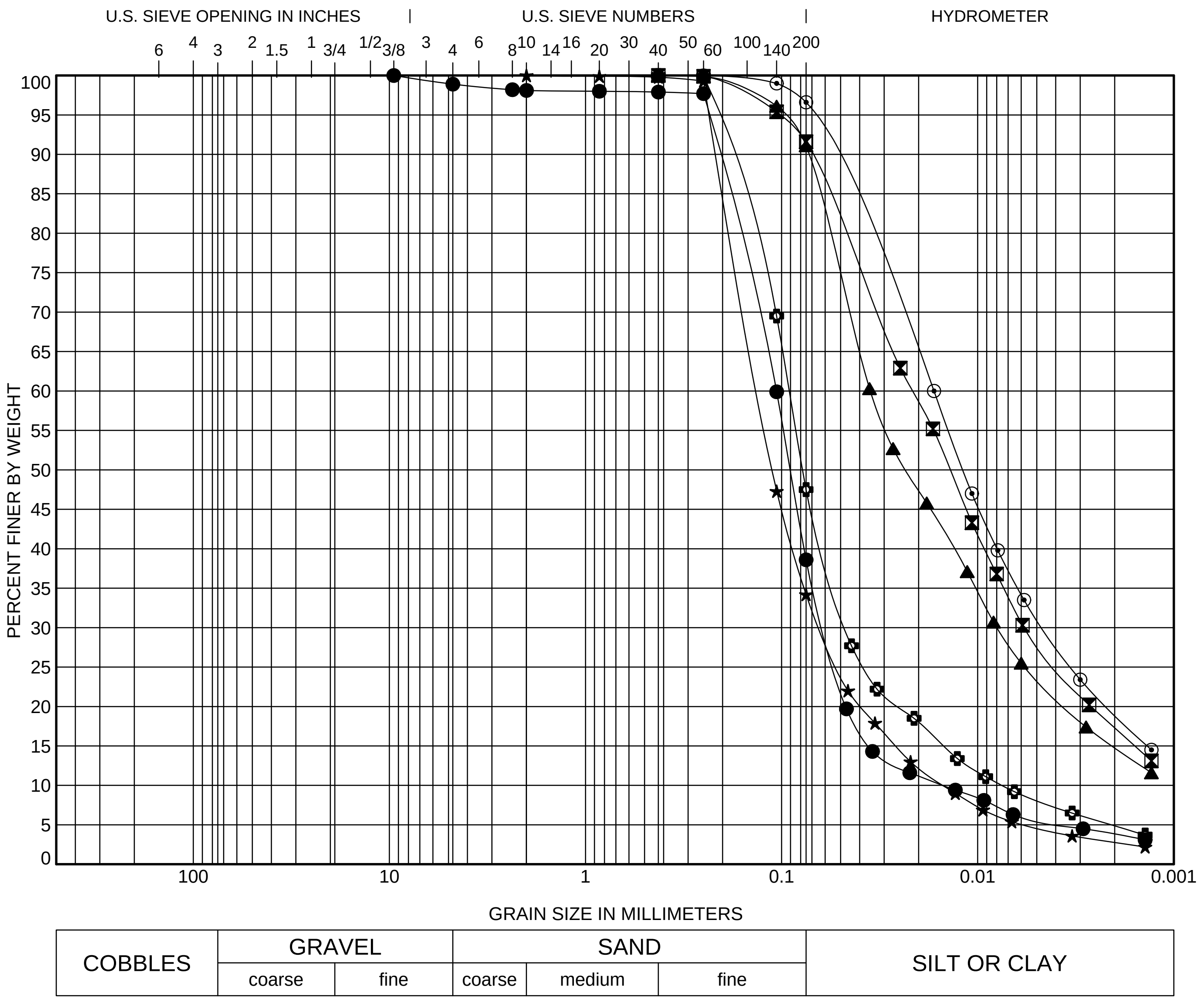
▤ Auger Sample	☒ Rock Core	▥ Pionjar Sample
▨ Split Spoon Sample	▧ Side Sampler	▒ Bulk Sample
☐ 70mm Thin Wall Tube	☐ 75mm Split Spoon Sample	

SLR
2280 DUNDAS STREET WEST
BH22-5
Box 1
100' 4" to 102' 4" (30.60 m to 31.21 m)
ELEVATION – 82.05 m to 81.44 m

APPENDIX C

GEOTERRE 2020
LABORATORY GRAIN SIZE DATA

GRAIN SIZE ANALYSIS
UPPER FINE GRAINED COHESIONLESS MATERIALS



	Specimen Identification and Depth (m)		Classification	LL	PL	PI	Cc	Cu
●	BH22-2	3.35					**2.29**	**7.06**
⧗	BH22-2	7.85						
▲	BH22-2	9.37						
★	BH22-5	2.59					**2.07**	**8.82**
⊙	BH22-5	4.11						
✿	BH22-5	6.32					**3.21**	**12.19**

GRAINSIZE - GEOTERRE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

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FIGURE C1

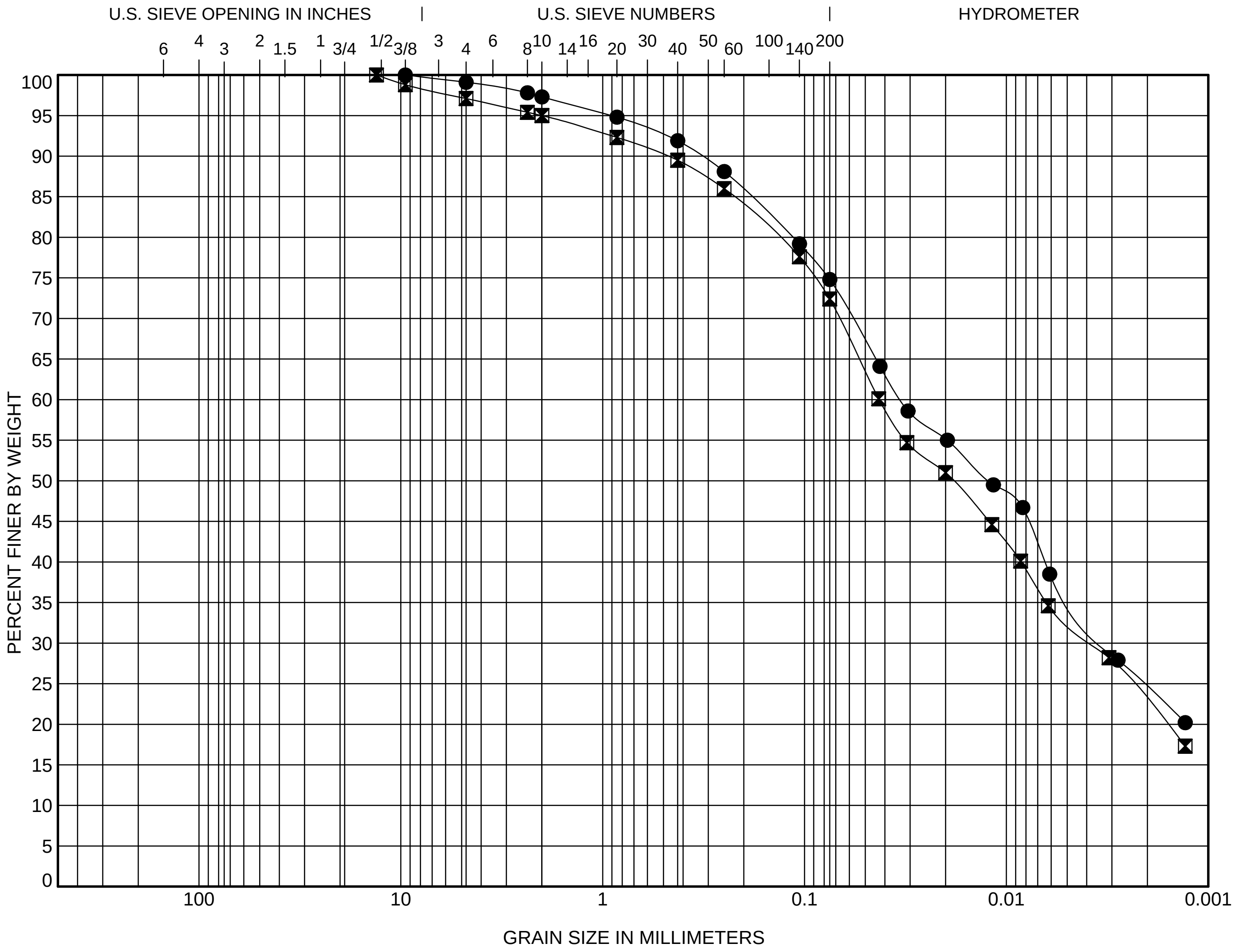
Project No.: TG22-020

Client: SLR

Project: Dundas/Bloor Proposed Development

Location: 2280 Dundas Street West, Toronto, Ontario

GRAIN SIZE ANALYSIS
WEAK SILTY CLAY MATERIALS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification and Depth (m)		Classification	LL	PL	PI	Cc	Cu
●	BH22-2	12.42		**25**	**15**	**10**		
⧗	BH22-5	13.94		**24**	**15**	**9**		

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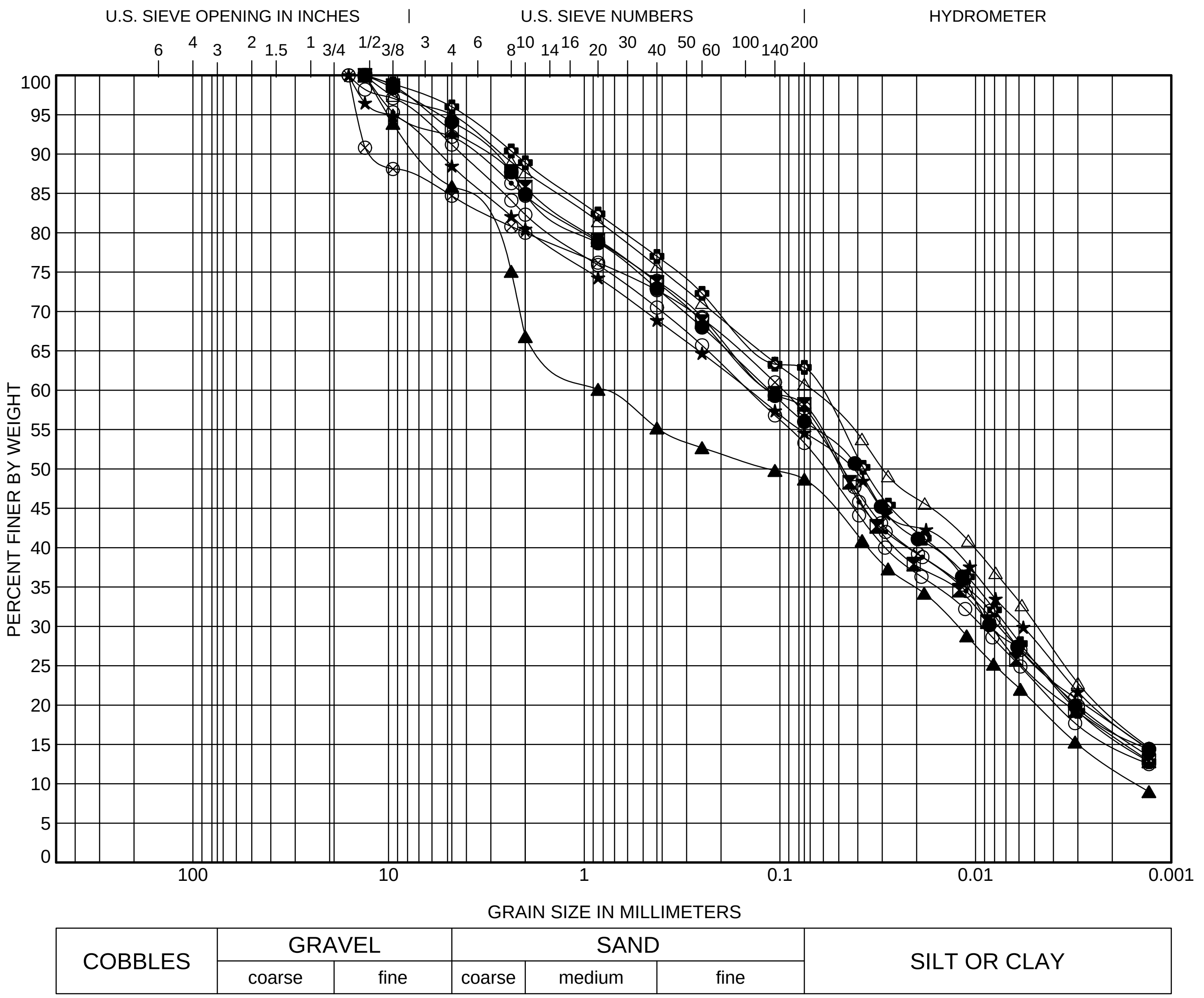
FIGURE C2

Project No.: TG22-020
Client: SLR
Project: Dundas/Bloor Proposed Development
Location: 2280 Dundas Street West, Toronto, Ontario

GRAIN SIZE ANALYSIS
SAND AND SILT TILL TO SANDY SILT TILL MATERIALS



	Specimen Identification and Depth (m)		Classification	LL	PL	PI	Cc	Cu
●	BH22-1	20.04						
⧗	BH22-1	26.14		**21**	**14**	**7**		
▲	BH22-1	33.65					**0.12**	**561.60**
★	BH22-2	16.99						
⊙	BH22-2	23.09						
✿	BH22-3	20.04						
○	BH22-3	24.61						
△	BH22-4	20.12						
⊗	BH22-4	26.14						

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FIGURE C3

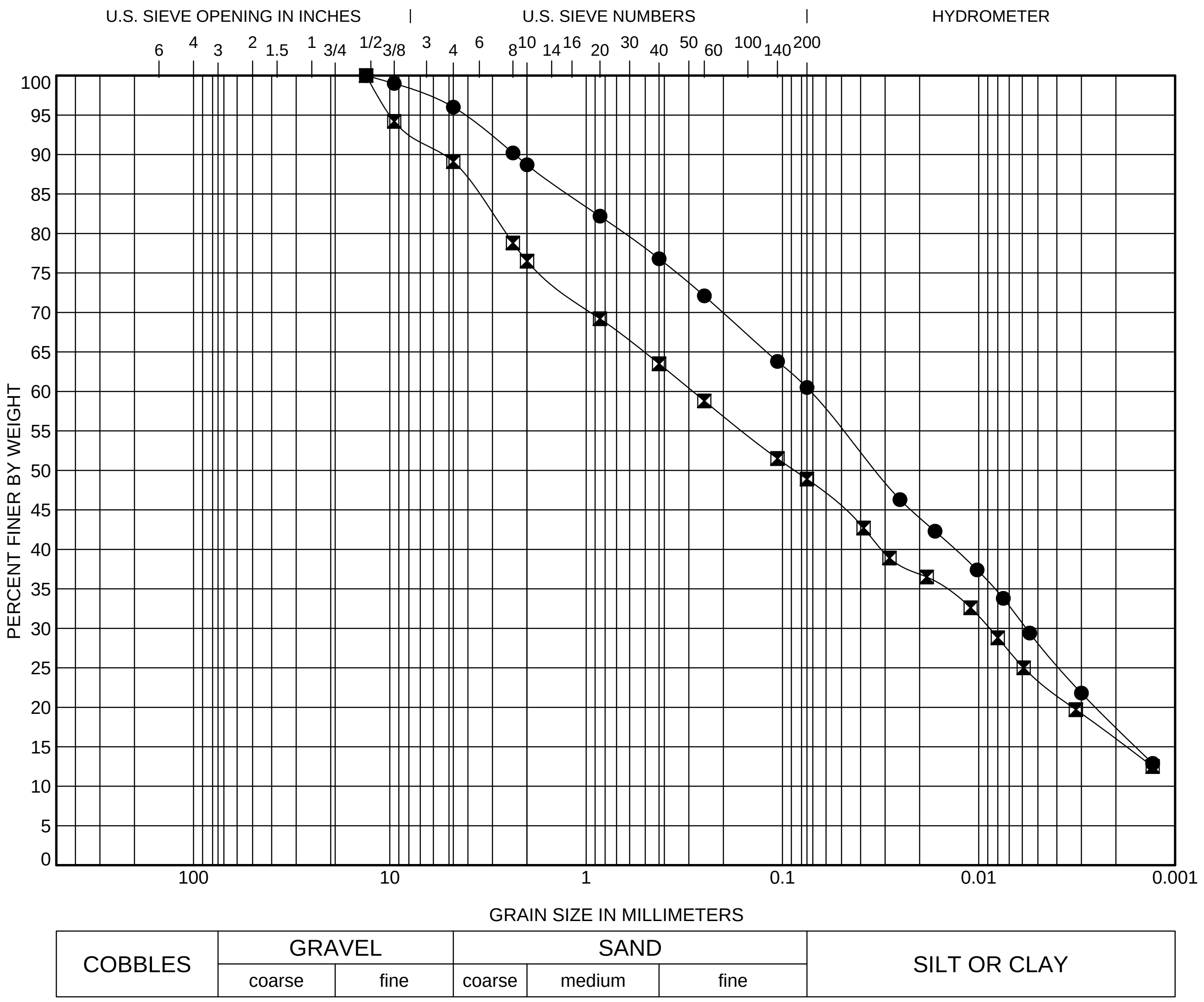
Project No.: TG22-020

Client: SLR

Project: Dundas/Bloor Proposed Development

Location: 2280 Dundas Street West, Toronto, Ontario

GRAIN SIZE ANALYSIS
SAND AND SILT TILL TO SILTY SAND TILL MATERIALS



	Specimen Identification and Depth (m)		Classification	LL	PL	PI	Cc	Cu
●	BH22-5	20.04						
☒	BH22-5	26.14						

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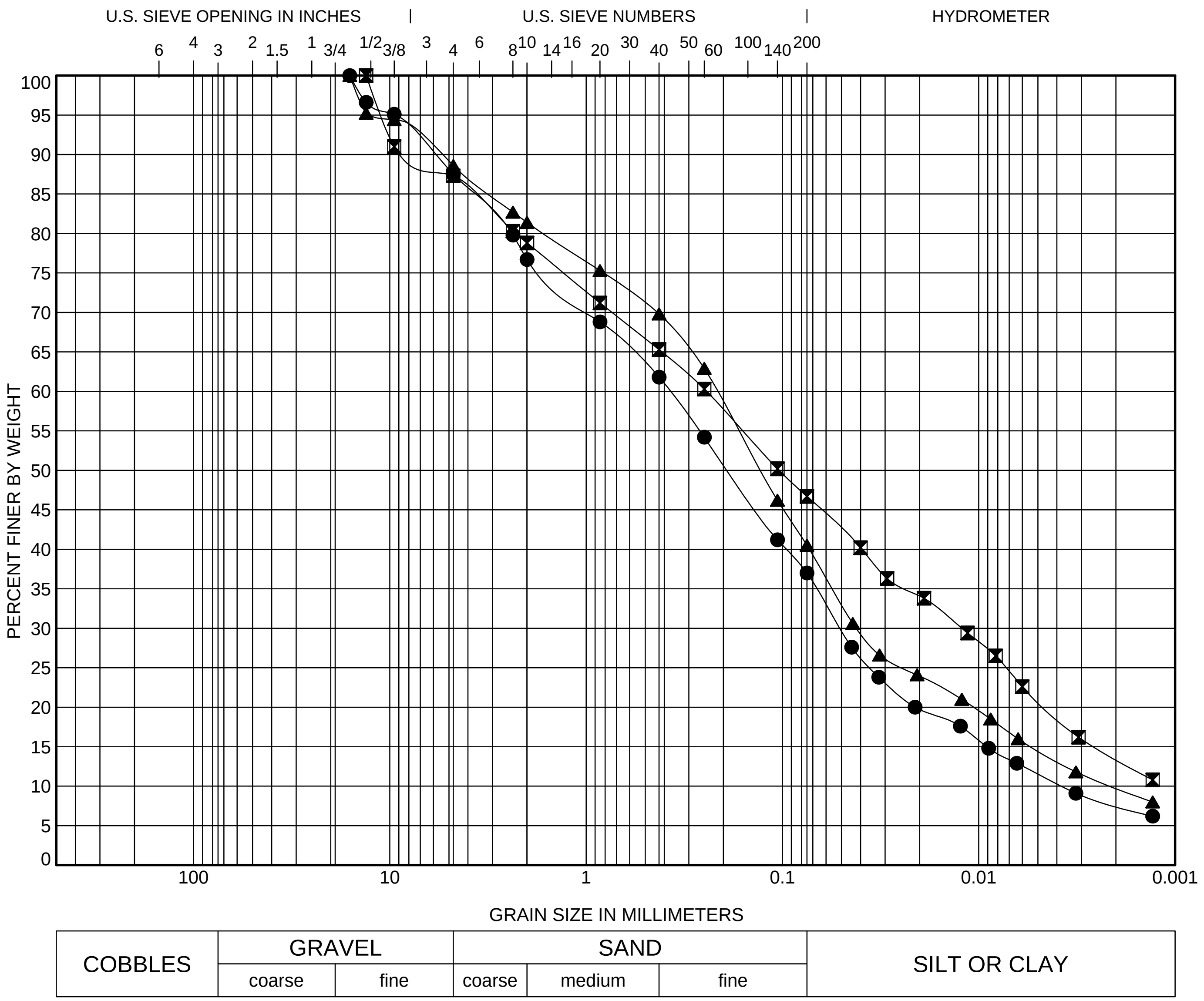
FIGURE C4

Project No.: TG22-020
Client: SLR
Project: Dundas/Bloor Proposed Development
Location: 2280 Dundas Street West, Toronto, Ontario

GRAIN SIZE ANALYSIS
SILTY SAND TILL MATERIALS



Specimen Identification and Depth (m)			Classification	LL	PL	PI	Cc	Cu
●	BH22-1	30.61					**1.82**	**99.39**
☒	BH22-2	29.18						
▲	BH22-2	30.68					**3.88**	**103.13**

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FIGURE C5

Project No.: TG22-020

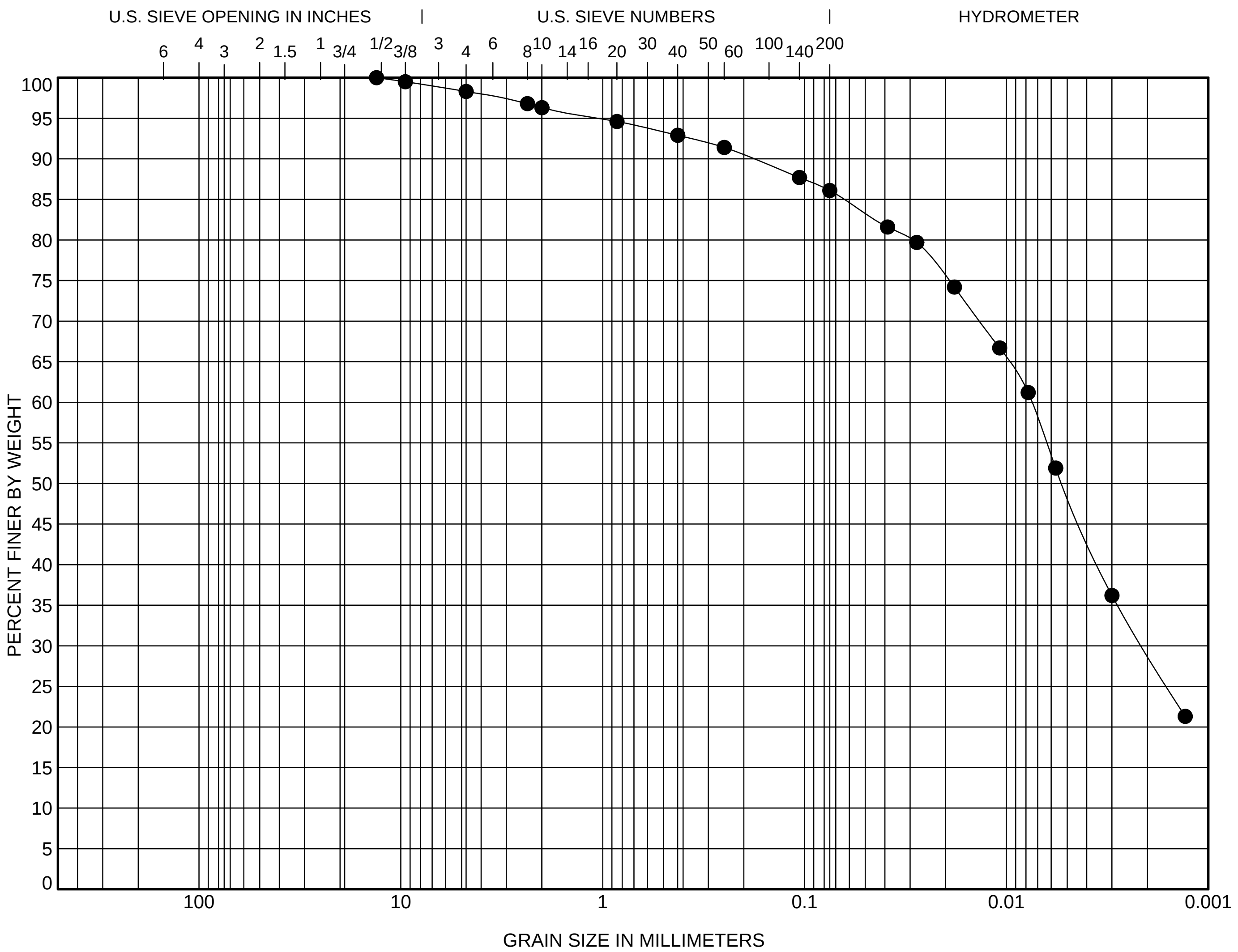
Client: SLR

Project: Dundas/Bloor Proposed Development

Location: 2280 Dundas Street West, Toronto, Ontario

GRAINSIZE - GEOTERRE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

GRAIN SIZE ANALYSIS
DEEP SILTY MATERIALS OF BH22-1



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification and Depth (m)		Classification	LL	PL	PI	Cc	Cu
●	BH22-1	29.18		**27**	**18**	**9**		

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FIGURE C6

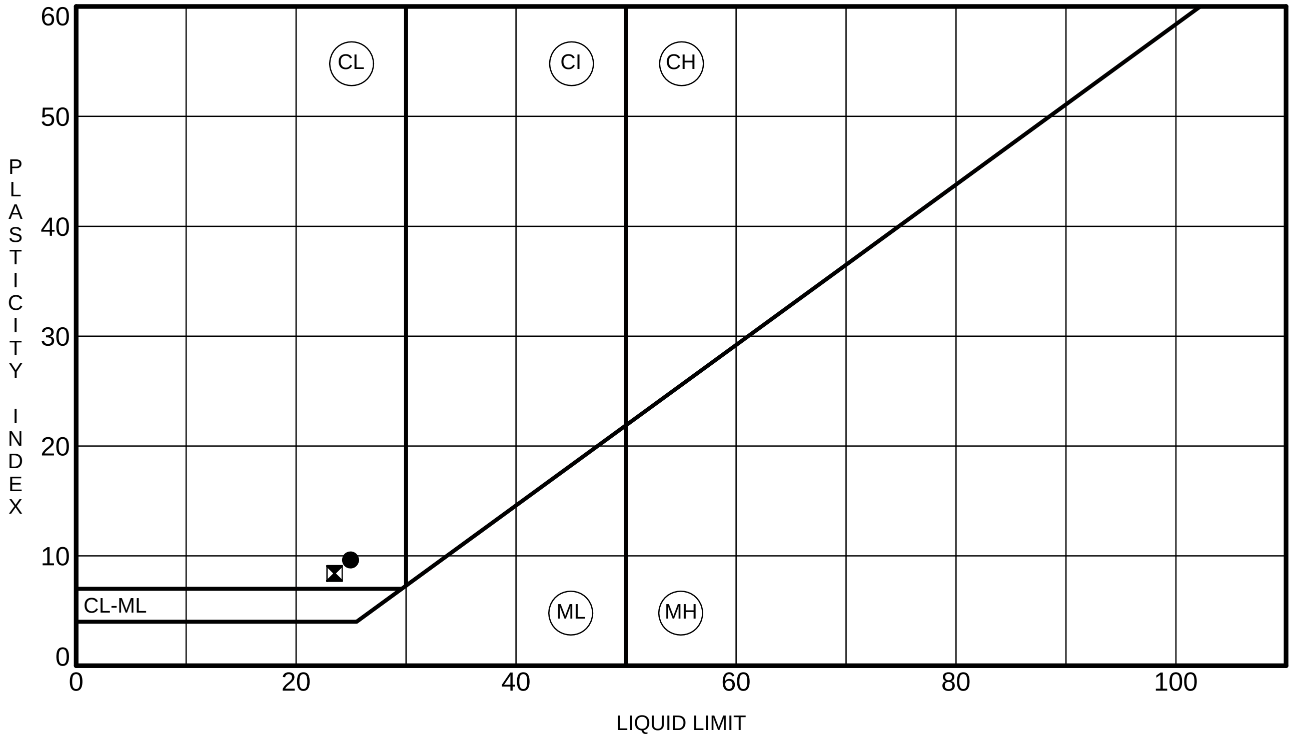
Project No.: TG22-020
Client: SLR
Project: Dundas/Bloor Proposed Development
Location: 2280 Dundas Street West, Toronto, Ontario

GRAINSIZE - GEOTERRE SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

APPENDIX D

GEOTERRE 2020
SOIL PLASTICITY DATA

ATTERBERG LIMIT TEST RESULTS
WEAK SILTY CLAY MATERIALS OF BH22-2 AND 5



	Specimen Identification		LL	PL	PI	Fines	Classification
●	BH22-2	12.42	**25**	**15**	**10**	**75**	**LEAN CLAY with SAND(CL)**
☒	BH22-5	13.94	**24**	**15**	**9**	**72**	**LEAN CLAY with SAND(CL)**

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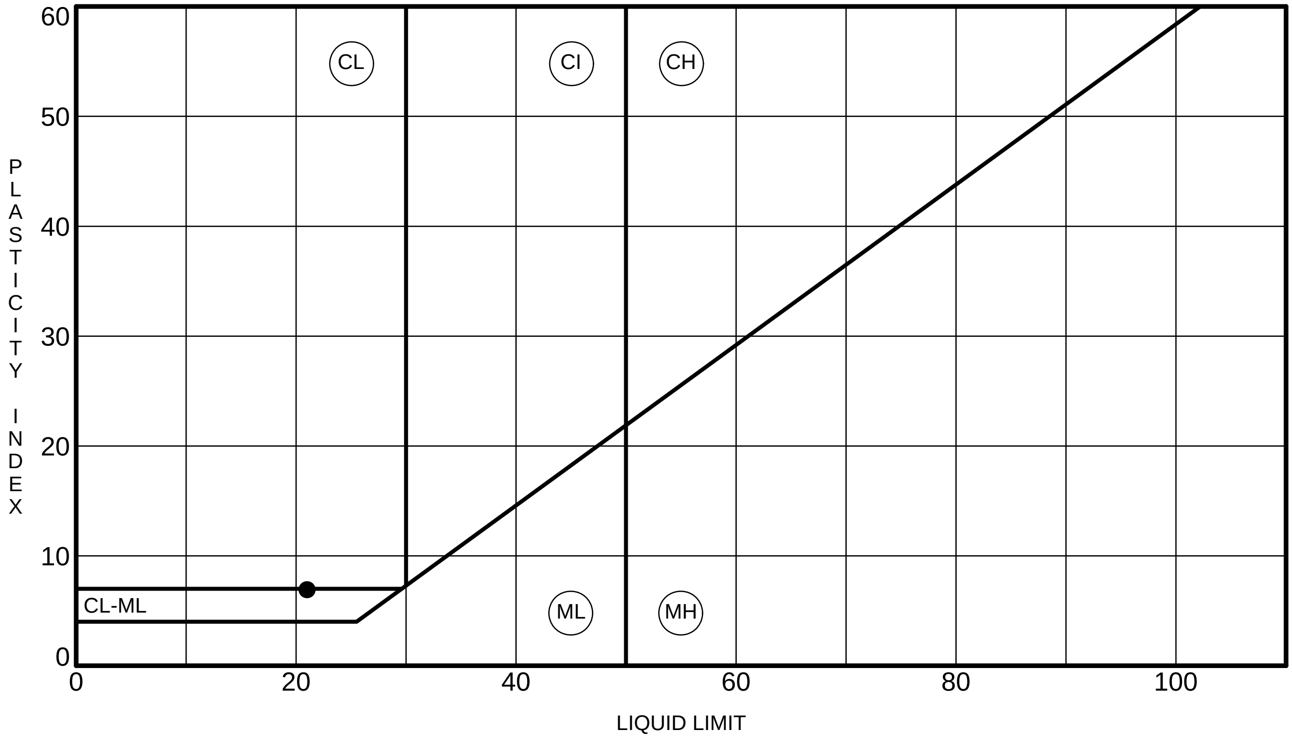
FIGURE D1

Project No.: TG22-020
Client: SLR
Project: Dundas/Bloor Proposed Development
Location: 2280 Dundas Street West, Toronto, Ontario

ATTERBERG LIMIT TEST RESULTS
SAND AND SILT TILL MATERIALS OF BH22-1



	Specimen Identification		LL	PL	PI	Fines	Classification
●	BH22-1	26.14	**21**	**14**	**7**	**58**	**SANDY SILTY CLAY(CL-ML)**

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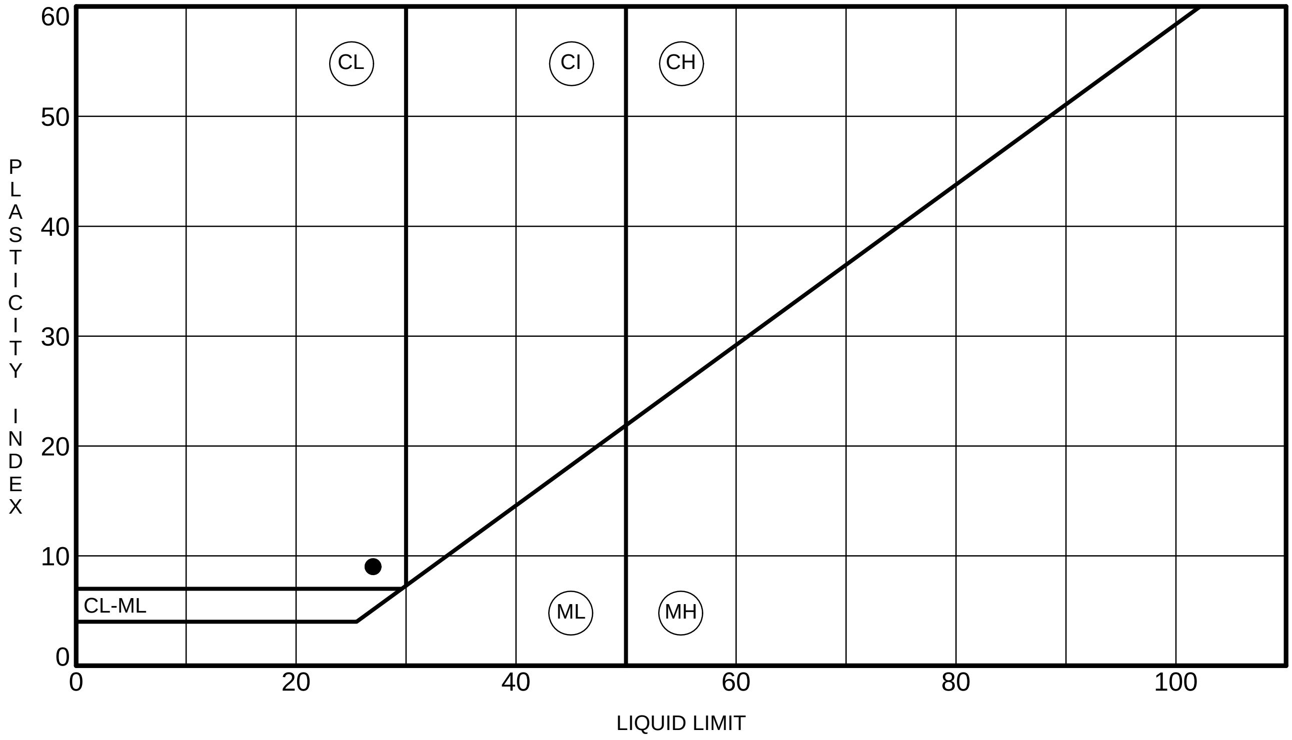
FIGURE D2

Project No.: TG22-020
Client: SLR
Project: Dundas/Bloor Proposed Development
Location: 2280 Dundas Street West, Toronto, Ontario

ATTERBERG LIMIT TEST RESULTS
DEEP SILTY CLAY MATERIALS OF BH22-1



	Specimen Identification		LL	PL	PI	Fines	Classification
●	BH22-1	29.18	**27**	**18**	**9**	**86**	**LEAN CLAY(CL)**

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e-mail: toronto@geoterre.ca

FIGURE D3

Project No.: TG22-020

Client: SLR

Project: Dundas/Bloor Proposed Development

Location: 2280 Dundas Street West, Toronto, Ontario

GEOTERRE ATTERBERG LIMITS SLR-DUNDAS-BLOORDEVELOPMENT.GPJ GEOTERRE.GDT 6/17/22

APPENDIX E

EXISTING 2018
BOREHOLE INFORMATION

TIL Toronto Inspection LTD.
GEO-ENVIRONMENTAL CONSULTANTS

REPORT ON
PRELIMINARY GEOTECHNICAL INVESTIGATION
2280 DUNDAS STREET WEST
TORONTO, ONTARIO

REPORT NO.: 2477-18-G-CPR-E (RR)
REPORT DATE: OCTOBER 22, 2018

PREPARED FOR
CHOICE PROPERTIES REIT
22 ST. CLAIR AVENUE EAST, SUITE 500
TORONTO, ONTARIO
M4T 2S5

110 KONRAD CRESCENT, UNIT 16, MARKHAM, ONTARIO L3R 9X2
TEL.: 905-940-8509 FAX: 905-940-8192

Drawings

Borehole Location Plan
Borehole Logs
(BH-1 to BH-11, BH-1S & BH-11S)
& Sections

LEGEND :

⌖/⌖ Borehole / Monitoring Well Location

NOT TO SCALE

TorontoInspection LTD.
GEO-ENVIRONMENTAL CONSULTANTS

110 Konrad Crescent,
Unit 16
Markham, Ontario
L3R 9X2

Tel: 905-940 8509 Fax: 905-940 8192 Email : TIL@torontoinspection.com

TITLE:	Borehole / Monitoring Well Location Plan
LOCATION:	2280 Dundas Street West, Toronto, Ontario

PROJECT NO.	DATE :	DRAWING NO.
2477-18-G-CPR-E	March 2018	1

Project No. 2477-18-G-CPR-E

Log of Borehole 1

Dwg No. 2

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

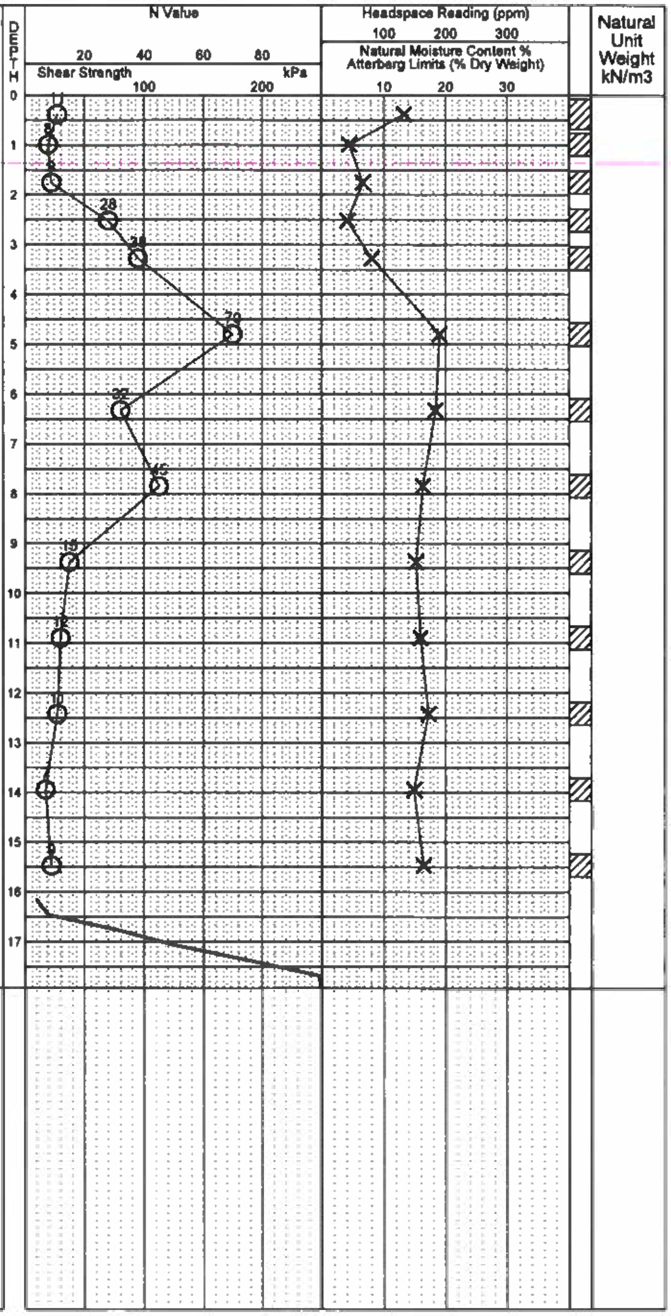
Date Drilled: 2/20/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	♦ S	Penetrometer	▲

Soil Description	ELEV. m
Ground Surface	112.91
ASPHALT PAVEMENT	112.83
- 75mm asphalt over granular bases	112.76
FILL - brown sand - dark silty sand at 0.15m to 0.3m - trace to some silt - moist	111.08
SAND - compact to very dense - brown, grey below 6.0m - fine to medium grained - trace silt - a layer of clayey silt at 6.3m to 6.5m - trace to some silt below 6.5m - occasional layers of silty sand below 6.5m - moist to very moist, wet below 6.0m	108.72
	102.85
CLAYEY SILT TILL - stiff to firm, grey - some gravel, some sandy silt - some silty clay - very moist	97.06
(Dynamic Cone Test)	94.98



END OF BOREHOLE

NOTE:

Upon completion of drilling:

- water level at 4.5m

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NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	4.31m	
May 3, 2018	4.25m	
May 30, 2018	4.17m	
June 12, 2018	4.20m	
Jun 26, 21018	4.19m	

Project No. 2477-18-G-CPR-E

Log of Borehole 2

Dwg No. 3

Project: Geotechnical Investigation

Sheet No. 1 of 1

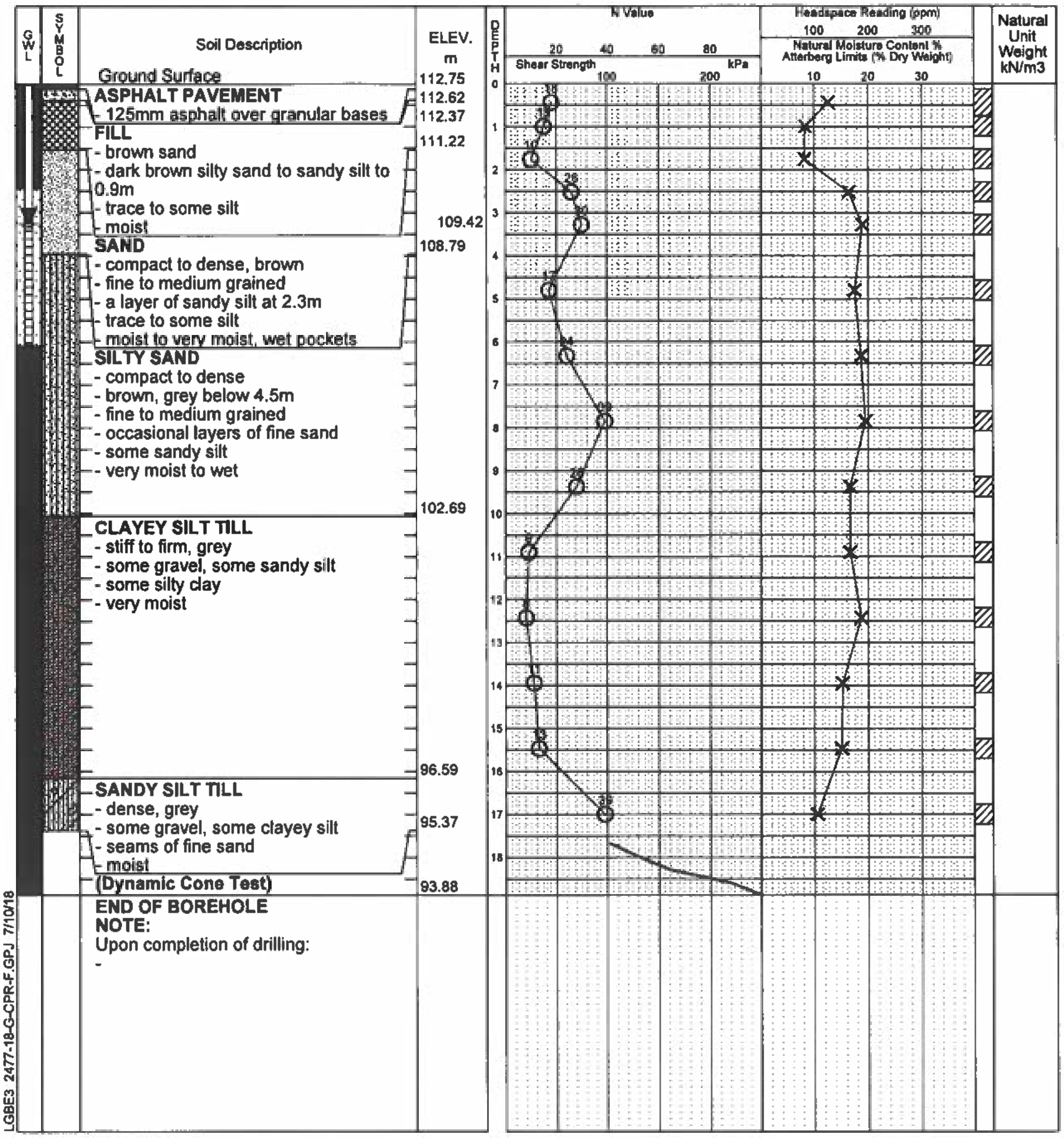
Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 2/21/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	⊢⊣
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	S	Penetrometer	▲



Soil Description	ELEV. m
Ground Surface	112.75
ASPHALT PAVEMENT - 125mm asphalt over granular bases	112.62
FILL - brown sand - dark brown silty sand to sandy silt to 0.9m - trace to some silt - moist	112.37 111.22 109.42
SAND - compact to dense, brown - fine to medium grained - a layer of sandy silt at 2.3m - trace to some silt - moist to very moist, wet pockets	108.79
SILTY SAND - compact to dense - brown, grey below 4.5m - fine to medium grained - occasional layers of fine sand - some sandy silt - very moist to wet	102.69
CLAYEY SILT TILL - stiff to firm, grey - some gravel, some sandy silt - some silty clay - very moist	96.59
SANDY SILT TILL - dense, grey - some gravel, some clayey silt - seams of fine sand - moist	95.37
(Dynamic Cone Test)	93.88
END OF BOREHOLE **NOTE:** Upon completion of drilling: -	

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NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	3.40m	
May 3, 2018	3.28m	
June 12, 2018	3.32m	
Jun 26, 21018	3.33m	

Project No. 2477-18-G-CPR-E

Log of Borehole 3

Dwg No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled:

Drill Type:

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	✚ S	Penetrometer	▲

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value 20 40 60 80 Shear Strength kPa 100 200	Headspace Reading (ppm) 100 200 300 Natural Moisture Content % Atterberg Limits (% Dry Weight) 10 20 30		Natural Unit Weight kN/m3
		Ground Surface	112.58	0				
		COULD NOT BE DRILLED DUE TO PRESENCE OF UNDERGROUND UTILITIES						

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NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)

Project No. 2477-18-G-CPR-E

Log of Borehole 4

Dwg No. 5

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 3/1/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	S	Penetrometer	▲

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value 20 40 60 80 Shear Strength kPa 100 200	Headspace Reading (ppm) 100 200 300 Natural Moisture Content % Atterberg Limits (% Dry Weight) 10 20 30	Natural Unit Weight kN/m3
		Ground Surface	112.65	0			
		NOT SAMPLED		1			
			110.12	2			
				3			
				4			
				5			
			106.56	6			
		END OF BOREHOLE **NOTE:** Upon completion of drilling: - no free water					

NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	2.48m	
May 3, 2018	2.30m	
May 30, 2018	2.44m	
June 12, 2018	2.48m	
Jun 26, 21018	2.53m	

Project No. 2477-18-G-CPR-E

Log of Borehole 5

Dwg No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

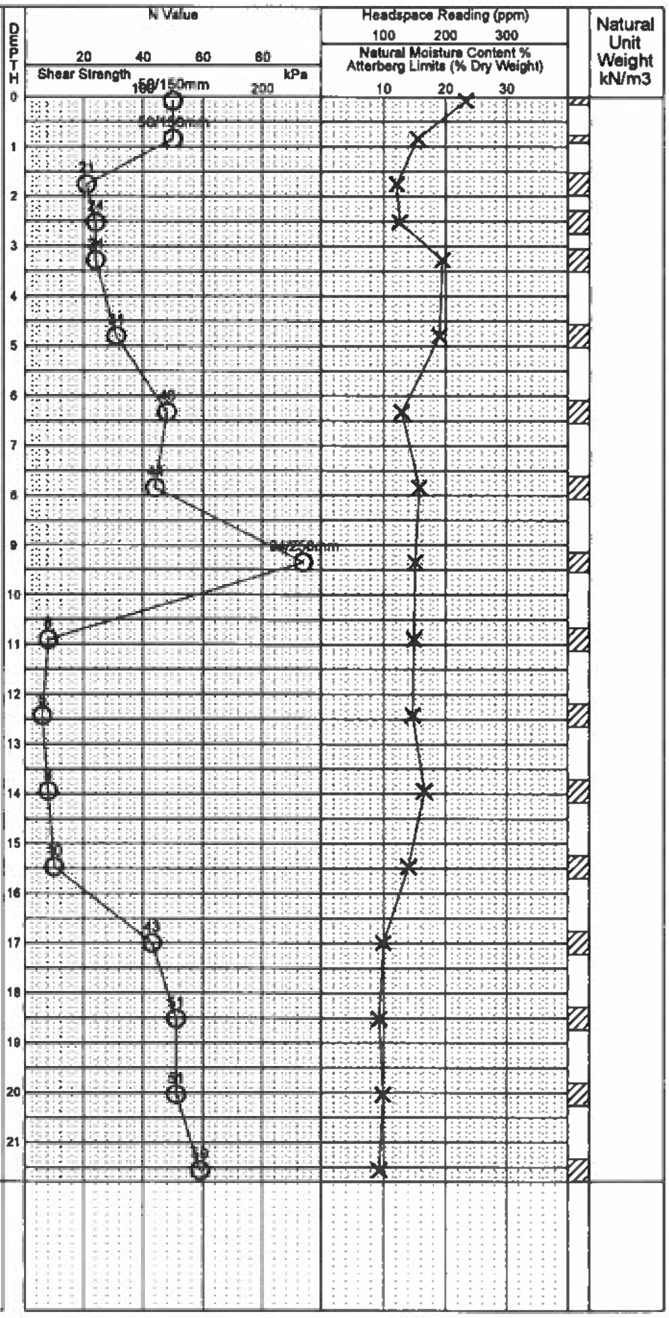
Date Drilled: 3/6/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	S	Penetrometer	▲

Soil Description	ELEV. m
Ground Surface	112.75
ASPHALT PAVEMENT - 75mm asphalt pavement	112.67
FILL - brown mix of sand and silt - some glass, concrete & asphalt pieces - some gravel - large concrete pieces and bricks - moist, frozen to 0.9m	110.61
SAND - compact to dense, brown - fine to medium grained - layers of sandy silt - moist, wet below 3.1m	108.72
SANDY SILT - dense, grey - some clayey silt - moist	107.26
SILTY SAND - dense to very dense, grey - fine to medium grained - layers of fine sand below 7.7m - moist to very moist, wet pockets	104.98
CLAYEY SILT TILL - firm to stiff, grey - low to medium plasticity - some silty clay, trace sandy silt - a layer of sandy silt at 12.2m - some gravel - very moist, wet pockets	102.69
SANDY SILT TILL - dense to very dense - grey - some gravel, some clayey silt - seams of fine sand - moist	96.59
END OF BOREHOLE **NOTE:** Upon completion of drilling: - - (Mud rotary drilling)	90.96



LGBE3 2477-18-G-CPR-F.GPJ 7/10/18

NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	4.02m	
May 3, 2018	3.94m	
May 30, 2018	3.85m	
June 12, 2018	3.92m	
Jun 26, 21018	4.03m	

Project No. 2477-18-G-CPR-E

Log of Borehole 6

Dwg No. 7

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 2/22/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	•
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	✚ S	Penetrometer	▲

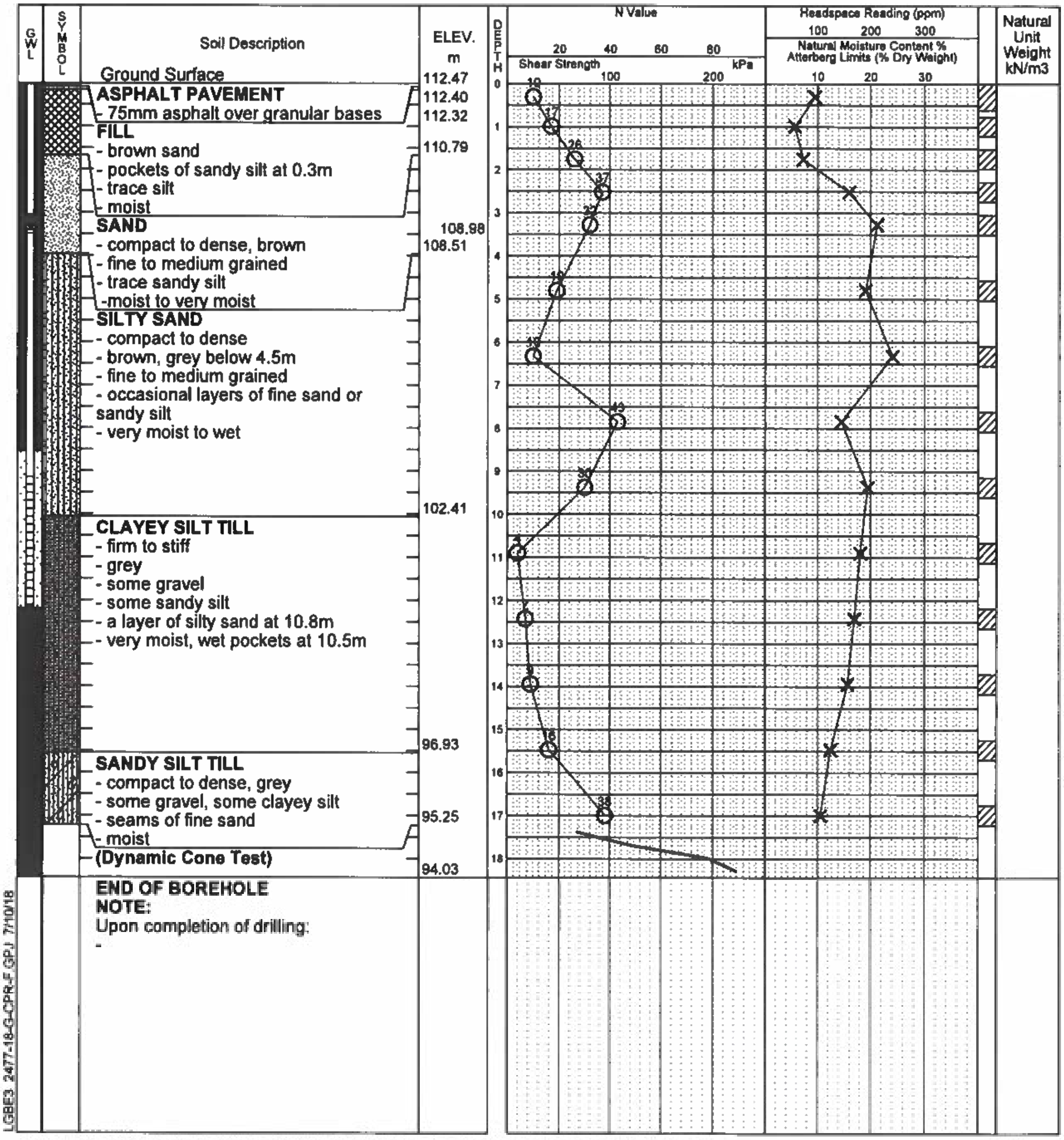
Soil Description	ELEV. m
Ground Surface	112.47
ASPHALT PAVEMENT - 75mm asphalt over granular bases	112.40 112.32
FILL - brown sand - pockets of sandy silt at 0.3m - trace silt - moist	110.79
SAND - compact to dense, brown - fine to medium grained - trace sandy silt -moist to very moist	108.98 108.51
SILTY SAND - compact to dense - brown, grey below 4.5m - fine to medium grained - occasional layers of fine sand or sandy silt - very moist to wet	102.41
CLAYEY SILT TILL - firm to stiff - grey - some gravel - some sandy silt - a layer of silty sand at 10.8m - very moist, wet pockets at 10.5m	96.93
SANDY SILT TILL - compact to dense, grey - some gravel, some clayey silt - seams of fine sand - moist	95.25
(Dynamic Cone Test)	94.03

END OF BOREHOLE

NOTE:

Upon completion of drilling:

-



NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	3.51m	
May 3, 2018	3.73m	
May 30, 2018	3.42m	
June 12, 2018	3.45m	
Jun 26, 21018	3.49m	

Project No. 2477-18-G-CPR-E

Log of Borehole 7

Dwg No. 8

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

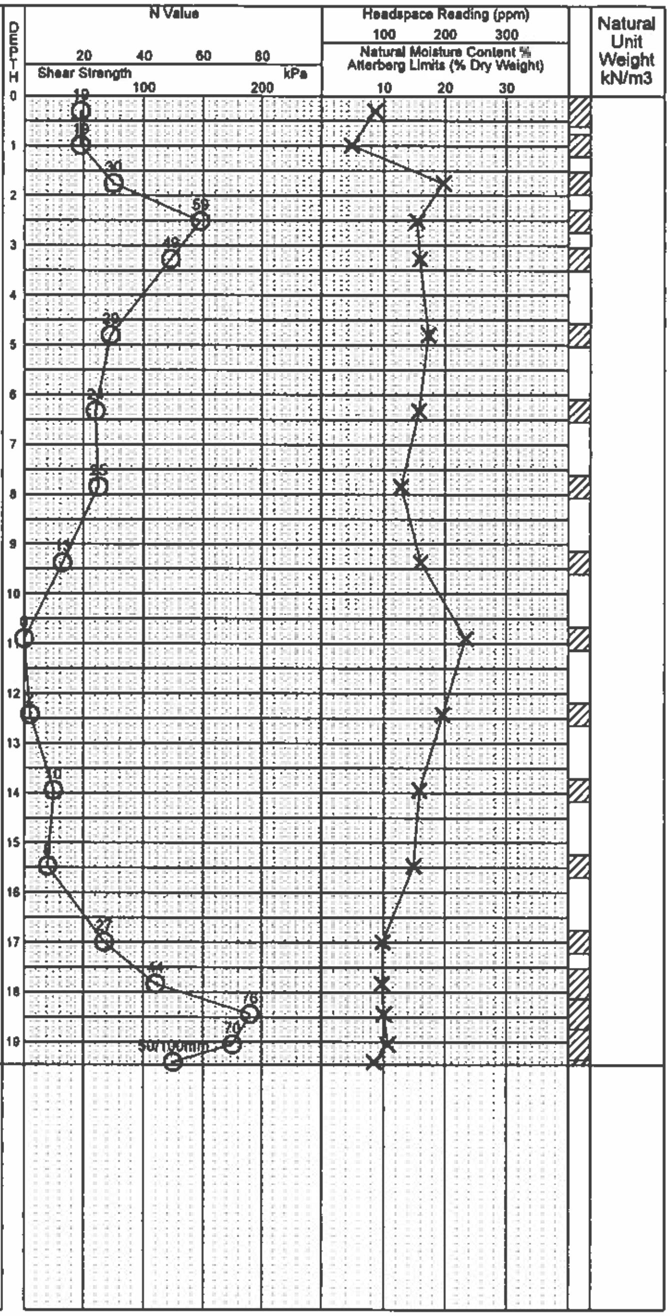
Date Drilled: 2/26/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	✕
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	♣ S	Penetrometer	▲

Soil Description	ELEV. m
Ground Surface	112.14
ASPHALT PAVEMENT	112.06
- 75mm asphalt over granular bases	111.76
FILL	110.92
- brown sand	
- minor slag and cinders at 0.4m	
- trace gravel, trace silt	
- moist	
SAND	
- dense to very dense, brown	108.18
- fine to medium grained	
- trace to some silt	107.33
- moist to very moist	
SANDY SILT	
- compact	
- brown, grey below 4.5m	
- some silty sand	
- silty sand layer at 9.0m	
- moist to very moist, wet at 9.0m	
	102.08
CLAYEY SILT TILL	
- very soft to stiff, grey	
- some gravel	
- some silty clay	
- trace sandy silt	
- very moist to wet	
	95.98
SANDY SILT TILL	
- compact to very dense	
- some gravel	
- some clayey silt	
- layers of clayey silt till	
- moist	
	92.68
END OF BOREHOLE	
NOTE:	
Upon completion of drilling:	
-	



NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	8.05m	
May 3, 2018	6.46m	
May 30, 2018	5.25m	
June 12, 2018	4.99m	
Jun 26, 21018	4.81m	

Project No. 2477-18-G-CPR-E

Log of Borehole 8

Dwg No. 9

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

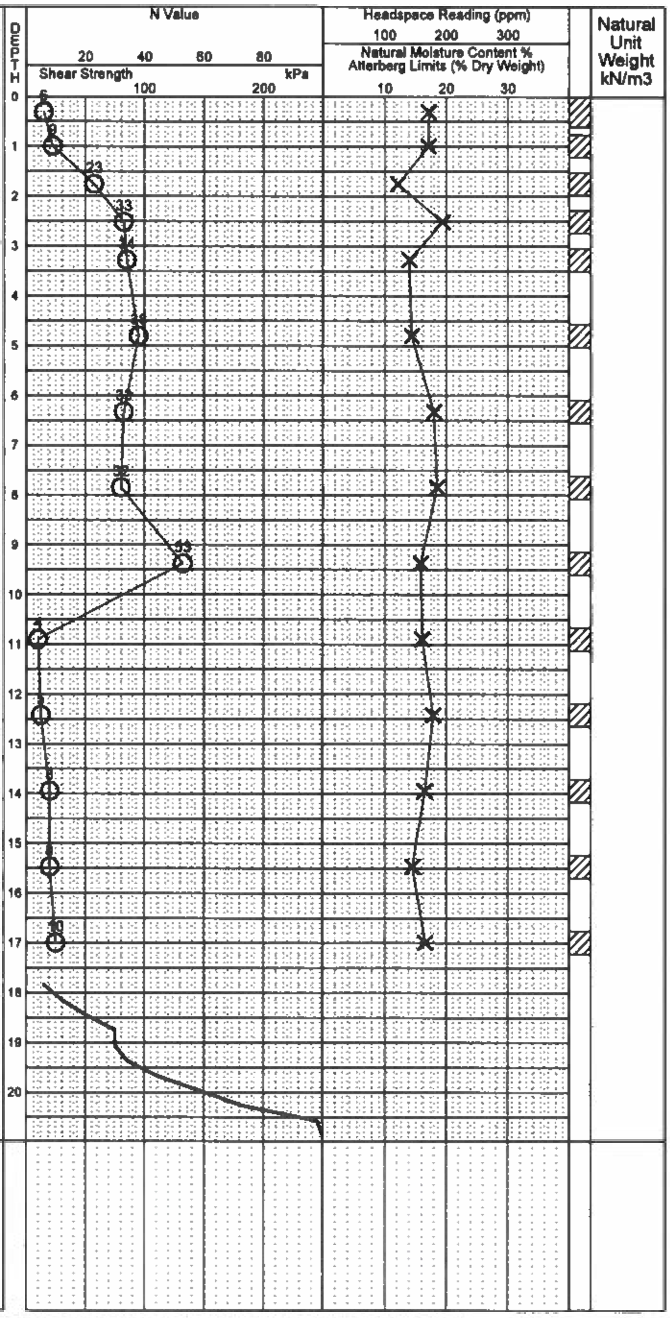
Date Drilled: 2/24/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	●	Penetrometer	▲

Soil Description	ELEV. m
Ground Surface	112.43
ASPHALT PAVEMENT - 125mm asphalt over granular bases	112.30
FILL - brown silty sand - a layer of slag and cinder at 0.35m to 0.55m - some silt - moist	112.05
	110.75
SAND - compact to very dense - brown, grey below 3.0m - fine to medium grained - thin layers of sandy silt at 3.3m & 6.3m - a very thin layer of clayey silt at 3.4m - a layer of sandy silt at 3.3m - moist to very moist	109.27
CLAYEY SILT TILL - soft to stiff - grey - some gravel - some clayey silt - some sandy silt - very moist	102.37
(Dynamic Cone Test)	94.75
END OF BOREHOLE **NOTE:** Upon completion of drilling: -	91.45



NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	3.18m	
May 3, 2018	3.04m	
May 30, 2018	3.05m	
June 12, 2018	3.11m	
Jun 26, 21018	3.16m	

Project No. 2477-18-G-CPR-E

Log of Borehole 9

Dwg No. 10

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 2/20/18

Drill Type: Truck Mounted Drill Rig

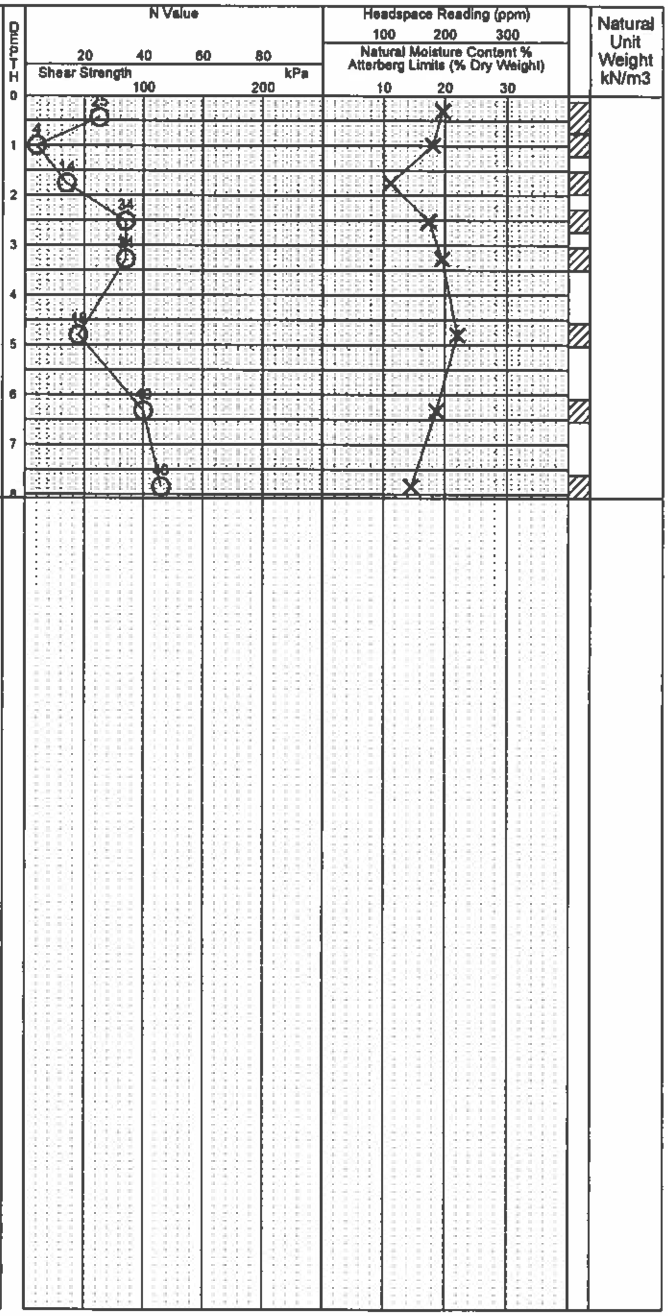
Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	⊢⊣
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	S	Penetrometer	▲

Soil Description	ELEV. m
Ground Surface	112.18
ASPHALT PAVEMENT	112.05
- 125mm asphalt over granular bases	111.75
FILL	
- dark brown sandy silt to brown sand	110.50
- a layer of slag and cinder at 0.45m	
- trace gravel, an organic layer at 0.8m	
- moist to very moist	109.31
SAND	
- compact to dense	
- brown, grey below 4.5m	
- fine to medium grained	
- some silty sand	
- occasional layers of sandy silt	
- moist to wet	
	105.17
SILTY SAND	
- dense, grey	
- some sandy silt	104.10
- moist to very moist	

END OF BOREHOLE

NOTE:
Upon completion of drilling:
- water level at 6.3m



LGBE3 2477-18-G-CPR-F.GPJ 7/10/18

NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	2.99m	
May 3, 2018	2.81m	
May 30, 2018	2.79m	
June 12, 2018	2.82m	
Jun 26, 21018	2.87m	

Project No. 2477-18-G-CPR-E

Log of Borehole 10

Dwg No. 11

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 2/23/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	⊢⊣
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test		Penetrometer	▲

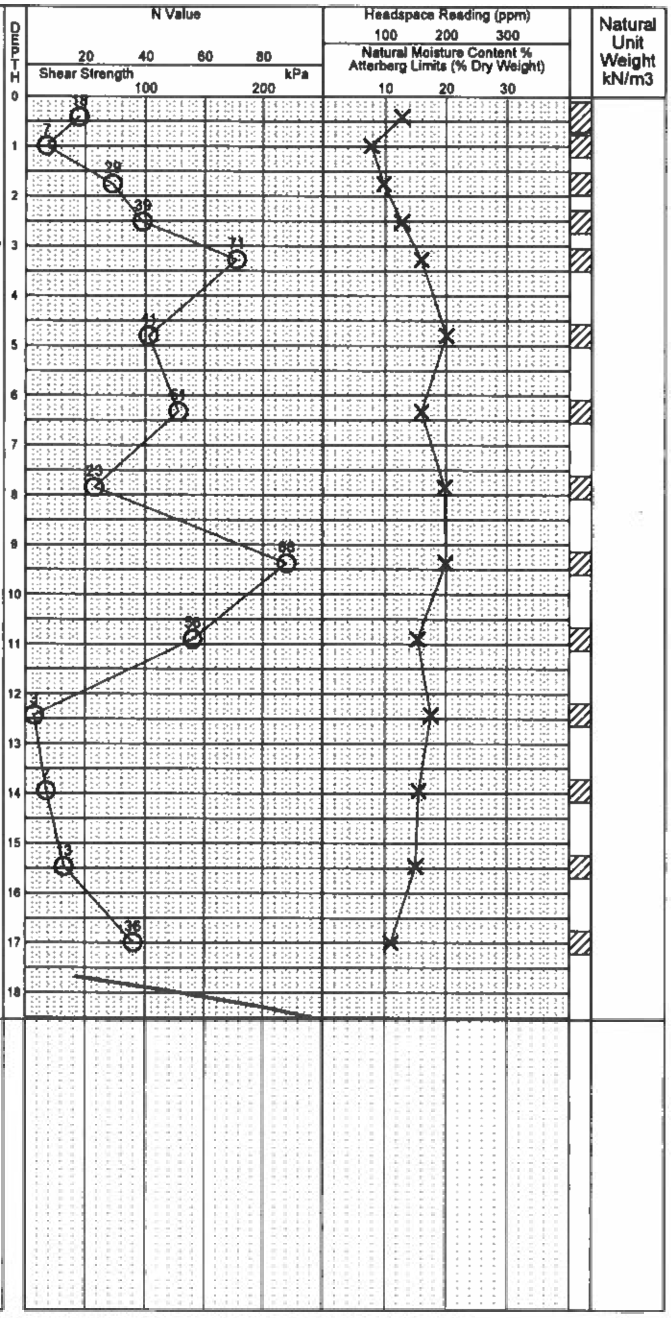
Soil Description	ELEV. m
Ground Surface	112.56
ASPHALT PAVEMENT	112.46
- 100m asphalt over granular bases	112.31
FILL	
- brown sand	110.88
- some slag pieces, some silty sand	
- moist	
SAND	109.37
- compact to very dense	
- brown, grey below 2.3m	
- fine to medium grained	
- some silty sand	
- layers of silty sand at 6.0m & 9.0m	
- moist to wet	
	102.50
SANDY SILT	
- very dense, grey	
- some silty sand, some gravel	100.98
- very moist	
CLAYEY SILT TILL	
- soft to stiff, grey	
- some gravel	
- some silty clay	
- some sandy silt	
- very moist	
	96.41
SANDY SILT TILL	
- dense, grey	
- some gravel, some clayey silt	95.19
- moist	
(Dynamic Cone Test)	94.02

END OF BOREHOLE

NOTE:

Upon completion of drilling:

-



LGBE3 2477-18-G-CPR-F.GPJ 7/10/18

NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
May 3, 2018	3.26m	
May 30, 2018	3.12m	
June 12, 2018	3.15m	
Jun 26, 21018	3.19m	

Project No. 2477-18-G-CPR-E

Log of Borehole 11

Dwg No. 12

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

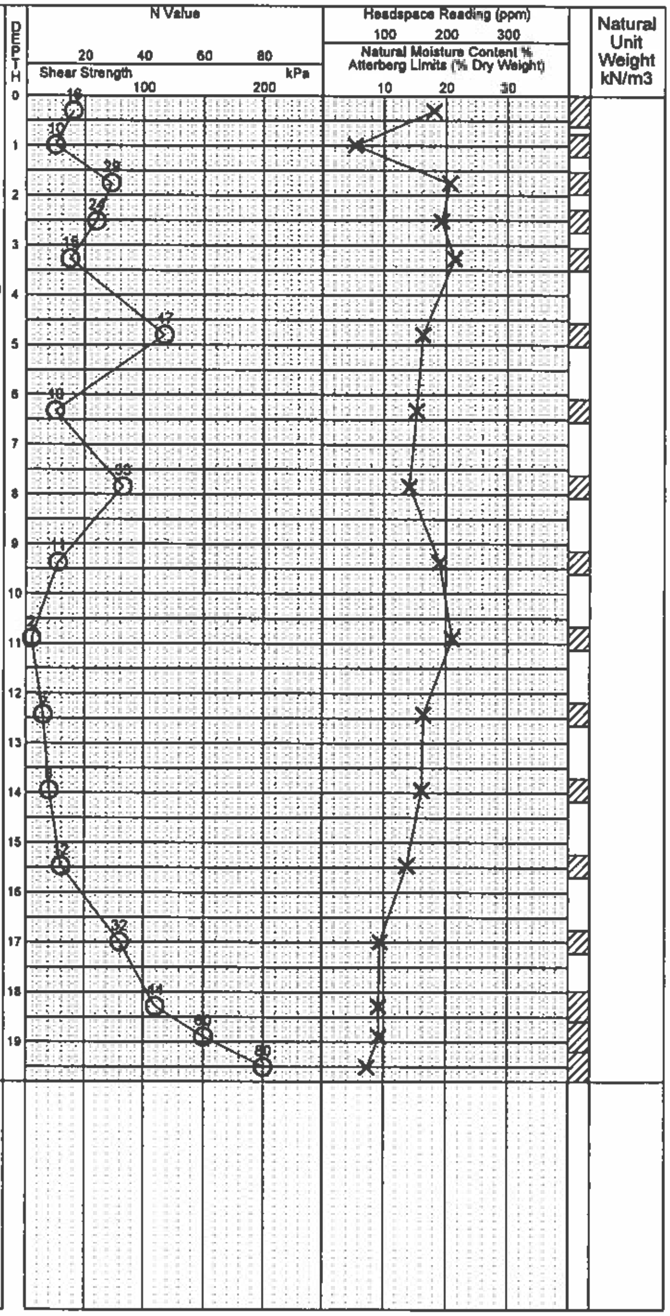
Date Drilled: 3/2/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	☒
SPT (N) Value	○ ▨
Dynamic Cone Test	—
Shelby Tube	■
Field Vane Test	♣
Headspace Reading (ppm)	•
Natural Moisture	×
Plastic and Liquid Limit	├─┤
Unconfined Compression % Strain at Failure	⊗
Penetrometer	▲

Soil Description	ELEV. m
Ground Surface	111.63
TOPSOIL	111.48
FILL - brown silty sand to sand - some asphalt pieces at 0.2m - some rootlets to 0.8m - pockets of topsoil at 0.8m - moist	109.95
SAND - compact to dense - brown, grey below 3.0m - fine to medium grained - some silty sand - moist to wet	107.60 106.14
SANDY SILT - compact to dense, grey - a layer of clayey silt at 6.0m - silty sand at 7.7m to 8.0m - moist to very moist	103.10
CLAYEY SILT TILL - very soft to stiff, grey - low to medium plasticity - some gravel - some silty clay - some sandy silt - very moist, wet pockets	95.48
SANDY SILT TILL - dense to very dense, grey - some gravel - some clayey silt - seams of fine sand - moist	91.83
END OF BOREHOLE **NOTE:** Upon completion of drilling: -	



NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	7.86m	
May 3, 2018	5.92m	
May 30, 2018	4.48m	
June 12, 2018	4.18m	
Jun 26, 21018	4.03m	

Project No. 2477-18-G-CPR-E

Log of Borehole 11S

Dwg No. 14

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 3/2/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

Auger Sample	⊠	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	S	Penetrometer	▲

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value 20 40 60 80 Shear Strength kPa 100 200	Headspace Reading (ppm) 100 200 300 Natural Moisture Content % Atterberg Limits (% Dry Weight) 10 20 30	Natural Unit Weight kN/m3
		Ground Surface	111.63	0			
		**NOT SAMPLED**		1			
			109.27	2			
				3			
				4			
				5			
			105.53	6			
		END OF BOREHOLE					

LGBE3 2477-18-G-CPR-F.GPJ 7/10/18

NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	2.17m	
May 3, 2018	3.26m	
May 30, 2018	2.36m	
June 12, 2018	2.30m	
Jun 26, 21018	2.36m	

Project No. 2477-18-G-CPR-E

Log of Borehole 1S

Dwg No. 13

Sheet No. 1 of 1

Project: Geotechnical Investigation

Location: 2280 Dundas Street West, Toronto, Ontario

Date Drilled: 2/20/18

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic

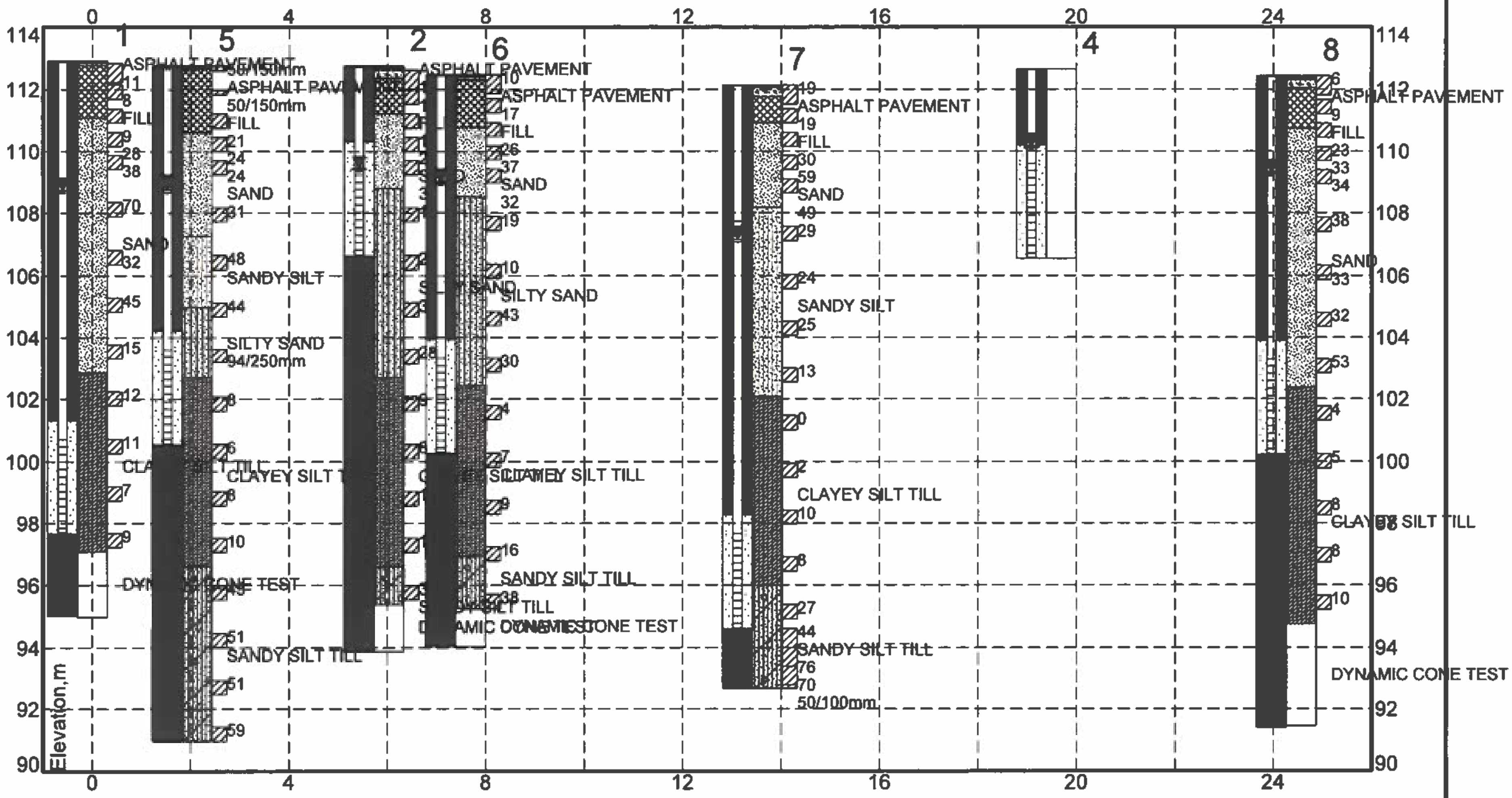
Auger Sample	☒	Headspace Reading (ppm)	●
SPT (N) Value	○ ▨	Natural Moisture	×
Dynamic Cone Test	—	Plastic and Liquid Limit	├─┤
Shelby Tube	■	Unconfined Compression % Strain at Failure	⊗
Field Vane Test	⍦ S	Penetrometer	▲

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value 20 40 60 80 Shear Strength kPa 100 200	Headspace Reading (ppm) 100 200 300 Natural Moisture Content % Atterberg Limits (% Dry Weight) 10 20 30	Natural Unit Weight kN/m3
		Ground Surface	112.91	0			
		NOT SAMPLED		1			
				2			
				3			
▼			109.20	4			
				5			
			106.81	6			
		END OF BOREHOLE					

NOTE: THE BOREHOLE DATA NEEDS INTERPRETATION ASSISTANCE BY TORONTO INSPECTION LTD. BEFORE USE BY OTHERS

Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
April 19, 2018	3.73m	
May 3, 2018	3.71m	
May 30, 2018	3.69m	
June 12, 2018	3.72m	
Jun 26, 21018	3.71m	



Borehole No	Elev.	Depth
1	112.9	17.9
2	112.7	18.9
4	112.7	6.1
5	112.7	21.8
6	112.5	18.4
7	112.1	19.5
8	112.4	21.0

Toronto Inspection Ltd.

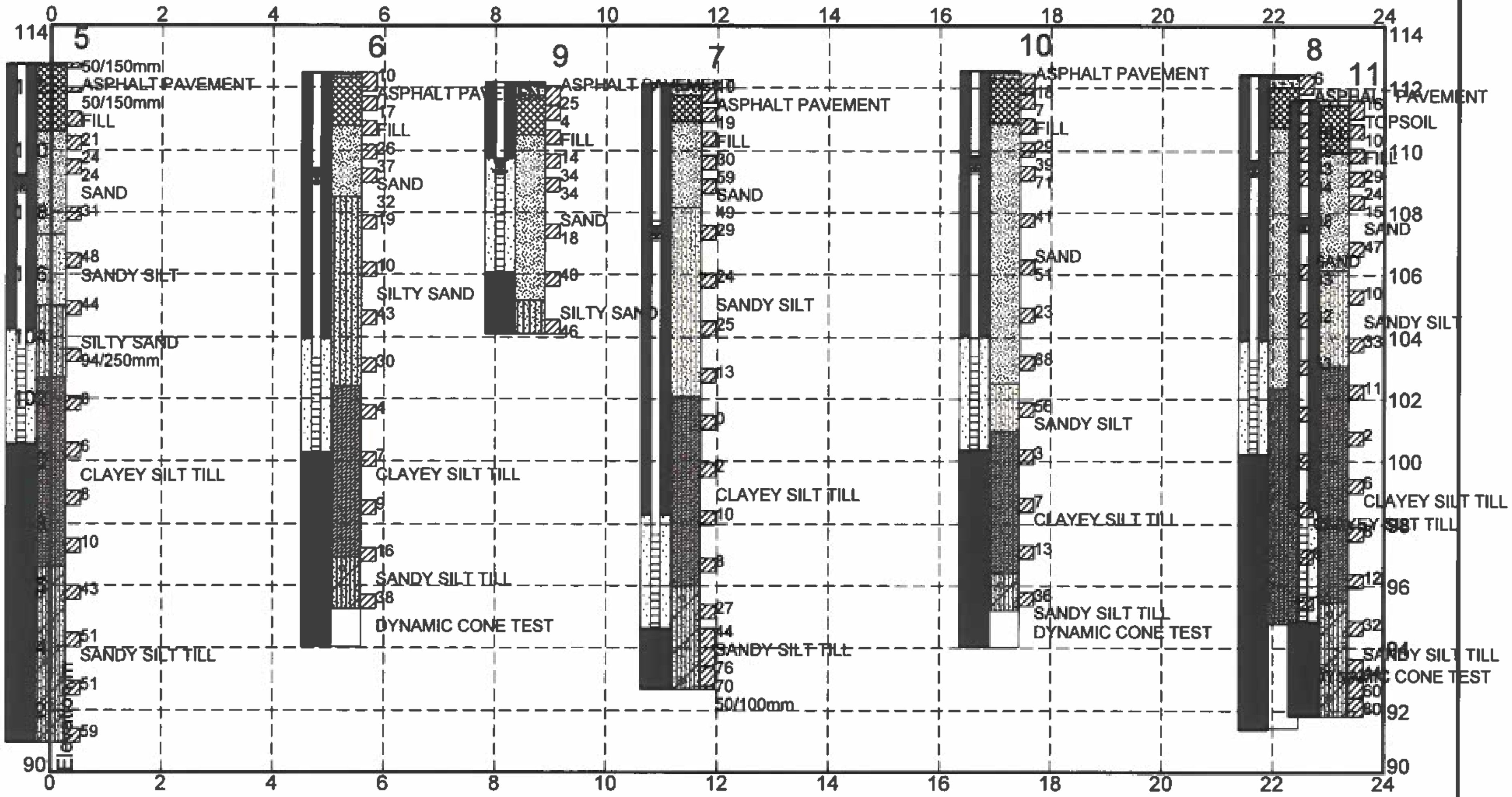
SUBSURFACE STRATIGRAPHY

Section 1

Geotechnical Investigation

2280 Dundas Street West, Toronto, Ontario

PROJECT #	DATE	DRAWING
2477-18-G-CPR-E	Jul 18	15



Borehole No	Elev.	Depth
5	112.7	21.8
6	112.5	18.4
7	112.1	19.5
8	112.4	21.0
9	112.2	8.1
10	112.6	18.5
11	111.6	19.8

Toronto Inspection Ltd.

SUBSURFACE STRATIGRAPHY

Section 2

Geotechnical Investigation

2280 Dundas Street West, Toronto, Ontario

PROJECT #	DATE	DRAWING
2477-18-G-CPR-E	Jul 18	16