



**REPORT ON
SLOPE STABILITY STUDY
1345 LAKESHORE ROAD EAST
MISSISSAUGA, ONTARIO**

**REPORT NO.: 4738-17-G-VAN-A
REPORT DATE: MAY 11, 2018**

**PREPARED FOR
VANDYK GROUP OF COMPANIES
1944 FOWLER DRIVE
MISSISSAUGA, ONTARIO
L5K 0A1**

**110 KONRAD CRESCENT, UNIT 16, MARKHAM, ONTARIO L3R 9X2
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Toronto Inspection Ltd.

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May 11, 2018
Project No.: 4738-17-G-VAN-A

Vandyk Group Of Companies
1944 Fowler Drive
Mississauga, Ontario
L5K 0A1

Attention : Mr. Chris Langley

**Re.: Slope Stability Study
1345 Lakeshore Road East, Mississauga, Ontario**

Toronto Inspection Ltd. was authorised to carry out a slope stability study at the above referenced property.

The purpose of the study was to establish the stable top of slope in order to determine the setback of proposed mid rise residential buildings at the site.

1.0 SITE CONDITIONS

The area of study (hereinafter described as “the Site”) is located on the east bank of Applewood Creek, within the Appledale Park, adjacent to the west of the Site. The area is currently a landscaped area and a paved parking lot, for an existing commercial building. The gradient of the Site drops toward the Applewood Creek, with a vegetated slope of grass, trees and bushes. The water course of Applewood Creek, located at the bottom of the slope, drains to the south towards the Lake Ontario.

The backfull width of the creek was approximately 3m. In addition, there are Gabion wall/basket and boulders/Armour stone along the slope and the edge of the creek at the middle part of the Site; and stones along the slope and the edge of the creek at the south part of the Site.

The heights of the slope, are approximately 2.3m (north), 1.8m to 2.4m (middle) and 4.0m (south), having the respective inclinations of 2.7H : 1V, 2.3-2.5H : 1V and 5.5H : 1V, or 21° , 21°-22° and 10° to the horizontal.

2.0 FIELD INVESTIGATION

The fieldwork for the slope stability study was carried out in the tableland, during the period of December 15 to 20, 2017, which consisted of drilling seven sampled boreholes, BH-1 to BH-7, having BH-1, BH-3 and BH-6 located close to the top of slope at the north, middle and south. The borehole locations are shown on the appended Borehole Location Plan, Drawing No. 1.

The boreholes were advanced using a truck mounted drill rig, equipped with continuous flight solid stem augers, supplied by a specialist drilling contractor. Refusal to augering was encountered in the shale bedrock, at all borehole locations, except BH-4, at depths varying from 4.6m to 5.6m from grade. Borehole BH-4 was terminated at a depth of 2.3m from grade, due to resistance to auger penetration, probably on a concrete slab, after several attempts in the proximity of the proposed BH-4 location. Below the auger refusal depths at BH-2, BH-6 and BH-7 locations, 5.4m (17ft10in) to 8.1m (26ft6in) long rock cores were obtained to confirm that the refusal was in the shale bedrock and to determine the rock quality. The rock cores at Boreholes BH-2, BH-6 and BH-7 were terminated at depths of 11.0m to 12.6m from grade.

Soil samples were retrieved from the boreholes, at regular intervals of 0.8m to a depth of 3.0m from grade and at 1.5m intervals thereafter, using a split spoon sampler in conjunction with Standard Penetration Tests (SPT), using a driving energy of 475 joules (350 ft-lbs). The soil samples were identified and logged in the field and were carefully bagged for later visual identification and analysis in the laboratory, as necessary.

Groundwater observations were made in the boreholes during and upon the completion of drilling. All of the boreholes, except BH-4, were completed as monitoring wells to document the current static groundwater levels. The groundwater records are presented in the borehole logs.

The borehole locations, established in the field by our site personnel, are shown on the appended Borehole Location Plan, Drawing No. 1. The ground elevations, at the borehole locations, were determined using “TOP OF MH”, located to the southwest of the existing building of the Site, as the temporary benchmark (TBM).

The geodetic elevation of 83.52m for the TBM was obtained from the survey drawing, “Boundary and Topographic Survey of Lots 2, 23 and 24 and Part of Lots 1, 3 and 22, Registered Plan H-23, City of Mississauga”, prepared by R. AVIS Surveying Inc., dated April 4, 2018, provided to our office by the client.

3.0 SUBSURFACE CONDITIONS

Reference is made to the appended Borehole Location Plan (Drawing No. 1) and the Logs of Boreholes (Drawing Nos. 2 to 8) for details of field work, including soil classification, inferred stratigraphy, and groundwater observation in the boreholes.

The ground surface at the borehole locations, consisted of asphalt pavement and a layer of fill. Underlying the fill, the overburden consisted of sandy silt and clayey silt deposits, overlying weathered shale and shale bedrock. Brief descriptions of the subsurface materials, encountered at the borehole locations, are as follows:

3.1 Surface Course

Asphalt pavement, consisting of approximately 75mm to 150mm of asphalt overlying granular bases, extending to depths of 0.1m to 0.5m from grade, was encountered at the ground level at all borehole locations.

3.2 Fill

Underlying the asphalt pavement at the ground surface, a layer of fill was contacted at all borehole locations. The fill consisted of mixture of sandy silt, clayey silt, sand, gravel, with minor rootlets, topsoil or organics. At BH-3, BH-4, BH-6 and BH-7 locations, minor to some scattered cinders, pieces of wood, brick or concrete were observed in the fill matrix.

Borehole BH-4 was terminated in the fill at depths ranging from 1.4m to 2.3m from grade, due to resistance on probable concrete at seven different spots in the proximity of BH-4 location. The fill, at the remaining borehole locations, extended to depths varying from 1.2m to 2.4m from grade.

3.3 Sandy Silt

Underlying the fill, a native sandy silt deposit was contacted, at depths varying from 1.2m to 2.4m from grade, at BH-1, BH-2 and BH-5 to BH-7 locations. The sandy silt deposit, a mixture of sand and silt, with some gravel, contained layers of clayey silt and silty sand, with occasional shale pieces. The sandy silt deposit extended to depths of 2.9m to 3.4m from grade.

Based on the Standard Penetration N-values of 34 to more than 100 blows for a penetration of 0.3m, the relative density of the sandy silt deposit was dense to very dense.

The in-situ moisture content of the soil samples from this deposit ranged from 12% to 17%, indicating moist to very moist conditions.

3.4 Clayey Silt

A native clayey silt deposit was contacted, underlying the fill at BH-3 location and underlying the sandy silt deposit at BH-1 and BH-2 locations, at depths of 2.3m to 2.9m from grade. The clayey silt deposit, a mixture of clay and silt with some sand and gravel, contained occasional seams of fine sand. The clayey silt deposit extended to depths of 3.0m to 4.6m from grade.

Based on the Standard Penetration N-values of 40 to 58 blows for a penetration of 0.3m, the consistency of the clayey silt deposit was hard.

The in-situ moisture content of the soil samples from this deposit ranged from 11% to 15%, indicating moist conditions.

3.5 Shale

Weathered shale was contacted below the sandy silt and clayey silt deposits at depths ranging from 3.0m to 4.6m from grade at BH-1 to BH-3 and BH-5 to BH-7 locations. The weathered shale extended to depths of 4.6m to 5.6m from grade, where virtual refusal to augering was encountered. The weathered shale was stratified, with seams of clayey silt and occasionally limestone layers.

The in-situ moisture content of the soil samples retrieved from the weathered shale ranged from 5% to 8%, indicating moist conditions.

5.4m (17ft10in) to 8.1m (26ft6in) long NQ rock cores were obtained at Boreholes BH-2, BH-6 and BH-7, below the virtual auger refusal depths, to determine the quality of the bedrock. An inspection of the rock cores, indicated that the shale bedrock quality, within the cored depths, was generally poor to good, based on RQD values, varying from 20% to 90%, and Recovery of 86% to 100%. Occasional layers of limestone or clayey silt were also observed within the shale bedrock.

3.6 Groundwater

Free water was recorded in the open borehole BH-1 at a depth of 5.3m from grade and no free water was recorded in the remaining open boreholes, upon completion of drilling and sampling. Free water could not accurately recorded in the open boreholes after rock coring.

All of the boreholes, except BH-4, were completed as monitoring wells to determine the current static groundwater levels. On December 21, 2017 and January 4, 2018, free water was recorded in the monitoring wells at BH-1 to BH-3 and BH-5 to BH-7 locations, at depths of 2.68m to 4.02m and 2.65m to 4.12m from grade, respectively.

Based on the field observation and the moisture content profile of the recovered soil samples, it is our opinion that the free water recorded in the monitoring wells represents perched water in the fill, in the sand seams within the silt deposits, and / or water within the shale bedrock.

4.0 SLOPE STABILITY STUDY

4.1 Visual Inspection by Site Visit

A visual inspection of the slope revealed that there was no signs of internal erosion or recent slip failures along the slope. The surface along the slope was treed and vegetated, with bushes and grass growth. There are Gabion wall and boulders or stones along the slope and the edge of the creek at the middle and south parts of the Site. The trees on the slope showed no obvious signs of slope movement in the past, i.e. no bent tree trucks. The backfull width of the creek was approximately 3m. In addition, no surface tension cracks or depressions were observed in the paved area or within the slope that would suggest any potential failure of the slope.

4.2 Computerised Slope Stability Analysis

A computerised slope stability analysis was carried out on two slope profiles close to the locations of BH-1 and BH-3, as shown on the attached Borehole Location Plan (Drawing No.1). The slope profiles were based on the survey drawing, "Boundary and Topographic Survey of Lots 2, 23 and 24 and Part of Lots 1, 3 and 22, Registered Plan H-23, City of Mississauga", prepared by R. AVIS Surveying Inc., dated April 4, 2018, provided to **Toronto Inspection Ltd.** by the client.

We have assumed that the proposed mid rise buildings will be a free standing structure with set back beyond the long term stable top of slope. The loads from the proposed building were, therefore, not considered in the stability analysis.

The subsoil data from BH-1 and BH-3, located close to the top of slope, was used to evaluate the soil parameters for slope stability analysis in computerised Simplified Bishop method. The soil parameters for slope analysis are as follows:

SLOPE SECTION	SOIL TYPE	UNIT WEIGHT γ (kN/m ³)	SHEAR STRENGTH PARAMETERS	
			c' (kPa)	ϕ'
SECTION A-A through BH-1	Fill	18	0	28°
	Sandy Silt	20.5	0	35°
	Clayey Silt	21	5	30°
	Weathered Shale	22.5	10	38°
SECTION B-B through BH-3	Fill	18	0	28°
	Clayey Silt	21	5	30°
	Weathered Shale	22.5	10	38°
	Armour Stone	24	0	40°
	Gabion Basket	22	0	36°

The results of the slope stability analysis are presented on Figure Nos. 1 and 2.

Existing Slope

The analysis indicates that at Section A, the intercept at the tableland for the slip surface, with a factor of safety of 1.503, is at a distance of approximately 0.4m from the existing top of bank / property line. (Figure No. 1 – Section A1)

The analysis indicates that at Section B, the intercept at the tableland for the slip surface, with a factor of safety of 1.586, is very close to the existing top of bank / property line. (Figure No. 2 – Section B1)

Drawdown after Flooding

Slope failure occurred more frequently after flooding. The proposed regional flood line in this vicinity is established at the existing regulatory elevations of 84.38m at Section A and 83.90m at Section B, as shown in Flood Plan Mapping – Cut/Fill Analysis, City of Mississauga, Regional Municipality of Peel, Figure No.: FP-3, prepared by Cole Engineering, dated May 2018.

The analysis indicates that the failure plane, with the a factor of safety of 1.522 at Section A, has shifted into the tableland by about 3.0m from the existing top of bank / property line. (Figure No. 1 – Section A1-1)

The analysis indicates that the failure plane, with the a factor of safety of 1.502 at Section B, has shifted into the tableland by about 0.7m from the existing top of bank / property line. (Figure No. 2 – Section B1-1)

5.0 DISCUSSION OF STABLE SLOPE

The results of the slope stability analysis are presented on Figure Nos. 1 & 2. The analysis indicates that at Sections A and B, the intercepts at the tableland for the slip surfaces, with factors of safety of 1.522 and 1.502, are at distances of 3.0m and 0.7m from the existing top of bank / property line.

5.1 Toe Erosion Allowance

Based on the Ministry of Natural Resources ‘Natural Hazards Training Manual’, January 1997, a toe erosion allowance need to be considered. The allowance for the toe erosion in Fill, for a river within 15m of slope toe, no evident of active erosion, with backfull width less than 5m, is 1m to 2m.

It is our opinion that a Toe Erosion Allowance of 1m should be considered at the north part (Section A).

Toe Erosion along the creek, under normal circumstances, is unlikely due to the presence of the Armour stone wall at the middle and south parts (at Section B); therefore, a Toe Erosion Allowance is not required.

5.2 Stable Slope Allowance

The critical slip surface, with the factor of safety of 1.522 at Section A, has shifted into the tableland by about 3.0m from the existing top of bank / property line (Figure No. 1 – Section A1-1). This represents the Long Term Stable top of slope at 3.0m from the existing Top of Slope.

The critical slip surface, with the factor of safety of 1.502 at Section B, has shifted into the tableland by about 0.7m from the existing top of bank / property line (Figure No. 2 – Section B1-1).

5.3 Buffer Allowance

Based on the current City of Mississauga, a buffer of 10m is required for the set-back of the proposed development, between the stable top of slope and the proposed development.

6.0 Conclusion

The subsoils along the slope profile is anticipated to consist of fill at the surface, overlying native deposits of sandy silt and / or clayey silt, of dense in relative density and hard in consistency. The slope stability analysis indicates that 0.4m to the existing top of bank represents the stable top of slope at the north part. During and after regulatory flooding, the stable top of bank may shift 4.0m at the north part (1m for toe erosion and 3m for stable slope allowance).

The existing top of bank at the middle part represents the stable of slope. During and after regulatory flooding, the stable top of bank may shift 0.7m at the middle part. (0.7m for stable slope allowance).

The existing top of back at the south part, having the inclination of approximately 5.5H : 1V, in our opinion, that represents the stable top of slope.

The total setback of the proposed development would be established as below:

Total setback = toe erosion allowance + stable slope allowance + buffer allowance

Based on the slope stability study, the proposed development can be set-back at or beyond distances of 14m, 10.7m and 10.0m from the existing (established) top of bank at the north, middle and south parts, respectively. Any distance, less than 14m and 10.7m at the north and middle parts will be subject to approval by the City of Mississauga.

We recommend that no additional surcharge should be placed within 10m from the long term stable top of slope; and no uncontrolled flow of surface water should be allowed onto the slope, as this may result in erosion gullies on the bank.

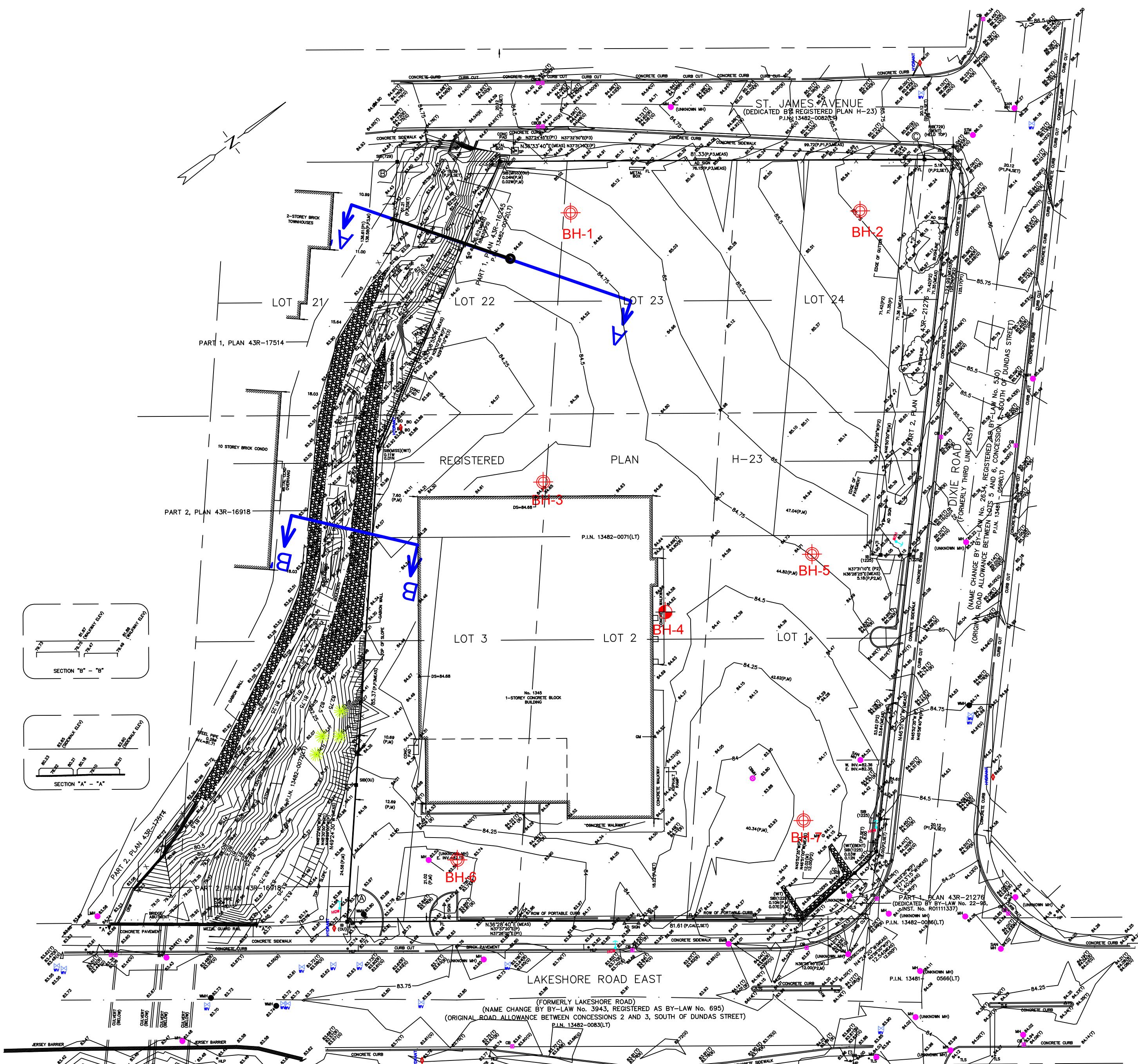
We hope that you will find this report complete within our scope of work. If you have any questions, please contact our office.



Toronto Inspection Ltd.

DRAWINGS AND ENCLOSURES

N
W E
S



LEGEND :

/ Borehole / Monitoring Well Location

NOT TO SCALE

Toronto Inspection 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 / Slope Stability Study - Sections	
LOCATION: 1345 Lakeshore Road East, Mississauga, Ontario	
PROJECT NO. 4738-17-G-VAN-A	DATE : May 2018
DRAWING NO. 1	

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

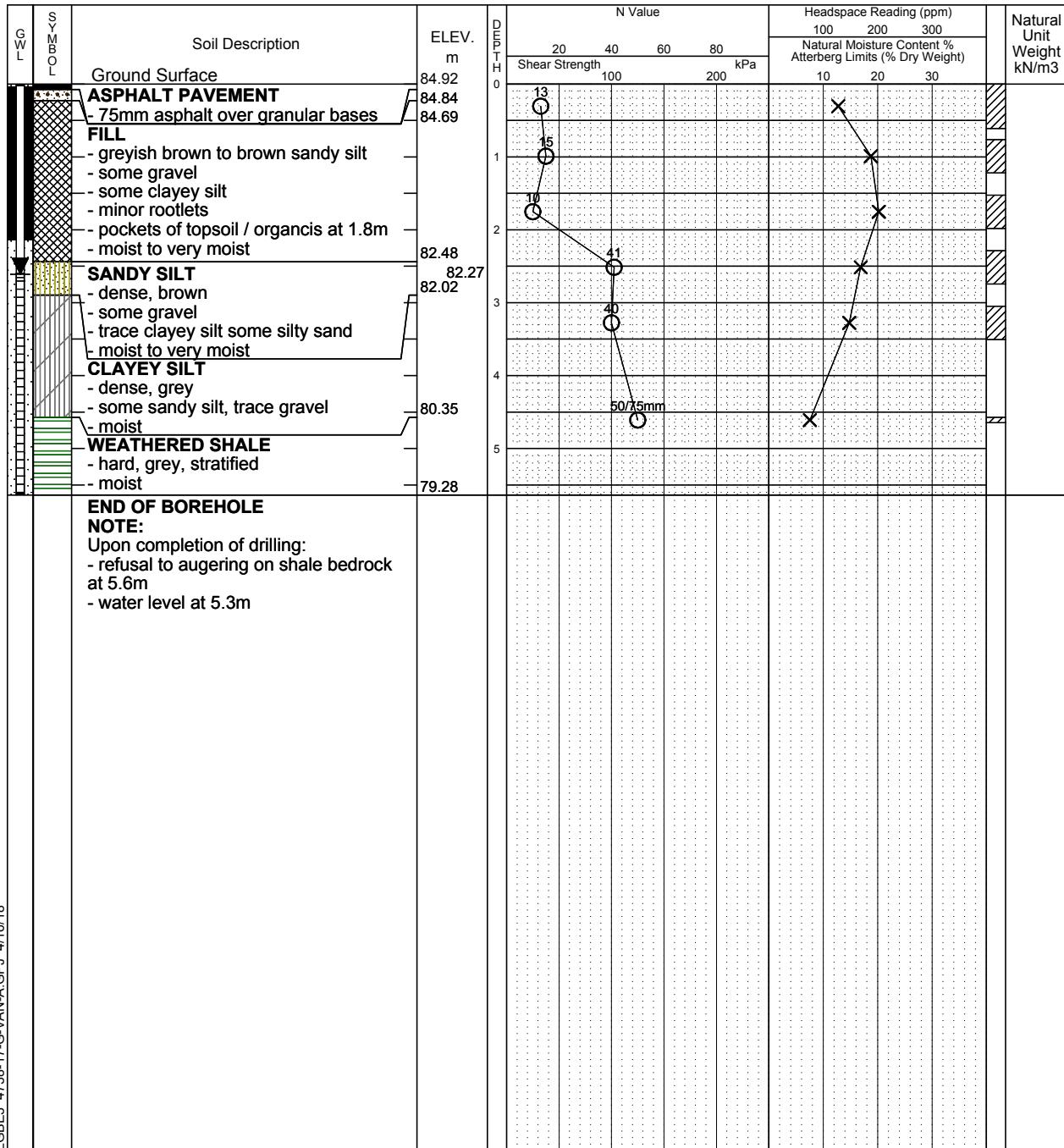
Date Drilled: 12/15/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



LGBE3 4738-17-G-VAN-A.GPJ 4/16/18

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)
Dec. 21, 2017	2.68m	
Jan. 4, 2018	2.65m	

Log of Borehole BH-2

Dwg No. 3

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

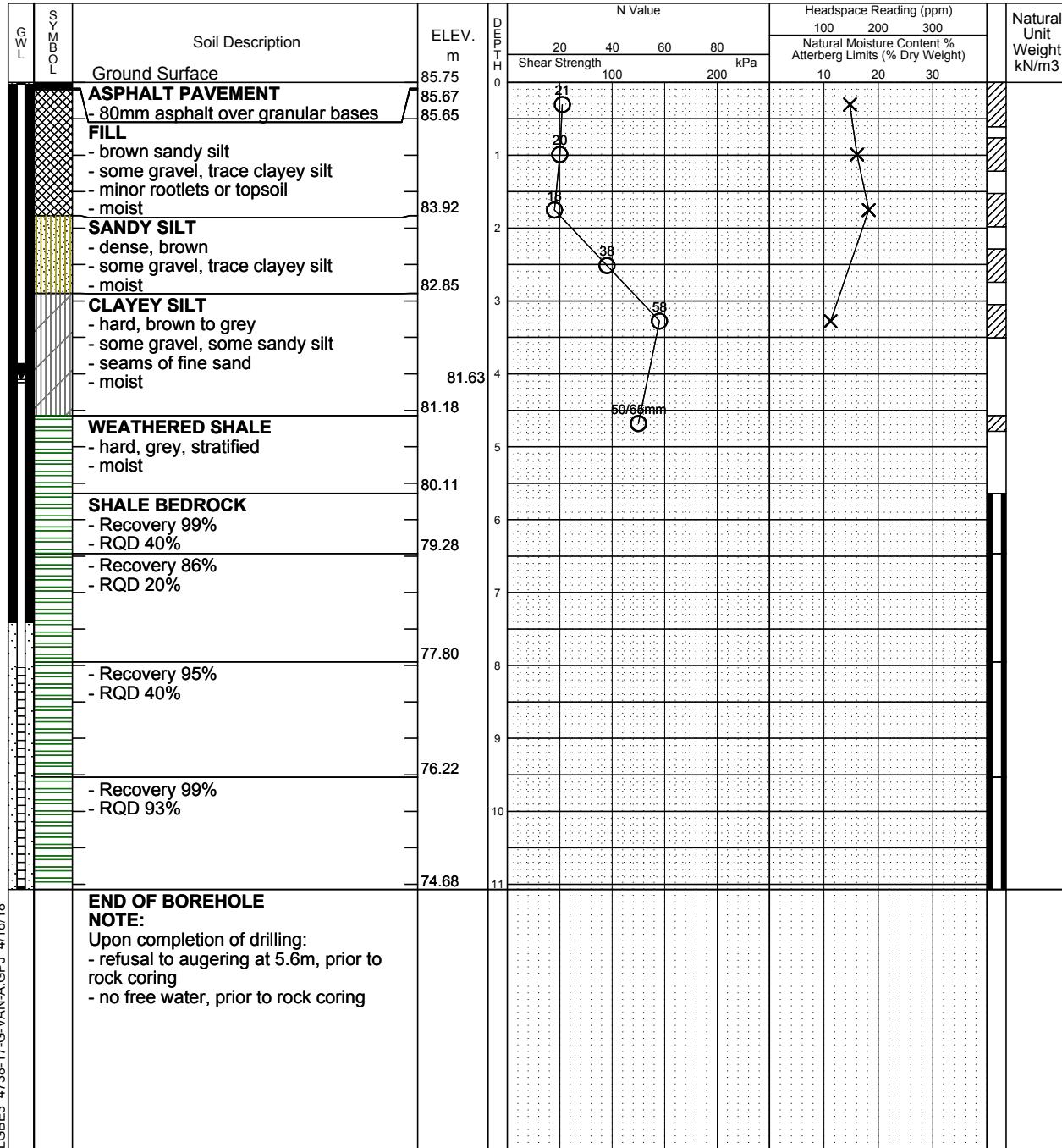
Date Drilled: 12/19/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



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)
Dec. 21, 2017	4.01m	
Jan. 4, 2018	4.12m	

Log of Borehole BH-3

Dwg No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

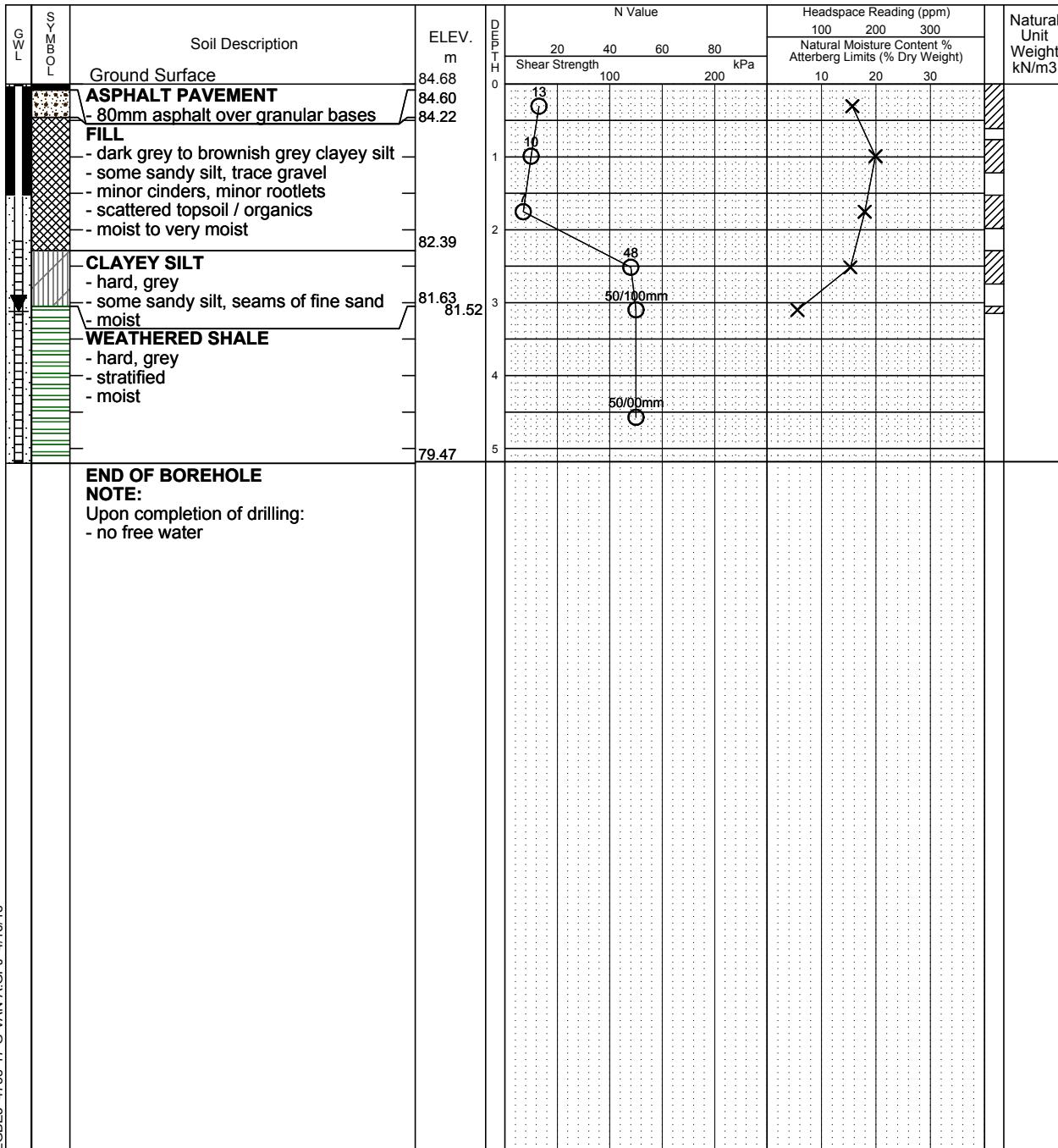
Date Drilled: 12/15/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



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)
Dec. 21, 2017	3.32m	
Jan. 4, 2018	3.16m	

Log of Borehole BH-4

Dwg No. 5

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

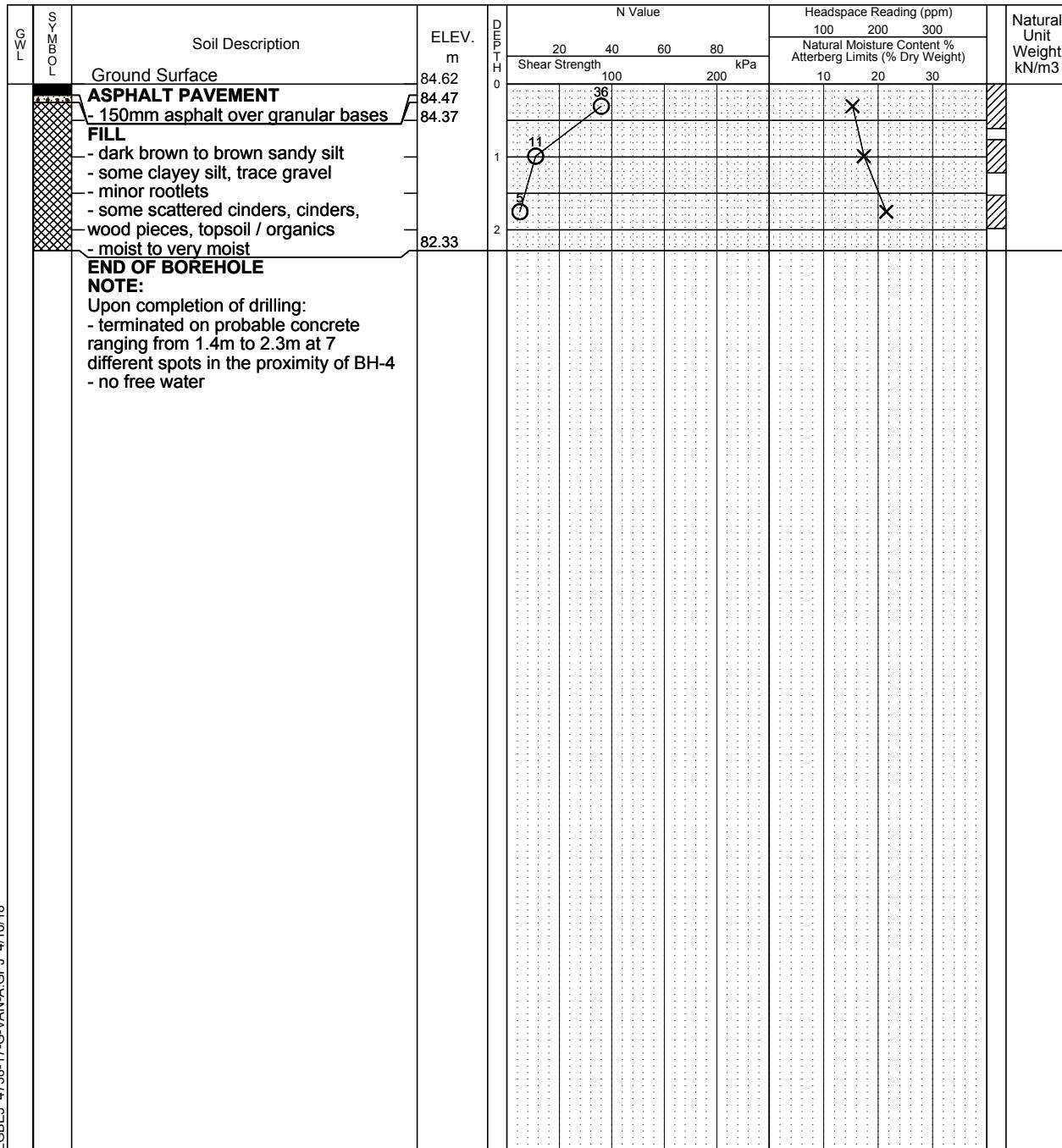
Date Drilled: 12/15/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



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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)

Log of Borehole BH-5

Dwg No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

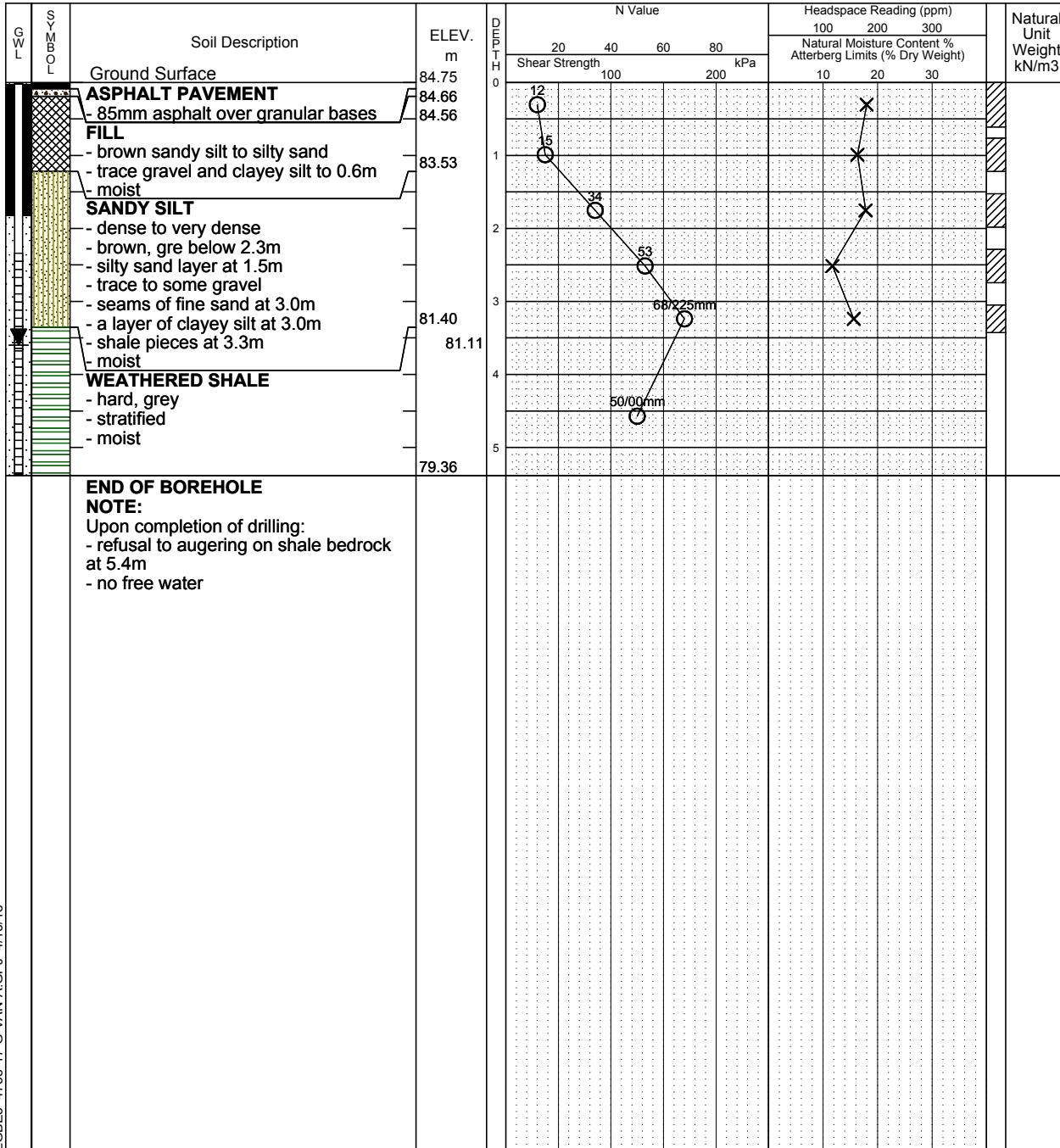
Date Drilled: 12/15/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



LGBE3 4738-17-G-VAN-A.GPJ 4/16/18

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)
Dec. 21, 2017	4.02m	
Jan. 4, 2018	3.64m	

Log of Borehole BH-6

Dwg No. 7

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

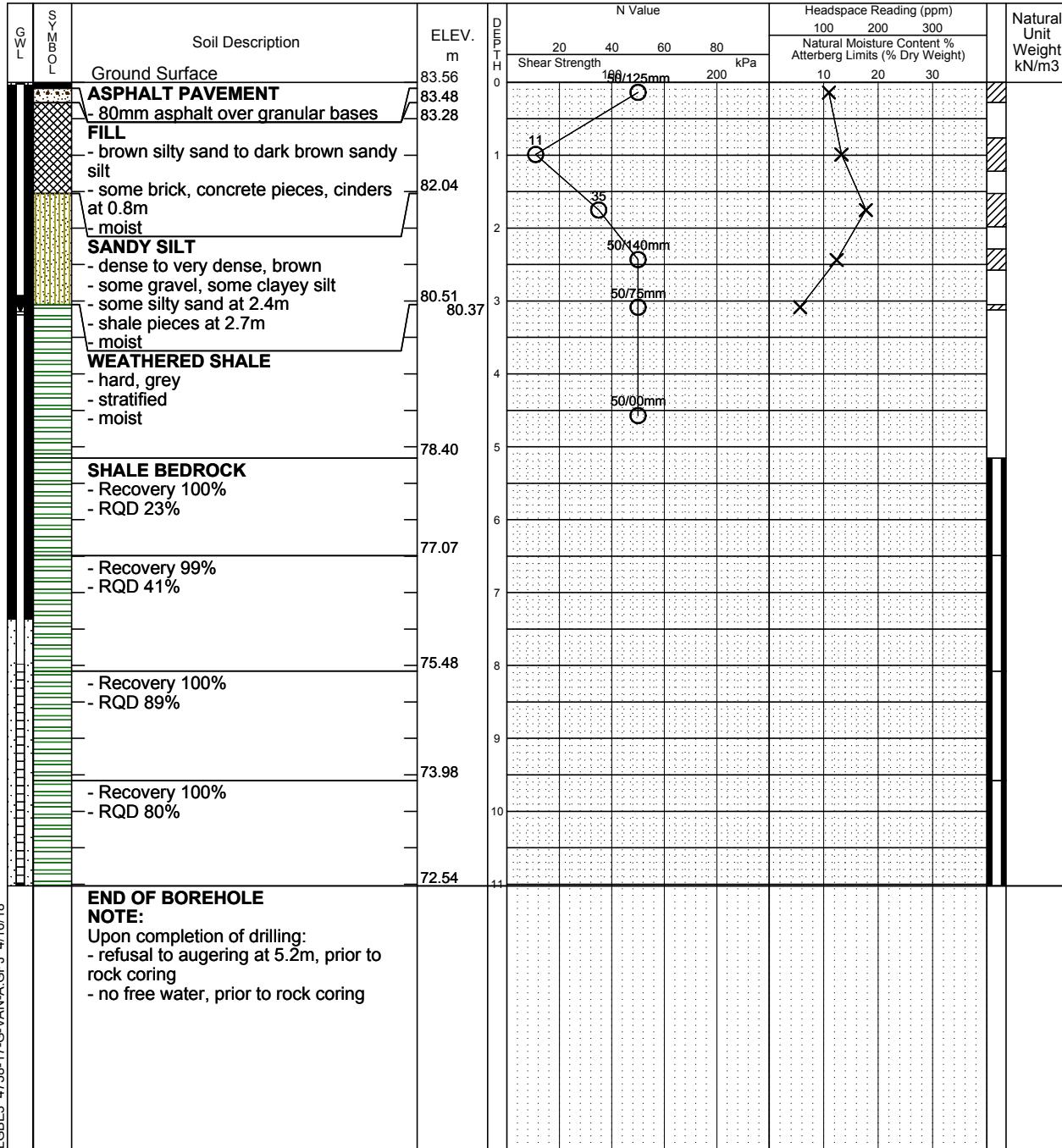
Date Drilled: 12/20/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



LGBE3 4738-17-G-VAN-A.GPJ 4/16/18

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Toronto Inspection Ltd.

Time	Water Level (m)	Depth to Cave (m)
Dec. 21, 2017	4.02m	
Jan. 4, 2018	3.19m	

Log of Borehole BH-7

Dwg No. 8

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 1345 Lakeshore Road East, Mississauga, Ontario

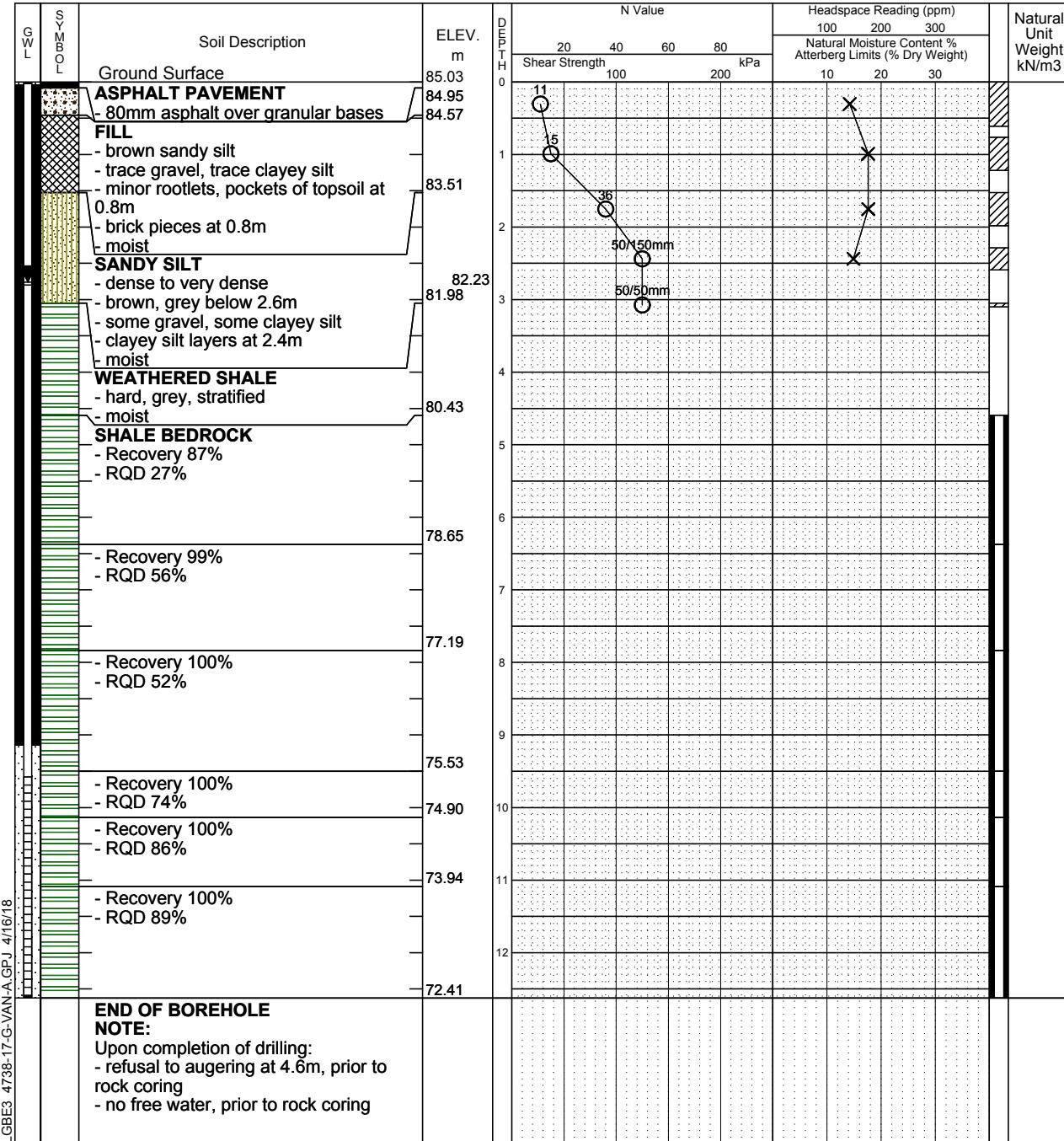
Date Drilled: 12/18/17

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

Headspace Reading (ppm) •
 Natural Moisture X
 Plastic and Liquid Limit
 Unconfined Compression
 % Strain at Failure
 Penetrometer

Drill Type: Truck Mounted Drill Rig

Datum: Geodetic



LGBE3 4738-17-G-VAN-A.GPJ 4/16/18

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)
Dec. 21, 2017	2.94m	
Jan. 4, 2018	2.80m	

Slope Stability Study
 Project No.: 4738-17-G-VAN-A
 1345 Lakeshore Road East, Mississauga

	Unit Weight r (kN/m ³)	Shear Strength Parameter Effective Cohesion C' (kPa)	Angle of Int. Friction
Fill	18.0	0	28°
Sandy Silt	20.5	0	35°
Clayey Silt	21	5	30°
Weathered Shale	22.5	10	38°

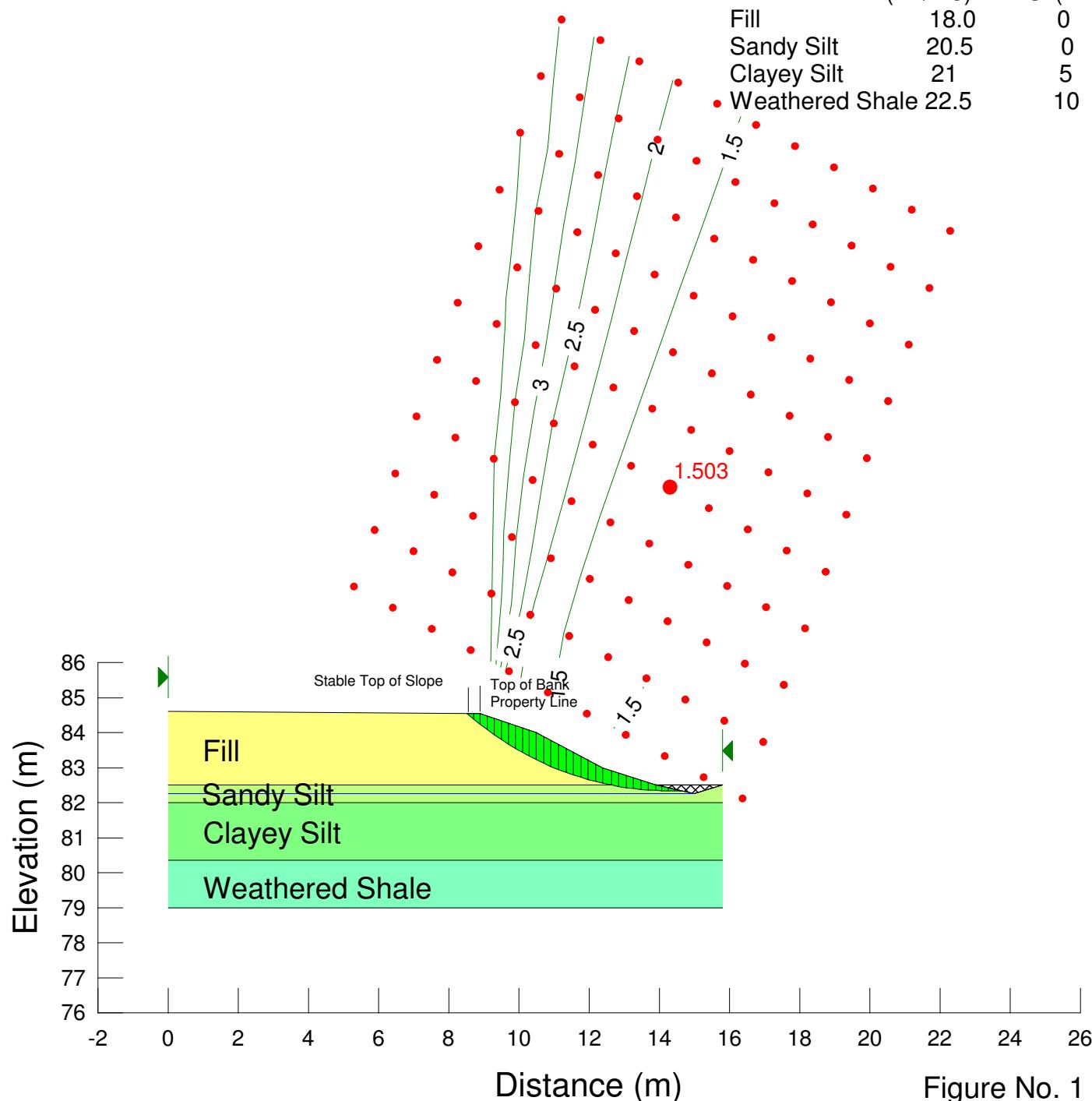


Figure No. 1 - Section A1

Slope Stability Study
 Project No.: 4738-17-G-VAN-A
 1345 Lakeshore Road East, Mississauga

	Unit Weight r (kN/m ³)	Shear Strength Parameter Effective Cohesion C' (kPa)	Angle of Int. Friction
Fill	18.0	0	28°
Sandy Silt	20.5	0	35°
Clayey Silt	21	5	30°
Weathered Shale	22.5	10	38°

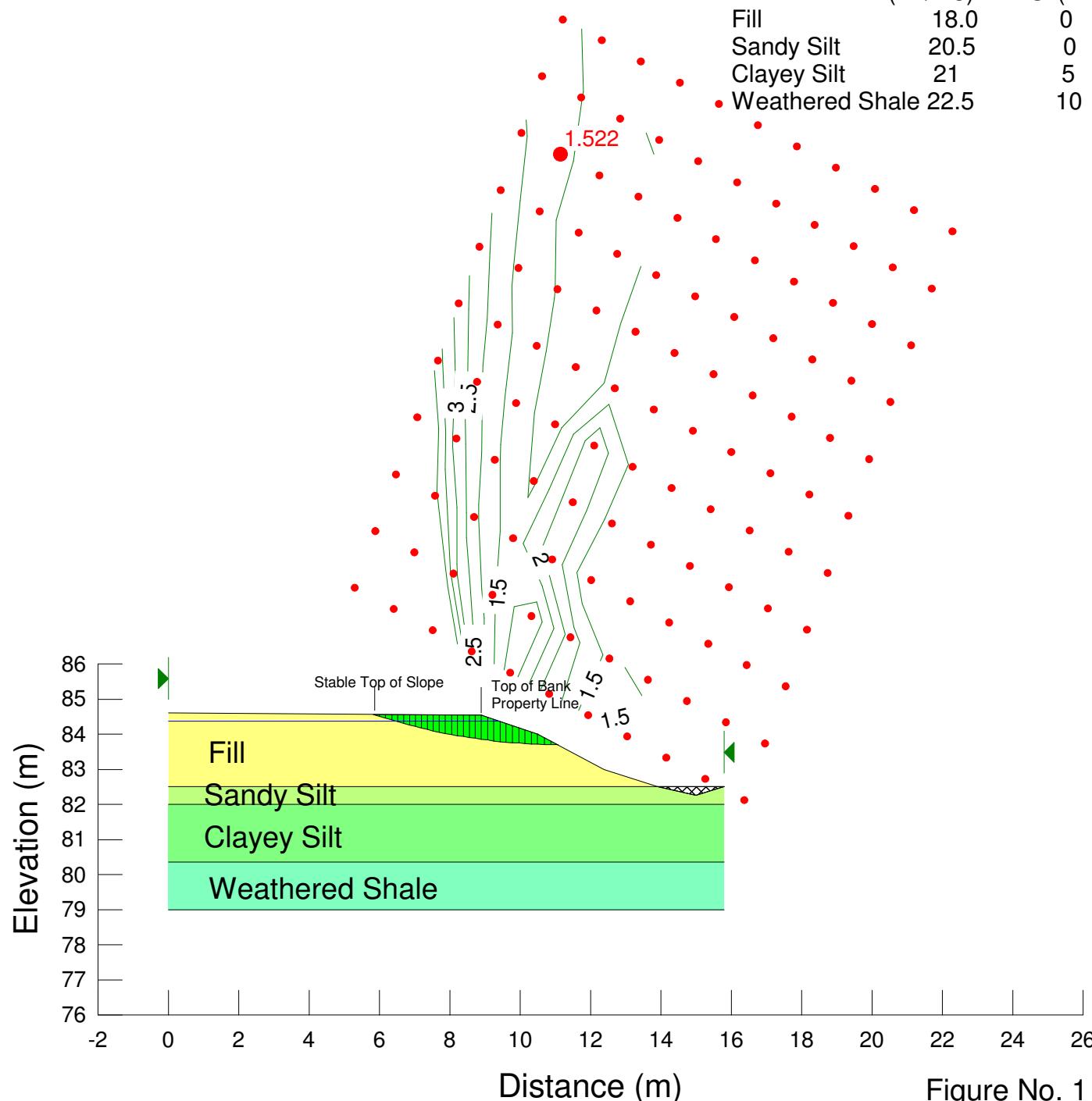
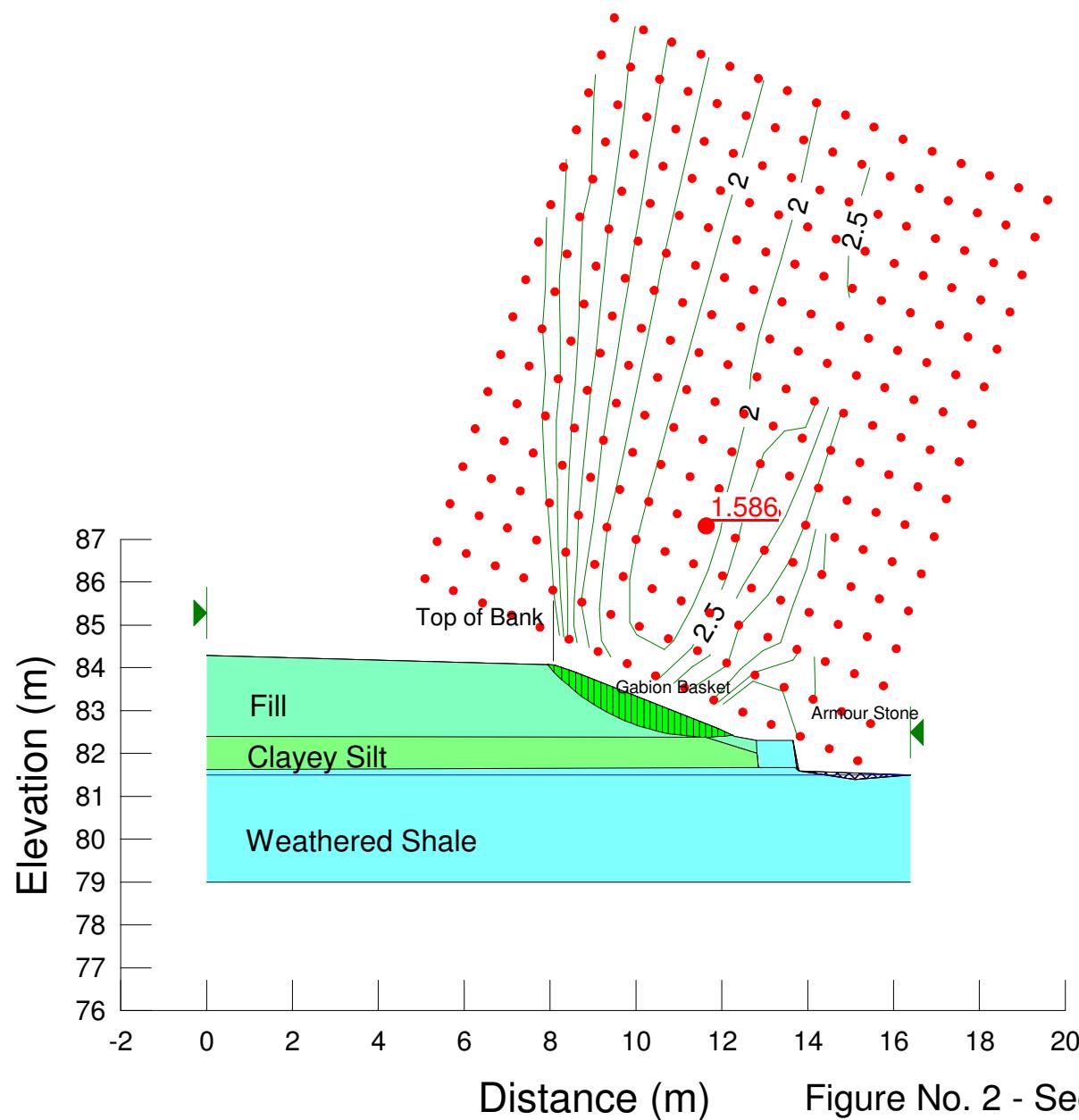


Figure No. 1 - Section A1-1

Slope Stability Study
 Project No.: 4738-17-G-VAN-A
 1345 Lakeshore Road East, Mississauga

	Unit Weight	Shear Strength Parameter	
	r (kN/m ³)	Effective Cohesion C' (kPa)	Angle of Int. Friction
Fill	18.0	0	28°
Clayey Silt	21	5	30°
Weathered Shale	22.5	10	38°
Armour Stone	24	0	40°
Gabion Basket	22	0	36°



Slope Stability Study
 Project No.: 4738-17-G-VAN-A
 1345 Lakeshore Road East, Mississauga

	Unit Weight	Shear Strength Parameter	
	r (kN/m ³)	Effective Cohesion C' (kPa)	Angle of Int. Friction
Fill	18.0	0	28°
Clayey Silt	21	5	30°
Weathered Shale	22.5	10	38°
Armour Stone	24	0	40°
Gabion Basket	22	0	36°

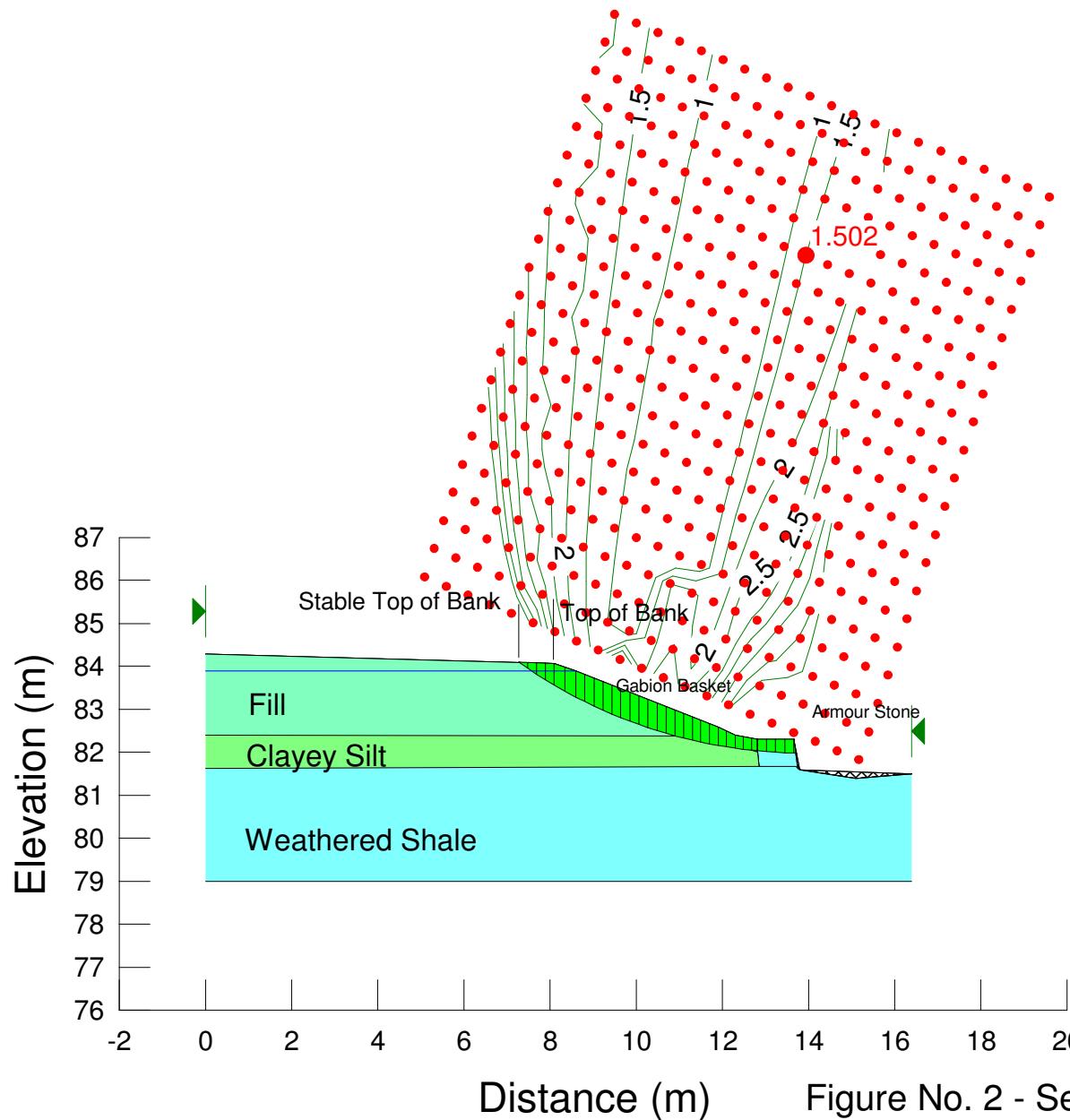


Figure No. 2 - Section B1-1

7.0 GENERAL STATEMENT OF LIMITATION

The comments and recommendations presented in this report are based on the subsoil and groundwater conditions encountered at the borehole locations, indicated in the borehole location plan, and are intended for the guidance of the design engineer.

Although we consider this report to be representative of the subsurface conditions at the subject property, the soil and the ground water conditions beyond the borehole location may differ from those encountered at the time of our investigation and may become apparent during construction. Any use and/or interpretation of the data presented in this report, and any decisions made on it by the third party are responsibility of the third parties. **Toronto Inspection Ltd.**'s responsibility is limited to the accurate interpretation of the soil and ground water conditions prevailing in the location investigated and accepts no responsibility for the loss of time and damages, if any, suffered by the third party as a result of decisions or actions based on this report.

To the fullest extent permitted by law, the client's maximum aggregate recovery against **Toronto Inspection Ltd.**, its directors, employees, sub-contractors and representatives, for any and all claims by client for all causes including, but not limited to, claims of breach of contact, breach of warranty and/or negligence, shall be the amount of the fee paid to **Toronto Inspection Ltd.** for its professional services rendered under the agreement with respect to the particular site which is the subject of the claim by client.

Any legal actions arising directly or indirectly from this work and/or **Toronto Inspection Ltd.**'s performance of the Services shall be filed no longer than two years from the date of **Toronto Inspection Ltd.**'s substantial completion of the services. **Toronto Inspection Ltd.** shall not be responsible to the client for lost revenues, lost of profits, cost of content, claims of customers, or other special indirect, consequential or punitive damages.

Yours very truly,
TORONTO INSPECTION LTD.

David S. Wang

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