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SLOPE STABILITY ASSESSMENT

900 LAKESHORE ROAD WEST,

MISSISSAUGA, ONTARIO, L5H 1H9

Prepared for:

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

Fisher Engineering Limited (Fisher) was retained by 1000570027 Ontario Inc. to carry out an investigation into the Long-Term Stable Top of Slope (LTSTOS) for the property located at 900 Lakeshore Road West, Mississauga, Ontario (the Site). For the purpose of this report Lakeshore Road West was assumed to run in an east to west direction. The site is located on the south side of Lakeshore Road West, approximately 1.75km west of the intersection with Mississauga Road and is bounded by Lakeshore Road West to the north, Richard's Memorial Park to the east, residential properties to the south, beyond which is Lake Ontario, and Whittler Crescent to the west.

At the time of the investigation the subject property was occupied by a one & half-storey residence with detached garage and in-ground swimming pool. Several retaining walls/steps/stairs were observed connecting areas of higher elevations to the lower patio/inground pool areas.

Subsurface exploration for an initial geotechnical investigation was carried out on November 6, 7 and 8, 2023, during which five (5) boreholes (BH1 – BH5) were advanced to approximate depths varying from 10.74m to 17.53m below prevailing grades. Monitoring wells were installed in the five boreholes (MW1 to MW5) and used for groundwater level monitoring and sampling. Further drilling was carried out on September 3, 2024 during which three (3) boreholes were advanced to depths of 12.19m to 17.45m below prevailing grade. The three boreholes were instrumented as monitoring wells. The boreholes drilled during previous investigations were used for the current slope stability assessment. Approximate borehole locations and elevations are shown on the Borehole Location Plan in Appendix A.

The subsoils observed in the vicinity of the slope during the investigation generally consisted of a layer of fill extending to various depths. The fill was underlain by sand & silt underlain by clayey silt till with shale at further depths.

The existing slope sections were analyzed using Slope/W software (GeoStudio 2018) based on the interpreted soil properties. The minimum Factors of Safety (FOS) for Sections A-A', B-B' and C-C' were determined as 1.095, 3.496 and 6.555 respectively under static conditions and 0.780, 2.562 and 3.600 under seismic conditions respectively. The Ministry of Natural Resources (MNR) recommends FOS values of 1.3 to 1.5 (Land Use C). The analyses indicate that under current conditions, and with short-term high groundwater levels, the requirements have not been met at Sections A-A'.

As the slope inclination for Sections D-D' & E-E' is less than 3:1 (H:V), the slope stability assessment consisted of a desktop review of the available information for the site and involved geological and topographical mapping and the results of previous geotechnical field investigation.

Sliding surfaces associated with FOS of 1.713 and 1.367, obtained under static and seismic conditions, daylight at approximately 5.7006m behind the top of slope line for Section A-A'.

For Sections D-D' and E-E', assuming 3H:1V as long-term stable slope, a Stable Slope Allowance is not required.

From the analyses, it is concluded that:

1. The existing slope at Section A-A' has FOS less than 1.5 and 1.3 under static and seismic conditions. The slope inclination at Sections D-D' and E-E' is flatter than 3:1 (H:V).
2. The existing slopes at Sections B-B' and C-C' have FOS more than 1.5 and 1.3 under static and seismic conditions.
3. Design toe erosion allowances (TEA) of 0m to 2m are applicable.
4. The stability components of the LTSTOS are 5.70m, 0m, 0m, 0m and 0m at Sections A-A', B-B', C-C', D-D' and E-E'.
5. An access allowance of 6.0m is recommended. Overhanging of 2nd floor and above will not impact LTSTOS.
6. Deeper fill materials were observed in the area of BH102, covering Section A-A'. Engineering solutions are recommended to stabilize the slope in this area to reduce stable top of slope setback.
7. Figure E3 & E3a, in Appendix E, show total development setback prior to and after slope stabilization measures.

We trust that the information presented herein meets your present requirements. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

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2. INTRODUCTION

Fisher Engineering Limited (Fisher) was retained by 1000570027 Ontario Inc. to carry out an investigation into the Long-Term Stable Top of Slope (LTSTOS) for the property located at 900 Lakeshore Road West, Mississauga, Ontario (the Site). The investigation was conducted to assess existing slope conditions and its long-term stability and erosion risks as well as to recommend appropriate development setback as necessary.

The scope of work for the geotechnical slope stability assessment consisted of:

- Subsurface exploration to determine prevailing soil and groundwater conditions.
- Detailed visual slope inspection to ascertain existing general slope conditions, including signs of instability, if any, vegetation cover and internal and surface erosion and
- Detailed slope stability analyses.

Based on the results of the investigation, recommendations for the Long-Term Stable Top of Slope (LTSTOS) are made.

Engtec Consulting Inc. carried out peer review of the slope stability assessment on behalf of the City of Mississauga and submitted a report dated February 27, 2026. Engtec's review suggests less depth of fill at Section A-A' along with zero Toe Erosion Allowance for seasonal wetlands/creek. Based on the Peer Review, and recommended slope stabilization measures, total development setback at Section A-A' has been reduced. Peer Review is attached in Appendix F.

3. TERMS OF REFERENCE

The objectives of this investigation were to:

- Investigate the LTSTOS for the proposed development due to the presence of existing natural slopes on the southeast, south and southwest sections of the site.
- Provide surface and subsurface information with regards to types, thicknesses and variability of soils along the slope.
- Establish groundwater conditions with regard to the natural slope.
- Assess stability of the slope in the current condition.
- Establish long-term stable top of slope and development setback prior to slope stability measures.
- Recommend suitable stability measures as necessary.

4. PROCEDURE

4.1 SITE DESCRIPTION

For the purpose of this report Lakeshore Road West was assumed to run in an east to west direction. The site is located on the south side of Lakeshore Road West, approximately 1.75km west of the intersection with Mississauga Road, and is bounded by Lakeshore Road West to the north, Richard's Memorial Park to the east, residential properties to the south, beyond which is Lake Ontario, and Whittler Crescent to the west.

At the time of the investigation the subject property was occupied by a one & half-storey residence with detached garage and in-ground swimming pool. Several retaining walls/steps/stairs were observed connecting areas of higher elevations to the lower patio/inground pool areas.

Topography

Site grades fall significantly across the site changing from approximately 89.2m asl towards the front/middle to 79.4m near the southern apex. Elevations at borehole locations change from approximately 86.63m asl at BH1, located at the northeast corner to 82.55m asl at BH103 located at the eastern side of the site.

4.2 SITE INVESTIGATION

Subsurface Investigation

Subsurface exploration for an initial geotechnical investigation was carried out on November 6, 7 and 8, 2023, during which five (5) boreholes (BH1 – BH5) were advanced to approximate depths varying from 10.74m to 17.53m below prevailing grades. Monitoring wells were installed in the five boreholes (MW1 to MW5) and used for groundwater level monitoring and sampling. Further drilling was carried out on September 3, 2024 during which three (3) boreholes were advanced to depths of 12.19m to 17.45m below prevailing grade. The three boreholes were instrumented as monitoring wells. The boreholes drilled during previous investigations were used for the current slope stability assessment. Approximate borehole locations and elevations are shown on the Borehole Location Plan in Appendix A.

A track mounted drill rig equipped with solid stem augers, supplied by Terra Firma Services, was used for drilling under direct supervision of Fisher Engineering personnel. Soil samples were taken at regular intervals using a split–spoon sampler advanced by means of the Standard Penetration Test (SPT) which was conducted in general accordance with ASTM Specification D1586. Rock coring was carried out in BH1 and BH103. All recovered soil samples were placed in clear, sealable plastic bags in the field and

transported to Fisher Engineering laboratory for further examination, characterization and laboratory analyses.

A description of the subsurface conditions encountered at each borehole location is presented in Appendix C - Log of Boreholes.

Standing water levels were measured in the open boreholes on completion of drilling. Long-term monitoring of groundwater levels was carried out biweekly over the period November 2023 to September 2024 to determine seasonal highwater levels at the site. Groundwater level monitoring data are presented in Appendix C.

Laboratory Analyses

The soil samples were taken to the Fisher Engineering laboratory for final visual assessment and classification. The samples were tested and classified in general accordance with the Unified Soil Classification System, ASTM D 2487 and Standard Practice for Classification of Soil for Engineering Purposes.

Representative soil samples were submitted to the laboratory for analyses as follows:

- Forty (40) soil samples from BH1, BH2, BH3 & BH5 and twenty (20) from BH102 & BH103 were selected and submitted to the laboratory for moisture content analyses.
- Seven (7) samples from BH1, BH2 & BH5 for grain size tests and
- Seven (7) samples from BH1, BH2, BH5, TH1 & TH2 and ten (10) from BH101 & BH103 submitted for hydrometer tests.

The laboratory results, which are presented in Appendix C, are consistent with the field description for subsurface soils discussed in Section 5.0.

Site Survey

Elevations at borehole/monitoring well locations were interpolated from a topography/survey plan, prepared by Tarasick McMillan Kubicki Limited, dated November 08, 2023, which was provided to Fisher during the investigation.

Site Observations

Visual inspection of the tableland and slope area was carried out on September 22, 2025 by geotechnical personnel from Fisher Engineering and included a walkover of the site, observation of vegetation, soil type, seepage condition, slope measurements and erosion activity. Slope inspection record, rating chart

and photo records are presented in Appendix B. Slope sections (Section A to E), shown on the attached site plan, were developed and analysed as discussed in the following sections.

5. SUBSURFACE CONDITIONS

Surface and subsurface conditions encountered at borehole locations are shown in Appendix B - Log of Boreholes, and are summarized in the following sections. The records include stratification at borehole locations along with detailed soil descriptions. Variations in soil stratification may occur and should be expected between borehole locations and elsewhere on the site.

Fill/Asphalt/Granular Material/Topsoil – Layers of asphalt/granular materials were found at the surface of BH1 while topsoil was encountered at the surface of BH2 to BH5 and BH101 to BH103. Fill soils were encountered below the surficial layers. Fill composition varied from dark brown to brown sand/silty sand with trace of roots/topsoil. Fill extended to approximate depths below prevailing grades/elevations as shown in Table 1.

Table 1: Fill Depths and Elevations

Borehole No.	BH1	BH2	BH3	BH4	BH5	TH1	TH2	BH101	BH102	BH103
Surface Elevation (m asl)	86.63	85.68	86.60	83.20	82.63	85.98	86.81	89.10	85.39	82.55
Depth of Borehole (m)	17.53	12.29	13.72	10.97	10.74	1.98	1.98	13.82	12.19	17.45
Elevation at Bottom of Borehole (m asl)	69.10	73.39	72.88	72.23	71.89	84.00	84.83	75.28	73.20	65.10
Depth of Fill (m)	1.37	1.37	1.37	1.52	1.17	1.52	1.52	1.91	3.66	1.67
Elevation at Bottom of Fill (m asl)	85.26	84.31	85.23	81.68	81.46	84.46	85.29	87.19	81.73	80.88
Depth to bedrock surface(m)	12.19	12.19	13.72	9.30	10.67	n/a	n/a	12.04	10.36	10.52
Elevation at surface of Bedrock (m asl)	74.44	73.49	72.88	73.90	71.96			77.06	75.03	72.03

Brown Sand/ Silty Sand – Layers of native, brown to grey, moist, compact to very dense sand/silty sand were found underlying the fill soils of BH1 to BH5 and BH101 extending to approximate depths of 2.59m (BH5) to 5.18m (BH101).

Grey Silt/Sandy Silt – The brown to grey silty sand layers were underlain by grey, moist, dense to very dense silt to sandy silt extending to depths of 5.18m in BH101 to 9.76m in BH3.

Grey Clayey Silt/Clayey Silt Till – Layers of grey clayey silt to clayey silt till, of variable thickness/depth (less than 1.12m thick in BH103 to 2.6m thick in BH4), and consistency (firm to very stiff), were encountered below the grey to brown silt to sandy silt. Moisture content of the clayey silt varied from 11.5% to 23.1% in the samples tested.

Grey Sandy Silt Till – Deposits of grey, moist, dense to very dense sandy silt till were encountered beneath the grey clayey silt of BH2, BH3, BH5, BH102 and BH103 extending to approximate depths of 8.84m (BH103) to 13.72m (BH3).

Grey Shale/Weathered Shale – Weathered shale bedrock was found underlying the grey clayey silt/clayey silt till of BH1, BH4 & BH101 and grey sandy silt till/silty sand of BH2, BH5, BH102 & BH103. Shale was found to be hard in consistency and dry within the depths explored. Rock coring carried out in BH1 and BH103 indicated that the upper 1.3m of shale is severely weathered.

RQD values of 85% to 100% below depth of 14.48m in BH1 and 12.79m in BH103 indicate very good to excellent quality of bedrock. Core samples retrieved from BH1 yielded compressive strength of 13 MPa & 21.2MPa at depths of 14m and 16.5m. One core sample from BH103 yielded compressive strength of 24.8MPa at depths of 15.85m below prevailing grade. Inferred bedrock surface elevation are shown in Table 1.

6. SLOPE CONDITIONS

The southeast portion of the property, beyond the existing inground pool and terrace areas, slopes generally southwards towards the wooded lot. The south and southwest portions also slope towards wooded features. The slope was observed to be covered generally with mature trees and brushes during the investigation. Boreholes in the location of the cross sections for these analyses are BH3, BH4, BH5, BHH102 and BH103.

The height of the slopes varies from approximately 4.52m at the southwestern boundary (Section B-B') to approximately 1.79m at the southeast corner of the property (Sections E-E'). Overall gradients for the cross sections are as follows:

- Section A-A': 2.41:1 (H:V)
- Section B-B': 1.55:1 (H:V)

- Section C-C': 4.89:1 (H:V)
- Section D-D': 3.67:1 (H:V)
- Section E-E': 4.19:1 (H:V)

At the time of the visual inspection on September 22, 2025, the slope areas were generally vegetated with mature trees and shrubs/undergrowth. No visual signs of continuing instability were observed, neither were there signs of seepage or drainage paths on the slope.

Standing water was observed in open boreholes BH3 and BH5 at depths of 10.67m & 10.51m below prevailing grades (elevations of 75.93m & 72.12m asl) on completion of drilling while BH4, BH102 and BH103 were observed to be dry. No caving in of soils was observed during drilling. Static groundwater levels were measured at depths of 2.07m to 5.11m bgs (elevations vary from 78.79m to 84.99m asl).

7. GEOTECHNICAL LABORATORY TEST RESULTS

7.1 Grain Size Distribution, Moisture Content, Hydrometer and Atterberg Limits Analyses

Eight (8) soil samples collected from BH3, BH5 and BH103 were submitted to the Fisher Engineering laboratory for grain size distribution analyses and hydrometer tests. Additional samples were analysed for moisture content. The analytical results are summarized in Table 2 and Certificate of Analyses presented in Appendix D.

Table 2: Grain size distribution, Moisture Content and Hydrometer analyses

Borehole No Sample No.	Sampling Depth, m bgs	Moisture Content (%)	Percentage (by weight)				Description
			Gravel	Sand	Silt	Clay	
					Silt & Clay		
BH3, SS10	10.68 – 11.13	11.5	3.6	5.9	67.0	23.6	Clayey Silt, trace Sand & Gravel
BH5, SS3	1.53 - 1.98	13.6	0.0	9.7	90.3		Silt, trace Sand
BH5, SS6	4.58 - 5.03	12.2	0.0	4.1	85.2	10.7	Silt, some Clay, trace Sand
BH5, SS10	10.68 - 11.13	2.5	26.8	46.0	27.2		Silty Gravelly Sand
BH103, SS6	4.58 - 5.03	11.3	0.0	6.1	87.3	6.6	Silt, trace Sand & Clay
BH103, SS8	7.63 - 8.08	21.2	1.6	11.1	82.6	4.7	Silt, some Sand, trace Clay
BH103, SS9	9.15 - 9.61	12.8	17.7	16.8	40.1	25.3	Clayey Silt, some Sand & Gravel
BH103, SS10	10.68 - 11.13	6.4	7.8	35.1	40.4	16.7	Silt & Sand, some Clay, trace Gravel

8. SLOPE STABILITY ANALYSES

Stability analyses were carried out for Sections A-A', B-B' and C-C' using Slope/W software (GeoStudio 2018 R2) and the slope geometry and surface conditions revealed in the boreholes. Factors of Safety (FOS) against slope failure were evaluated based on the limit equilibrium analysis method proposed by Morgenstern-Price for circular sliding surfaces. The method assesses potential movements of large soil masses over a specific failure surface, which in this instance was circular. As the inclination of Sections D-D' and E-E' was less than 3:1, the slope stability assessment consisted of a desktop review of the available information for the site and involved geological and topographical mapping and the results of previous geotechnical field investigation. Software modelling was carried out on Section C-C' due to the presence of wetland/water feature at the toe of slope.

The Factor of Safety is defined as the ratio of the available soil strength resisting movement, divided by the gravitational forces causing soil movement. At the 'limiting equilibrium', the Factor of Safety is 1.0, and is the point at which failure of the slope is pending, since the soil resistance is equal to the forces causing movement. The analyses involve dividing the sliding mass into thin slices and calculating the normal and shear forces acting on each slice. The process is iterative and converges to a solution.

Soil parameters adopted for the analyses are summarized in Table 3. These parameters were estimated from laboratory analyses, SPT results and published index properties of the soils, and are considered to be realistic and slightly conservative.

Table 3: Soil properties used in the analyses

	Fill	Compact Silty Sand	Dense Silty Sand/Sandy Silt
Unit weight, γ, kN/m³	18	20.0	21.0
Coefficient of earth pressure at rest (K_0)	0.53	0.47	0.44
Coefficient of active earth pressure (Ka)	0.36	0.31	0.28
Coefficient of passive earth pressure (Kp)	2.77	3.25	3.54
Effective Cohesion(c') (kPa)	5	5	5
Angle of Shearing resistance (Ø°)	28	32	34

Each slope section was analyzed under static and seismic (short term) conditions. Seasonal highwater levels were assumed at 83.07m below prevailing grade based on field measurements (highest observed gwl). Design ground velocity for the site was determined from the National Building Code of Canada Seismic Hazard values. The program indicates Peak Ground Velocity, PGV (m/s) value of approximately

0.159 m/s at the site. The value is associated with an earthquake having a 5% probability of exceedance in a 50-year period (0.001 per annum probability).

9. RESULTS OF STABILITY ANALYSES

9.1 DESIGN CONSIDERATIONS

Typical Factors of Safety recommended for engineering assessment of slope stability are shown in Table 4 which is taken from Table 4.3 in the MNR Policy Guidelines.

From Table 3, it is determined that the minimum required FOS for building construction in this case is 1.3 to 1.5 (Land Use Type C). A stable inclination of 3:1 in fill material and less competent soils and 2:1 (H:V) in competent native soils was assumed for desktop slope stability assessment.

The following sections provide discussion of the toe erosion allowance, slope stability analyses, and recommendations for the LTSTOS.

Table 4: Design minimum FOS

Type	Land Uses	Design Minimum FOS
A	PASSIVE: no buildings near slope; farm field, bush, forest, timberland, woods, wasteland, badlands, tundra	1.1
B	LIGHT: no habitable structures near slope; recreational parks, golf courses, buried small utilities, tile beds, barns, garages, swimming pools, sheds, satellite dishes, dog houses	1.20 to 1.30
C	ACTIVE: habitable or occupied structures near slopes; residential, commercial, and industrial buildings, retaining walls, storage/warehousing of non-hazardous substances	1.30 to 1.50
D	INFRASTRUCTURE and PUBLIC USE: public use structures and buildings (i.e., hospitals, schools, stadiums) cemeteries, bridges, high voltage power transmissions lines, towers, storage/warehousing of hazardous materials, waste management areas	1.40 to 1.50

9.2 DETERMINATION OF EROSION COMPONENT

An erosion allowance is recommended where the location of the watercourse is within 15m of the toe of the slope. The Toe Erosion Allowance (TEA) at the site was evaluated from Table 3 in the Ministry of Natural Resources' (MNR) Determination of the Toe Erosion Allowance, summarized in Table 5.

Notes to Table 5:

***** *Where a combination of different native soil structures occurs, the greater or largest range of applicable toe erosion allowances for the materials found at the site should be applied*.

** **Active Erosion** is defined as: bank material is bare and exposed directly to stream flow under normal or flood flow conditions and, where undercutting, over steepening, slumping of a bank or down stream sediment loading is occurring. An area may have erosion but there may not be evidence of "active erosion" (i.e., is not bare or undercut) either as a result of well rooted vegetation or as a result of a condition of net sediment deposition. The area may still suffer erosion at some point in the future as a result of shifting of the channel.

*** **Competent Flow velocity**: the flow velocity that the bed material in the stream can support without resulting in erosion or scour.

Table 5: Determination of Toe Erosion Allowance (from Table 3 of MNR guidelines)

Minimum Toe Erosion Allowance – River within 15 m of Slope Toe*				
Type of Material (Native Soil Structure)	Evidence of Active Erosion** **or** Bank full Flow Velocity > Competent Flow Velocity*** Range of Suggested **Toe Erosion Allowances**	No evidence of Active Erosion** **or** Flow Velocity << Competent Flow Velocity***		
		Bank full Width		
		< 5 m	5 – 30 m	> 30 m
1. Hard Rock (granite) *	0 – 2 m	0 m	0 m	1 m
2. Soft Rock (shale, limestone), Cobbles, Boulders*	2 – 5 m	0 m	1 m	2 m
3. Stiff/Hard Cohesive Soil (clays, clay silt), Coarse Granular (gravels) Tills*	5 – 8 m	1 m	2 m	4 m
4. Soft/Firm Cohesive Soil, loose granular, (sand, silt) Fill*	8 – 15 m	1 – 2 m	5 m	7 m

A creek runs within a distance of 15m of the toe of slope at Cross Sections A-A' and B-B'. The creek, at the location of the cross sections, has bank full width of less than 5m. Consequently, a toe erosion allowance (TEA) of 1m is applicable at Sections A-A' and B-B. Marshlands/seasonal wetlands were observed at the toe of Section C-C'. A TEA of 2m is applicable at Section C-C'. Sections D-D' and E-E' do not have water features within a distance of 15m of the toe of slope. A TEA of 0m is applicable at Sections D-D and E-E'.

9.3 SLOPE STABILITY ANALYSES

Slope stability analyses were conducted for Sections A-A' to C-C' using GeoSlope. The results of the analyses are shown in Figures 1 to 8 in Appendix E. The LTSTOS and Total Setback, prior to slope stabilization measures, are presented in Figure E3 of Appendix E.

SECTION A-A' (FIGURES 1 TO 4)

Deep fill materials (3.66m bgs) were observed in the location of BH102 covering the area of Section A-A'. Section A-A' has an approximate height of 3.11m with an overall gradient of 2.41H:1V. The FOS under existing conditions are 1.095 and 0.780 for static and seismic (short term) analyses as shown in Figures 1 and 2. Therefore, under static and seismic conditions, the analyses indicate that the current slope conditions are less than the recommended FOS values of 1.3 and 1.5 respectively.

Sliding surfaces associated with FOS of 1.713 and 1.367, obtained under static and seismic conditions, daylighted at approximately 5.7006m behind the physical top of slope line (Figures 3 and 4). Therefore, at this location, the stability component is 5.70m.

SECTION B-B' (FIGURES 5 & 6)

Section B-B' has an approximate height of 4.52m with an overall gradient of 1.55H:1V. The FOS under existing conditions are 2.961 and 2.245 for static and seismic (short term) analyses as shown in Figures 5 & 6. Therefore, under static and seismic conditions, the analyses indicate that the current slope conditions are more than the recommended FOS values of 1.3 and 1.5 respectively. At this location the stable top of slope coincides with the physical top of slope.

SECTION C-C' (FIGURES 7 & 8)

Section C-C' has an approximate height of 3.07m with an overall gradient of 4.89H:1V. The FOS under existing conditions are 6.555 and 3.600 for static and seismic (short term) analyses as shown in Figures 7 & 8. Therefore, under static and seismic conditions, the analyses indicate that the current slope conditions are more than the recommended FOS values of 1.3 and 1.5 respectively. At this location the stable top of slope coincides with the physical top of slope.

SECTION D-D' (FIGURE 9)

The height of the slope at Section D-D' is 2.18m± over a horizontal distance of 8.0m (3.67H:1V). Assuming 3H:1V as long-term stable slope, then a Stable Slope Allowance is not required.

SECTION E-E' (FIGURE 10)

The height of the slope at Section E-E' is 1.79m± over a horizontal distance of 7.5m (4.19H:1V). Assuming 3H:1V as long-term stable slope, then a Stable Slope Allowance is not required.

COMMENTS

Based on the slope stability assessment described in the preceding, the geotechnical stable top of slope is 5.70m, 0.0m, 0.0m, 0.0m and 0m at Sections A-A', B-B', C-C', D-D' and E-E' respectively. The larger setback for stable top of slope at Section A-A' is due to deeper fill material (3.66m deeper) observed in that location. It should be noted that depth of fill varies across the site and further assessment of fill depth is recommended during site work.

ACCESS ALLOWANCE/DEVELOPMENT SETBACK COMPONENT

An access allowance/development setback component is typically applied to geotechnical setbacks to provide emergency access to erosion prone areas, construction maintenance or for an erosion event or failure, and to provide protection against external conditions which could adversely impact the existing natural condition of the slope, for example redirection of surface flows away from the slope hazard area.

Assuming that the slope on this site is a hazard slope, and has not been designated as a valley slope, then a development setback, normally associated with valley slopes, would usually not be applicable for this site. The water features are also not regulated by the conservation authority. Consequently, a conservative setback of 6m from the long-term stable top of slope may be applied. The total setback may therefore be calculated as the sum of the TEA, Stability Component and Access Allowance as shown in Table 6. Total setback after slope stabilization measures are presented in Table 6.

Table 6: Results of Slope Stability Analysis

Section of Slope	Minimum FOS				Stability Component* (m)	Toe Erosion Allowance (m)	Access Allowance (m)	Total Setback (Prior to slope stabilization measures)	Total Setback (After slope stabilization measures)
	Static	Figure	Seismic	Figure					
Section A-A'	1.713	3	1.367	4	5.70***	1	6.0	12.7	7.0
Section B-B'	3.496	5	2.562	6	0	1	6.0	7.0	7.0
Section C-C'	6.555	7	3.600	8	0	2.0	6.0	8.0	8.0
Section D-D'	**Figure 9				0	0	6.0	6.0	6.0
Section E-E'	**Figure 10				0	0	6.0	6.0	6.0

* Stable top of slope is where the FOS is 1.5 or higher for static conditions and 1.3 or higher for seismic (short-term) conditions.

** Assuming 3H:1V as long-term stable slope.

*** Deep fill conditions observed during drilling.

Based on deep fill materials observed in the area of BH102, covering Section A-A', it is recommended that the option of using engineering solution to stabilize the slope in this area be pursued and that the stable top of slope setback be reduced accordingly. It would be expected that soil nailing combined with a geogrid would be feasible to achieve global stability of the slope and surficial stability for erosion control. It is further recommended that fill depth in the area by assessed by way of test pits prior to finalizing any slope stabilization measures.

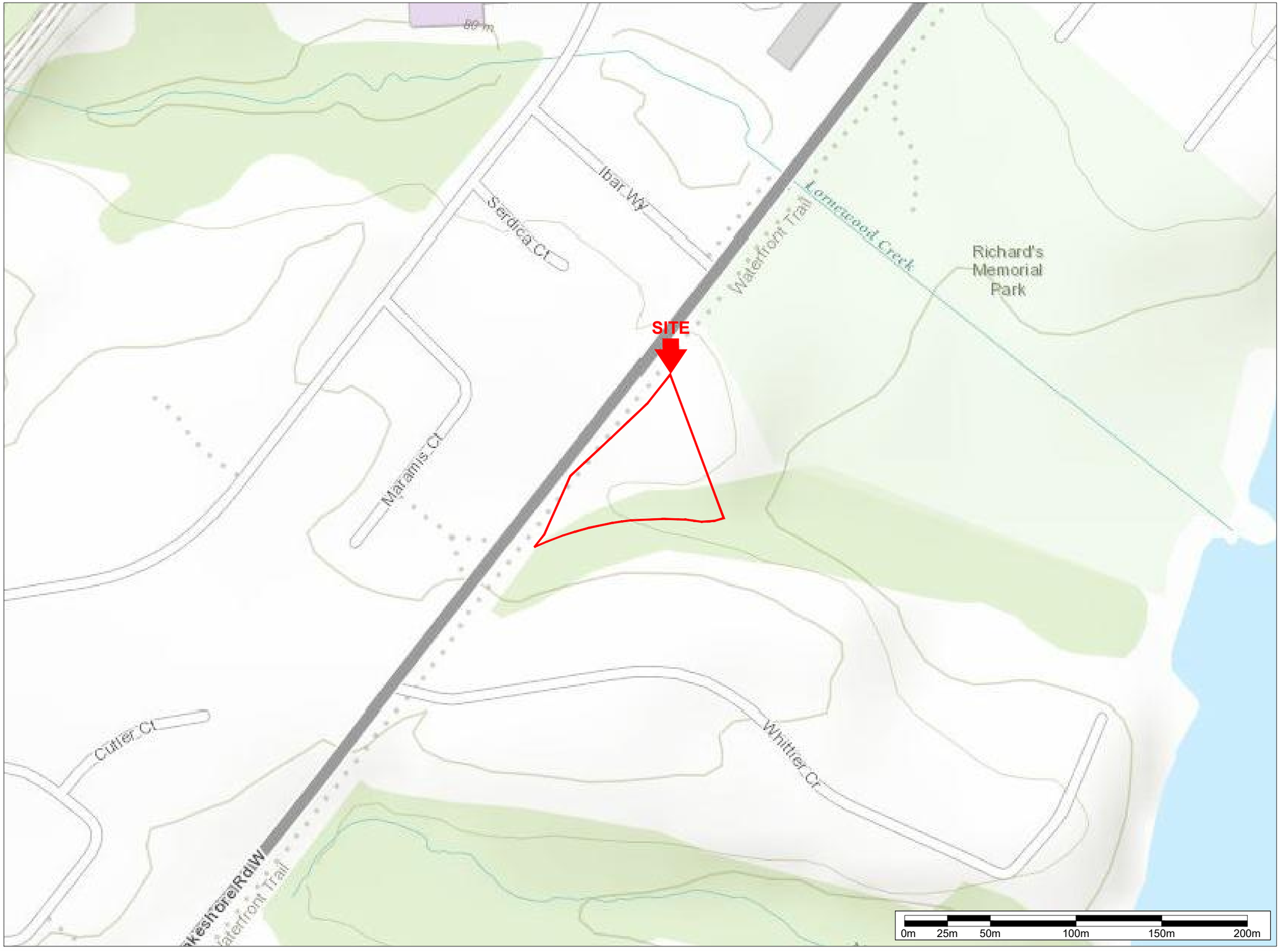
It should be noted that following slope reinforcement, building encroachments into the 6m offset (at the second level or above), as shown on drawing E3a, will have no impact on slope stability.

10. LIMITATIONS

This report is limited in scope to those items specifically referenced in the text. The discussions and recommendations presented in this report are intended only as guidance for the client named and design engineers. When design and specifications based on the results reported herein are required, Fisher should be retained to review and verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, Fisher will assume no responsibility for interpretation of the recommendations in the report.

This report has been prepared for and is intended for the exclusive use of 2807823 Ontario Inc**.** Any use which a third party makes of this report, or any part thereof, or any reliance on or decision to be made based on it, are the responsibility of such third parties. Fisher accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. The contents of this report should not be relied upon by any other party without written consent from Fisher. The findings are relevant to the dates of the site visits and should not be relied upon to represent conditions at later dates.

APPENDIX A: SITE AND LOCATION PLANS



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2

Tel: 905 475-7755

NORTH

N

LEGEND

SITE BOUNDARY

PROJECT NAME AND ADDRESS

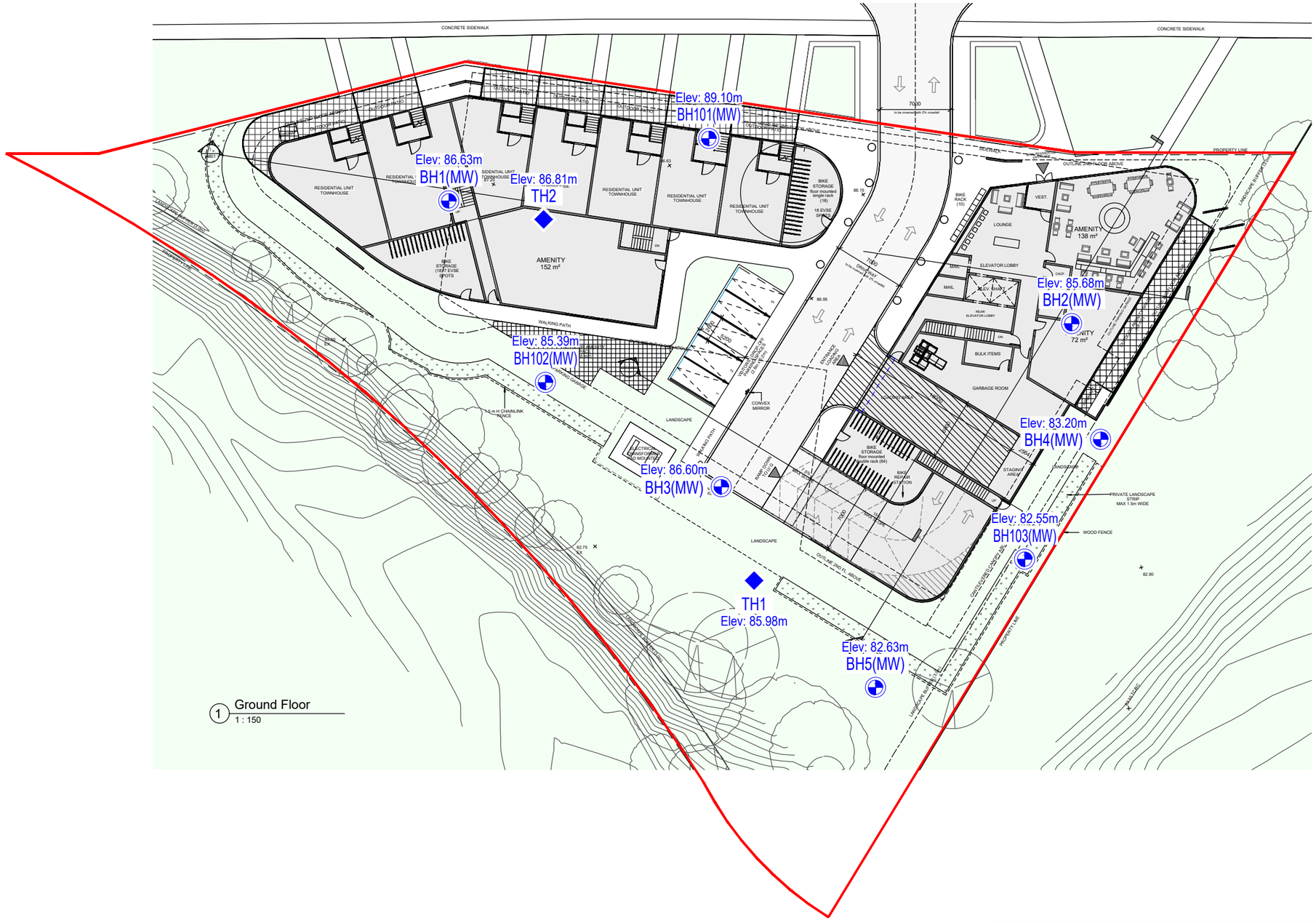
SLOPE STABILITY ASSESSMENT INVESTIGATION

900 Lakeshore Road West,
Mississauga, Ontario

FIGURE A1:

SITE LOCATION MAP

PROJECT NO.	SHEET NO.
FG25-15006	A1
DATE: September 2025	
SCALE: AS SHOWN	



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2

Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- BOREHOLE WITH MONITORING WELL LOCATION
- TEST HOLE LOCATION

PROJECT NAME AND ADDRESS

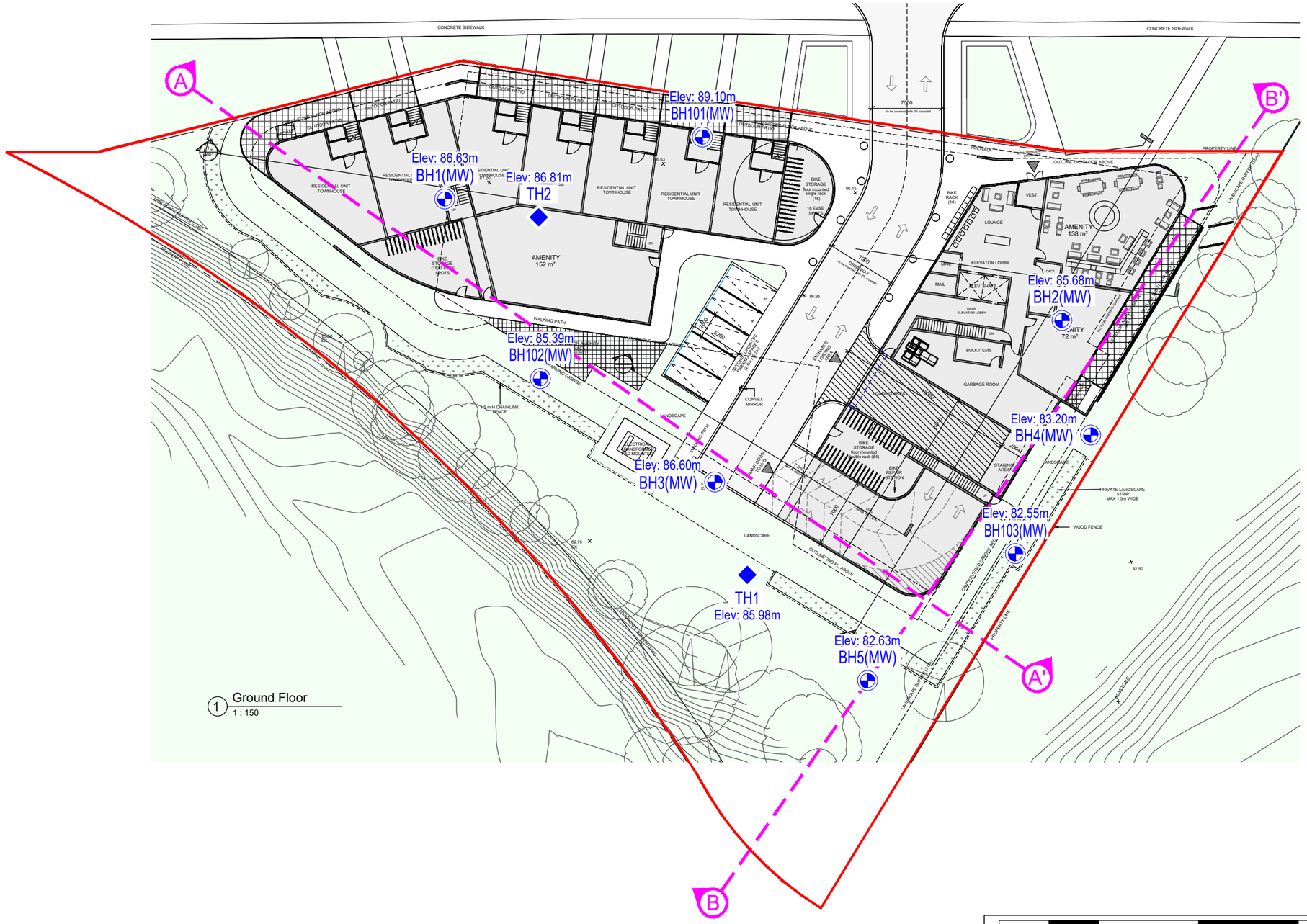
ADDITIONAL HYDROGEOLOGICAL INVESTIGATION

900 Lakeshore Road West, Mississauga, Ontario

FIGURE A2:

SITE PLAN WITH BOREHOLE LOCATIONS

PROJECT NO.	SHEET NO.
FE 25-15006	A2
DATE: 30 January 2026	
SCALE: AS SHOWN	



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2

Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- BOREHOLE WITH MONITORING WELL LOCATION
- TEST HOLE LOCATION
- A — A' CROSS SECTION CUT PLANE

PROJECT NAME AND ADDRESS

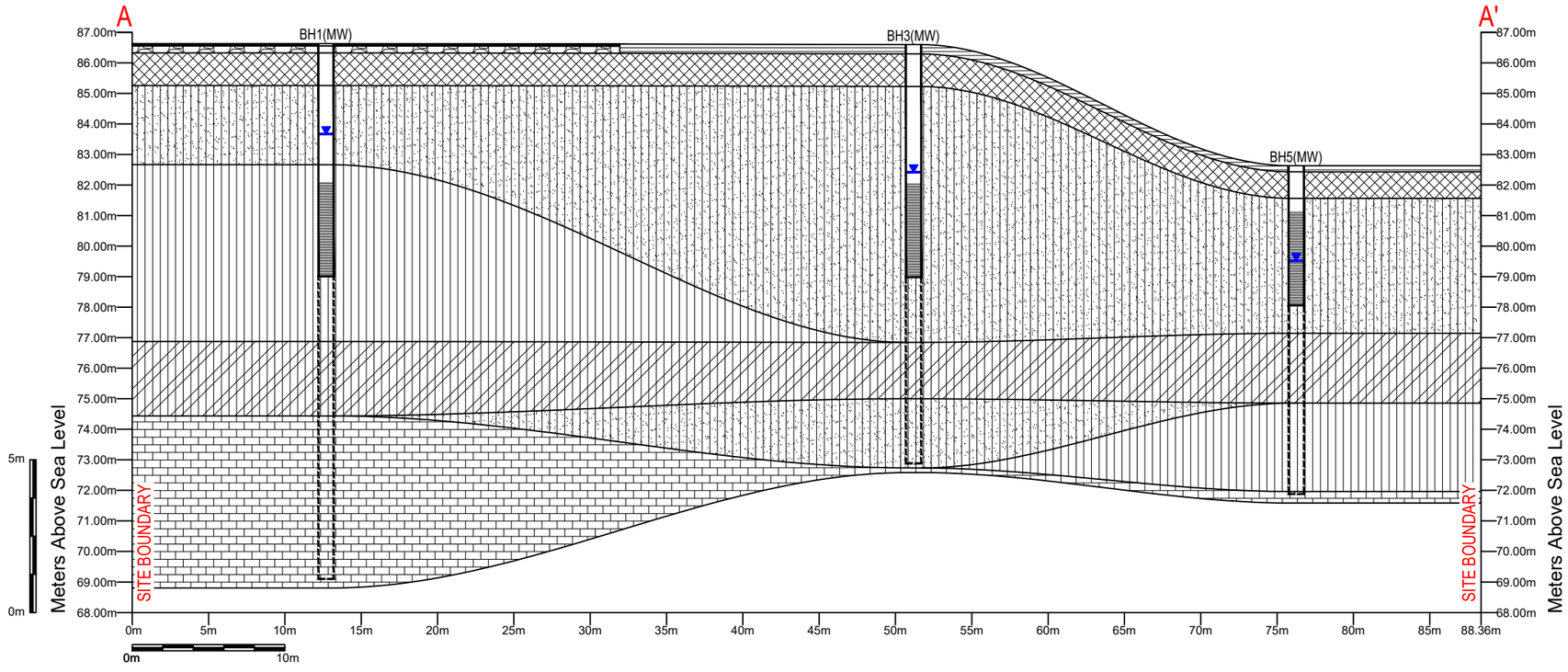
ADDITIONAL HYDROGEOLOGICAL INVESTIGATION

900 Lakeshore Road West, Mississauga, Ontario

FIGURE A3:

SITE PLAN WITH BOREHOLE LOCATIONS

PROJECT NO.	SHEET NO.
FE 25-15006	A3
DATE: 30 January 2026	
SCALE: AS SHOWN	



FISHER ENGINEERING
400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755

NORTH

LEGEND

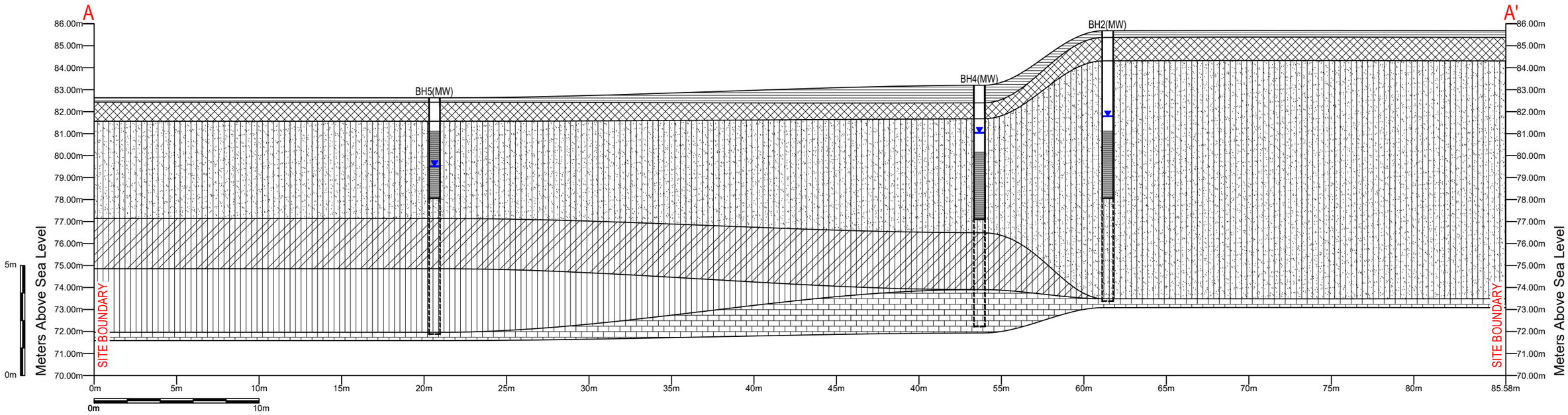
- ASPHALT
- FILL
- TOPSOIL
- GRANULAR
- SAND
- SILT
- CLAY
- BEDROCK
- GROUNDWATER POTENTIOMETRIC LEVEL

PROJECT NAME AND ADDRESS

GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

900 Lakeshore Road West, Mississauga, Ontario

PROJECT NO.	FE-23-13329/30
DATE.	19 October 2023
SCALE.	AS SHOWN
FIGURE A4.1:	**CROSS-SECTION A - A'**
SHEET NO.	A4.1



FISHER ENGINEERING
400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755

NORTH

LEGEND

- FILL
- TOPSOIL
- GRANULAR
- SAND
- SILT
- CLAY
- BEDROCK
- GROUNDWATER POTENTIOMETRIC LEVEL

PROJECT NAME AND ADDRESS

GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

900 Lakeshore Road West, Mississauga, Ontario

PROJECT NO.
FE-23-13329/30

DATE.
19 October 2023

SCALE.
AS SHOWN

FIGURE A4.2:
CROSS-SECTION B - B'

SHEET NO.
A4.2

APPENDIX B: SITE PHOTOGRAPHS

TABLE 4.1 – Slope Inspection Record

1. FILE NAME / NO. 25G-15006

WEATHER (circle) :	• sunny • partly cloudy • cloudy
Cloudy	• calm • breeze • windy
Rainy	• clear • fog • rain • snow
Cool	• cold • cool • warm • hot
18	estimated air temperature: 18 Deg Celsius

INSPECTED BY (name): Mithun Raja Sathya Murthy

2. SITE LOCATION (describe main roads, features)

900 Lakeshore Road West, Mississauga. North of Intersection of Lore Park Road and Lakeshore Road West

SKETCH

3. WATERSHED Creek

4. PROPERTY OWNERSHIP (name, address, phone):

1000570027 Ontario Inc, 900 Lakeshore Road West Mississauga, ON; L5H 1H9

LEGAL DESCRIPTION

Lot: Part of Lot 1 and 22

Concession: 3

Township: City of Mississauga

County: Regional Peel.

CURRENT LAND USE (circle and describe)

- vacant – field, bush, woods, forest, wilderness, tundra
- passive – recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- active – habitable structures, residential, commercial, industrial, warehousing and storage
- infra-structure or public use – stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites

5. SLOPE DATE

HEIGHT • 3 – 6 m • 6 – 10 m • 10 – 15 m • 15 – 20 m
• 20 – 25 m • 25 – 30 m • >30 m

INCLINATION AND SHAPE

• 4:1 or flatter 25% 14°	• up to 3:1 33% 18°	• up to 2:1 50% 26°
• up to 1:1 100% 45°	• up to :1 200% 63°	• steeper than :1 >63°

6. SLOPE DRAINAGE (describe)

TOP Sheet

FACE

BOTTOM

7. SLOPE STRATIGRAPHY (describe positions, thicknesses, types):

TOP Sandy silt fill

FACE Sandy silt till/clayey silt

BOTTOM Shale

8: WATER COURSE FEATURES (circle and describe)

SWALE CHANNEL

GULLY

STREAM, CREEK, RIVER

POND, BAY, LAKE

SPRINGS

MARSHY GROUND

9. VEGETATION COVER (grasses, weeds, shrubs, saplings, trees)

TOP Grass/matured trees/Shrubs

FACE Mature trees and undergrowth

BOTTOM Saplings

10. STRUCTURES (buildings, walls, fences, sewers, roads, stairs, decks, towers)

TOP 1 Storey Concrete Dwelling

FACE none

BOTTOM Creek

11. EROSION FEATURES (scour, undercutting, bare areas, piping, ritts, gully)

TOP none

FACE none

BOTTOM none

12. SLOPE SLIDE FEATURES (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees)

TOP None

FACE None

BOTTOM None

13. PLAN SKETCH OF SLOPE See Site plan

14. PROFILE SKETCH OF SLOPE See slope profiles

TABLE 4.2 - SLOPE STABILITY RATING CHART

Site Location: 900 Lakeshore Road West, Mississauga	File No: 25G-15006	
Property Owner: 1000570027 Ontario Inc	Inspection Date: September 25, 2025	
Inspected By: Mithun Raja Sathya Murthy	Weather: Rainy. 18 deg C	
1. SLOPE INCLINATION		
degrees	Horizontal: Vertical	
a) 18 or less	3 : 1 or flatter	0
b) 18 – 26	2: 1 to more than 3: 1	6
c) More than 26	Steeper than 2 : 1	16
2. SOIL STRATIGRAPHY		
a) Shale, Limestone, Granite (Bedrock)		0
b) Sand, Gravel		6
c) Glacial Till		9
d) Clay, Silt		12
e) Fill		16
f) Leda Clay		24
3. SEEPAGE FROM SLOPE FACE		
a) None or Near bottom only		0
b) Near mid-slope only		6
c) Near crest only or from several levels		12
4. SLOPE HEIGHT		
a) 2 m or less		0
b) 2.1 to 5 m		2
c) 5.1 to 10 m		4
d) More than 10 m		8
5. VEGETATION COVER ON SLOPE FACE		
a) Well vegetated; heavy shrubs or forested with mature trees		0
b) Light vegetation: Mostly grass, weeds, occasional trees, shrubs		4
c) No vegetation, bare		8
6. TABLE LAND DRAINAGE		
a) Table land flat, no apparent drainage over slope		0
b) Minor drainage over slope, no active erosion		2
c) Drainage over slope, active erosion gullies		4
7. PROXIMITY OF WATERCOURSES TO SLOPE TOE		
a) 15 metres or more from slope toe		0
b) Less than 15 metres from slope toe		6
8. PREVIOUS LANDSLIDE ACTIVITY		
a) No		0
b) Yes		6
SLOPE INSTABILITY RATING VALUES INVESTIGATION RATING SUMMARY		**TOTAL 30**

Site Photos

1. Section A-A’ looking from east to west

2. Section A-A’ looking from north to south showing mature trees and the creek

3. Section A-A’ looking from south to north

4. Section B-B’ looking from west to east

5. Section B-B’ looking from north to south showing mature trees on slope

6. Section C-C’ looking form north to south

7. Section C-C’ looking from east to west

8. Section C-C, looking from west to east

9. Section D-D’looking from west to east

10. Section D-D’ looking from north to south showing mature trees on slope

11. Section D-D’ looking from south to north

12. Section E-E’ looking from east to west

13. Section E-E’ looking south to north showing mature trees and grasses on slope

14. Creek and Mature trees and sapling growth on toe of the slope

15. Bottom of Seasonal Creek

16. Wetland

17. Wetland

APPENDIX C: LOG OF BOREHOLES

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH1(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				86.63			
0	0	76mm ASPHALT GRANULAR MATERIAL		0.30 / 86.33		SS-1	12
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist			23-2124-1	SS-2	8
4				1.37 / 85.26			
6	2	SILTY SAND: Brown, trace of clay/gravel, moist, dense				SS-3	41
8						SS-4	34
10	3					SS-5	40
12				3.96 / 82.67			
14	4	SILT: Grey, pockets of sandy silt, trace to some sand, trace to some clay, moist, dense to very dense				SS-6	36
16	5						
18							
20	6					SS-7	65
22	7						
24							
26	8					SS-8	63
28							
30	9					SS-9	55
32				9.75 / 76.88			
	10	CLAYEY SILT: Grey, trace to some sand, very moist, stiff					
34							

PENETRATION TESTING (SPT) ▲ 20 40 60 80

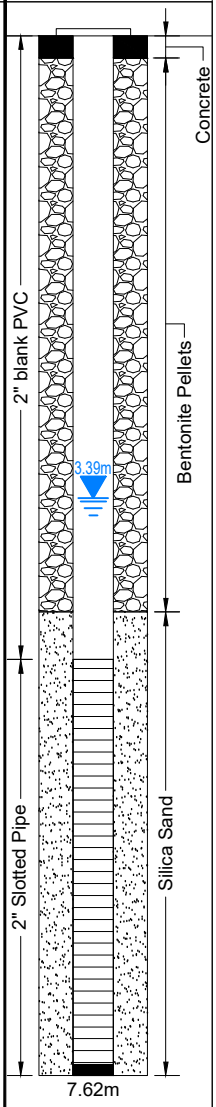
SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

8.9%
10.0%
13.8%
17.7%
17.7%
11.7%
11.1%
18.4%
13.1%

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: 9.14m; 6 December 2023: 2.96m/ On 15 January 2024: 3.39m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH1(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE	PENETRATION TESTING (SPT) ▲ 20 40 60 80 / SHEAR STRENGTH (Kpa) ✚ 40 80 120 160	VAPOUR READING (ppm) □ 20 40 60 80 / MOISTURE CONTENT (%) ● 10 20 30 40	PIEZOMETER OR WELL CONSTRUCTION
36	11	CLAYEY SILT: Grey, trace to some sand, very moist, stiff				SS-10	13		14.7%	
38	12									
40		WEATHERED SHALE: Grey, dry, hard		12.19/ 74.44		SS-11	100+		4.0%	
42	13									
44						SS-12	100+		6.9%	
46	14					RC-1	Run=0.72m Rec=0.63m, 87.5% RQD=42%			
48		SHALE: Grey, dry, hard		14.48/ 72.15						
50	15					RC-2	Run=1.30m Rec=1.30m, 100.0% RQD=100.0%			
52	16									
54						RC-3	Run=1.55m Rec=1.55m, 100.0% RQD=85.2%			
56	17									
58		End of borehole at 17.53m		17.53/ 69.10						
60	18									
62	19									
64										
66	20									
68										
70	21									

Groundwater Depth (m): on completion: 9.14m; 6 December 2023: 2.96m/ On 15 January 2024: 3.39m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH2(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

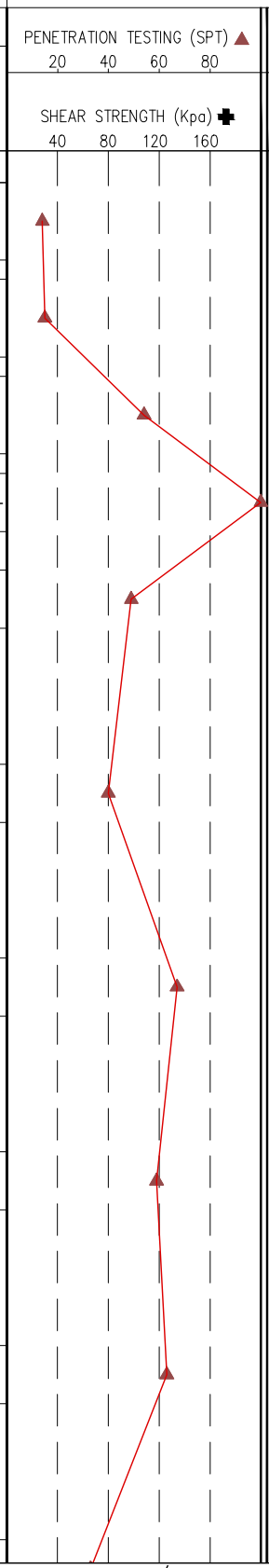
PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

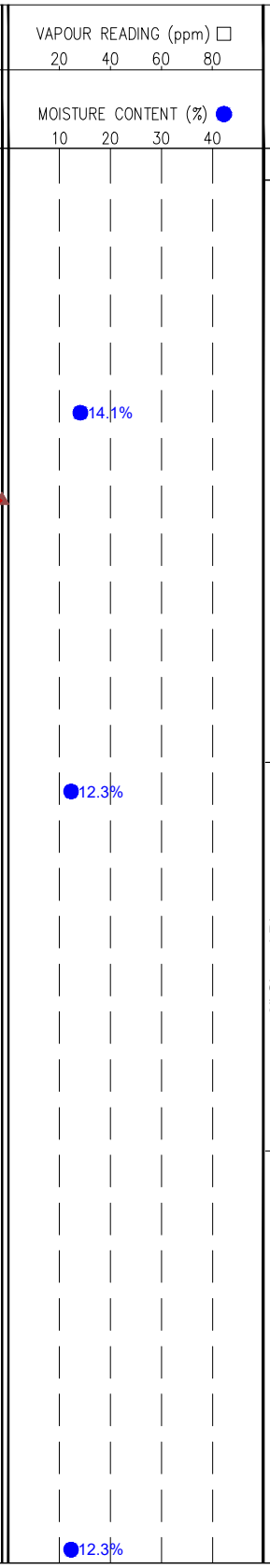
LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

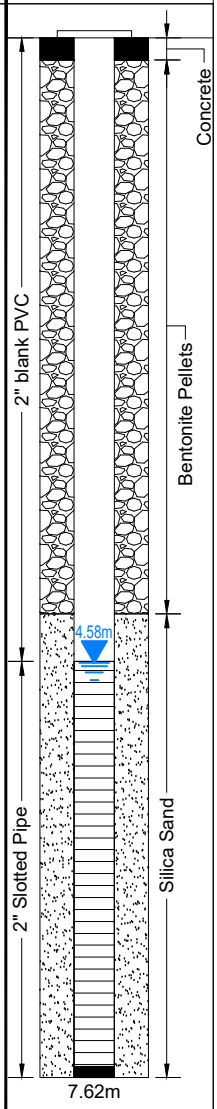
DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				85.68			
0	0	TOPSOIL		0.30 / 85.38	23-2124-2	SS-1	14
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist				SS-2	15
4				1.37 / 84.31			
6	2	SILTY SAND: Brown, moist, very dense				SS-3	54
8						SS-4	100+
10	3	SILT TO FINE SANDY SILT: Grey, moist, dense to very dense		3.05 / 82.63		SS-5	49
12	4						
14							
16	5					SS-6	40
18							
20	6					SS-7	67
22	7						
24							
26	8					SS-8	59
28							
30	9					SS-9	63
32	10	SANDY SILT TILL: Grey, pieces of shale, trace of gravel, thin layer of clayey silt around 10m, moist to dry, dense		9.60 / 76.08			
34							





PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; 6 December 2023: 3.89m/ On 15 January 2024: 4.58m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH2(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
36	11	SANDY SILT TILL: Grey, pieces of shale, trace of gravel, moist to dry, dense				SS-10	33
38							
40	12	WEATHERED: Grey, dry, hard		12.19/ 73.49		SS-11	100+
		End of borehole at 12.29m		12.29/ 73.39			
42	13						
44							
46	14						
48							
50	15						
52	16						
54							
56	17						
58							
60	18						
62	19						
64							
66	20						
68							
70	21						

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

● 12.3%

● 8.5%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: Dry; 6 December 2023: 3.89m/ On 15 January 2024: 4.58m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH3(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

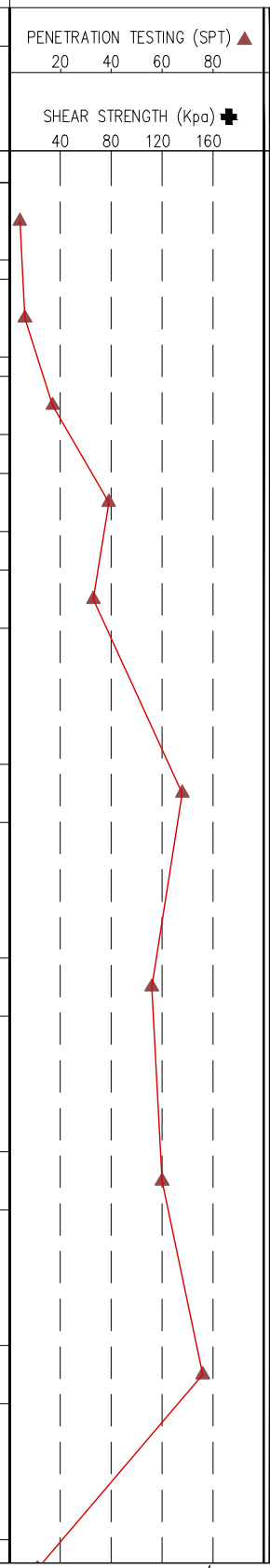
PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

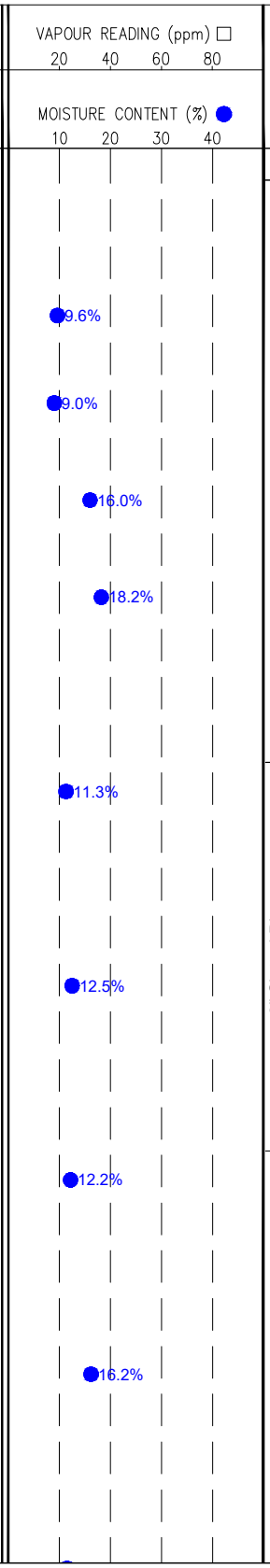
LOCATION: 900 Lakeshore Road W., Mississauga ON

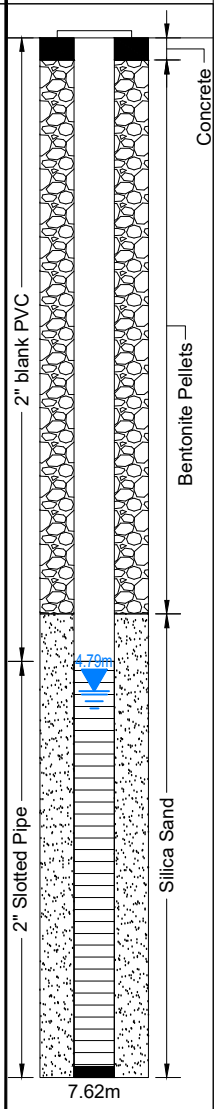
DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 8 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				86.60			
0	0	TOPSOIL		0.30 / 86.30	23-2124-3	SS-1	4
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist				SS-2	6
4				1.37 / 85.23			
6	2	SILTY SAND to SANDY SILT: Brown, moist to very moist, compact to dense				SS-3	17
8						SS-4	39
10	3				23-2124-4	SS-5	33
12	4						
14				4.57 / 82.03			
16	5	SILT TO FINE SANDY SILT: Grey, trace of clay, moist, very dense				SS-6	68
18							
20	6					SS-7	56
22	7						
24							
26	8					SS-8	60
28							
30	9					SS-9	76
32				9.76 / 76.84			
34	10	CLAYEY SILT: Grey, trace to some sand, very moist, stiff					







Groundwater Depth (m): on completion: 10.67m; 6 December 2023: 4.18m/ On 15 January 2024: 4.79m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH3(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 8 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
36	11	CLAYEY SILT: Grey, trace to some sand, very moist, stiff				SS-10	11
38				11.60/ 75.00			
	12	SANDY SILT TILL: Grey, trace to some gravel, moist, dense					
40						SS-11	38
42	13						
44		Refusal to spoon @13.72m Possibly due to bedrock				SS-12	100+
		End of borehole at 13.72m		13.72/ 72.88			
46	14						
48							
	15						
50							
52	16						
54							
56	17						
58							
	18						
60							
62	19						
64							
66	20						
68							
	21						
70							

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

11.5%

8.6%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: 10.67m; 6 December 2023: 4.18m/ On 15 January 2024: 4.79m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH4(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 6 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				83.20			
0	0	TOPSOIL		0.30 / 82.90		SS-1	5
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist			23-2124-5	SS-2	7
4				1.52 / 81.68			
6	2	SILTY SAND: Brown, trace of clay, moist to very moist, compact to dense				SS-3	17
8						SS-4	41
				2.79 / 80.41			
10	3	SILT TO SANDY SILT: Grey, trace to some clay, moist, dense to very dense				SS-5	53
12							
14	4					SS-6	58
16	5					SS-7	44
18							
20	6					SS-8	92
22				6.71 / 76.49			
24	7	CLAYEY SILT: Grey, some sand, trace of gravel, very moist, stiff to very stiff					
26	8					SS-9	15
28							
30	9			9.30 / 73.90		SS-10	100+
32	10	WEATHERED SHALE: Grey, seam/layers of limestone/ cemented shale, dry, hard					
34						SS-11	100+

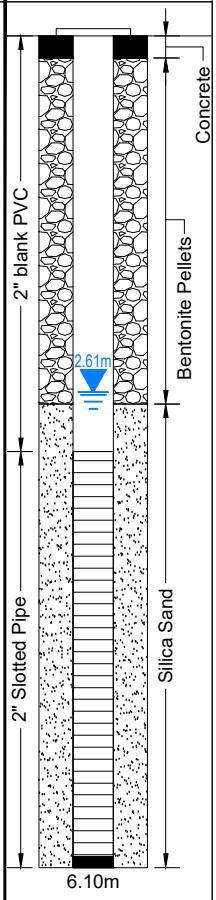
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; 6 December 2023: 2.16m / On 15 January 2024: 2.61m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH4(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 6 November, 2023

DEPTH (feet)	DEPTH (meters)	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: LAB ID	Type NO.	"N" VALUE	PENETRATION TESTING (SPT) ▲ 20 40 60 80 / SHEAR STRENGTH (Kpa) ✚ 40 80 120 160	VAPOUR READING (ppm) □ 20 40 60 80 / MOISTURE CONTENT (%) ● 10 20 30 40	PIEZOMETER OR WELL CONSTRUCTION
36	11	WEATHERED SHALE: Grey, seam/layers of limestone/ cemented shale, dry, hard		10.97/ 72.23		SS-11	100+			
		End of borehole at 10.97m								
38	12									
40										
42	13									
44										
46	14									
48										
50	15									
52										
54	16									
56	17									
58										
60	18									
62	19									
64										
66	20									
68										
70	21									

Groundwater Depth (m): on completion: Dry; 6 December 2023: 2.16m/ On 15 January 2024: 2.61m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH5(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 6 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				82.63			
0	0	TOPSOIL		0.20 / 82.43	23-2124-6 23-2124-7 (DUP)	SS-1	1
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist				SS-2	9
4				1.17 / 81.46			
		SILT & SAND: Brown, moist, compact to dense					
6	2					SS-3	31
8				2.59 / 80.04		SS-4	41
		SILT TO FINE SANDY SILT: Grey, trace to some clay, moist to very moist, dense to very dense					
10	3					SS-5	37
12	4						
14							
16	5					SS-6	60
18				5.49 / 77.14			
		CLAYEY SILT: Grey, some sand, occ. trace of gravel, very moist, firm					
20	6					SS-7	7
22	7						
24							
26	8	SANDY SILT TILL: Grey, some clay, trace of gravel, moist, dense to very dense		7.77 / 74.86		SS-8	31
28							
30	9					SS-9	100+
32	10						
34		WEATHERED SHALE: Grey, dry, hard				SS-10	100+
		End of borehole at 10.74m		10.74 / 71.89			

PENETRATION TESTING (SPT) ▲ 20 40 60 80

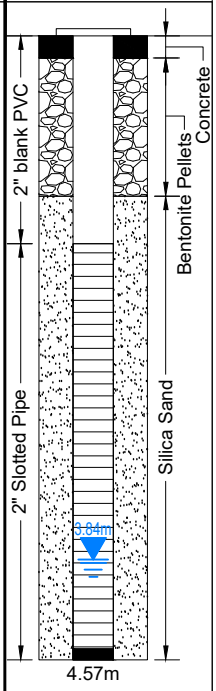
SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

Depth (m)	MOISTURE CONTENT (%)
1.17	13.9%
1.17	17.1%
2.59	13.6%
2.59	12.5%
2.59	12.5%
5.49	13.1%
5.49	12.2%
7.77	23.1%
7.77	13.7%
7.77	8.0%
10.74	8.9%
10.74	2.5%

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: 10.51m; 6 December 2023: 3.11m/ On 15 January 2024: 3.84m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. TH1 SHEET. 1 of 1

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				85.98			
		TOPSOIL: Dark brown sand and grass, trace rootlets		0.30 / 85.68			
		FILL: Brown sand		1.52 / 84.46			
		SAND: Brown, dry, dense		1.98 / 84.00		SS-1	43
		End of borehole at 1.98m					

SOIL PROFILE | SAMPLES

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

8.9%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: N/A

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. TH2 SHEET. 1 of 1

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Solid Stem Augers

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				86.81			
0	0	TOPSOIL: Dark brown		0.15 / 86.66			
		FILL: Brown to grey sandy silt					
4	1			1.52 / 85.29		SS-1	8
6	2	CLAYEY SILT TILL: Grey, moist, loose, some sand, trace gravel					
		End of borehole at 1.98m		1.98 / 84.83			

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

● 14 6%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: N/A

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH101(MW) SHEET. 1 of 2

PROJECT NO.: FE- 24-14065/191

PROJECT NAME: GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: CME-55 Track Solid Stem

DRILLING DATE: 3 September, 2024

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				89.10			
0	0	127mm TOPSOIL		0.13 / 88.97			
		FILL: Brown sand, trace silt, topsoil, rootlets, moist				SS-1	2
2	1					SS-2	26
4							
6	2					SS-3	33
		SILTY SAND: Brown, moist, dense to very dense		1.91 / 87.19			
8						SS-4	54
10	3					SS-5	49
		SILTY SAND: Grey, moist, very dense		3.51 / 85.59			
12	4						
14							
16	5					SS-6	54
		SILT to SANDY SILT: Grey, moist, dense to very dense		5.18 / 83.92			
18							
20	6					SS-7	38
22	7						
24							
26	8					SS-8	58
28							
30	9					SS-9	58
32							
	10						
34				10.36 / 78.74			

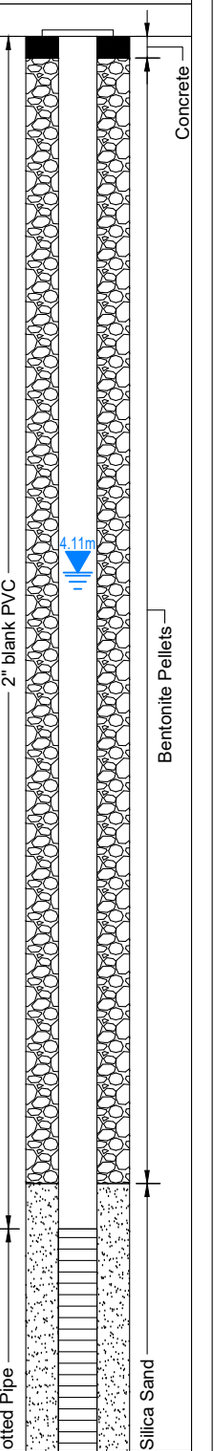
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 9 September 2024: 4.11m

DRAWN: A.M LOGGED: D.G. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH101(MW) SHEET. 2 of 2

PROJECT NO.: FE- 24-14065/191

PROJECT NAME: GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: CME-55 Track Solid Stem

DRILLING DATE: 3 September, 2024

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				78.74			
36	11	CLAYEY SILT TILL: Grey, trace sand, trace gravel, very moist, very stiff				SS-10	27
38							
	12			12.04/ 77.06			
40		WEATHERED SHALE: Grey, limestone seams, dry, moist, hard				SS-11	100+
42							
	13						
44							
				13.82/ 75.28		SS-12	100+
46	14	End of borehole at 13.82m					
48							
	15						
50							
52	16						
54							
56	17						
58							
	18						
60							
62	19						
64							
66	20						
68							
	21						
70							

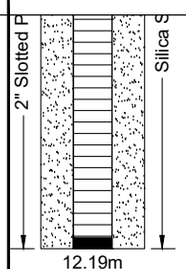
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 9 September 2024: 4.11m

DRAWN: A.M | LOGGED: D.G. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH102(MW) SHEET. 1 of 2

PROJECT NO.: FE- 24-14065/191

PROJECT NAME: GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: CME-55 Track Solid Stem

DRILLING DATE: 3 September, 2024

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				85.39			
0	0	152mm TOPSOIL		0.15			
		FILL: Brown to dark brown sand, trace to some silt, fragments organics, topsoil, moist		85.24		SS-1	15
2							
	1					SS-2	15
4							
6	2					SS-3	9
8						SS-4	5
10	3			3.00			
		FILL: Brown sand, some silt, trace topsoil, organics, wet		82.39		SS-5	6
12				3.66			
	4	SAND and SILT: Grey, moist, very dense		81.73			
14							
16	5					SS-6	58
18							
20	6					SS-7	50
22							
24	7						
26	8					SS-8	72
28				8.69			
		CLAYEY SILT TILL: Grey, trace gravel, sand, moist to wet, stiff		76.70			
30	9			9.45		SS-9	15
		SANDY CLAYEY SILT TILL: Grey, trace gravel, moist to wet		75.94			
32				9.91			
	10	SANDY SILT TILL: Grey, trace to some clay, trace gravel, stone fragments, moist, dense		75.48		SS-10	38
34				10.36			
		SHALE: Grey, dry, hard		75.03			

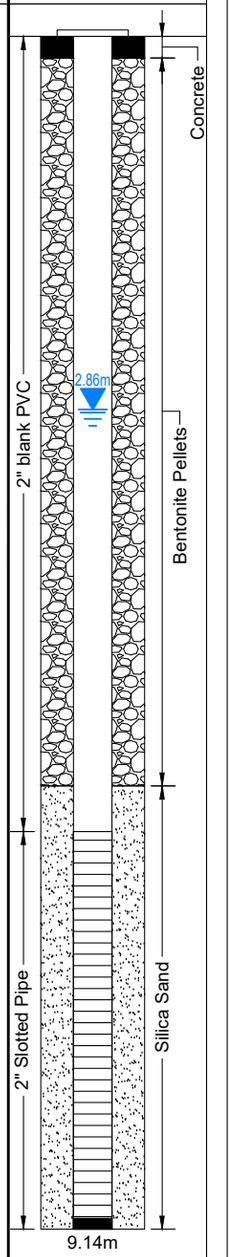
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 9 September 2024: 2.86m

DRAWN: A.M | LOGGED: D.G. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH102(MW) SHEET. 1 of 2

PROJECT NO.: FE- 24-14065/191

PROJECT NAME: GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: CME-55 Track Solid Stem

DRILLING DATE: 3 September, 2024

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE	PENETRATION TESTING (SPT) ▲ / SHEAR STRENGTH (Kpa) ✚	VAPOUR READING (ppm) □ / MOISTURE CONTENT (%) ●	PIEZOMETER OR WELL CONSTRUCTION
				75.03				20 40 60 80 / 40 80 120 160	20 40 60 80 / 10 20 30 40	
36	11	SHALE: Grey, dry, hard				SS-11	100+			
38										
40	12			12.19/ 76.91						
		End of borehole at 12.19m								
42	13									
44										
46	14									
48										
50	15									
52	16									
54										
56	17									
58										
60	18									
62	19									
64										
66	20									
68										
70	21									

Groundwater Depth (m): on completion: Dry; on 9 September 2024: 2.86m

DRAWN: A.M | LOGGED: D.G. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH103(MW) SHEET. 1 of 2

PROJECT NO.: FE- 24-14065/191

PROJECT NAME: GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: CME-55 Track Solid Stem

DRILLING DATE: 3 September, 2024

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				82.55			
0	0	101mm TOPSOIL		0.10 / 82.45			
		FILL: Brown sand, trace silt, topsoil				SS-1	2
2	1					SS-2	4
4				1.67 / 80.88		SS-3	37
6	2	SILT: Brown, trace to some sand, moist, dense					
8		SILT: Grey, trace to some sand, moist to wet, dense to very dense		2.44 / 80.11		SS-4	44
10	3					SS-5	57
12		SANDY SILT: Grey, wet, very dense		3.66 / 78.89			
14	4						
16	5					SS-6	100+
18		SILTY SAND: Grey, wet, very dense		5.33 / 77.22			
20	6					SS-7	61
22							
24	7	CLAYEY SILT: Grey, trace sand, gravel, wet, hard		7.01 / 75.54			
26	8	SANDY SILT TILL: Grey, trace clay, gravel, wet, very dense		7.72 / 74.83		SS-8	65
28							
30	9	SILTY SAND: Grey, trace gravel, wet, very dense		8.84 / 73.71		SS-9	100+
32	10						
34				10.52 / 72.03			

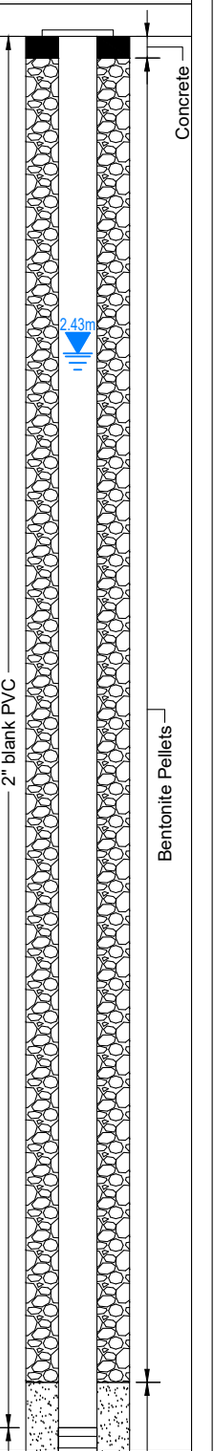
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 9 September 2024: 2.43m

DRAWN: A.M | LOGGED: D.G. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH103(MW) SHEET. 2 of 2

PROJECT NO.: FE- 24-14065/191

PROJECT NAME: GEOTECHNICAL & HYDROGEOLOGICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: CME-55 Track Solid Stem

DRILLING DATE: 3 September, 2024

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				10.52/ 72.03			
36	11	SHALE: Grey, dry, hard				SS-10	100+
38							
40	12					SS-11	100+
42	13						
44							
46	14					RC-1	Run=1.52m Rec=1.52m, 100% RQD=97%
48							
50	15					RC-2	Run=0.76m Rec=0.68m, 90% RQD=91%
52	16					RC-3	Run=1.75m Rec=1.75m, 100% RQD=92%
54							
56	17						
				17.45/ 65.10			
58	18	End of borehole at 17.45m					
60							
62	19						
64							
66	20						
68							
70	21						

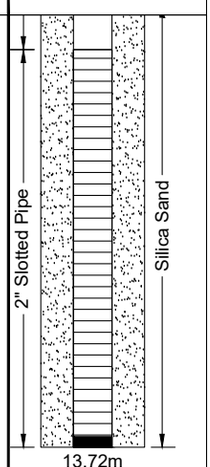
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 9 September 2024: 2.43m

DRAWN: A.M | LOGGED: D.G. | CHECKED: C.W.

APPENDIX D: LABORATORY RESULTS

Project Name:	Geotechnical Investigation	***F.E. Lab #:***	23-971
Client:	1000570027 Ontario Inc.	***Date Sampled:***	7-Nov-2023
Project ID:	23-13330	***Date Received:***	10-Nov-2023
Location:	900 Lakeshore Road West, Mississauga, Ontario	***Date Reported:***	29-Nov-2023

Certificate of Analysis

Analyses	Matrix	Quantity	Testing Date	Method Reference
Moisture Content	Soil	40	14-Nov-23	ASTM D2216
Grain Size (Sieve Analysis)	Soil	7	21-Nov-23	LS-602
Grain Size (Hydrometer)	Soil	7	27-Nov-23	LS-702
Atterberg test	Soil	0	N.A.	LS-703/704

Authorized by: Behnam Sayad-Pour

Behnam Sayad Pour Zanjani
Geo-Lab Supervisor

400 Esna Park Drive, Unit 15, Markham, ON L3R 3K2
Tel:(905) 475-7755 www.fishereng.com

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Moisture Content	***Sample Description:***	40 Soil Sample(s)

Sample Info	BH1 SS2 A	BH1 SS2 B	BH1 SS3	BH1 SS4	BH1 SS5	BH1 SS6
Sample Depth (m)	0.76-1.07	1.07-1.22	1.53-1.98	2.29-2.75	3.05-3.51	4.58-5.03
Moisture Content (%)	8.9	10.0	13.8	17.7	17.7	11.7

Sample Info	BH1 SS7	BH1 SS8	BH1 SS9	BH1 SS10	BH1 SS11	BH1 SS12
Sample Depth (m)	6.1-6.56	7.63-8.08	9.15-9.61	10.68-11.13	12.2-12.35	13.73-13.82
Moisture Content (%)	11.1	18.4	13.1	14.7	4.0	6.9

Sample Info	BH2 SS3	BH2 SS6	BH2 SS10 A	BH2 SS10 B	BH3 SS2	BH3 SS3
Sample Depth (m)	1.53-1.98	4.58-5.03	10.68-10.82	10.82-11.13	0.76-1.22	1.53-1.98
Moisture Content (%)	14.1	12.3	12.3	8.5	9.6	9.0

Sample Info	BH3 SS4	BH3 SS5	BH3 SS6	BH3 SS7	BH3 SS8	BH3 SS9
Sample Depth (m)	2.29-2.75	3.05-3.51	4.58-5.03	6.1-6.56	7.63-8.08	9.15-9.61
Moisture Content (%)	16.0	18.2	11.3	12.5	12.2	16.2

Sample Info	BH3 SS10	BH3 SS11	BH5 SS2 A	BH5 SS2 B	BH5 SS3	BH5 SS4 A
Sample Depth (m)	10.68-11.13	12.2-12.66	0.76-1.07	1.07-1.22	1.53-1.98	2.29-2.59
Moisture Content (%)	11.5	8.6	13.9	17.1	13.6	12.5

Sample Info	BH5 SS4 B	BH5 SS5	BH5 SS6	BH5 SS7	BH5 SS8 A	BH5 SS8 B
Sample Depth (m)	2.59-2.75	3.05-3.51	4.58-5.03	6.1-6.56	7.63-7.78	7.78-8.08
Moisture Content (%)	12.5	13.1	12.2	23.1	13.7	8.0

Sample Info	BH5 SS9	BH5 SS10	TH1	TH2		
Sample Depth (m)	9.15-9.46	10.68-11.13	1.53-1.98	1.53-1.98		
Moisture Content (%)	8.9	2.5	8.9	14.6		

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Grain Size (Sieve Analysis)	***Sample Quantity:***	7	Soil Sample(s)

Sample Info	***23-972 BH1 SS3***	***23-973 BH1 SS6***	***23-975 BH2 SS3***	***23-976 BH2 SS6***	***23-978 BH2 SS10 B***	***23-979 BH5 SS3***
Sample Depth (m)	***1.53-1.98***	***4.58-5.03***	***1.53-1.98***	***4.58-5.03***	***10.82-11.13***	***1.53-1.98***
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	0.0
9.5mm-19mm	0.0	0.0	0.0	0.0	3.0	0.0
4.75mm-9.5mm	0.0	0.0	0.0	0.0	4.8	0.0
1.18mm-4.75mm	0.0	0.1	0.0	0.2	10.5	0.3
300um-1.18mm	0.2	0.2	0.0	0.1	11.5	0.3
75um-300um	55.0	11.4	31.8	6.5	12.0	9.2
<75um	44.8	88.4	68.2	93.2	58.2	90.3
Clay and Silt	**44.8**	**88.4**	**68.2**	**93.2**	**58.2**	**90.3**
Sand	**55.2**	**11.6**	**31.8**	**6.8**	**34.0**	**9.7**
Gravel	**0.0**	**0.0**	**0.0**	**0.0**	**7.8**	**0.0**

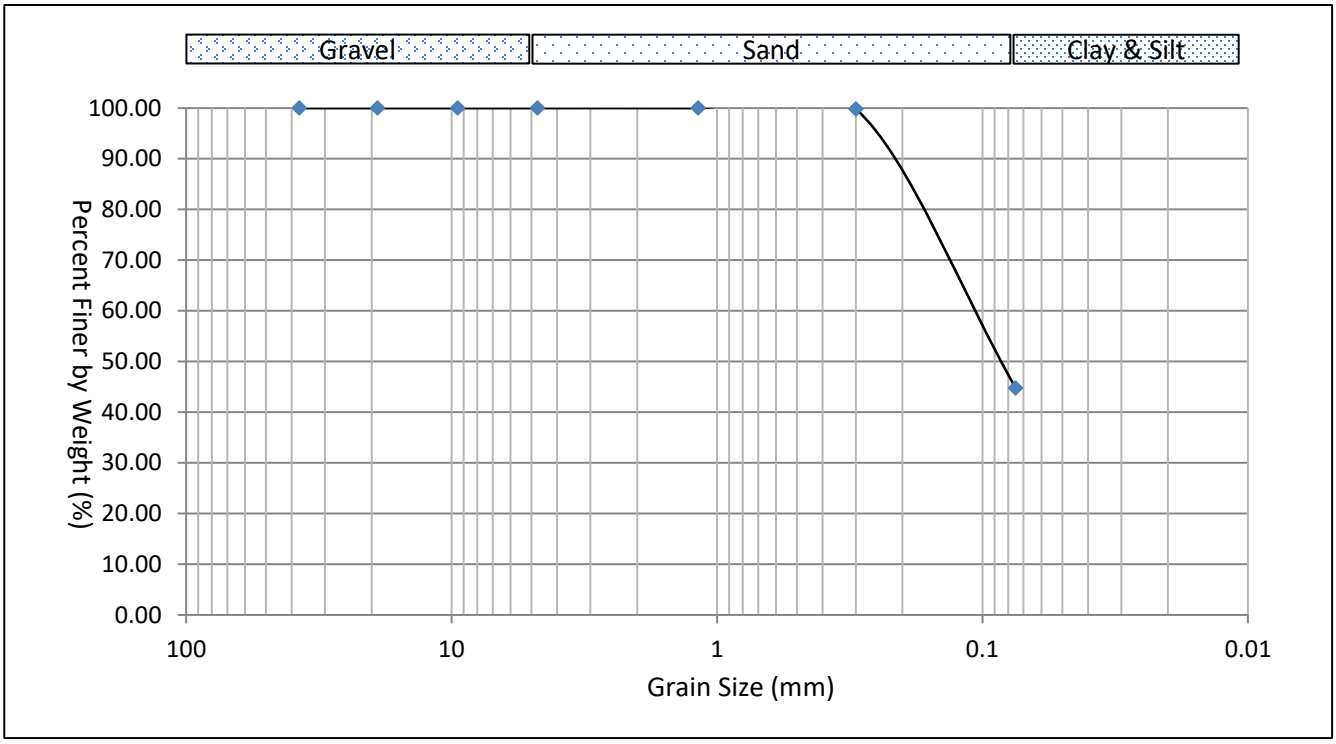
Sample Info	***23-981 BH5 SS10***					
Sample Depth (m)	***10.68-11.13***					
Grain Size (%)						
>19mm	0.0					
9.5mm-19mm	6.7					
4.75mm-9.5mm	20.1					
1.18mm-4.75mm	24.7					
300um-1.18mm	14.2					
75um-300um	7.1					
<75um	27.2					
Clay and Silt	**27.2**					
Sand	**46.0**					
Gravel	**26.8**					

Results related only to the items tested

Grain Size Distribution

Sample ID: 23-972 BH1 SS3 (1.53-1.98m)

Gravel: 0% Sand: 55.2% Clay and Silt 44.8%

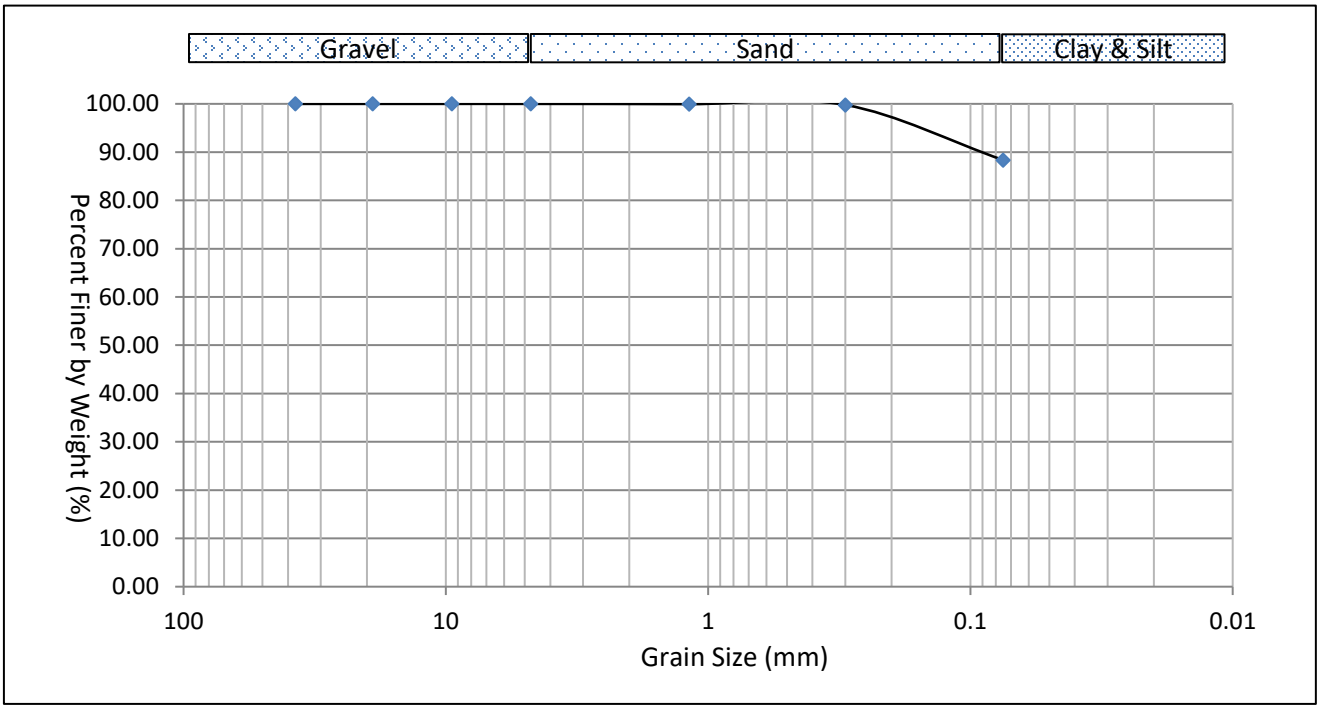


Results related only to the items tested

Grain Size Distribution

Sample ID: 23-973 BH1 SS6 (4.58-5.03m)

Gravel: 0% Sand: 11.6% Clay and Silt 88.4%

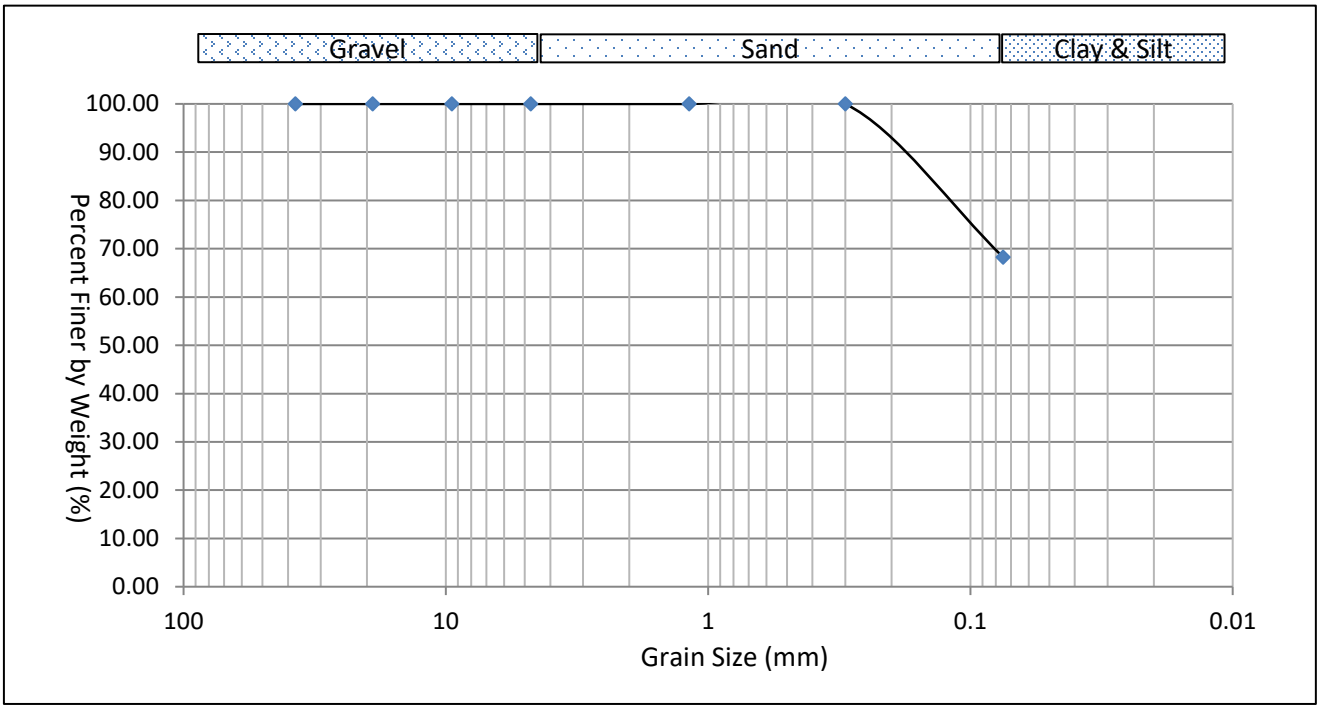


Results related only to the items tested

Grain Size Distribution

Sample ID: 23-975 BH2 SS3 (1.53-1.98m)

Gravel: 0% Sand: 31.8% Clay and Silt 68.2%

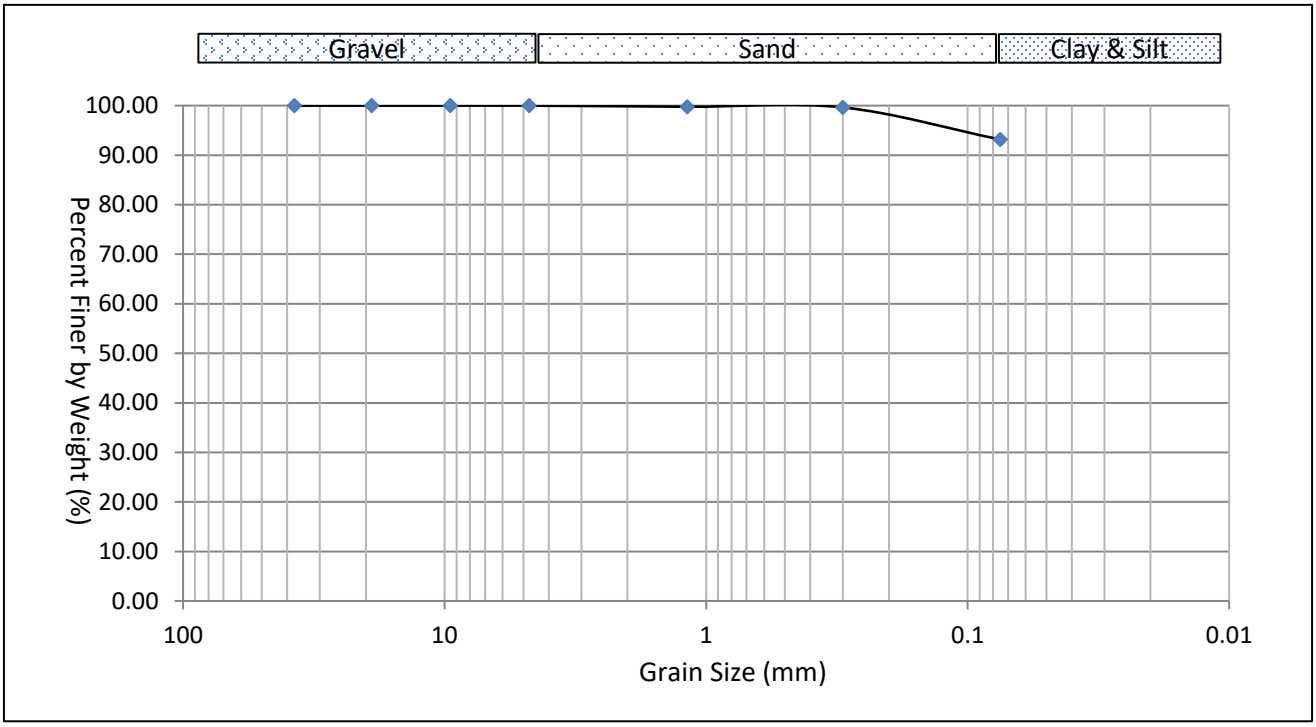


Results related only to the items tested

Grain Size Distribution

Sample ID: 23-976 BH2 SS6 (4.58-5.03m)

Gravel: 0% Sand: 6.8% Clay and Silt 93.2%

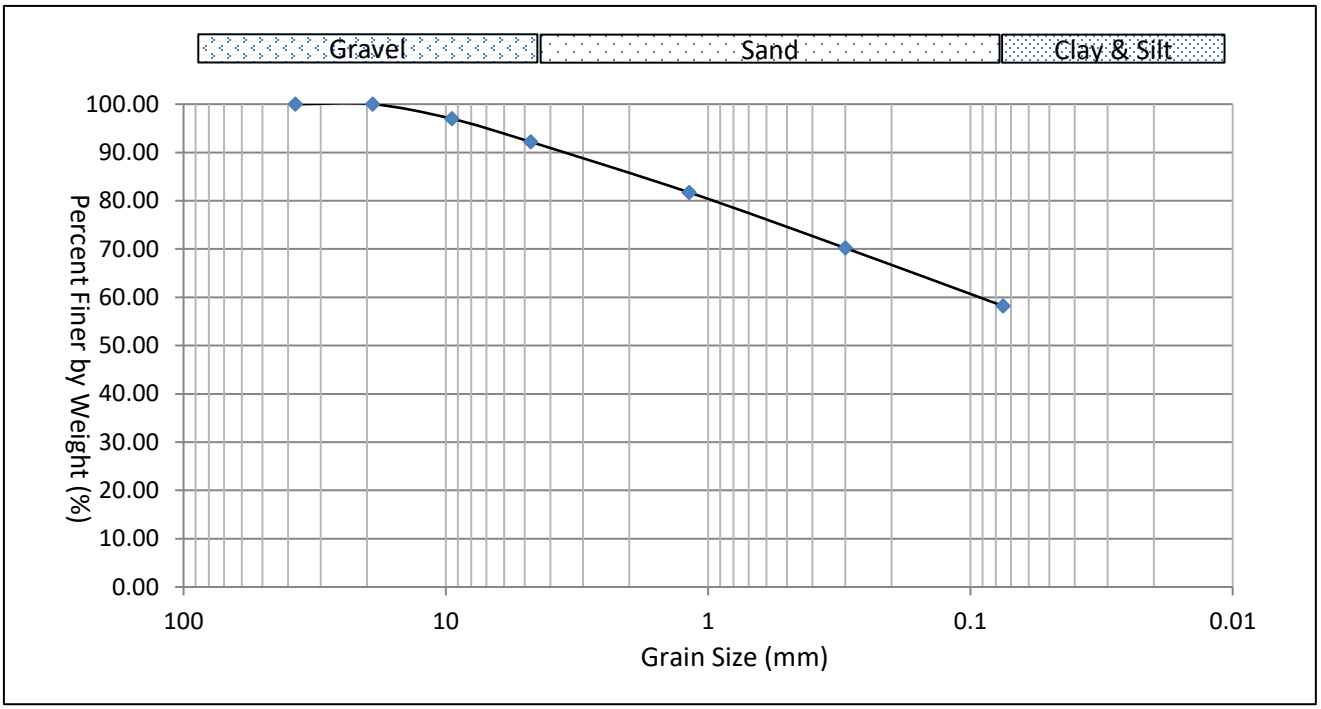


Results related only to the items tested

Grain Size Distribution

Sample ID: 23-978 BH2 SS10 B (10.82-11.13m)

Gravel: 7.8% Sand: 34% Clay and Silt 58.2%

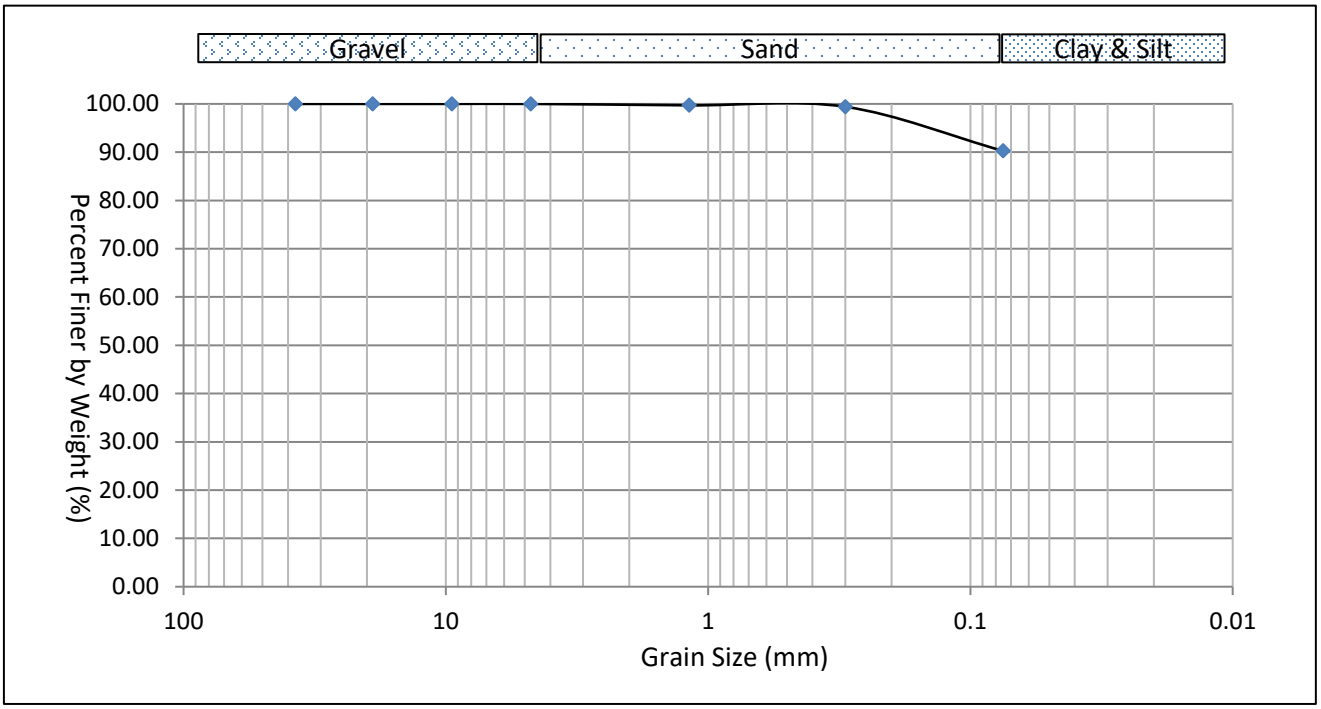


Results related only to the items tested

Grain Size Distribution

Sample ID: 23-979 BH5 SS3 (1.53-1.98m)

Gravel: 0% Sand: 9.7% Clay and Silt 90.3%

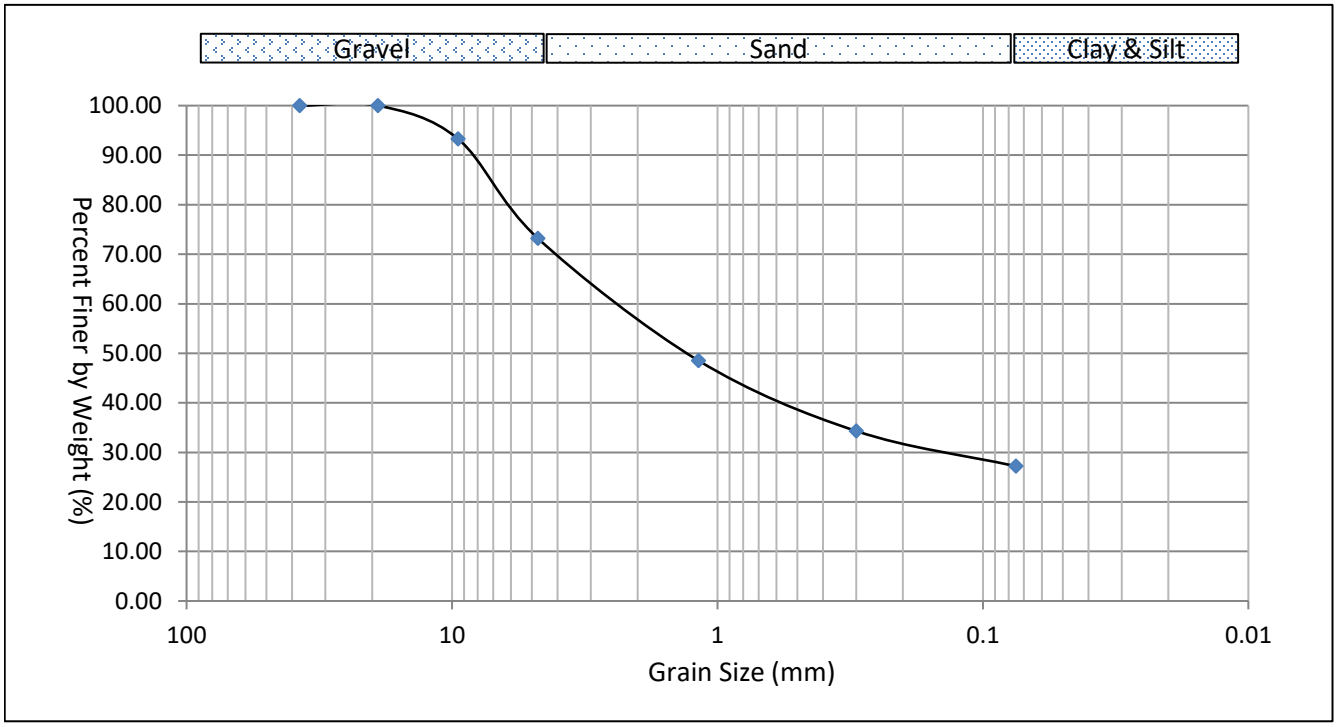


Results related only to the items tested

Grain Size Distribution

Sample ID: 23-981 BH5 SS10 (10.68-11.13m)

Gravel: 26.8% Sand: 46% Clay and Silt 27.2%



Results related only to the items tested

F.E. Job #: 23-971

Certificate of Analysis

Analysis Requested:	Grain Size (Hydrometer)
Sample Description:	7 Soil Sample(s)

Sample Info	***23-1053 BH1 SS9***	***23-974 BH1 SS10***	***23-977 BH2 SS10 A***	***23-1055 BH3 SS10***	***23-980 BH5 SS6***	***23-982 TH1***
Sample Depth (m)	***9.15-9.61***	***10.68-11.13***	***10.68-10.82***	***10.68-11.13***	***4.58-5.03***	***1.53-1.98***
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	0.0
9.5mm-19mm	0.0	3.8	1.8	2.3	0.0	0.5
4.75mm-9.5mm	0.0	6.8	2.6	1.3	0.0	1.4
1.18mm-4.75mm	0.0	8.0	11.0	1.8	0.2	0.8
300um-1.18mm	0.0	8.8	14.1	1.9	0.2	0.9
75um-300um	8.8	7.9	11.7	2.1	3.8	53.9
5um-75um	77.6	36.3	27.5	52.7	79.3	34.5
2um-5um	4.8	9.9	11.0	14.3	5.9	2.0
<2um	8.9	18.7	20.3	23.6	10.7	5.8
Clay	**8.9**	**18.7**	**20.3**	**23.6**	**10.7**	**5.8**
Silt	**82.3**	**46.2**	**38.5**	**67.0**	**85.2**	**36.5**
Sand	**8.8**	**24.6**	**36.8**	**5.9**	**4.1**	**55.7**
Gravel	**0.0**	**10.6**	**4.4**	**3.6**	**0.0**	**1.9**

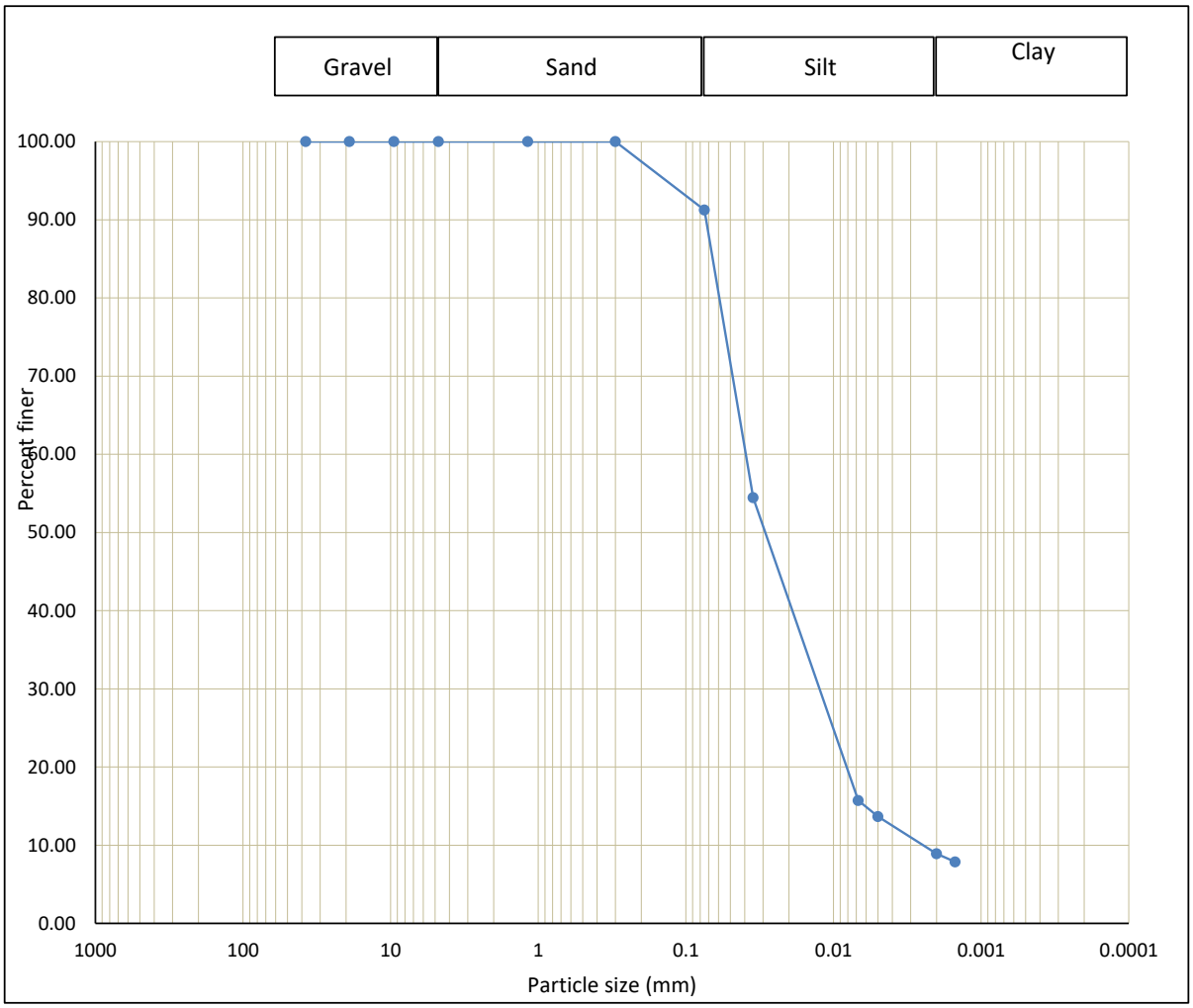
Sample Info	***23-983 TH2***					
Sample Depth (m)	***1.53-1.98***					
Grain Size (%)						
>19mm	0.0					
9.5mm-19mm	13.1					
4.75mm-9.5mm	5.5					
1.18mm-4.75mm	6.7					
300um-1.18mm	7.8					
75um-300um	12.2					
5um-75um	25.7					
2um-5um	6.3					
<2um	22.7					
Clay	**22.7**					
Silt	**31.9**					
Sand	**26.7**					
Gravel	**18.6**					

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-1053 BH1 SS9 (9.15-9.61m)

Gravel: 0% Sand: 8.8% Silt: 82.3% Clay: 8.9%

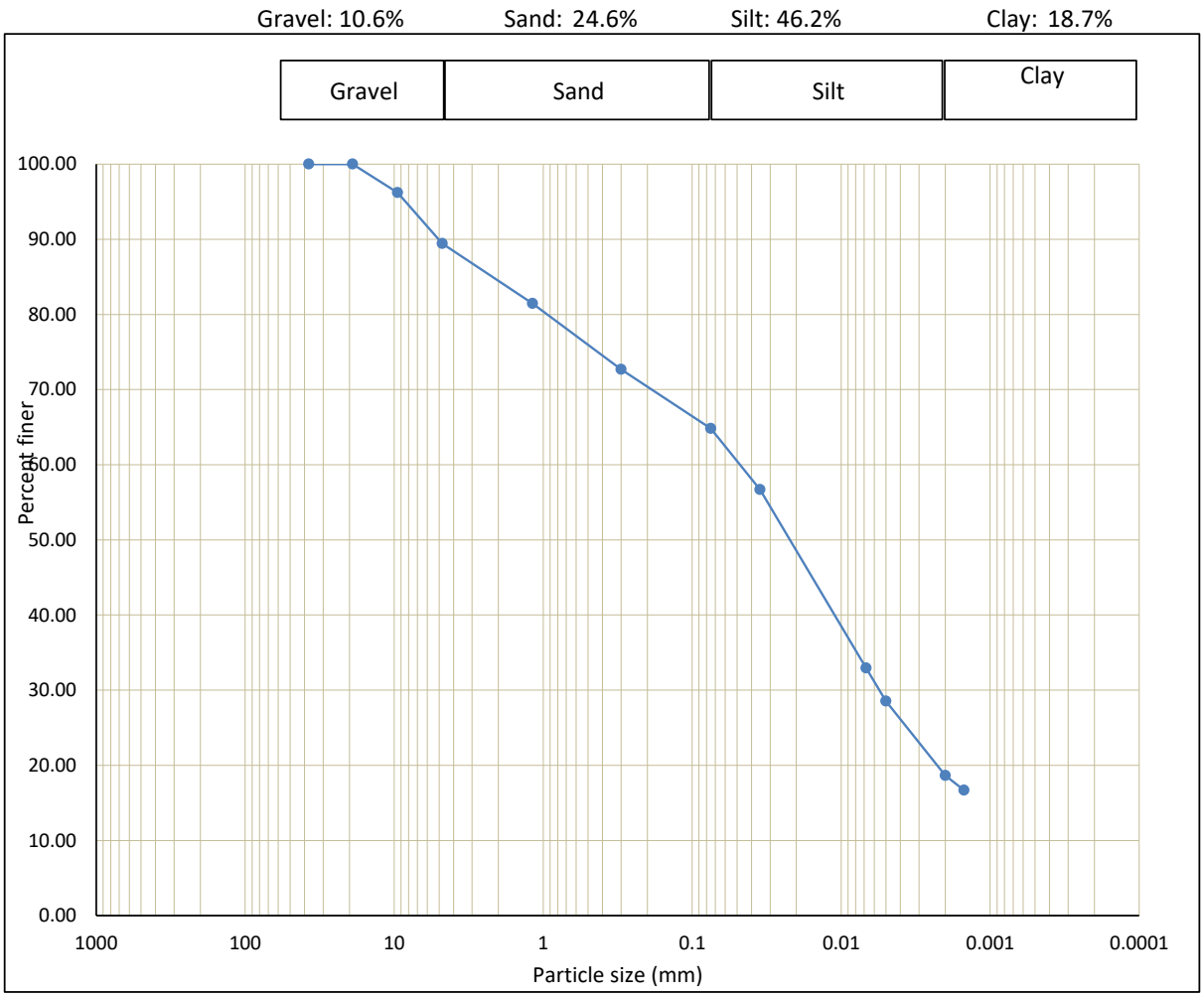


Sample ID: 23-1053 BH1 SS9 (9.15-9.61m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.0	Coarse Sand
300um-1.18mm	0.0	Medium Sand
75um-300um	8.8	Fine Sand
5um-75um	77.6	Silt
2um-5um	4.8	
<2um	8.9	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-974 BH1 SS10 (10.68-11.13m)



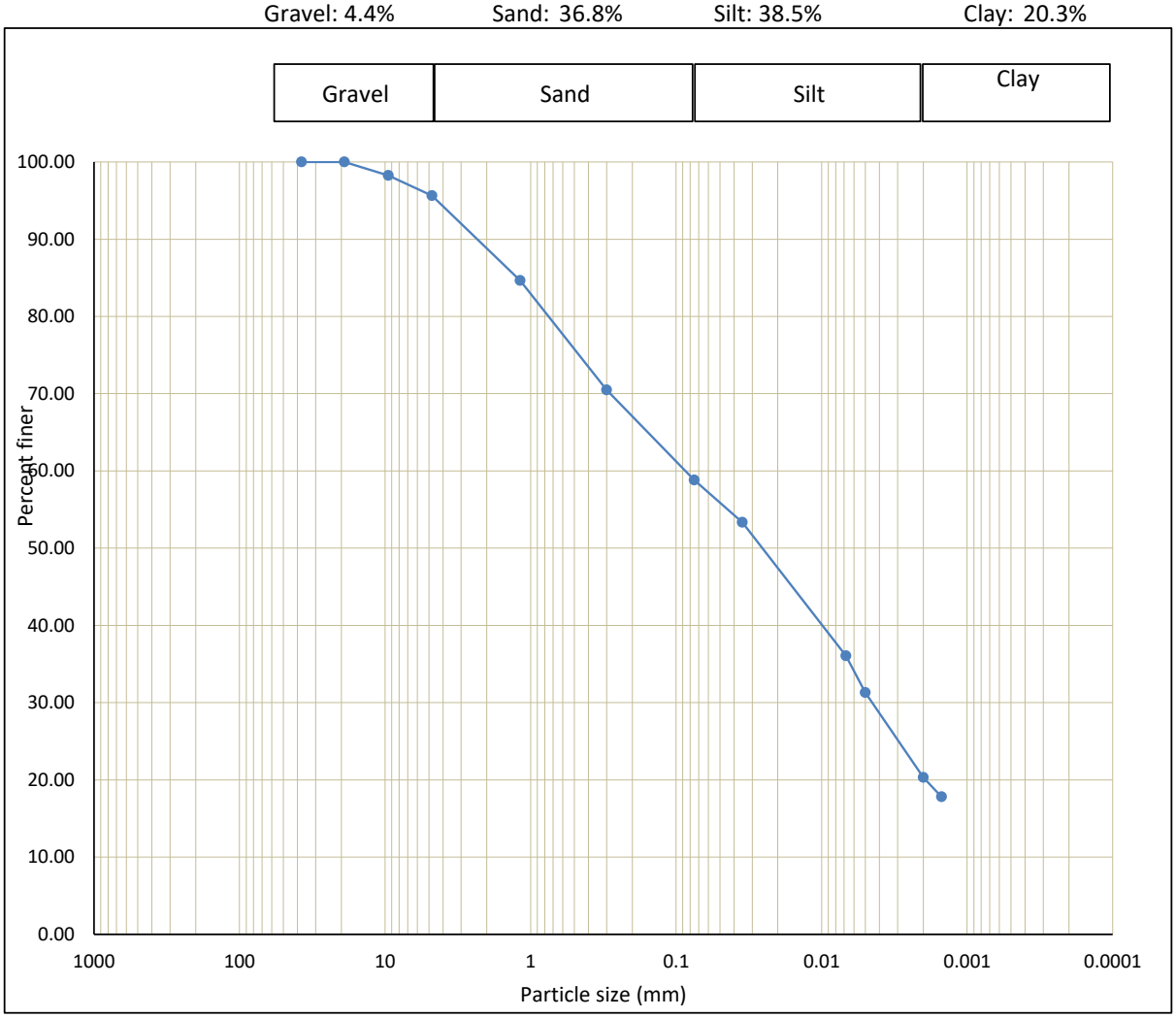
Sample ID: 23-974 BH1 SS10 (10.68-11.13m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	10.6	Gravel
1.18mm-4.75mm	8.0	Coarse Sand
300um-1.18mm	8.8	Medium Sand
75um-300um	7.9	Fine Sand
5um-75um	36.3	Silt
2um-5um	9.9	
<2um	18.7	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-977 BH2 SS10 A (10.68-10.82m)

Gravel: 4.4% Sand: 36.8% Silt: 38.5% Clay: 20.3%



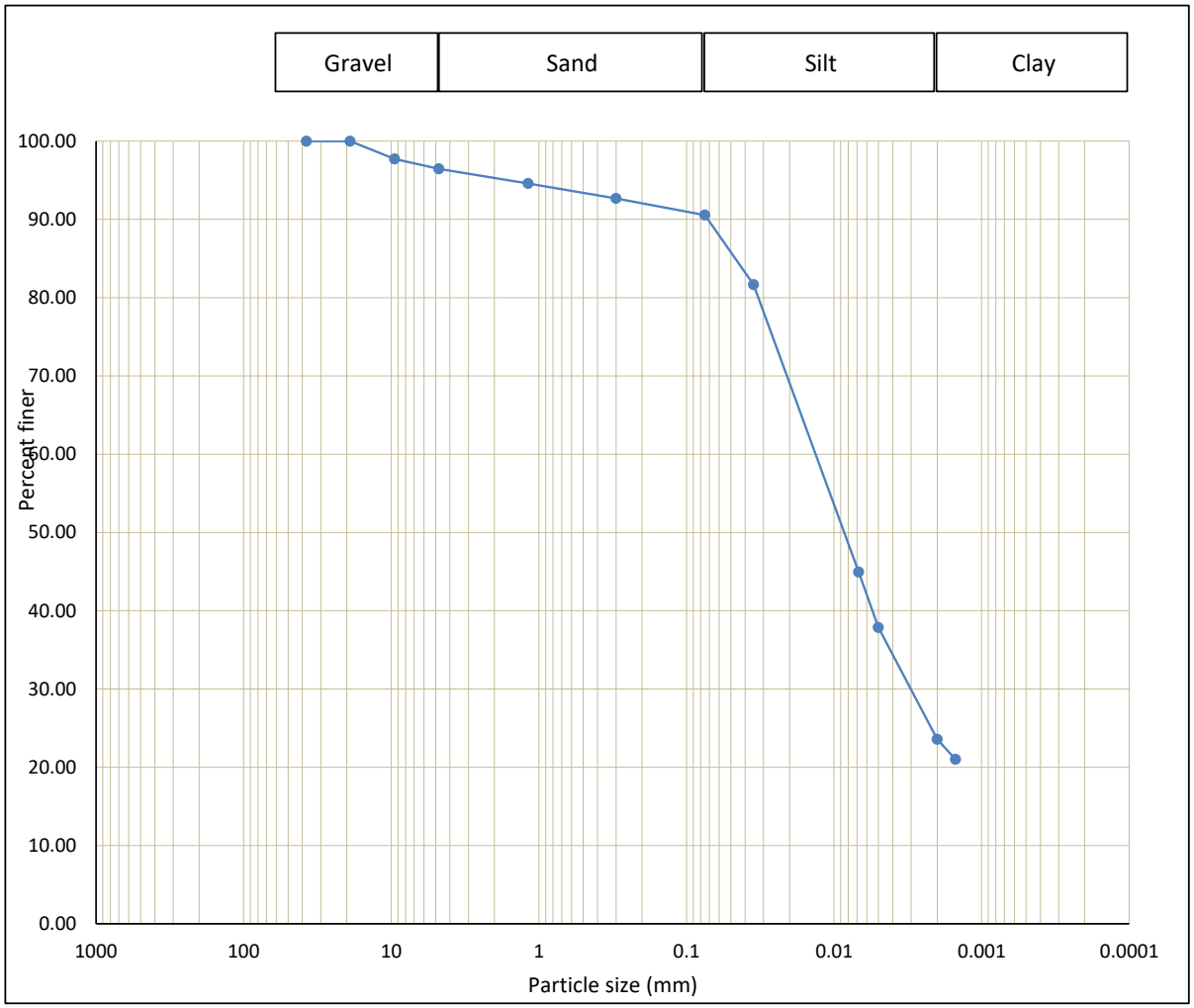
Sample ID: 23-977 BH2 SS10 A (10.68-10.82m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	4.4	Gravel
1.18mm-4.75mm	11.0	Coarse Sand
300um-1.18mm	14.1	Medium Sand
75um-300um	11.7	Fine Sand
5um-75um	27.5	Silt
2um-5um	11.0	
<2um	20.3	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-1055 BH3 SS10 (10.68-11.13m)

Gravel: 3.6% Sand: 5.9% Silt: 67% Clay: 23.6%

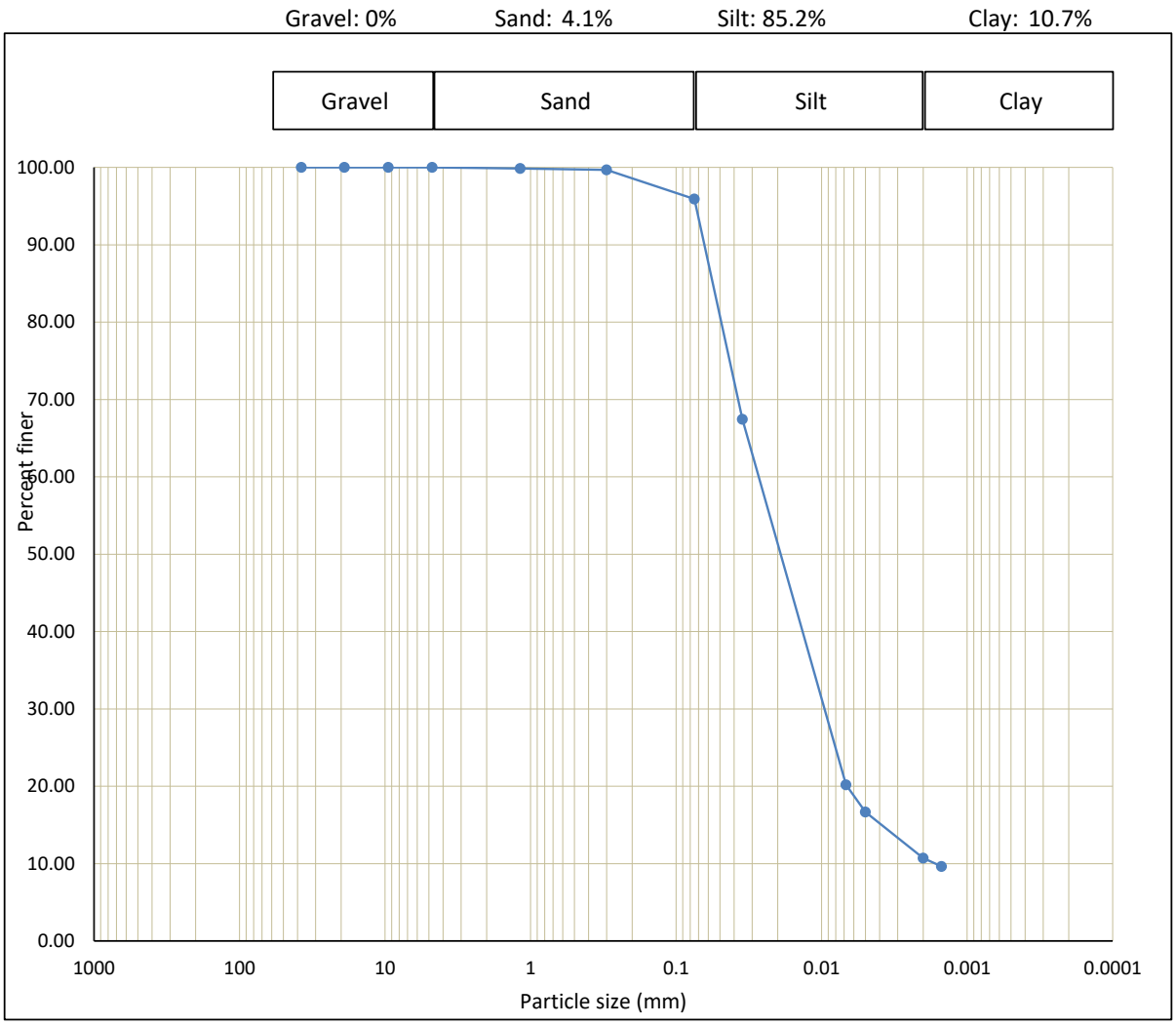


Sample ID: 23-1055 BH3 SS10 (10.68-11.13m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	3.6	Gravel
1.18mm-4.75mm	1.8	Coarse Sand
300um-1.18mm	1.9	Medium Sand
75um-300um	2.1	Fine Sand
5um-75um	52.7	Silt
2um-5um	14.3	
<2um	23.6	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-980 BH5 SS6 (4.58-5.03m)

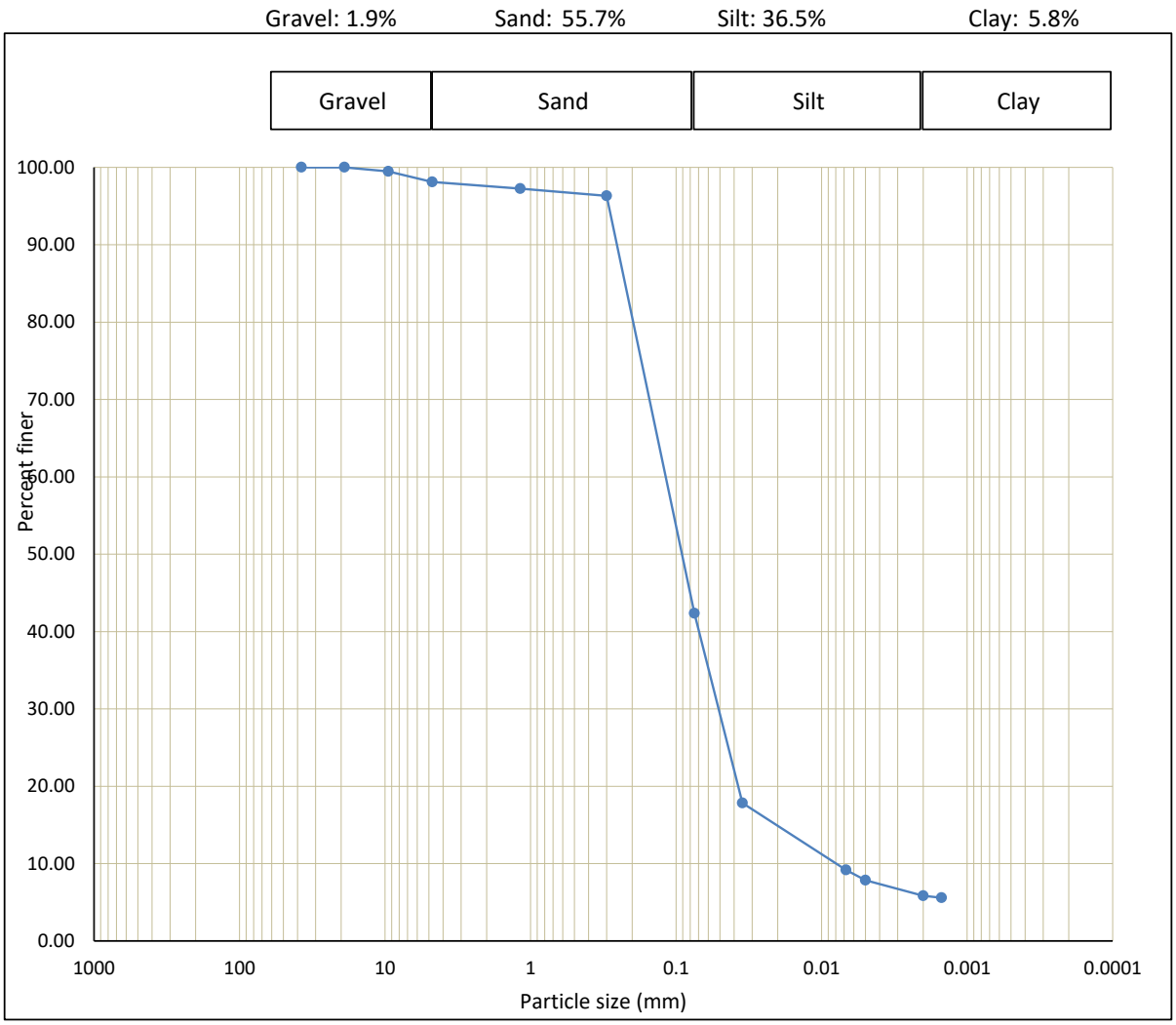


Sample ID: 23-980 BH5 SS6 (4.58-5.03m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.2	Coarse Sand
300um-1.18mm	0.2	Medium Sand
75um-300um	3.8	Fine Sand
5um-75um	79.3	Silt
2um-5um	5.9	
<2um	10.7	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-982 TH1 (1.53-1.98m)

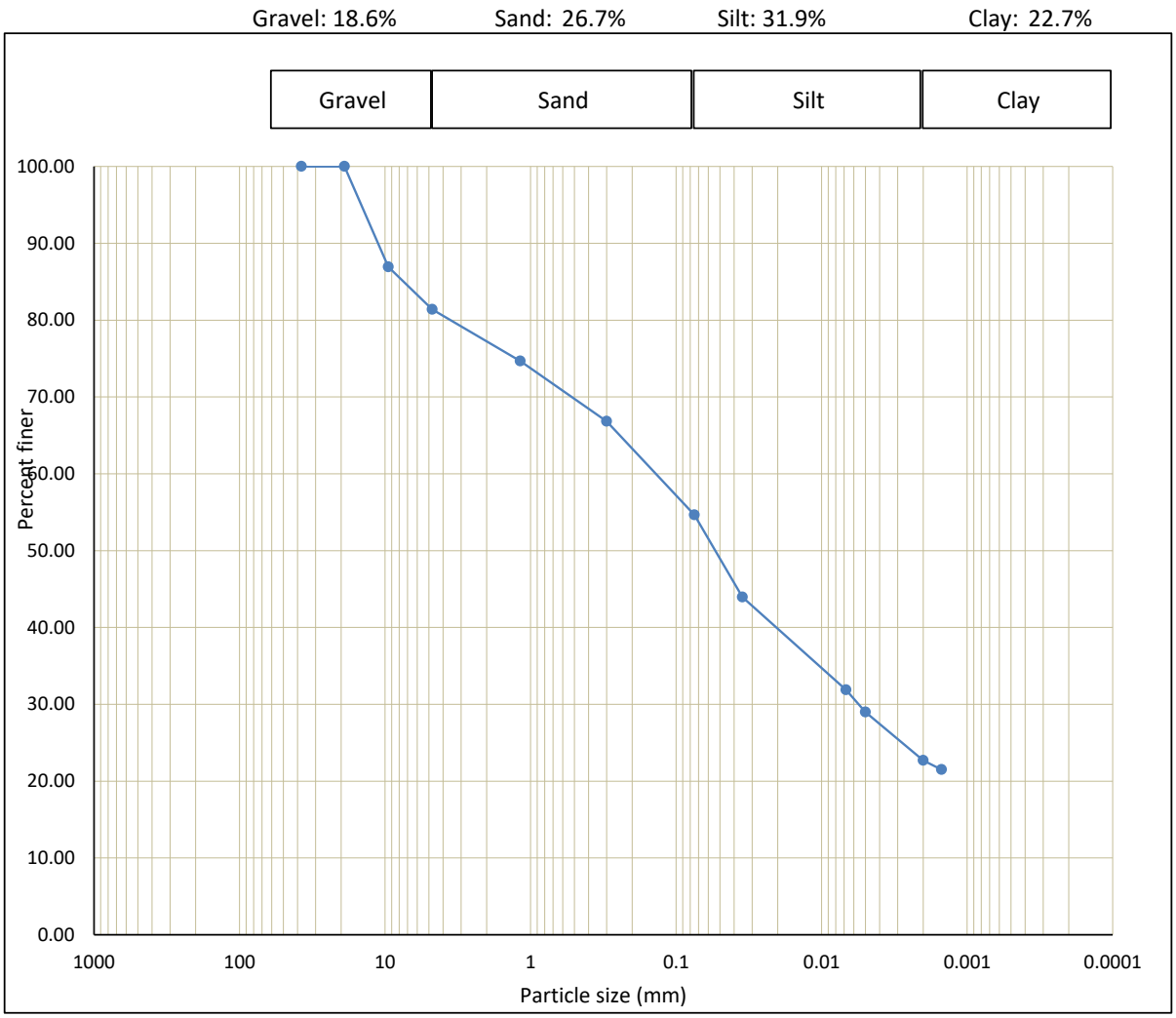


Sample ID: 23-982 TH1 (1.53-1.98m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	1.9	Gravel
1.18mm-4.75mm	0.8	Coarse Sand
300um-1.18mm	0.9	Medium Sand
75um-300um	53.9	Fine Sand
5um-75um	34.5	Silt
2um-5um	2.0	
<2um	5.8	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-983 TH2 (1.53-1.98m)



Sample ID: 23-983 TH2 (1.53-1.98m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	18.6	Gravel
1.18mm-4.75mm	6.7	Coarse Sand
300um-1.18mm	7.8	Medium Sand
75um-300um	12.2	Fine Sand
5um-75um	25.7	Silt
2um-5um	6.3	
<2um	22.7	Clay

Project Name:	Hydrogeological Investigation	***F.E. Lab #:***	24-598
Client:	1000570027 Ontario Inc.	***Date Sampled:***	3-Sep-2024
Project ID:	24-14065	***Date Received:***	5-Sep-2024
Location:	900 Lakeshore Road, Mississauga, Ontario	***Date Reported:***	23-Sep-2024

Certificate of Analysis

Analyses	Matrix	Quantity	Testing Date	Method Reference
Moisture Content	Soil	20	05-Sep-24	ASTM D2216
Grain Size (Sieve Analysis)	Soil	0	N.A.	LS-602
Grain Size (Hydrometer)	Soil	10	09-Sep-24	LS-702
Compressive test on rock core	Soil	1	16-Sep-24	ASTM D7012

Authorized by: Behnam Sayad-Pour

Behnam Sayad Pour Zanjani
Geo-Lab Supervisor

400 Esna Park Drive, Unit 15, Markham, ON L3R 3K2
Tel:(905) 475-7755 www.fishereng.com

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Moisture Content	***Sample Description:***	20 Soil Sample(s)

Sample Info	BH101 SS2	BH101 SS3	BH101 SS4	BH101 SS5	BH101 SS6	BH101 SS7
Sample Depth (m)	0.76-1.22	1.53-1.98	2.29-2.75	3.05-3.51	4.58-5.03	6.1-6.56
Moisture Content (%)	11.6	12.5	11.0	21.0	12.7	13.4

Sample Info	BH101 SS8	BH101 SS9 A	BH101 SS9 B	BH101 SS10	BH101 SS11	BH103 SS2
Sample Depth (m)	7.63-8.08	9.15-9.46	9.46-9.61	9.91-10.37	10.68-11.13	0.76-1.22
Moisture Content (%)	13.7	16.2	12.6	7.4	7.8	12.0

Sample Info	BH103 SS3	BH103 SS4	BH103 SS5	BH103 SS6	BH103 SS7	BH103 SS8
Sample Depth (m)	1.53-1.98	2.29-2.75	3.05-3.51	4.58-5.03	6.1-6.56	7.63-8.08
Moisture Content (%)	10.4	11.9	12.8	11.3	13.3	21.2

Sample Info	BH103 SS9	BH103 SS10				
Sample Depth (m)	9.15-9.61	10.68-11.13				
Moisture Content (%)	12.8	6.4				

Results related only to the items tested

F.E. Job #: 24-598

Certificate of Analysis

Analysis Requested:	Grain Size (Hydrometer)
Sample Description:	10 Soil Sample(s)

Sample Info	***24-599 BH101 SS6***	***24-600 BH101 SS8***	***24-601 BH101 SS9 A***	***24-602 BH101 SS9 B***	***24-603 BH101 SS10***	***24-604 BH101 SS11***
Sample Depth (m)	***4.58-5.03***	***7.63-8.08***	***9.15-9.46***	***9.46-9.61***	***9.91-10.37***	***10.68-11.13***
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	0.0
9.5mm-19mm	0.0	0.0	0.0	2.6	11.6	3.5
4.75mm-9.5mm	0.0	0.0	4.4	5.4	4.9	6.5
1.18mm-4.75mm	0.0	0.0	10.3	12.3	9.8	11.7
300um-1.18mm	0.1	0.1	9.7	13.5	10.3	11.0
75um-300um	10.1	10.0	8.8	10.7	10.7	11.3
5um-75um	79.6	82.3	35.3	29.2	27.3	31.7
2um-5um	4.4	3.1	10.8	10.8	9.7	9.7
<2um	5.7	4.5	20.7	15.5	15.8	14.6
Clay	**5.7**	**4.5**	**20.7**	**15.5**	**15.8**	**14.6**
Silt	**84.0**	**85.4**	**46.1**	**40.0**	**37.0**	**41.4**
Sand	**10.2**	**10.1**	**28.8**	**36.5**	**30.8**	**34.0**
Gravel	**0.0**	**0.0**	**4.4**	**8.0**	**16.4**	**9.9**

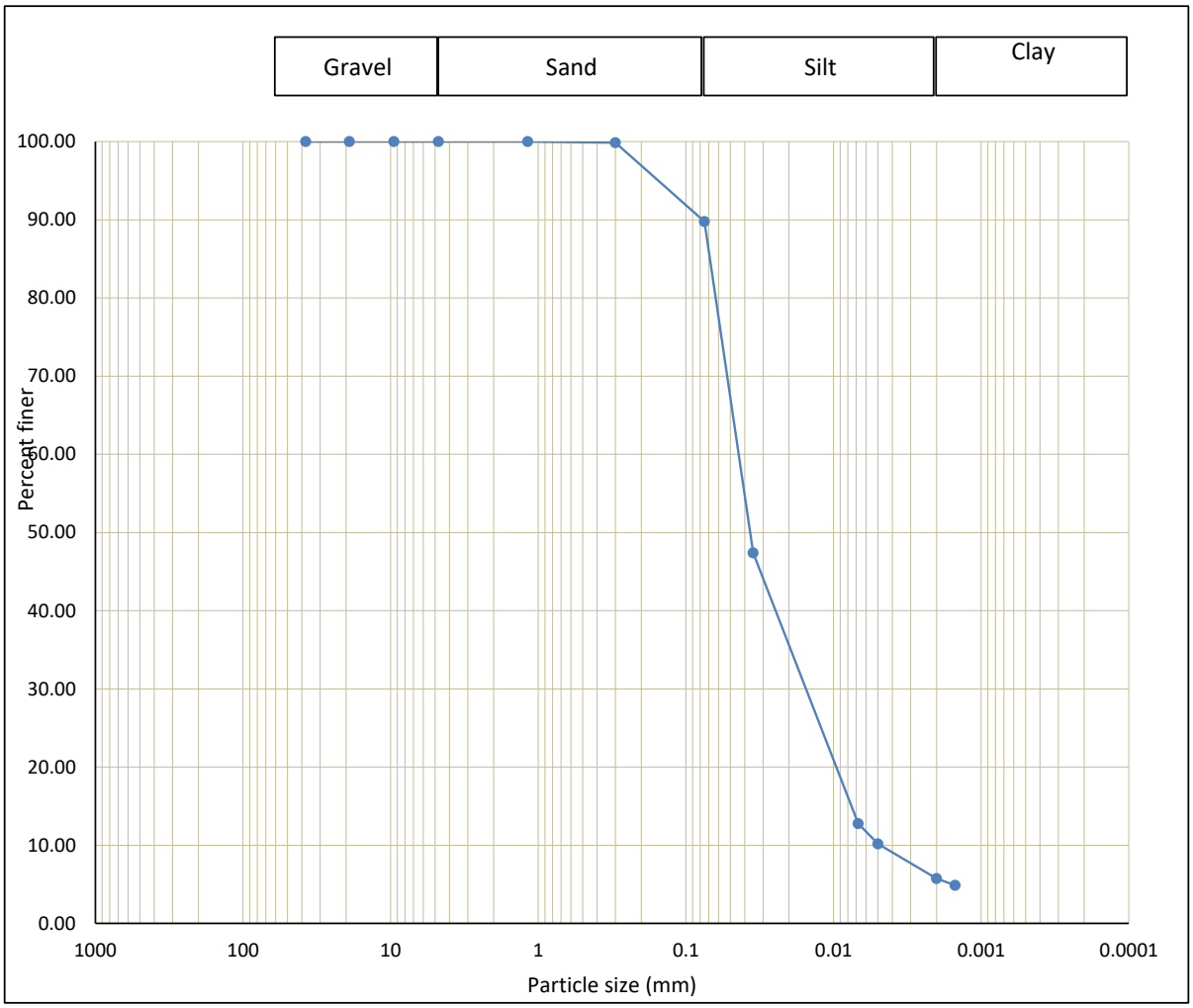
Sample Info	***24-605 BH103 SS6***	***24-606 BH103 SS8***	***24-607 BH103 SS9***	***24-608 BH103 SS10***		
Sample Depth (m)	***4.58-5.03***	***7.63-8.08***	***9.15-9.61***	***10.68-11.13***		
Grain Size (%)						
>19mm	0.0	0.0	8.6	0.0		
9.5mm-19mm	0.0	0.0	0.7	2.7		
4.75mm-9.5mm	0.0	1.6	8.4	5.1		
1.18mm-4.75mm	0.0	2.9	6.8	15.7		
300um-1.18mm	0.1	3.5	5.8	15.6		
75um-300um	6.0	4.7	4.2	3.7		
5um-75um	82.6	79.6	28.8	32.4		
2um-5um	4.7	3.0	11.3	8.0		
<2um	6.6	4.7	25.3	16.7		
Clay	**6.6**	**4.7**	**25.3**	**16.7**		
Silt	**87.3**	**82.6**	**40.1**	**40.4**		
Sand	**6.1**	**11.1**	**16.8**	**35.1**		
Gravel	**0.0**	**1.6**	**17.7**	**7.8**		

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-599 BH101 SS6 (4.58-5.03m)

Gravel: 0% Sand: 10.2% Silt: 84% Clay: 5.7%

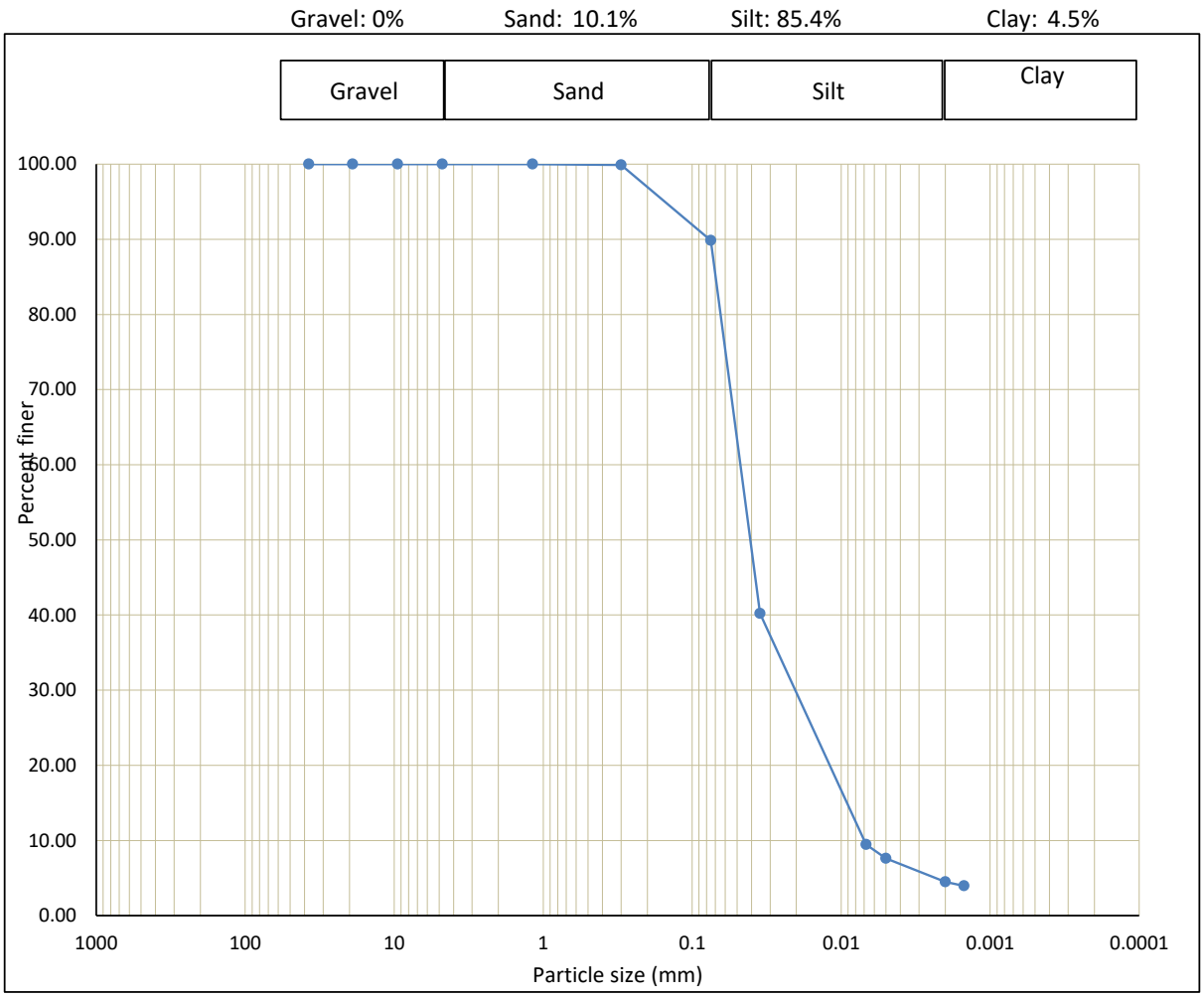


Sample ID: 24-599 BH101 SS6 (4.58-5.03m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.0	Coarse Sand
300um-1.18mm	0.1	Medium Sand
75um-300um	10.1	Fine Sand
5um-75um	79.6	Silt
2um-5um	4.4	
<2um	5.7	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-600 BH101 SS8 (7.63-8.08m)



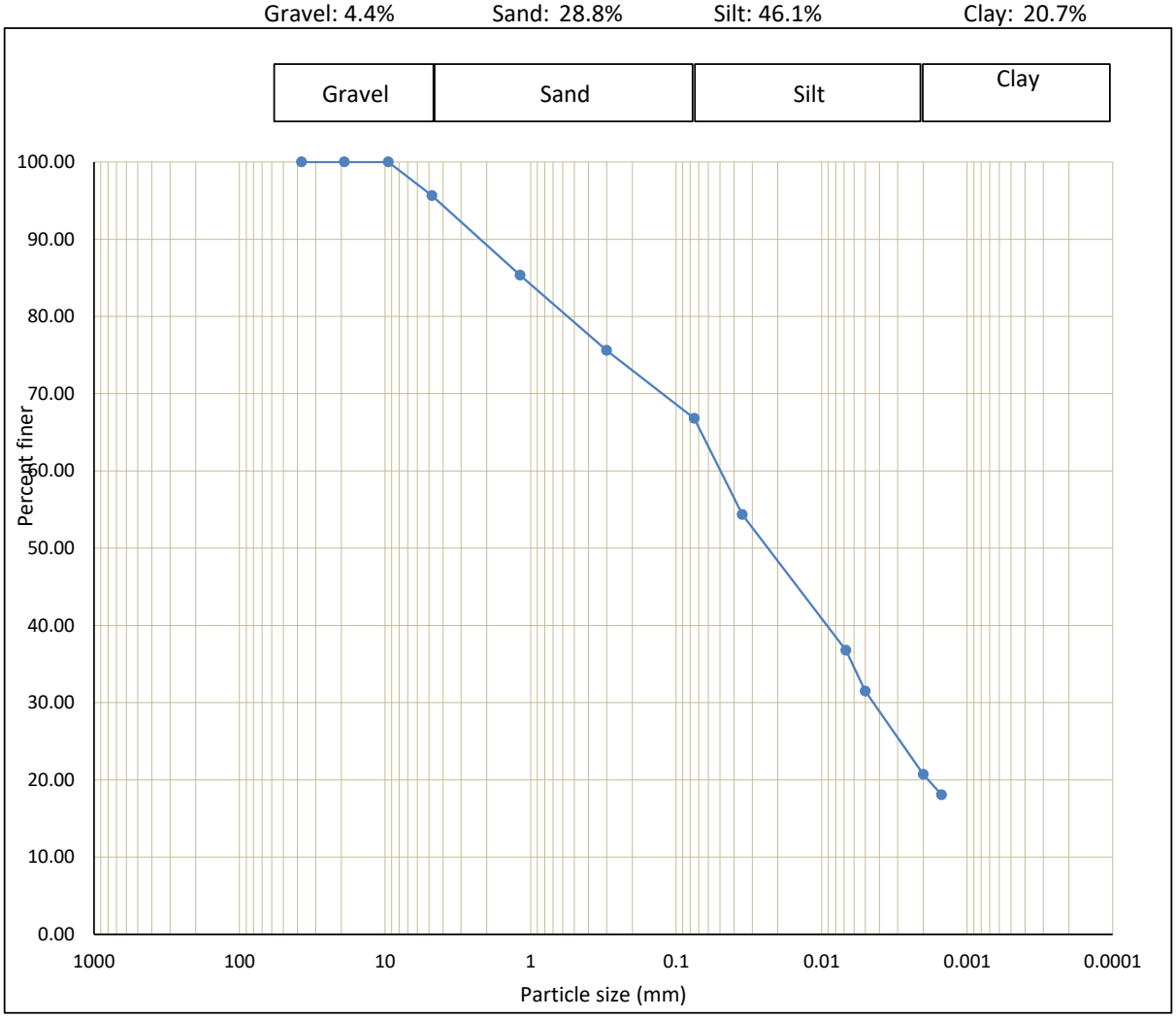
Sample ID: 24-600 BH101 SS8 (7.63-8.08m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.0	Coarse Sand
300um-1.18mm	0.1	Medium Sand
75um-300um	10.0	Fine Sand
5um-75um	82.3	Silt
2um-5um	3.1	
<2um	4.5	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-601 BH101 SS9 A (9.15-9.46m)

Gravel: 4.4% Sand: 28.8% Silt: 46.1% Clay: 20.7%



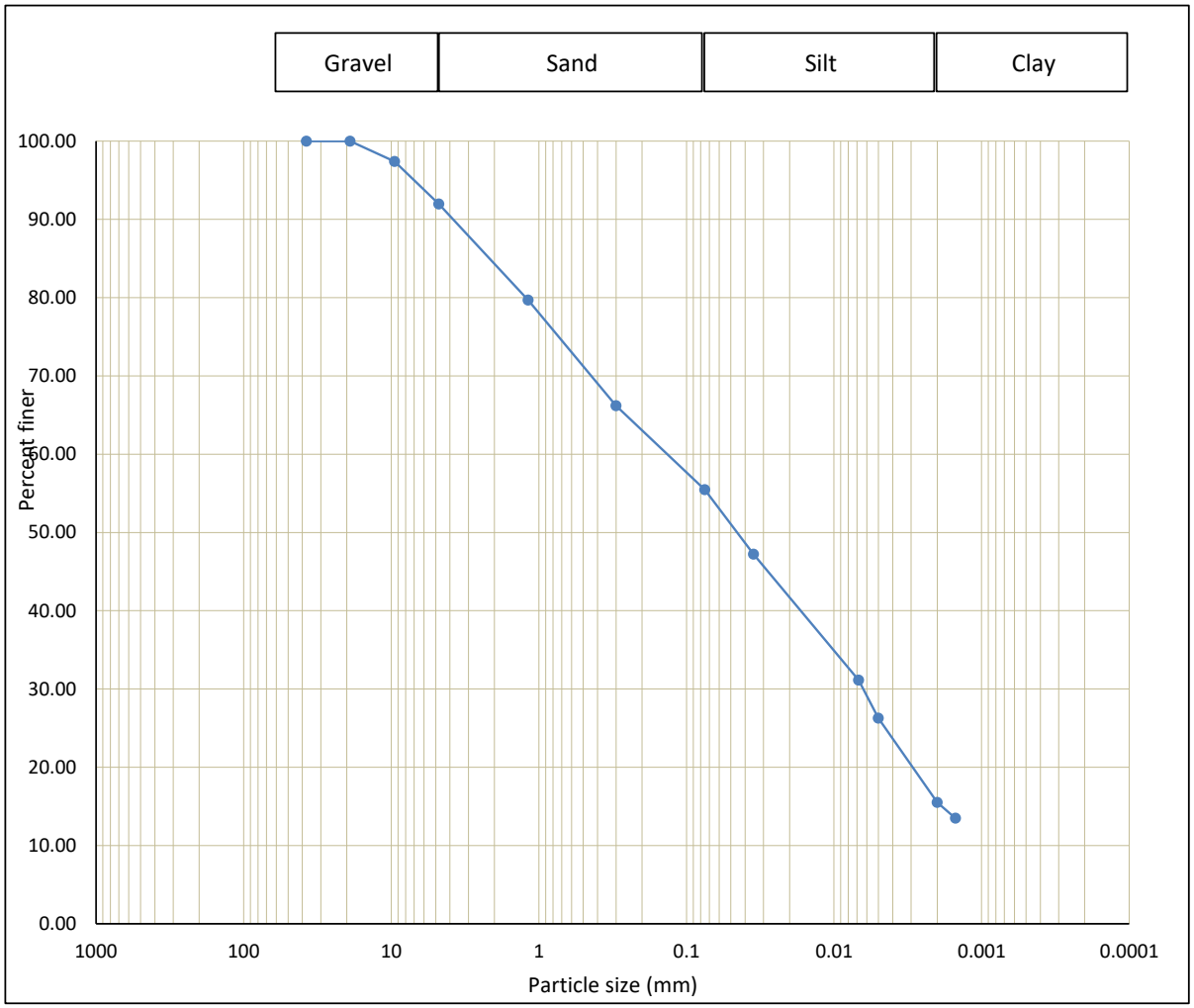
Sample ID: 24-601 BH101 SS9 A (9.15-9.46m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	4.4	Gravel
1.18mm-4.75mm	10.3	Coarse Sand
300um-1.18mm	9.7	Medium Sand
75um-300um	8.8	Fine Sand
5um-75um	35.3	Silt
2um-5um	10.8	
<2um	20.7	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-602 BH101 SS9 B (9.46-9.61m)

Gravel: 8% Sand: 36.5% Silt: 40% Clay: 15.5%

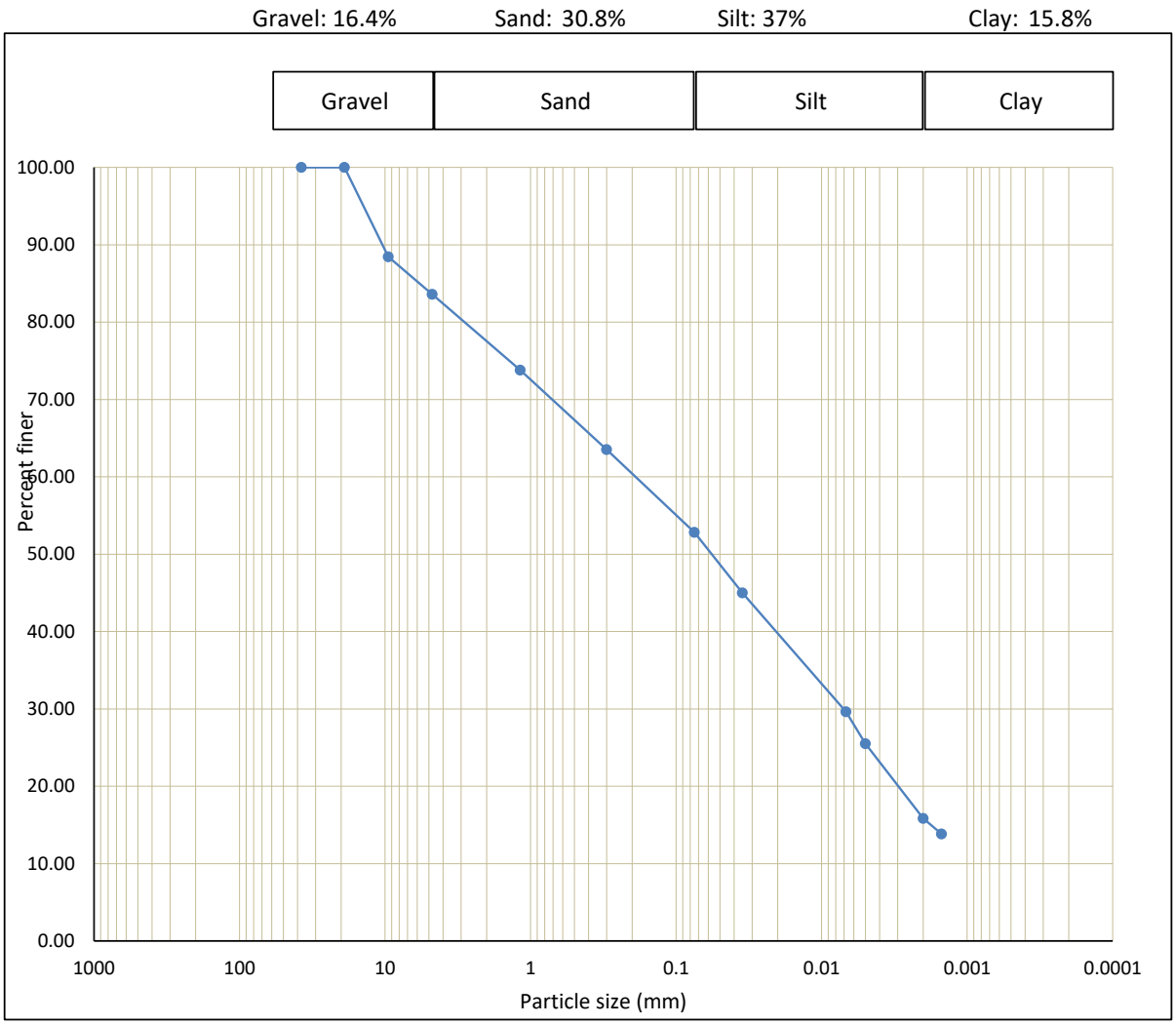


Sample ID: 24-602 BH101 SS9 B (9.46-9.61m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	8.0	Gravel
1.18mm-4.75mm	12.3	Coarse Sand
300um-1.18mm	13.5	Medium Sand
75um-300um	10.7	Fine Sand
5um-75um	29.2	Silt
2um-5um	10.8	
<2um	15.5	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-603 BH101 SS10 (9.91-10.37m)

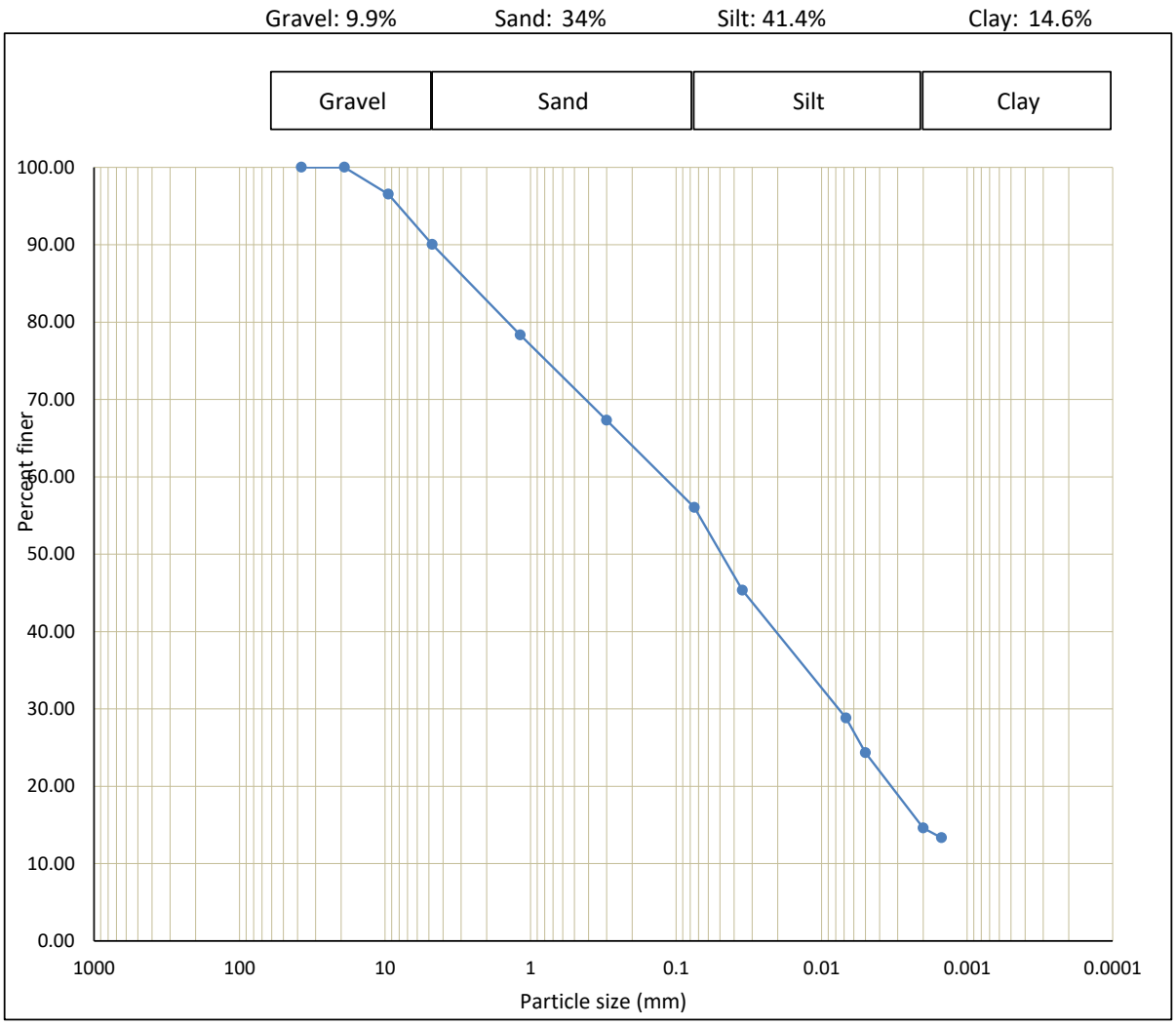


Sample ID: 24-603 BH101 SS10 (9.91-10.37m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	16.4	Gravel
1.18mm-4.75mm	9.8	Coarse Sand
300um-1.18mm	10.3	Medium Sand
75um-300um	10.7	Fine Sand
5um-75um	27.3	Silt
2um-5um	9.7	
<2um	15.8	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-604 BH101 SS11 (10.68-11.13m)

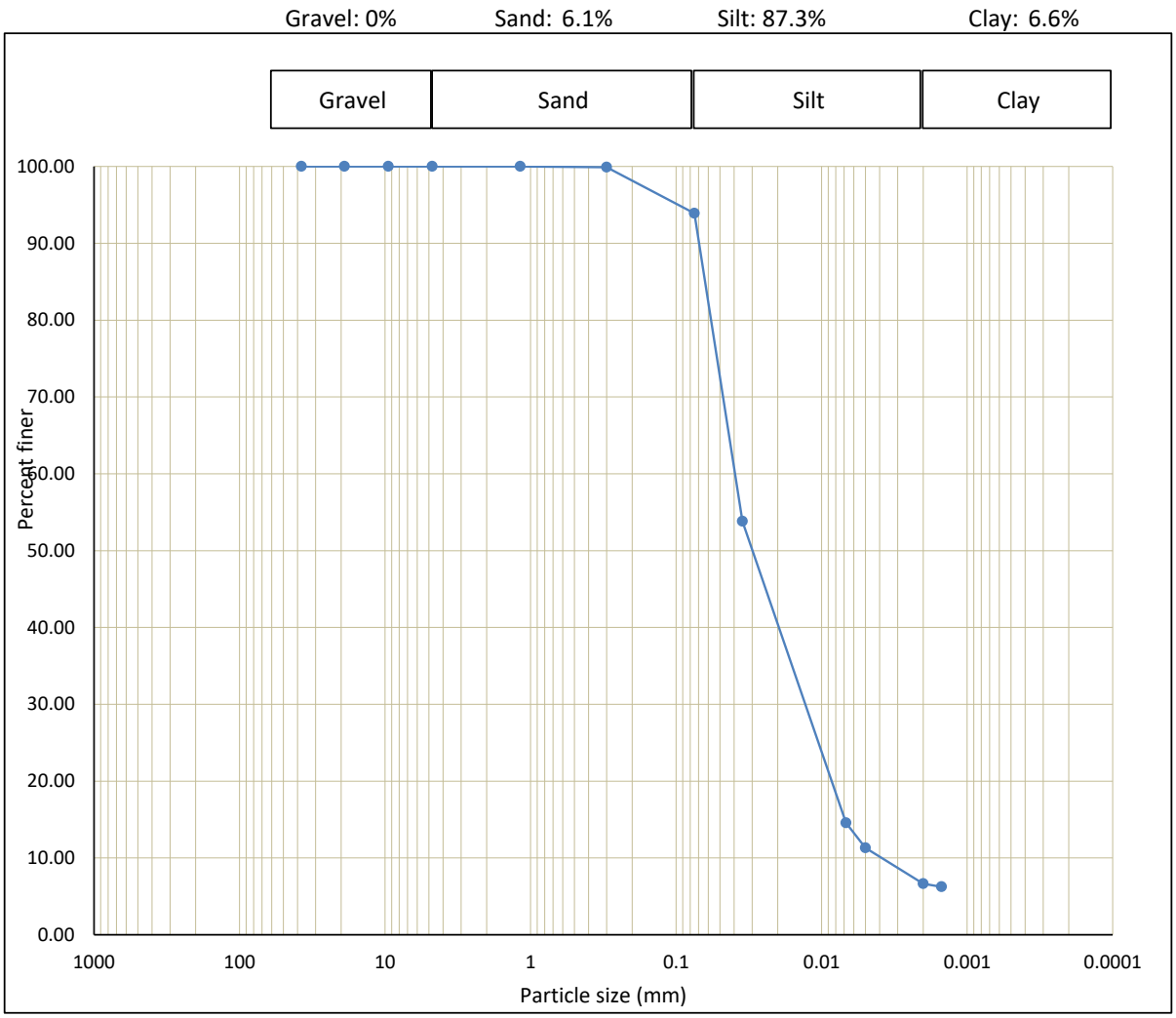


Sample ID: 24-604 BH101 SS11 (10.68-11.13m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	9.9	Gravel
1.18mm-4.75mm	11.7	Coarse Sand
300um-1.18mm	11.0	Medium Sand
75um-300um	11.3	Fine Sand
5um-75um	31.7	Silt
2um-5um	9.7	
<2um	14.6	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-605 BH103 SS6 (4.58-5.03m)

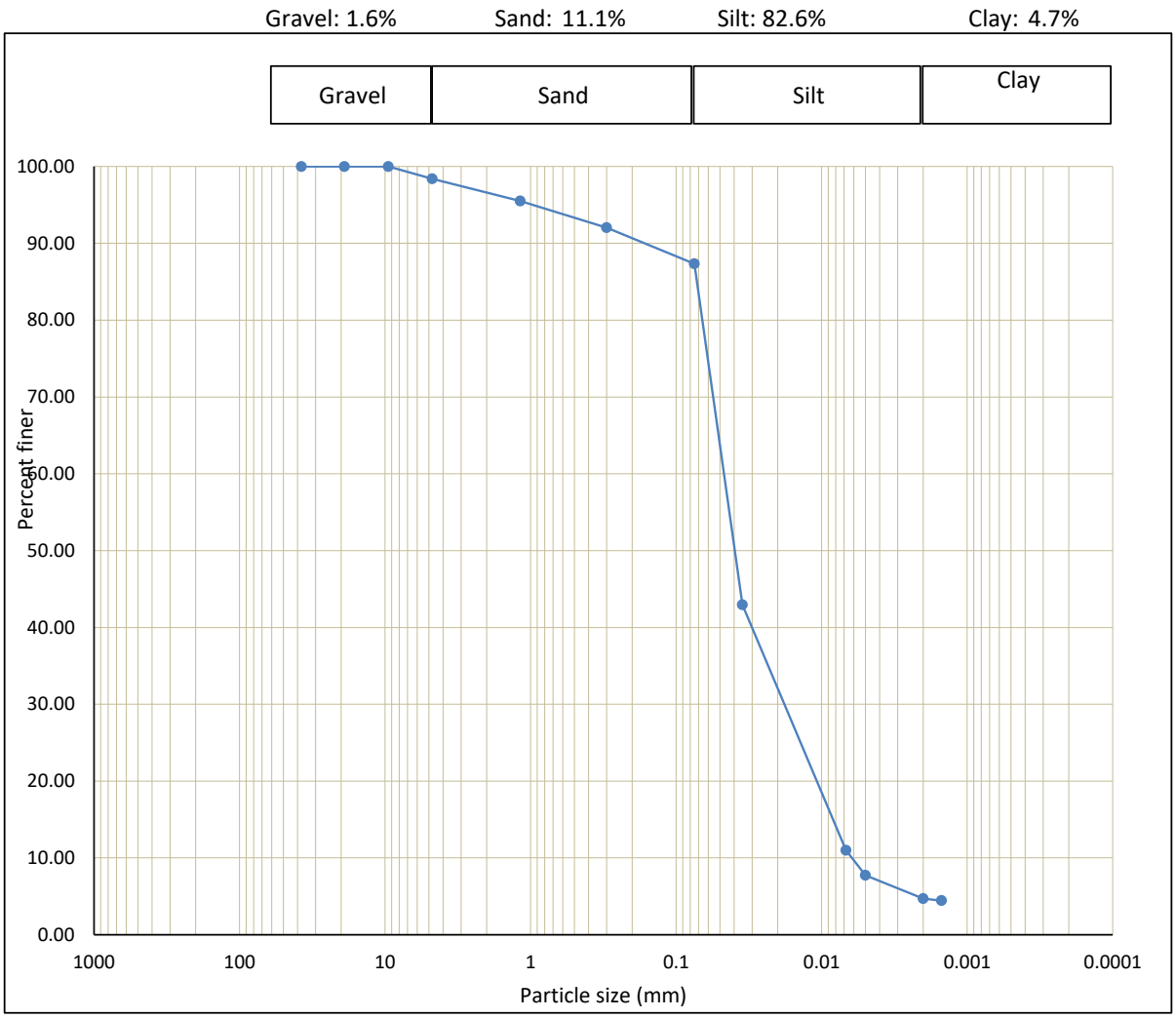


Sample ID: 24-605 BH103 SS6 (4.58-5.03m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.0	Coarse Sand
300um-1.18mm	0.1	Medium Sand
75um-300um	6.0	Fine Sand
5um-75um	82.6	Silt
2um-5um	4.7	
<2um	6.6	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-606 BH103 SS8 (7.63-8.08m)

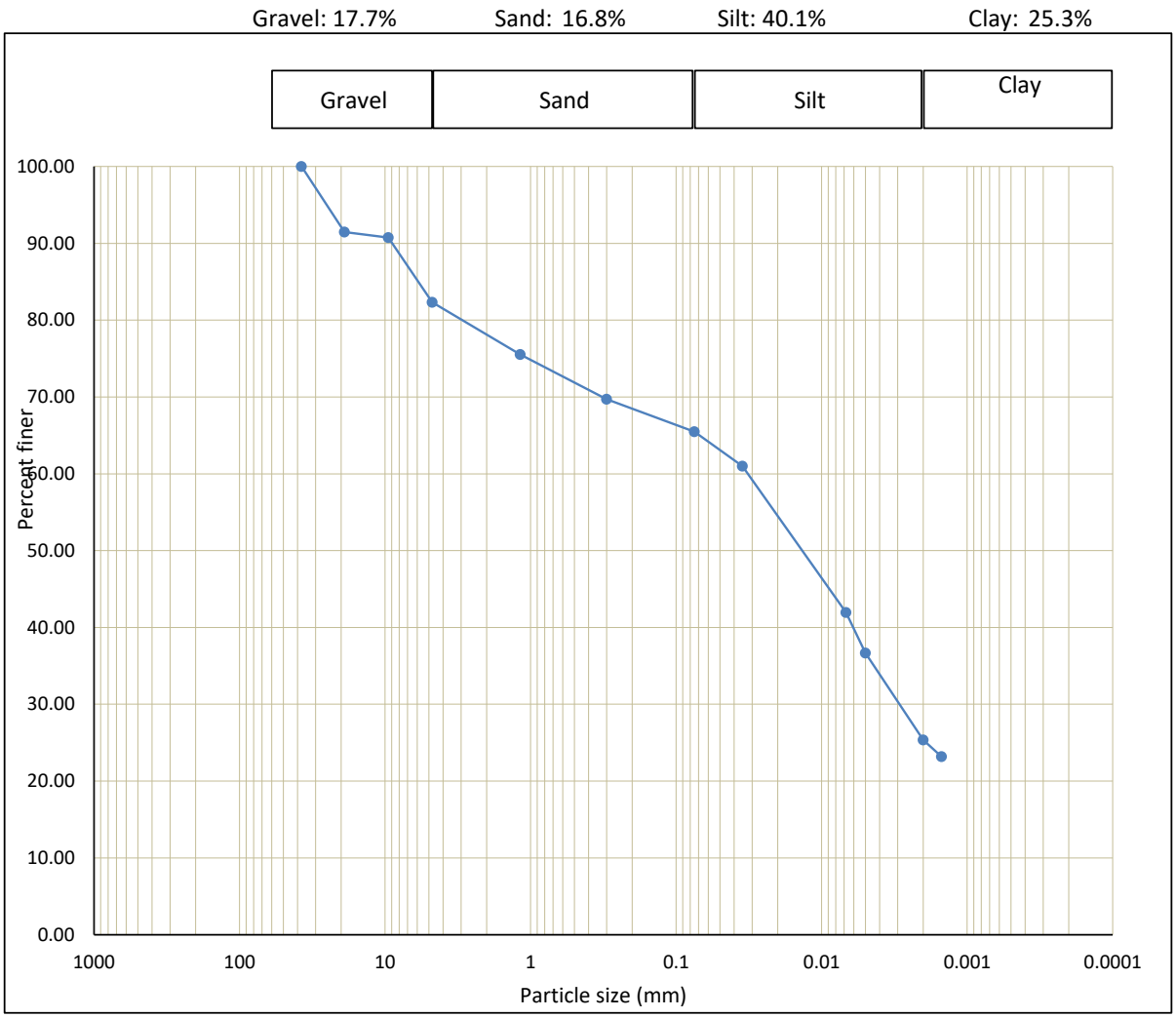


Sample ID: 24-606 BH103 SS8 (7.63-8.08m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	1.6	Gravel
1.18mm-4.75mm	2.9	Coarse Sand
300um-1.18mm	3.5	Medium Sand
75um-300um	4.7	Fine Sand
5um-75um	79.6	Silt
2um-5um	3.0	
<2um	4.7	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-607 BH103 SS9 (9.15-9.61m)

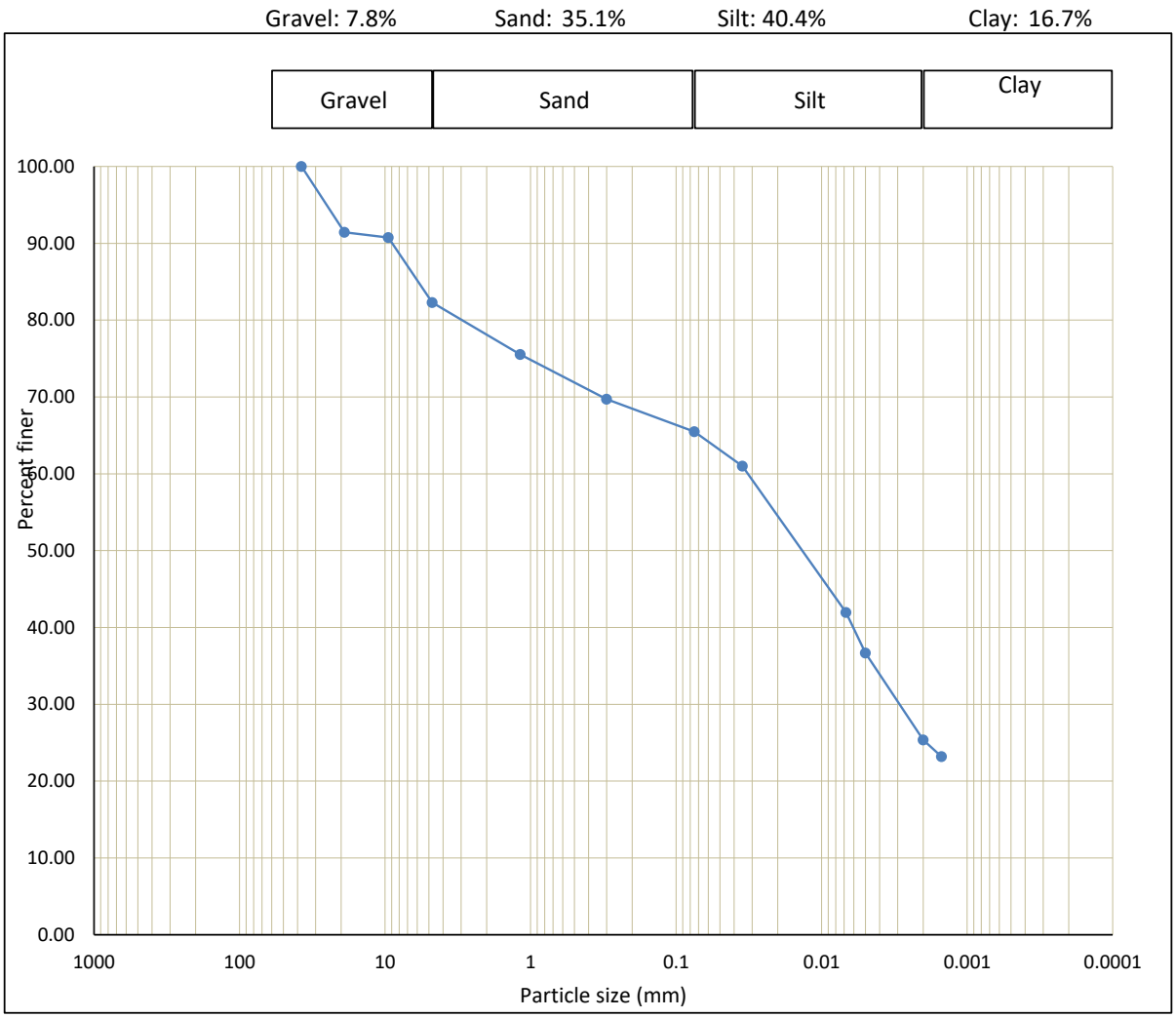


Sample ID: 24-607 BH103 SS9 (9.15-9.61m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	17.7	Gravel
1.18mm-4.75mm	6.8	Coarse Sand
300um-1.18mm	5.8	Medium Sand
75um-300um	4.2	Fine Sand
5um-75um	28.8	Silt
2um-5um	11.3	
<2um	25.3	Clay

F.E. Job #: 24-598

Grain Size Distribution

Sample ID: 24-608 BH103 SS10 (10.68-11.13m)



Sample ID: 24-608 BH103 SS10 (10.68-11.13m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	7.8	Gravel
1.18mm-4.75mm	15.7	Coarse Sand
300um-1.18mm	15.6	Medium Sand
75um-300um	3.7	Fine Sand
5um-75um	32.4	Silt
2um-5um	8.0	
<2um	16.7	Clay

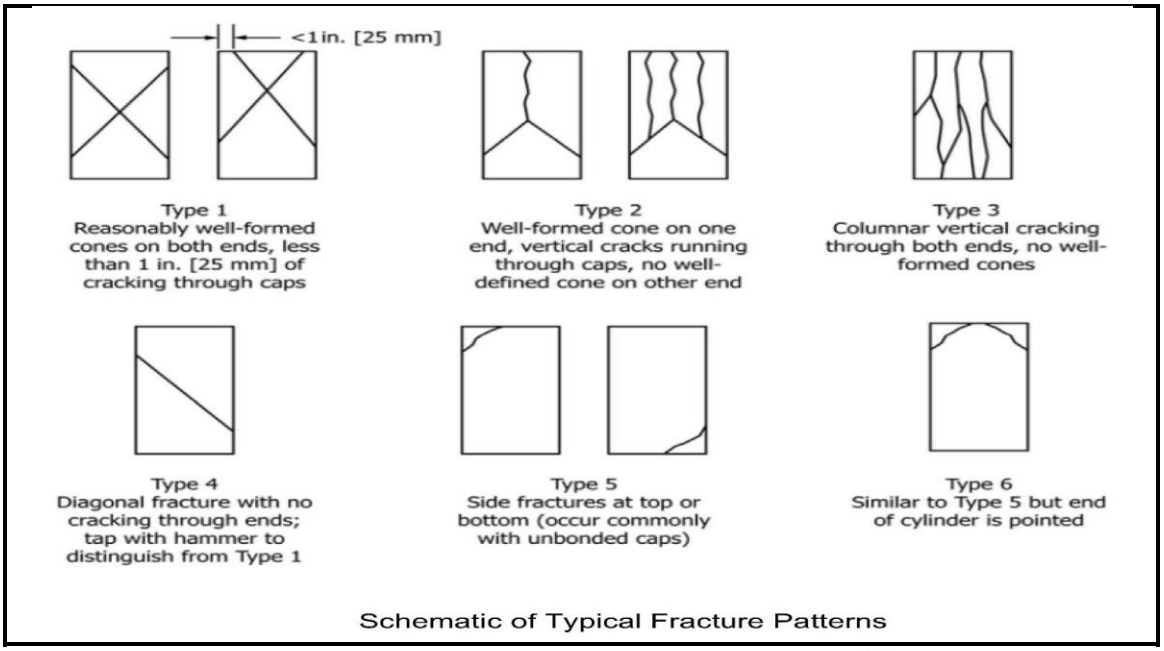
Rock Core Compressive Strength Test Report

Lab No.	Sample Location	Coring Date	Date Received in Lab	Date Reported	Density (kg/m^3)	Load (KN)	Correction Coefficent	Sample Strength (MPa)	Sample Diameter (mm)	Sample Height (mm)	Type of Fracture
24-660	BH103(52'-53')	03-Sep-24	05-Sep-24	23-Sep-24	2674	77.4	1	24.8	63	126.4	1

Project Number: **24-14065**

Project: **900 Lakeshore Road, Mississauga**

Client: **1000570027 Ontario Inc.**



Schematic of Typical Fracture Patterns

Tested and Reported By:

Behnam Sayad-Pour

Behnam Sayad-Pour
Laboratory Supervisor

15-400 Esna Park Drive, Markham, ON L3R 3K2
www.fishereng.com
Tel: (905) 475-7755
Fax: (905) 475-7718

FISHER ENGINEERING

GEOTECHNICAL-LABORATORY

T. 905 475-7755 fisher@fishereng.com
15-400 Esna Park Drive • Markham, ON • L3R 3K2
Hours: 9AM - 5PM M-F
Call for Emergency Response

LAB JOB No: 24-598

Standard Laboratory Request Form: Chain of Custody

CLIENT INFORMATION
Name:
Contact:
Address: 900 Lakshore Road Mississauga
Email:
Fax: Fax results ☐
Phone: Email results ☑

PROJECT INFORMATION
Project Name: Hydrogeological Investigation
Project ID: 24-14065
Sampled By: David

BILLING INFORMATION
Purchase Order No:
Verbal Authorization:
Credit Card Type (e.g. MC/Visa/AMEX...):
Credit Card #:
Expiry Date:

TURNAROUND TIME (TAT): Check ONE if all samples are the same/or see below.

STD - Standard (5-7 bus. days)	~~STD~~	Standard Charge	Reg. Business Hrs. 9am to 5pm. Samples received after 2pm are considered next day orders.
3D - Three-Day (72 hrs.)		+25% SURCHARGES MAY APPLY. Custom quotations (if applicable) will be reflected on final billing. CALL for: Emergencies, Bulk Quotes, or other Questions.	

LAB SAMPLE ID	CLIENT'S SAMPLE ID AND DESCRIPTION	SAMPLING DATE/TIME	SAMPLE MATRIX	CONTAINER NO. and TYPE	TAT (Above)	ANALYSIS REQUESTED (Check or Specify): Moisture Content	Sieve Analysis	Hydrometer	Atterberg Limits	Proctor	Compressive Test				NOTES
	BH 102 & BH103	Sep 3	Soil	Bag	~~STD~~	✓									
	(2.5-4')														
	(5-6.5')														
	(7.5-9')														
	(10-11.5')														
	(15-16.5')							✓							
	(20-21.5')														
	(25-26.5')							✓							
	(30-31.5')							✓							
	(35-36.5')							✓							
	Rock Core					✓					✓				

Relinquished by:
Name: (print)
Signature: Clive
Date & Time:
Method of Shipment: Sep 5, 2024

Client's Comments:

Regulatory Requirements:
OPSS Reg.

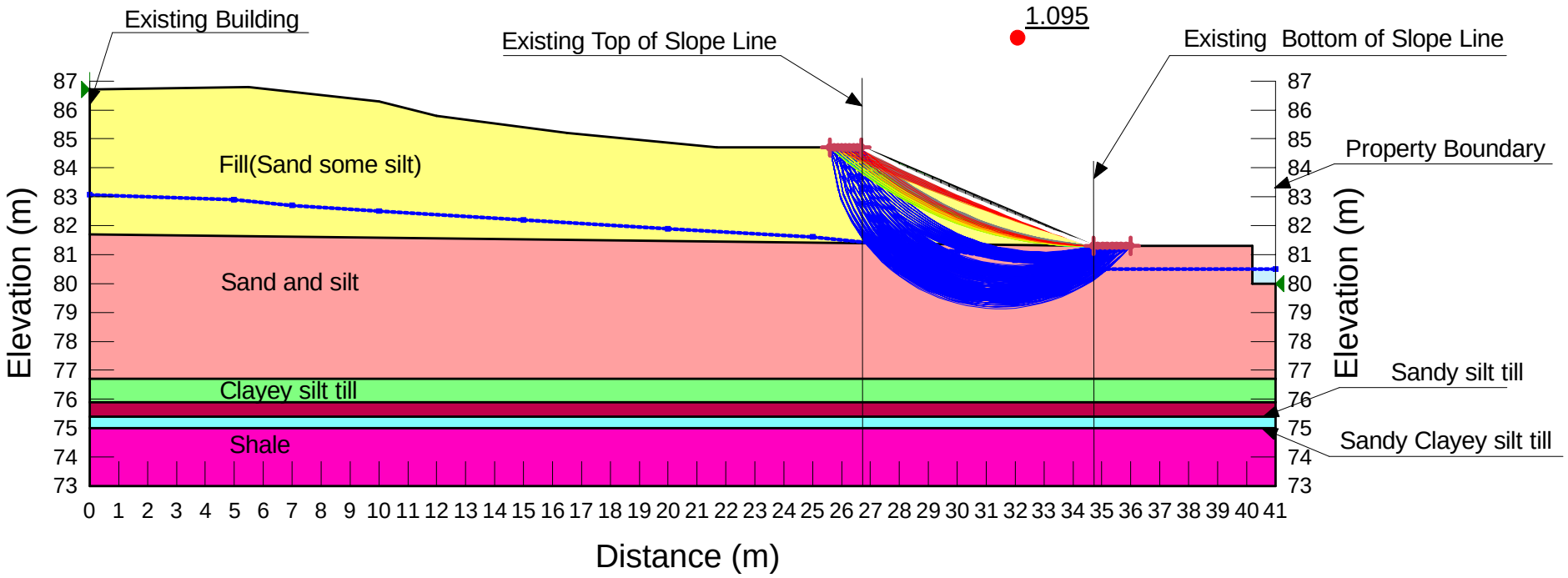
Received by (Internal):
Name:
Date & Time:

Arrival Temperature ° C:
Laboratory Remarks:

Purpose for sampling:
Road Base
Road Subbase
Subgrade
Backfill
Engineering Fill
Soil Classification
Other

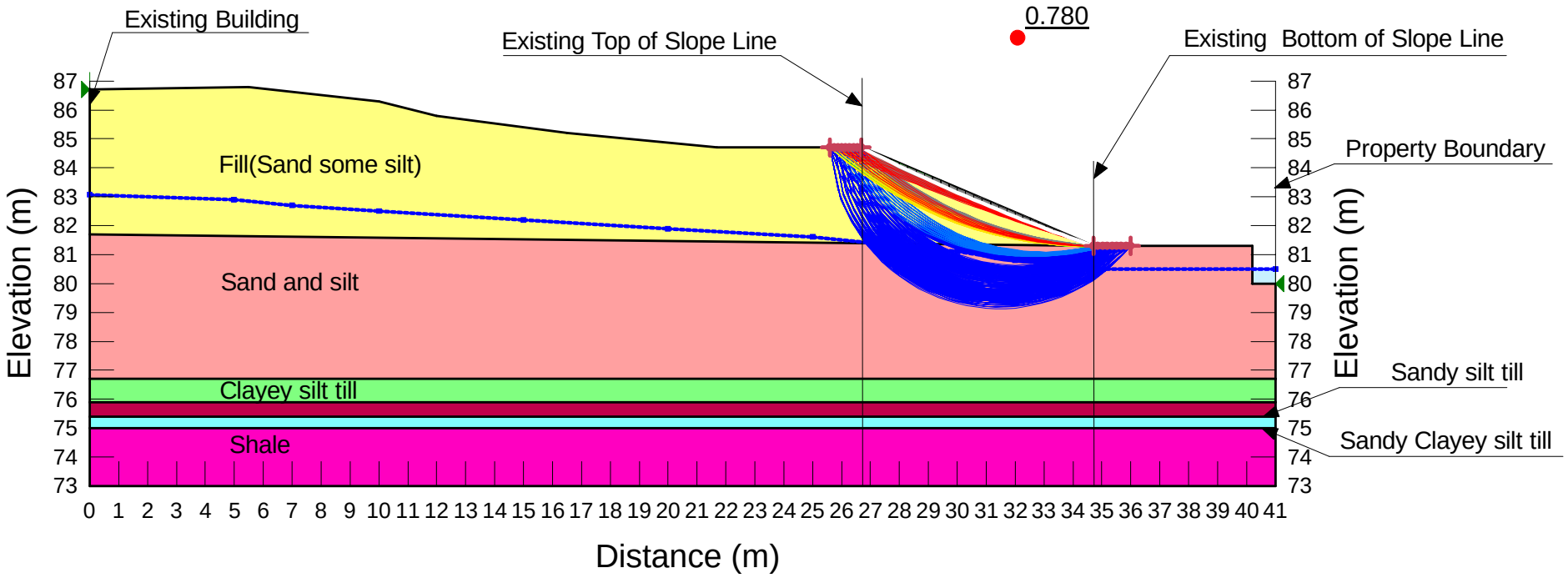
APPENDIX E: SLOPE STABILITY ANALYSES

Fig 1: Section A-A' under static condition (existing)



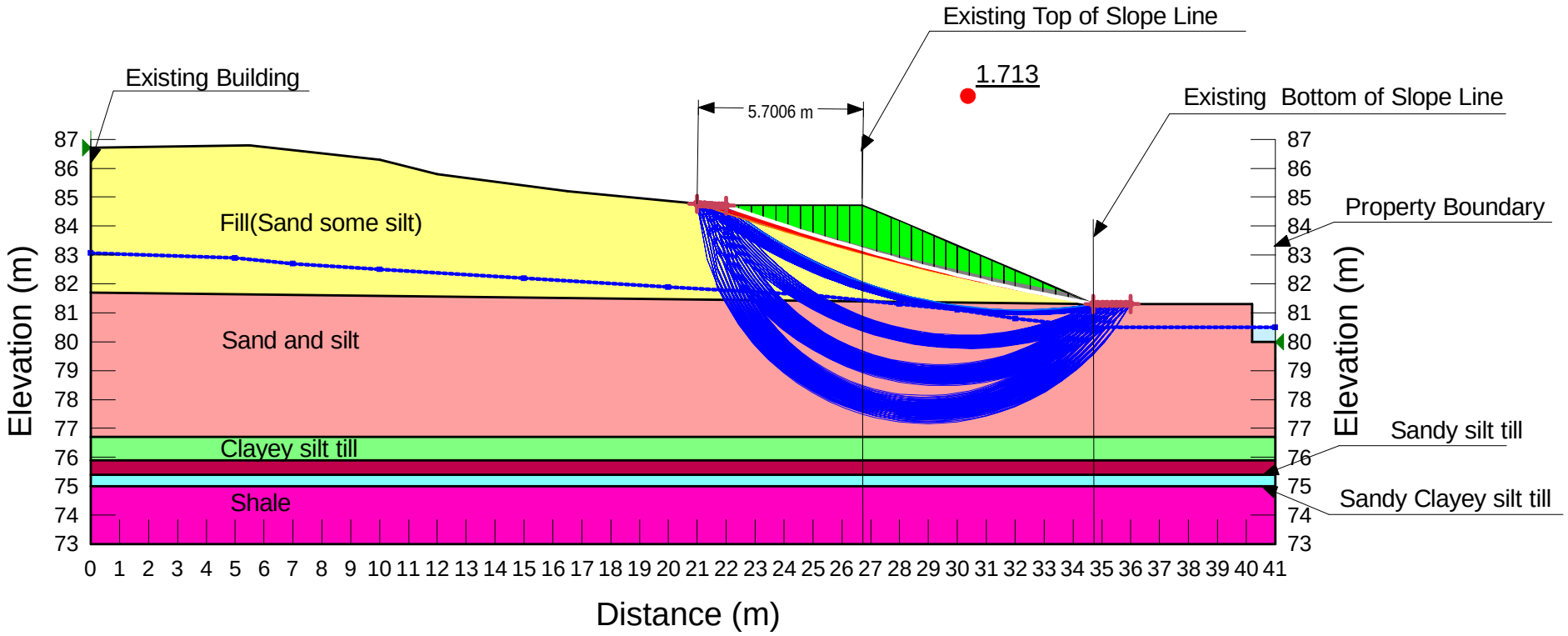
Section A-A'
Factor of Safety:1.095
Radius of Circle:65.808 m

Fig 2: Section A-A' under seismic condition (existing)



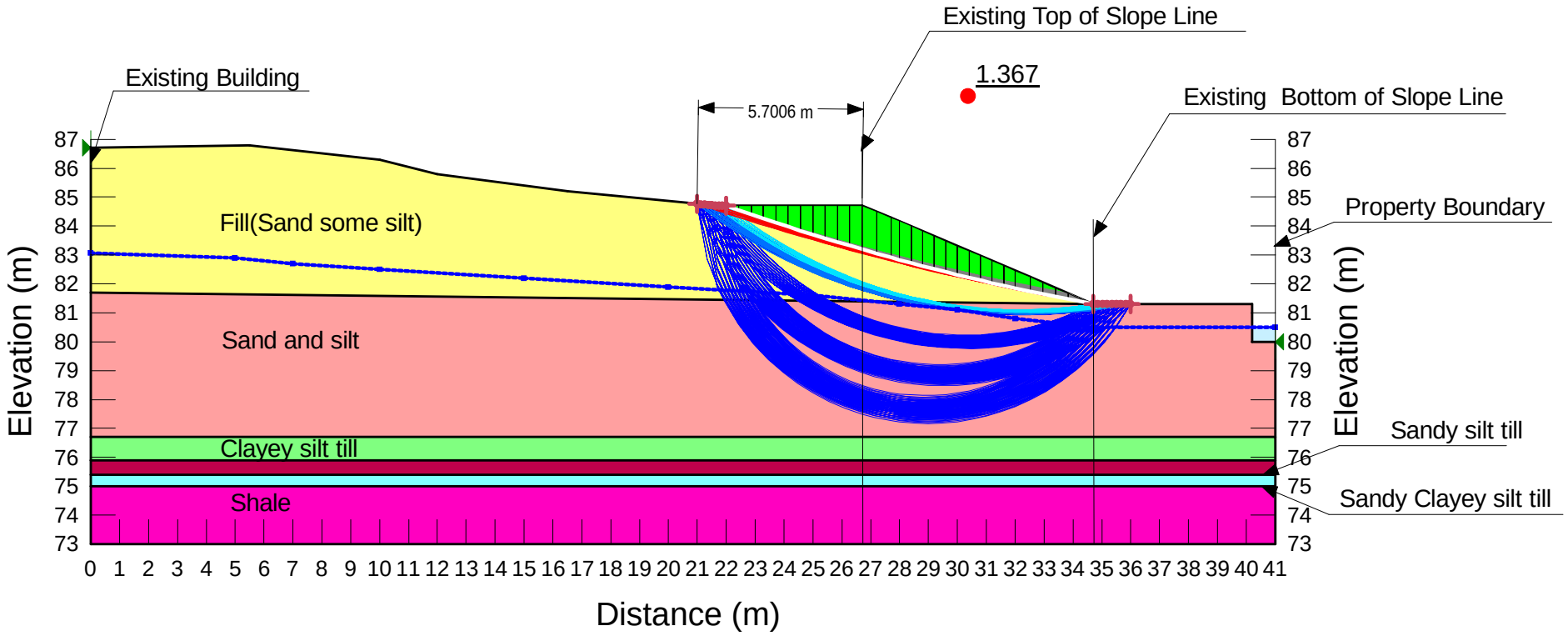
Section A-A'
Factor of Safety:0.780
Radius of Circle:65.808 m

Fig 3: Section A-A' under static condition (FOS 1.713)



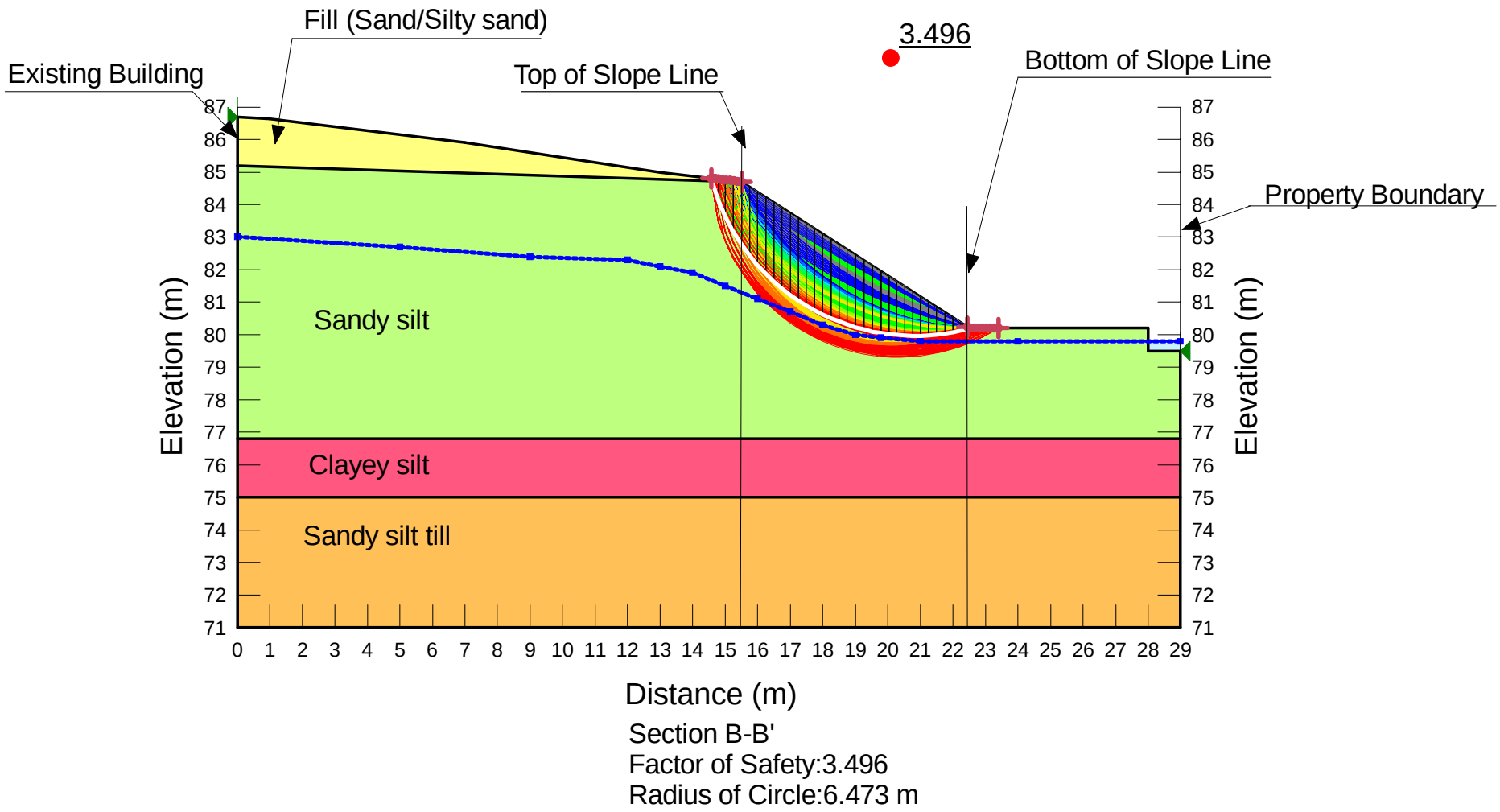
Section A-A'
Factor of Safety:1.713
Radius of Circle:85.776m

Fig 4: Section A-A' under sesimic condition (FOS 1.367)



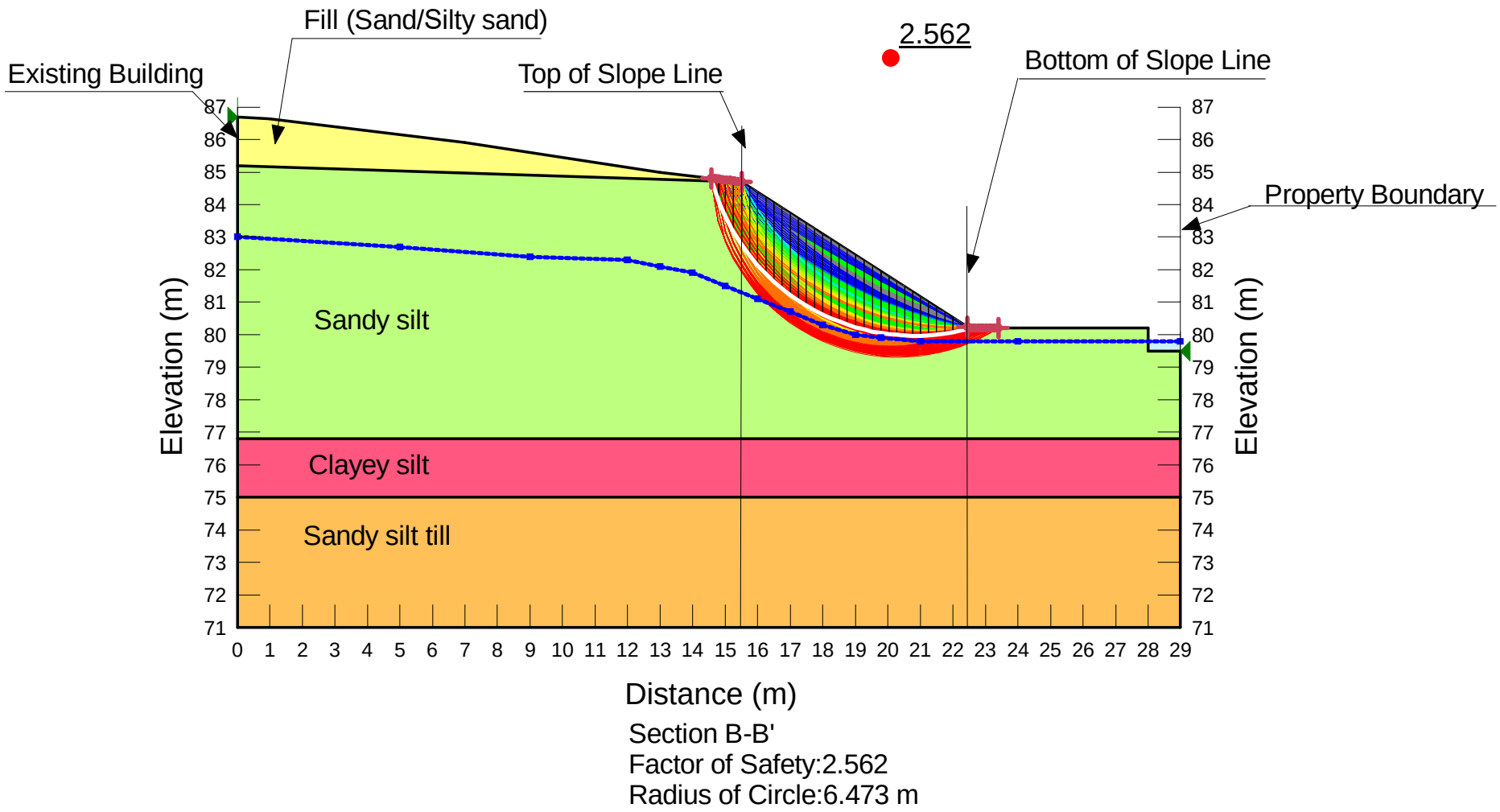
Section A-A'
Factor of Safety:1.367
Radius of Circle:85.776m

Fig 5: Section B-B' under static condtion (existing)



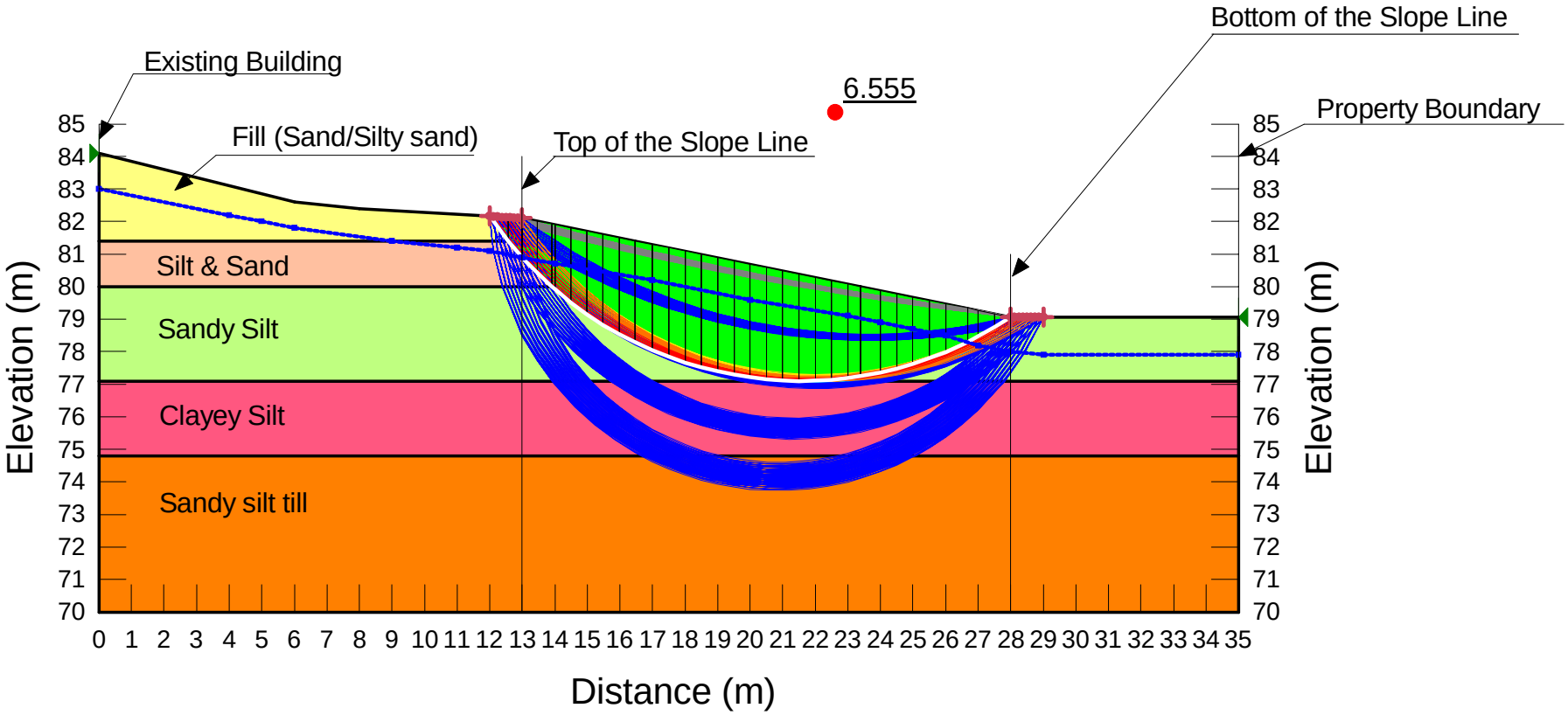
Section B-B'
Factor of Safety:3.496
Radius of Circle:6.473 m

Fig 6: Section B-B' under seismic condtion (existing)



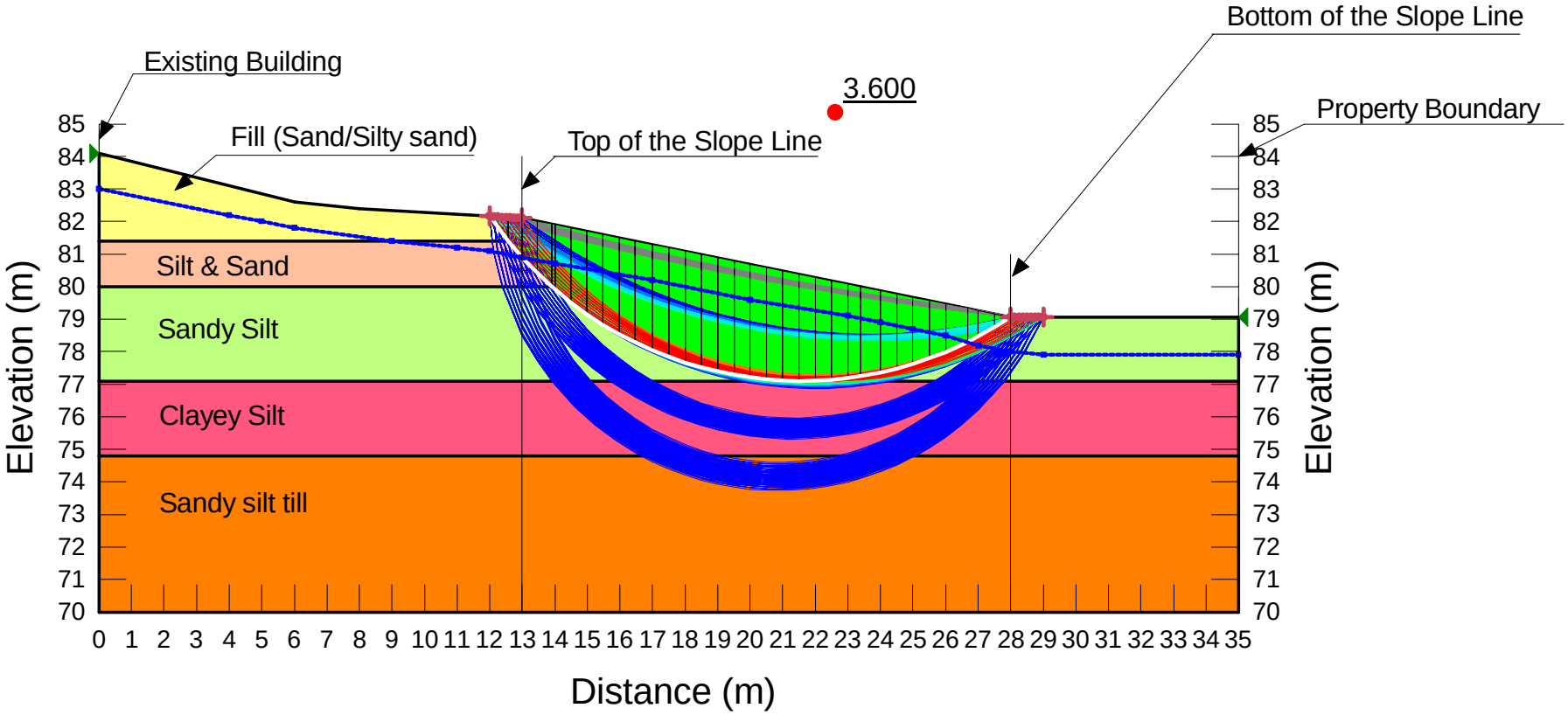
Section B-B'
Factor of Safety:2.562
Radius of Circle:6.473 m

Fig 7: Section C-C' under static condtion (existing)



Section C-C'
Factor of Safety:6.555
Radius of Circle:11.553 m

Fig 8: Section C-C' under seismic condtion (existing)



Section C-C'
Factor of Safety:3.600
Radius of Circle:11.553 m

Fig 10: Section E-E' Slope cross section

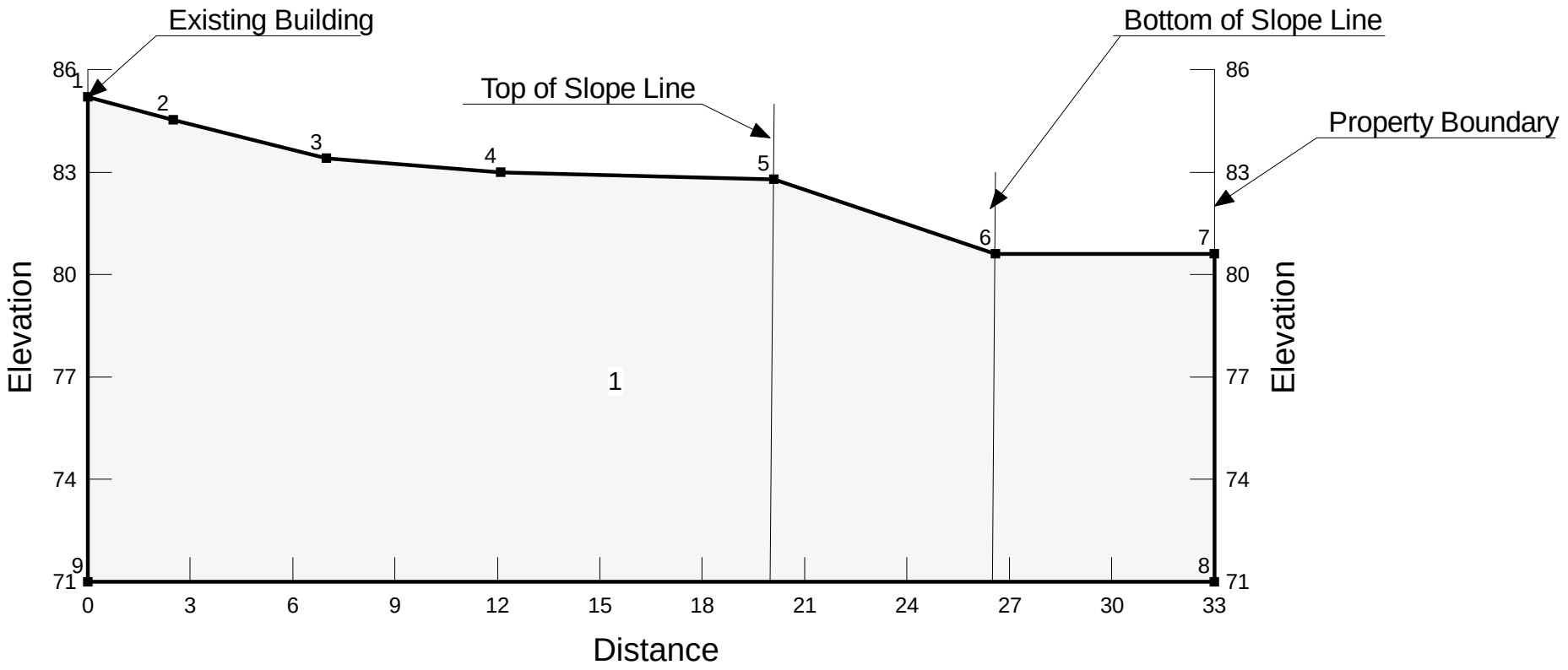
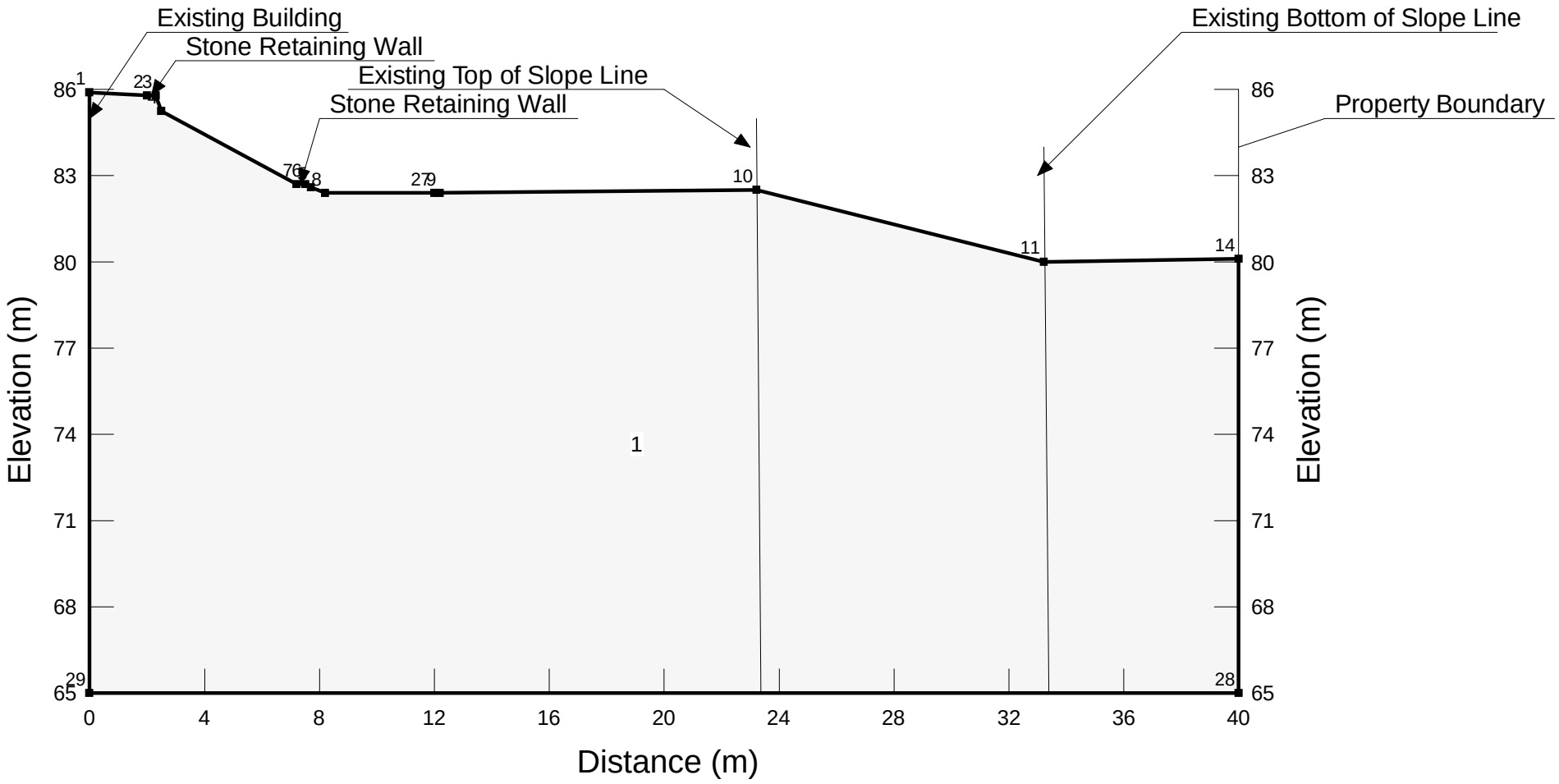


Fig 9: Section D-D' Slope cross section



2015 National Building Code Seismic Hazard Calculation

INFORMATION: Eastern Canada English (613) 995-5548 français (613) 995-0600 Facsimile (613) 992-8836
Western Canada English (250) 363-6500 Facsimile (250) 363-6565

Site: 43.550N 79.651W **User File Reference:** 1427 Dundas Crescent, Mississauga 2021-10-07 19:12 UT

Requested by: Clive Wiggan, Fisher Engineering Ltd

Probability of exceedance per annum	0.000404	0.001	0.0021	0.01
Probability of exceedance in 50 years	2 %	5 %	10 %	40 %
Sa (0.05)	0.228	0.111	0.057	0.011
Sa (0.1)	0.274	0.142	0.077	0.018
Sa (0.2)	0.228	0.121	0.069	0.019
Sa (0.3)	0.171	0.093	0.056	0.017
Sa (0.5)	0.118	0.067	0.042	0.014
Sa (1.0)	0.059	0.036	0.023	0.007
Sa (2.0)	0.028	0.017	0.011	0.003
Sa (5.0)	0.007	0.004	0.002	0.001
Sa (10.0)	0.003	0.002	0.001	0.000
PGA (g)	0.147	0.076	0.042	0.010
PGV (m/s)	0.093	0.052	0.031	0.008

Notes: Spectral (Sa(T), where T is the period in seconds) and peak ground acceleration (PGA) values are given in units of g (9.81 m/s^2). Peak ground velocity is given in m/s. Values are for "firm ground" (NBCC2015 Site Class C, average shear wave velocity 450 m/s). NBCC2015 and CSAS6-14 values are highlighted in yellow. Three additional periods are provided - their use is discussed in the NBCC2015 Commentary. Only 2 significant figures are to be used. **These values have been interpolated from a 10-km-spaced grid of points. Depending on the gradient of the nearby points, values at this location calculated directly from the hazard program may vary. More than 95 percent of interpolated values are within 2 percent of the directly calculated values.**

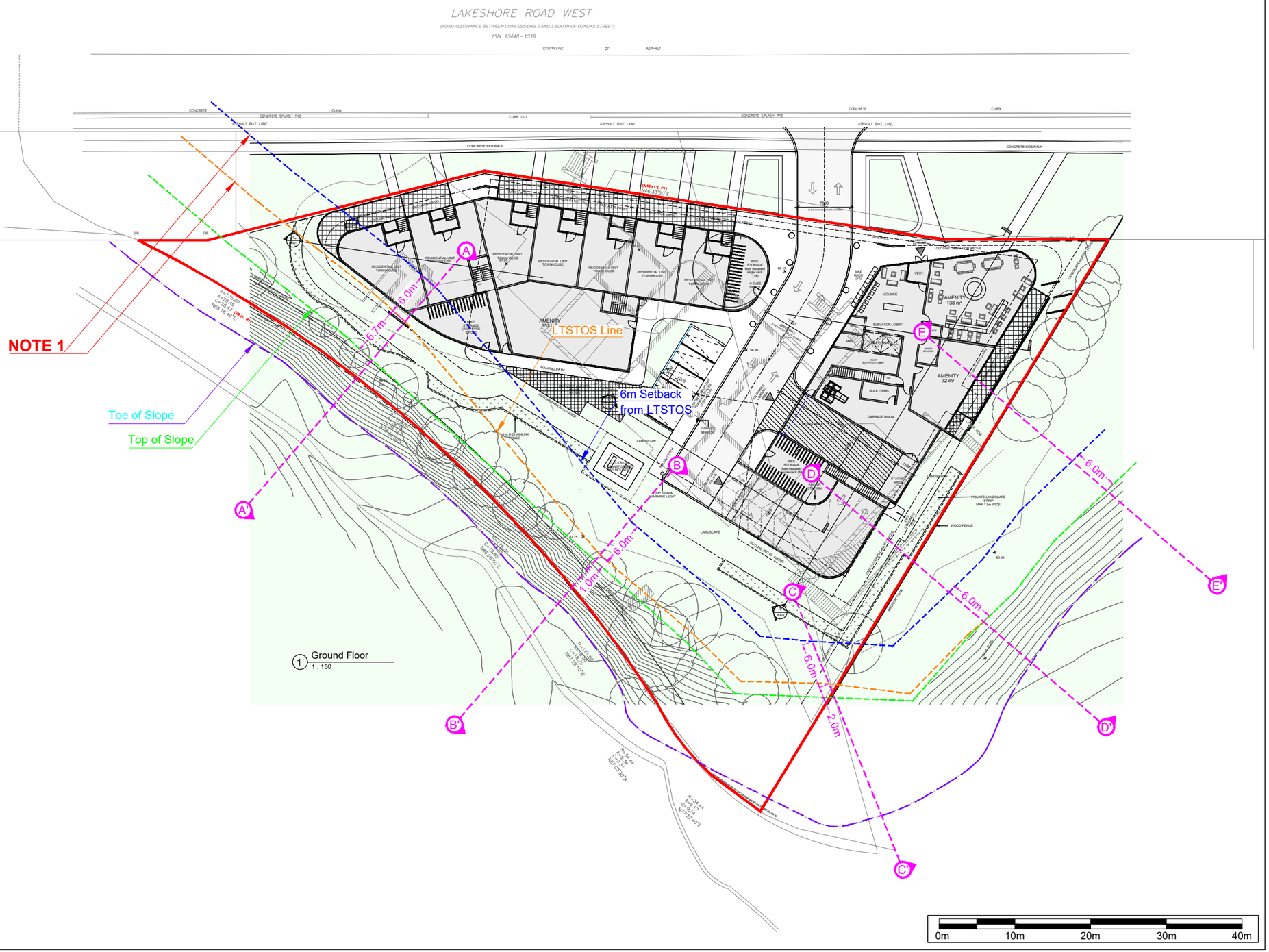
References

National Building Code of Canada 2015 NRCC no. 56190; Appendix C: Table C-3, Seismic Design Data for Selected Locations in Canada

Structural Commentaries (User's Guide - NBC 2015: Part 4 of Division B)
Commentary J: Design for Seismic Effects

Geological Survey of Canada Open File 7893 Fifth Generation Seismic Hazard Model for Canada: Grid values of mean hazard to be used with the 2015 National Building Code of Canada

See the websites www.EarthquakesCanada.ca and www.nationalcodes.ca for more information



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2

Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- A-A CROSS SECTION FOR SLOPE STABILITY
- TOP OF SLOPE
- LTSTOS LINE
- 6m SETBACK FROM LTSTOS
- TOE OF SLOPE

NOTE1: 6m setback and LTSTOS before slope stabilization measures

PROJECT NAME AND ADDRESS

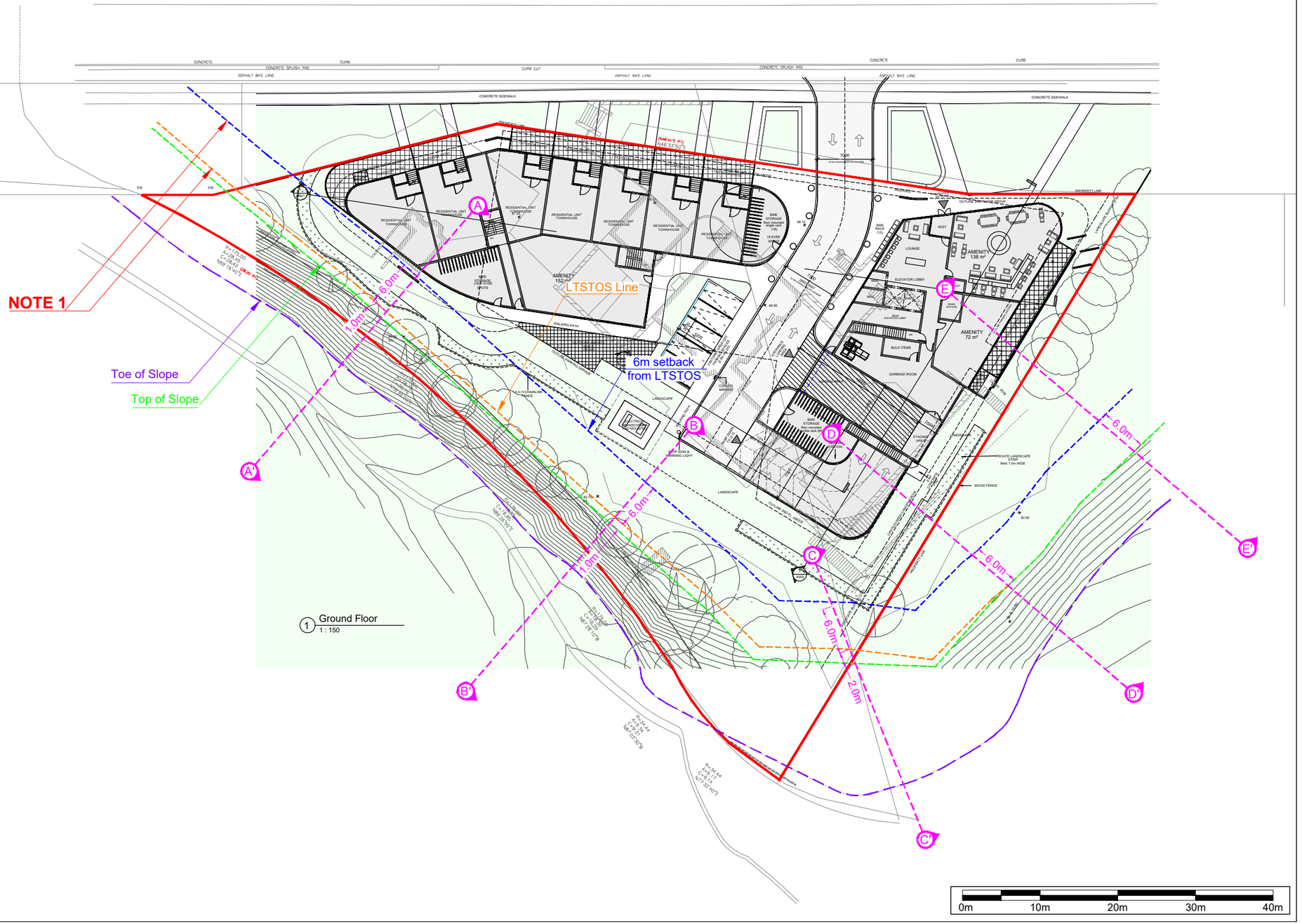
SLOPE STABILITY ASSESSMENT

900 Lakeshore Road West,
Mississauga, Ontario

FIGURE E3:

SITE PLAN WITH CROSS SECTIONS AND BOREHOLES / MONITORING WELL LOCATIONS

PROJECT NO.	SHEET NO.
FE 25-15006	E3
DATE: 30 January 2026	
SCALE: AS SHOWN	



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- A-A CROSS SECTION FOR SLOPE STABILITY
- TOP OF SLOPE
- LTSTOS LINE
- 6m SETBACK FROM LTSTOS
- TOE OF SLOPE

NOTES: 6m setback and LTSTOS after slope stabilization measures

Building encroachments into the 6m offset, at the second level or above, will not impact slope stability.

PROJECT NAME AND ADDRESS

SLOPE STABILITY ASSESSMENT

900 Lakeshore Road West,
Mississauga, Ontario

FIGURE E3A:

SITE PLAN WITH CROSS SECTIONS AND BOREHOLES / MONITORING WELL LOCATIONS

PROJECT NO.	SHEET NO.
FE 25-15006	E3A
DATE: 30 January 2026	
SCALE: AS SHOWN	

APPENDIX F: PEER REVIEW

Geotechnical Engineering Review for Slope Stability and Risks for Redevelopment of Property
At 900 Lakeshore Road West, Mississauga, Ontario

Prepared For:
The Corporation of the City of Mississauga

Stephen Davis
The Corporation of the City of Mississauga
3185 Mavis Road
Mississauga, Ontario
L5C 1T7

Project Number:
ET26-1013B-R3

Prepared By:

Engtec Consulting Inc.
2447 Anson Drive
Mississauga, Ontario
L5S 1G1
T: 1.905.856.2988
F: 1.905.856-2989
www.engtec.ca

Date Submitted:
February 27, 2026

Table of Contents

Description **Pages**

Appendices:

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If tests have been carried out, the results of these tests are valid only for the sample described in this report.

Engtec's subcontractors, who have carried out on-site, or laboratory work are duly assessed according to the purchase procedures of our quality system. For further information, please contact our project manager.

EXECUTIVE SUMMARY

Engtec Consulting Inc. ('Engtec') was retained by The City of Mississauga (The City'), to provide geotechnical engineering services related to slope stability and erosion risks for a proposed redevelopment of property located at 900 Lakeshore West, Mississauga, Ontario. Regulatory agencies criteria /Protocol for natural hazards require that development shall be setback from the existing Top of Slope (ETOS) to the imaginary Long-Term Stable Top of Slope (LTSTOS) line, so that the development is risk-free in the long term (100 years).

This submission encompasses a peer review of the Slope Stability Assessment report dated September 25, 2025 (revised November 13, 2025), prepared by Fisher Engineering Limited (Fiser Engineering'). A total of eight (8) boreholes were advanced to depths ranging from 10.7m to 17.5m below existing grade to determine the existing subsoil condition at the site.

Fisher Engineering carried out slope stability analysis using the existing slope configurations. A Site Map illustrating the ETOS line, LTSTOS line and Development limit was included in the report. This submission also included the Engtec's Site Map illustrating the ETOS line, LTSTOS line and Development based site visits.

Based upon our Peer Review of the submitted Fisher Engineering Report, it is Engtec's conclusion that the proposed multi-storey building with underground parking will not have an adverse impact on the slope stability for the site.

1 Introduction

Engtec Consulting Inc. ('Engtec') was retained by The City of Mississauga (The City'), to provide geotechnical engineering services related to slope stability and erosion risks for proposed redevelopment of property located at 900 Lakeshore West, Mississauga, Ontario. The property is approximately triangular shaped with a valley slope on southwest side. (Figure 1 below).

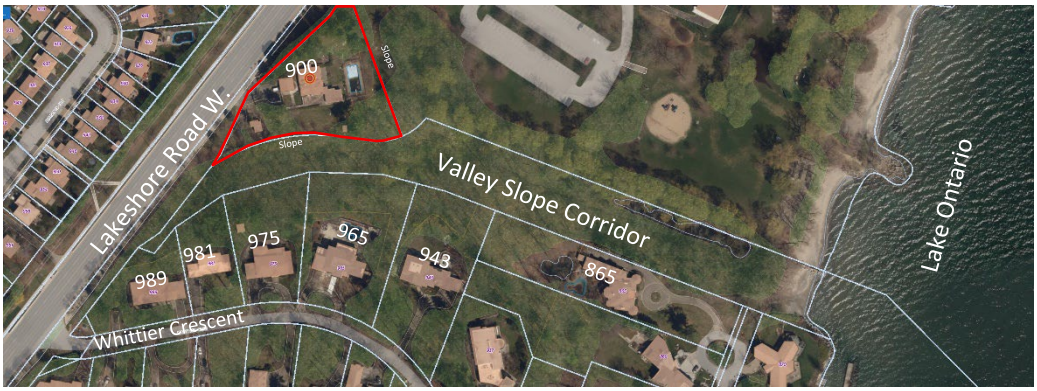

Figure 1: Site Plan

Presently, a one and half storey dwelling with a detached garage and ancillary structures (Figure 2). Based on Site E3 provided to Engtec, proposed redevelopment would comprise of a multi-storey apartment with underground parking (see, Figure 3).

Engtec was provided with a Slope Stability Assessment report dated September 25, 2025 (revised November 13, 2025), prepared by Fisher Engineering Limited (Fisher Engineering). Please note that Fisher Engineering report encompassed study of the slope on northeast side also. This northeast slope is relatively shallow (height less than 2m) and lies outside (approximately 20m to 25m off (outside) the property boundary on east). Therefore, it is not discussed in this submission.

The terms of reference for review included a peer review of the submitted FEL report and comment on determination of setbacks to define development limit in Ontario Act 41/24 Protocol for Natural Hazards. In addition, this review included following works.

i. Conduct a site inspection of the existing conditions of the slope;

ii. Determine the stable slope and erosion setbacks complying with MNR River and Stream Systems Erosion Hazard Limit Technical Guide (2002);

iii. Comment on hazard risks of the adjacent natural slope; and

iv. Comment on the impact of the proposed redevelopment on stability of the adjacent slope. and

Authorization to proceed with the review was provided by Mr. Stephen Davis of City of Mississauga via email dated December 2, 2025.

2 Documents Reviewed

The following documents reviewed.

1. Topographic Map (file no. 8139 dated November 8, 2023) prepared by Tarasick McMillan Kubicki Limited;
2. Slope Stability Assessment report, dated September 25, 2025 (revised November 13, 2025), prepared by Fisher Engineering Limited (FEL). The report was prepared for 1000570027 Ontario Inc., under Project No. FG25-15006_V1.
3. Technical Guide for River and Stream Systems: Erosion Hazard Limit Technical Guide, Ontario Ministry of Natural Resources (2002);
4. Geotechnical Principles for Stable Slopes prepared for Ontario Ministry of Natural Resources by Terraprobe Ltd.;
5. The 2005 Provincial Policy Statement, Ontario Ministry of Municipal Affairs and Housing;
6. Hazardous Sites Technical Guide, Ontario Ministry of Natural Resources;
7. Credit River Conservation, Watershed Planning and Regulation Policies, November 2025; and
8. Toronto Region and Conservation Authority for the Living City Policies, Planning and Development: 2014, Toronto, Canada.

3 Theoretical Considerations

3.1 Glossary of Terms

Valley slope. Incline leading down to base of valley (wide low- lying areas) usually formed by geological process (river / glacier). Characterized by gentle slopes or moderate gradient (Figure 4):

Ravine slope: Steep type of the valley slope. Characterized as narrow, steep sided, and deep depressions. Formed by primarily by intense and/or concentrated erosion often by flowing streams or erosive flash flows of manmade drainage water (Figure 5).

Hazard Slope: Man-made changes for development adjacent natural drainage corridors (creek /river) with over steepened slope condition often create hazardous conditions that pose a threat to human lives and loss of property from instability. In cognizant of this, regulatory agencies, e.g., OMNR, TRCA, CVC set limit for high natural slope with inclination of steeper than 3 horizontals to 1 vertical as hazard as stable safe slope. Over this limit, slope is called hazard slope and requires global stability analysis.

Existing Top of Slope (ETOS): The ETOS of a valley slope is that point where there is a break in slope.

Long Term Stable Top of Slope (LTSTOS): The LTSTOS is the imaginary landward projection, over a 100-year span of the ETOS.

3.2 Regulatory Framework

Where the slope adjacent to proposed development is over steepened, or subject to toe erosion, Protocol for natural hazards (Ontario Act 41/24) requires that development shall be setback from the existing Top of Slope (TOS) to the imaginary Long-Term Stable Top of Slope (LTSTOS), so that the development is risk-free in the long term (100 years). The MNR guideline for delineation of LTSTOS position requires

determination of three setback allowances, namely, stable slope allowance, toe erosion allowance and erosion access allowance (see, illustration in Figures 6 and 7). Figure 8 provides graphical methodology used to determine the geotechnical setbacks for delineation of 100-year LTSTOS line.

3.2.1 Stable Slope Allowance

A slope crest based on a uniform slope inclination of 3 horizontal to 1 vertical (if no borehole investigation and detailed analysis of slope stability), or, a slope crest with a slope configuration with a minimum Factor of Safety (F.S.) for global slope stability of 1.5 for typical conditions.

3.2.2 Toe Erosion Allowance

Table 2 of Natural Hazards Training Manual (Policy 3.1) prepared by OMNR provides ranges of toe erosion allowance for various soils and bedrocks materials. In situations where the slope toe may be located within 15 m of a water body (pond, river, creek, stream), consideration must be given to potential erosion of the slope toe by water action (waves, flow, etc.) and provision must be made for potential future erosion over a period of 100 years.

3.2.3 Erosion Access Allowance

A minimum of 6 m setback is to be provided from the stable slope allowance and the toe erosion allowance; to ensure there is a big enough safety zone along the top of a slope for people and vehicles to enter and exit an area during an emergency, such as a slope failure or flooding; also providing for construction access for maintenance or repair of slope conditions.

4 Fisher Engineering Report – Peer Review

4.1 Subsoil Condition

A total of eight (8) boreholes (BH1 through BH5 and BH101 through BH103, inclusive) were advanced by Fisher Engineering Limited (Fisher Engineering) to depths of 10.7m to 17.5m below existing grade to assess the existing subsoil condition at the site. Borehole locations were shown in FEL Drawing No. A2 (Figure 9 in Appendix A), which appears to be an outdated site plan. It may be mentioned that Drawing No. A2 is an old, outdated plan.

The borehole findings reveal that subsoils comprise of surficial fill soils (~1.5m deep) and underlain by native ground comprising predominantly of silt sized particles. In one borehole (BH102), relatively deep fill soils (~3.6m deep) were encountered at the surface. The compactness of native silt deposit ranged from compact to very dense as indicated by SPT N-values of 17 Blows to greater than 50 blows per 300mm. The silt was typically in moist condition, with moisture contents ranging from 10% to 18%. All boreholes were terminated in the weathered Shale at about 12m below the existing grade.

Existing ground surface at the tableland/upper patio area is 86.0m±. The ground surface elevation drops to 82.6m along the existing top of slope on Southwest side/lower patio area on northeast side).

On completion, groundwater level (GWL) was measured in two boreholes (BH3 and BH5) at elevations of 75.9m and 72.2m respectively. The remaining boreholes were dry. No caving was noted. The measured

Static GWL (in monitoring wells) was measured in all boreholes at elevation of 82.9m (BH1), 81.1m (BH2), 82.0m (BH3), 80.6m (BH4), 78.8m (BH5), 85.0 (BH101), 82.5m (BH102) and 80.2m (BH103).

4.2 Existing Slope Condition

Visual inspection of the slope was carried out by a senior engineer from FEL on September 22, 2025. The slope areas were vegetated with mature trees and dense shrubs/undergrowth. No visual signs of slope instability (surface erosion) and no evidence of groundwater seepage or drainage paths were noted on the slope surface.

4.3 Slope Stability Analysis

Fisher Engineering carried out slope stability analysis for five slope sections (Section A-A', B-B', C-C', D-D' and E-E'). The results of slope stability analysis are summarized in Table 6 in Section 9.3 of the Fisher Engineering Report (see, below). Engtec noted that the report did not include strength parameters (cohesion and angle of friction) used in the analysis.

Table 6: Results of Slope Stability Analysis

Section of Slope	Minimum FOS				Stability Component* (m)	Toe Erosion Allowance (m)	Access Allowance (m)	Total Setback
	Static	Figure	Seismic	Figure				
Section A-A'	1.713	3	1.367	4	5.70***	1	6.0	12.70
Section B-B'	3.496	5	2.562	6	0	1	6.0	7.0
Section C-C'	6.555	7	3.600	8	0	2.0	6.0	8.0
Section D-D'	**Figure 9				0	0	6.0	6.0
Section E-E'	**Figure 10				0	0	6.0	6.0

* Stable top of slope is where the FOS is 1.5 or higher for static conditions and 1.3 or higher for seismic (short-term) conditions.

** Assuming 3H:1V as long-term stable slope.

*** Deep fill conditions observed during drilling.

Based on the fact that deep fill materials were observed in the area of BH102, covering Section A-A', it is recommended that the option of using engineering solution to stabilize the slope in this area be pursued and that the stable top of slope setback be reduced accordingly. It would be expected that soil nailing combined with a geogrid would be feasible to achieve global stability of the slope and surficial stability for erosion control.

……

……

4.4 Fisher Engineering LTSTOS Line

The LTSTOS line was determined by summing all three allowances (stable slope, toe erosion allowance and erosion access allowance) and presented in Table 6 (see, above).

The ETOS line, LTSTOS line and Development Limit is illustrated on Site Plan E3 (see, Figure 3).

5 Engtec's Slope Stability Assessment

5.1 Site Visit

Engtec's Senior Geotechnical Engineer carried out two site visits on December 5, 2025, and December 15, 2025, to visually inspect the current conditions (general topography, vegetation, surficial soils and identify potential signs of instability of the slope).

At the time of visits, existing surface was covered with 50mm to 75mm snow. The valley slope areas are lined with extensive, dense and tall trees as well as plant growth. A narrow and shallow stream channel carrying storm water from the culvert underneath Lakeshore Road was seen, about 8m south of the toe of slope. No signs of toe of slope as well as stream /channel bed erosion were noted.

Photographic illustrations are provided in Appendix B.

5.2 Stable Slope

Engtec has drawn two slope x-sections across at or near the FEL Sections A-A' and B-B' (see, Figures 10 and 11). The slope height ranges from 3.1m (Section A-A') to 4.5m. The slope inclination ranges from 21.0 degrees (2.5H:1V) to 33.5 degrees (1.6H:1V).

Based on the BH Logs in FEL report, cohesion and angle of friction for soils are estimated as 5 kPa and 32 degrees respectively. The stable slope inclination for the site is determined from the following equation.

$$tan\beta = \tan \emptyset / F$$

Where:

$$\beta = Stable\ Slope\ Inclination;$$
$$\emptyset = Angle\ of\ Friction\ of\ Soil;\ and$$
$$F = Factor\ of\ Safety.$$

The TRCA/MNR recommends a factor of safety (*F*) of 1.5 for the stable slope.

With an angle of friction (Ø) equal to 32°, the stable slope inclination (β) is calculated as 22.5°. This angle corresponds to slope gradient of 2.4H:1V.

5.3 Assessment of Setbacks for the LTSTOS Line

i. Based on findings in Section 5.2, slope sections A-A and B-B' are stable.
ii. During our site visit, valley floor width was measured greater than 6m (Section A-A') and 8m (Section B-B'). At the time, no toe of slope erosion was noted. The flow in the stream appears seasonal /intermittent only.
iii. Access to the slope toe, if required, could be provided through the slope areas where inclination is relatively gentle.

Based on the above findings, in our opinion, no allowances (stable slope, toe erosion and erosion access) are warranted at this site. In other words, ETOS line could be considered as the LTSTOS line.

Engtec recommends that, in order to enhance the stability of the adjacent slope, a 6m wide landscape corridor from the building envelope be considered in development planning. This landscaped corridor could accommodate items, such as trees, shrubs, grass and other vegetation, as well as features such as walkways and fencing.

The ETOS line, LTSTOS line and Development Limit line are shown on Site Plan E3 (Figure 12).

6 Discussion and Recommendations

6.1 Slope Hazard

The slope on southwest is a shallow valley slope. The slope gradient is fairly gentle. A walkover of the site cum visual inspection of slope area carried out on September 22, 2025 by Geotechnical Personnel from Fisher Engineering. The inspection included observation of vegetation, soil type, seepage condition, slope measurement and erosion activity. Slope inspection record and slope rating chart were prepared in compliance with the MNR Technical Guide (2002). A rating score of 30 was obtained. This indicates that the slope has only slight potential for instability.

During Engtec site visits, shallow hand digging was carried out which showed no fill in the slope surface areas. Engtec's visual inspection revealed that slope areas were vegetated. Dense and tall trees are noted on the slope surface. Root reinforcement contributes moderately to resistance against erosion. No visual signs of slope instability and surface erosion (scarp, bare slope, bent and leaning tree trunks) were noted. The valley floor areas beyond the toe of slope remain dry most of the year. Photographic illustrations are presented in Appendix B.

In our opinion, the natural slope is stable and not hazardous (not posing threat to human life and property).

6.2 Impact of Redevelopment

Engtec reviewed the site plan E3, the proposed redevelopment would have south edge at 7.7m from the ETOS+LTSTOS line (scenario is illustrated in Figure 10 & 12). The foundation would likely be established at about 3m below the existing grade.

In Engtec' opinion, proposed redevelopment is unlikely to exert any pressure to destabilize the slope. In other words, the slope will be adequately safe and stable after the multistorey building is completed.

6.3 Comments on Slope Improvement by Fisher Engineering

Fisher Engineering report considered fill materials in the slope area for stability analysis. Fisher Engineering recommended engineering solutions comprising nailing and geogrid to enhance global slope stability and surface stability against erosion control.

The slope, based on our assessment, is stable. The slope areas were found generally vegetated with mature trees and shrubs/undergrowth.

Engtec recommends that prior to adopting the nailing and geogrid measures, present slope condition should be assessed by a geotechnical engineer.

7 General Comments

This report has been prepared and intended for the exclusive use of City of Mississauga Engineers. Any use by a third party is prohibited.

We trust that this report is satisfactory for your present needs. Should you have any questions, please contact this office.

Yours truly,

Mohammad Mollah, M.Eng., P.Eng.
Senior Geotechnical Engineer
Engtec Consulting Inc.

LICENSED PROFESSIONAL ENGINEER
M. A. MOLLAH
Feb 27 2026
PROVINCE OF ONTARIO

Salman Bhutta, Ph.D., P.Eng
Principal
Engtec Consulting Inc.

Appendix A

Figures 2 to 12

PLAN OF TOPOGRAPHY OF

PART OF LOT 1
REGISTERED PLAN C–89 AND
PART OF LOT 22
CONCESSION 3
SOUTH OF DUNDAS STREET

(ORIGINALLY IN TOWNSHIP OF TORONTO)

CITY OF MISSISSAUGA

REGIONAL MUNICIPALITY OF PEEL

SCALE 1 : 200

5 0 5 10 metres

TARASICK McMILLAN KUBICKI LIMITED
ONTARIO LAND SURVEYORS

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METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ELEVATION NOTE

ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM–1928, AND WERE DERIVED FROM CITY OF MISSISSAUGA BENCHMARK No. 132, HAVING A PUBLISHED ELEVATION OF 93.630 metres.

BEARING NOTE

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHEASTERLY LIMIT OF LAKESHORE ROAD WEST AS SHOWN ON DEPOSITED PLAN 43470, HAVING A BEARING OF N38°05'30"E.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
IB	DENOTES	IRON BAR
SIB	DENOTES	STANDARD IRON BAR
CP	DENOTES	CONCRETE PIN
TC	DENOTES	TOP OF CURB
BC	DENOTES	BOTTOM OF CURB
CCT	DENOTES	CURB CUT
MH	DENOTES	MANHOLE
CB	DENOTES	CATCH BASIN
TOB	DENOTES	TOP OF BANK
WUP	DENOTES	WOOD UTILITY POLE
WV	DENOTES	WATER VALVE
P1	DENOTES	PLAN BY DEPARTMENT OF HIGHWAYS, ONTARIO (P–1954–26)
P2	DENOTES	TARASICK McMILLAN KUBICKI LTD., O.L.S., DATED MAY 22, 2019
0.20ØD	DENOTES	DECIDUOUS TREE WITH TRUNK DIAMETER
0.20ØC	DENOTES	CONIFEROUS TREE WITH TRUNK DIAMETER

TREE CANOPIES ARE DRAWN TO SCALE.

PLAN UPDATED TO SHOW TOP OF BANK, BOTTOM OF BANK, WETLAND AND DRIPLINE, ON JANUARY 18, 2024.

CONTOUR LINES ADDED JANUARY 26, 2024

PLAN UPDATED TO SHOW EXTENSION OF THE CREEK AND TOP OF BANK, ON AUGUST 26, 2025.

CONTOUR LINES ADDED OCTOBER 20, 2025

I CERTIFY THAT THE SURVEY WAS COMPLETED ON OCTOBER 13, 2023.

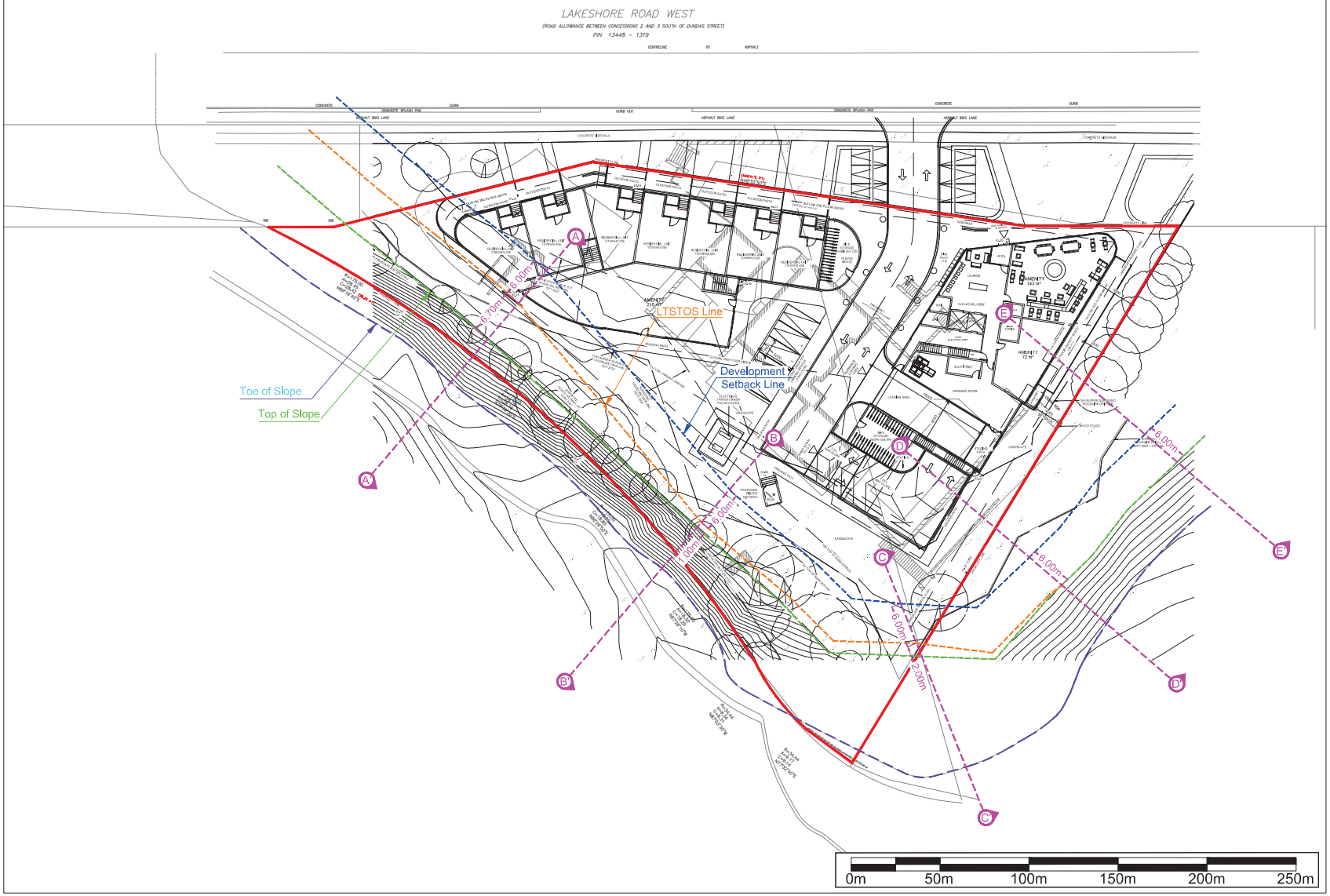
NOVEMBER 8, 2023
DATE

JACKIE HANG
ONTARIO LAND SURVEYOR

TARASICK McMILLAN KUBICKI LIMITED
ONTARIO LAND SURVEYORS
4181 SLADEVIEW CRESCENT, UNIT 42, MISSISSAUGA, ONTARIO L5L 5R2
TEL: (905) 569–8849 FAX: (905) 569–3160
E–MAIL: office@tmksurveyors.com

DRAWN BY: R.E. | FILE No. 8139–TOPO

CUSTOM (26"x36")



FISHER ENGINEERING
400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- A-A' CROSS SECTION FOR SLOPE STABILITY
- TOP OF SLOPE
- LTSTOS LINE
- DEVELOPMENT SETBACK LINE
- TOE OF SLOPE

PROJECT NAME AND ADDRESS

SLOPE STABILITY ASSESSMENT

900 Lakeshore Road,
Mississauga, ON

FIGURE A2:

SITE PLAN WITH CROSS SECTIONS AND BOREHOLES / MONITORING WELL LOCATIONS

PROJECT NO.	SHEET NO.
FE 25-15006	E3
DATE: 25 September 2025	
SCALE: AS SHOWN	

For purposes of implementing TRCA's Environmental Management Policies:

- Confined River or Stream Valleys are considered **Valley Corridors**
- Unconfined River or Stream Valleys are considered **Stream Corridors**

There may be reaches where there is a combination of both types of corridors.

Valley Corridors (Confined River or Stream Valleys):

Example of a Valley Corridor also referred to as Confined River or Stream Valley

Example of a Valley Corridor also referred to as "Confined River or Stream Valley"

Example of a Valley Corridor also referred to as Confined River or Stream Valley

Confined systems (Figures 7.4 and 7.5), regardless of whether or not they contain a *watercourse*, are those depressional features associated with a river or stream that are well defined by *valley walls*. *Confined River* or *Stream Valleys* can exhibit three different conditions within which *erosion hazards* exist or may develop: valley slopes that are steep but stable, valley slopes that are over steepened and potentially unstable, and valley slopes that are subject to active toe erosion. Accordingly, the extent of the *erosion hazard* within a confined system includes the combined effect of the *toe erosion allowance, stable slope allowance, stable top of slope* and *erosion access allowance*.

2.3.2 River and Stream Classifications

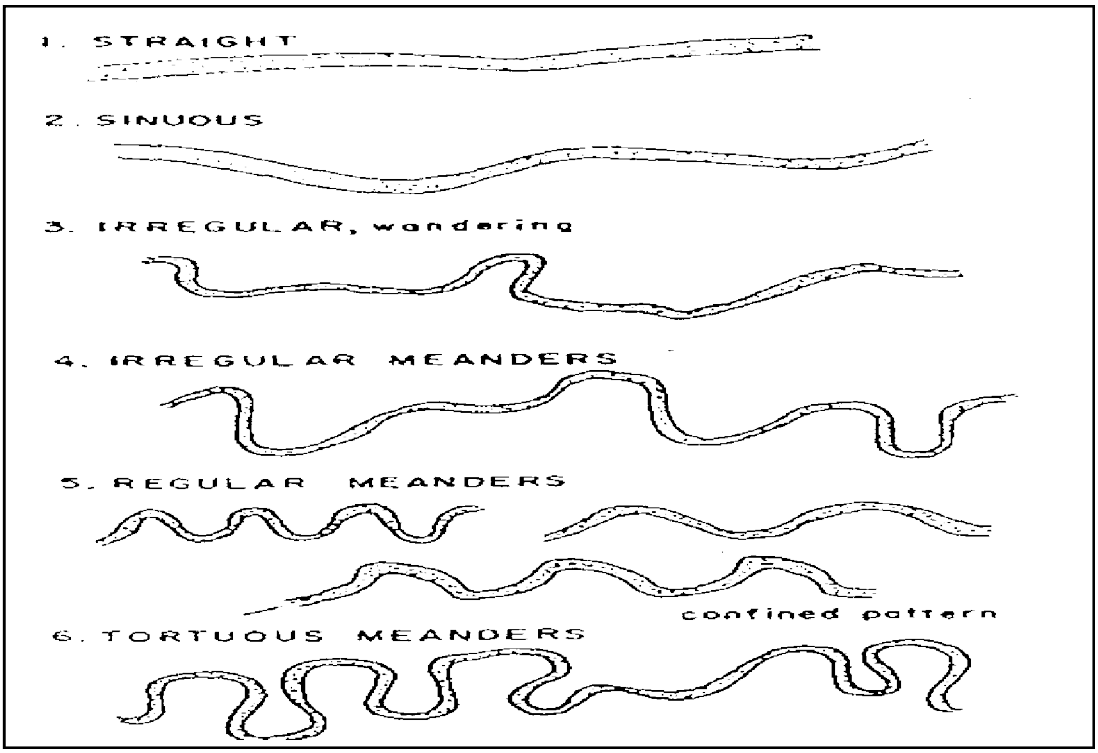


Figure 35 - River Patterns

Classification systems allow comparison of river features and behaviour, based on similar characteristics.

The complexity of the interaction of the above variables in ravines, river valleys, and stream corridor environments results in a wide array of drainage and stream/river types and patterns (Leopold et al, 1964).

There are a variety of classification systems available. A discussion on the various systems and their attributes is provided in a section of the AMSC[7] report.

2.3.3 Flow Regime

The flow component of river and stream systems plays a significant roll in the determination of the channel form. The "flow regime" defines the amount, intensity, duration, magnitude, and frequency of a precipitation event. This can encompass valley, floodplain, riparian, baseflow and bankfull flows. Refer to chapters 2 and 4 of the AMSC document for further details on the various flow regimes and the following figure.

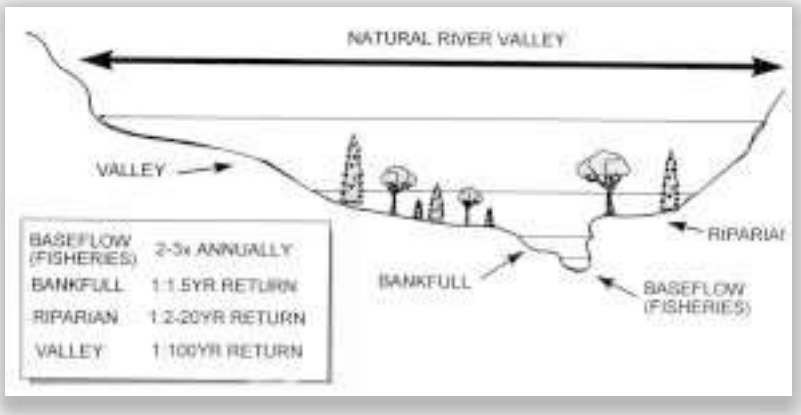


Figure 36 - Stages of Flow

2.3.3.1 Bankfull Conditions

The bankfull conditions are important in determining the erosion hazards for river and stream systems. For confined and unconfined systems the erosion hazard guide indicates the bankfull width can be used to determine the erosion allowance and the "meander belt allowance (20 x bankfull width).' If information on the Flooding Hazard Limit is not available or if the proponent prefers to determine the erosion hazard allowance by using the meander belt analysis then a detailed study may be conducted for the particular stream or river.

Numerous technical sources have indicated that the bankfull discharge is the event that determines channel morphology or change. The "channel-forming discharge" or the bankfull width can be identified in the field by scour lines, vegetation changes, or recent sediment. Bankfull channel width is commonly determined through either field investigations or through aerial photograph interpretation. (See Section 3.3 for

Defining the *erosion hazards* limit for the two basic types of *river and stream systems* landforms should be based on the following approaches:

Confined systems (see Figures 95a and 95b)

toe erosion allowance* (from Table 2; OR 100 times the average annual recession rate of the toe) **OR** as determined by a study using accepted geotechnical and engineering principles

+ allowance for stable slope 3:1 (h:v) minimum **OR** as determined by a study using accepted geotechnical principles

+ erosion access allowance 6 metres **OR** as determined by a study using accepted scientific, geotechnical and engineering principles

* Note:
.where the soil type is not known, Table 3 recommends the use of a 15 m toe erosion allowance; and

.when using average annual recession rates to determine the toe erosion allowance a minimum of 25 years of reliable information is recommended.

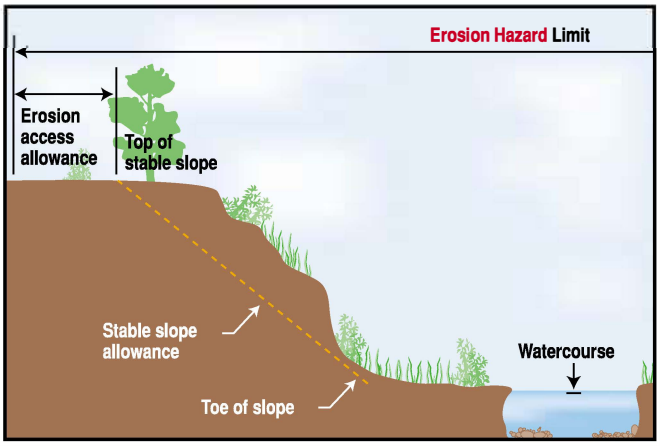


Figure 95 a Confined System, Erosion hazard limit where toe of valley slope is located more than 15 metres from the watercourse

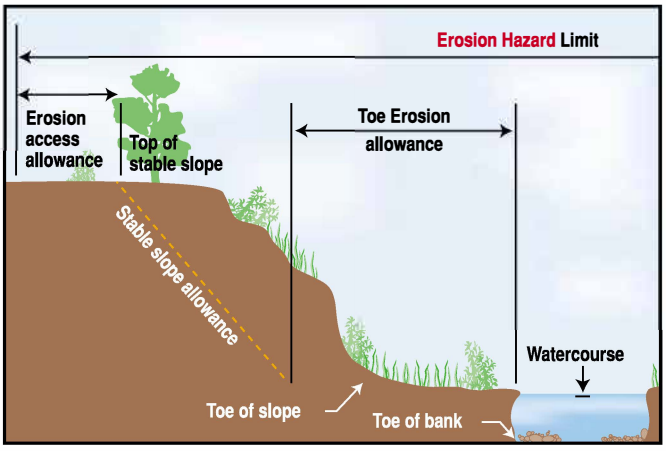
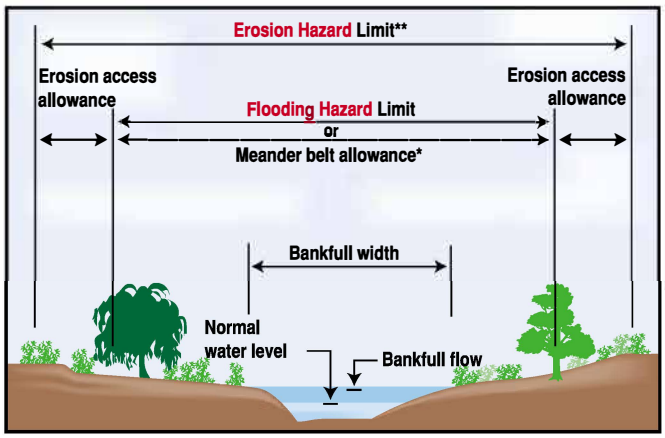


Figure 95 b Confined System, Erosion hazard limit where toe of valley slope is located less than 15 metres from the watercourse

Unconfined systems (see Figure 96)

an allowance for the *flooding hazard* limit OR meander belt allowance 20 times the bankfull channel width centred over the meander belt axis **OR** as determined by a study using accepted engineering principles

+ erosion access allowance 6 metres **OR** as determined by a study using accepted scientific, geotechnical and engineering principles



(NOT TO SCALE)

* The bankfull channel width with the largest amplitude meander in the reach is used to determine Meander Belt Width.

** Erosion access allowance is also added to the flooding hazard limit, when known, to define the erosion hazard limit.

Figure 96 Erosion Hazard Limit

Page Extracted from MNR, 2002

Project No: ET26-1013B

Figure No.6

The following subsections clarify how each of these components for defining *erosion hazards* should be determined and where flexibility may be provided to undertake studies to address unique, local situations (e.g., where the approach(es) may be considered excessive or insufficient to define the area of provincial interest). Where studies using accepted scientific, geotechnical and/or engineering principles were used to determine the landward limit of the *erosion hazards* are approved by the municipality, they should be applied only within the area studied.

b) in regard to woodlands; an area which is ecologically important in terms of features such as species composition to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources and Forestry; and
c) in regard to other features and areas in policy 2.1 (of the PPS), ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.
d) in regard to mineral potential, an area identified as provincially significant through evaluation procedures developed by the Province, as amended from time to time, such as the Provincially Significant Mineral Potential Index; and
e) in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest for the important contribution they make to our understanding of the history of a place, an event, or a people.

Criteria for determining significance for the resources identified in sections (c)-(e) are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used.

While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation. (Provincial Policy Statement, 2014)

Significant Groundwater Recharge Area – in the context of source water protection pursuant to the *Clean Water Act*, it is an area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an *aquifer*. (*Clean Water Act*, 2006 – O. Reg. 28/07)

Site Alteration - means activities such as grading, excavation, and the placement of fill that would change the landform and natural vegetative characteristics of a site. (Provincial Policy Statement, 2014)

Special Policy Area - means an area within a community that has historically existed in the *flood plain* and where site-specific policies, approved by both the the Ministers of Natural Resources and Forestry and Municipal Affairs and Housing, are intended to provide for the continued viability of existing uses (which are generally on a small scale) and address the significant social and economic hardships to the community that would result from strict adherence to provincial policies concerning *development*. The criteria and procedures for approval are established by the Province. A *Special Policy Area* is not intended to allow for new or intensified development and site alteration, if a community has feasible opportunities for development outside the *flood plain*. (Provincial Policy Statement, 2014)

Species of (Conservation) Concern – according to the TRCA methodology, any species with a local rank of L1 to L3, and those L4 species found within the Built-up Area. Generally species that are disappearing in the regional landscape, primarily as a result of land use changes. Species of Concern can also be used as indicators – a surrogate measure - of ecosystem function. Improvements in their distribution may indicate an improving trend in ecosystem or regional health.

Stable Slope Allowance - Defined Valleylands - the setback that ensures safety if the slumping or slope failure occur. It refers to a horizontal allowance measured landward from the toe erosion allowance equivalent to three times the height of the slope or through valid study; and - Lake Ontario Shoreline - the predicted long term stable slope projected from the stable toe of slope as may be shifted as a result of erosion over a hundred year period.

Stable Toe of Slope – as determined through a geotechnical study:

a) the physical toe of slope where the existing toe is stable and not impacted by erosion; or
b) the landward limit of the toe erosion allowance where the existing slope is unstable and/or impacted by erosion.

Stable Top of Slope/Bank (long term stable slope line) – as determined through a geotechnical study:
a) the physical top of slope where the existing slope is stable and not impacted by toe erosion; or b) the landward limit of the *toe erosion allowance* plus the

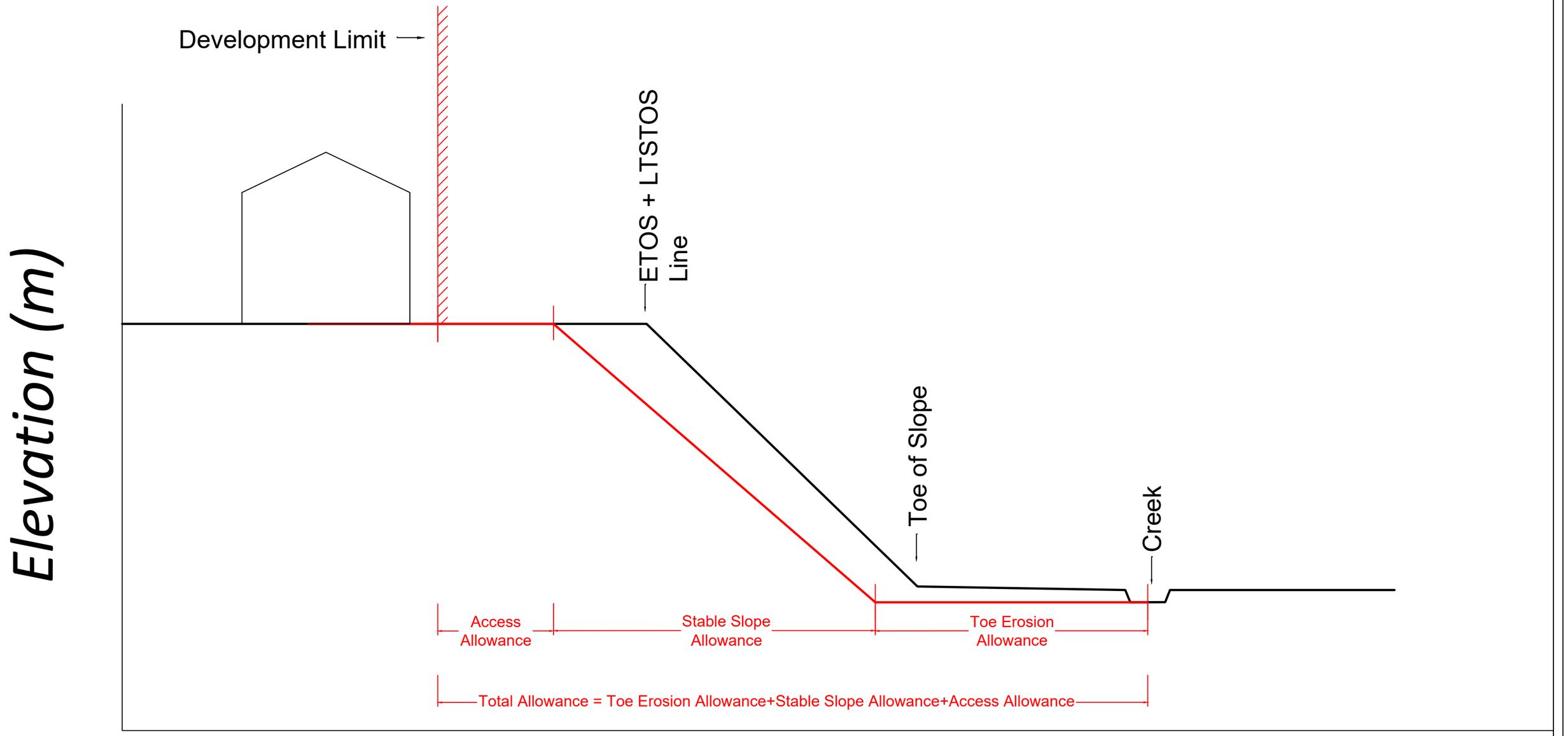
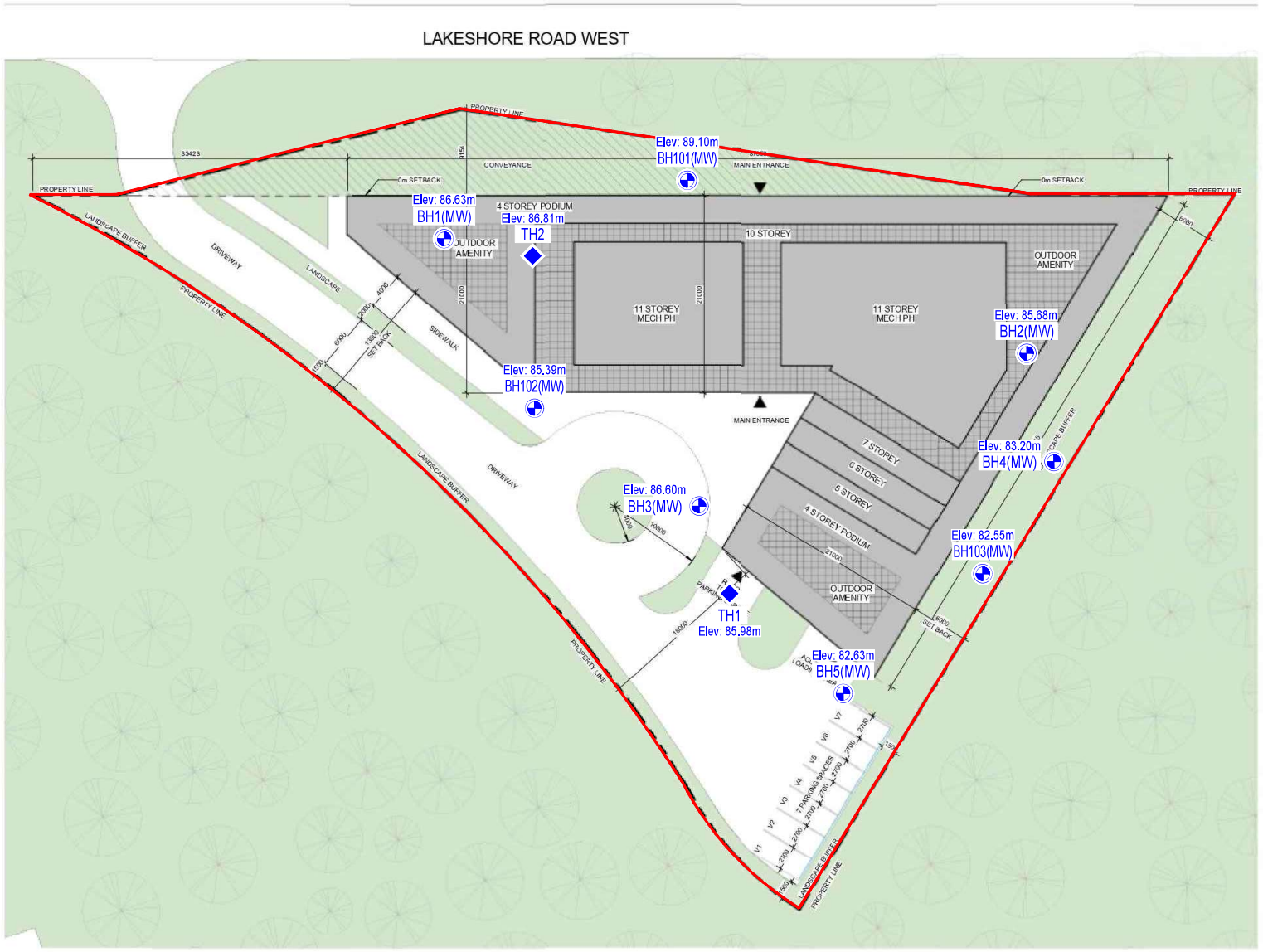


Figure 8

Project Name: Slope Stability Peer Review	Project No. ET26-1013B
Project Location: 900 Lakeshore Road W, Mississauga	Contract No.
Drawing Title: Slope Cross Section A-A	Drawn By: L.W Checked By: M.M
Drawing No. 02	Date: February 24, 2026 Scale: NTS

Engtec Consulting Inc.
1-2447 Anson Drive
Mississauga, ON, L5S 1G1
Tel: (905) 856-2988



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- BOREHOLE WITH MONITORING WELL LOCATION
- TEST HOLE LOCATION

PROJECT NAME AND ADDRESS

SLOPE STABILITY ASSESSMENT INVESTIGATION

900 Lakeshore Road West,
Mississauga, Ontario

FIGURE A2:

SITE PLAN WITH BOREHOLE LOCATIONS

PROJECT NO.	SHEET NO.
FG 25-15006	A2
DATE: September, 2025	
SCALE: AS SHOWN	

Section A-A'

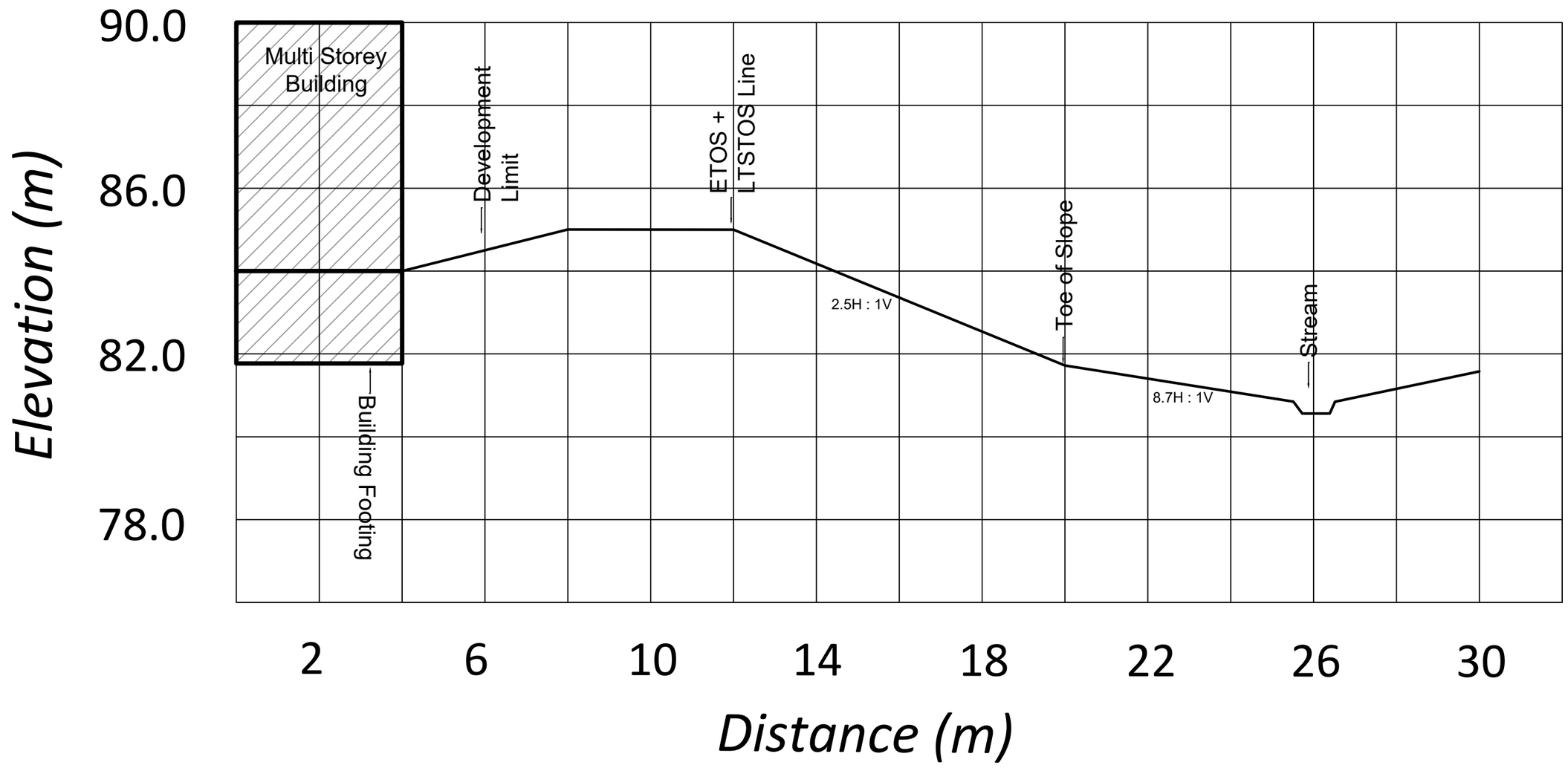


Figure 10

Project Name: Slope Stability Peer Review	Project No. ET26-1013B
Project Location: 900 Lakeshore Road W, Mississauga	Contract No.
Drawing Title: Slope Cross Section A-A	Drawn By: L.W Checked By: M.M
Drawing No. 10	Date: February 24, 2026 Scale: NTS

Engtec Consulting Inc.
1-2447 Anson Drive
Mississauga, ON, L5S 1G1
Tel: (905) 856-2988

Section B-B'

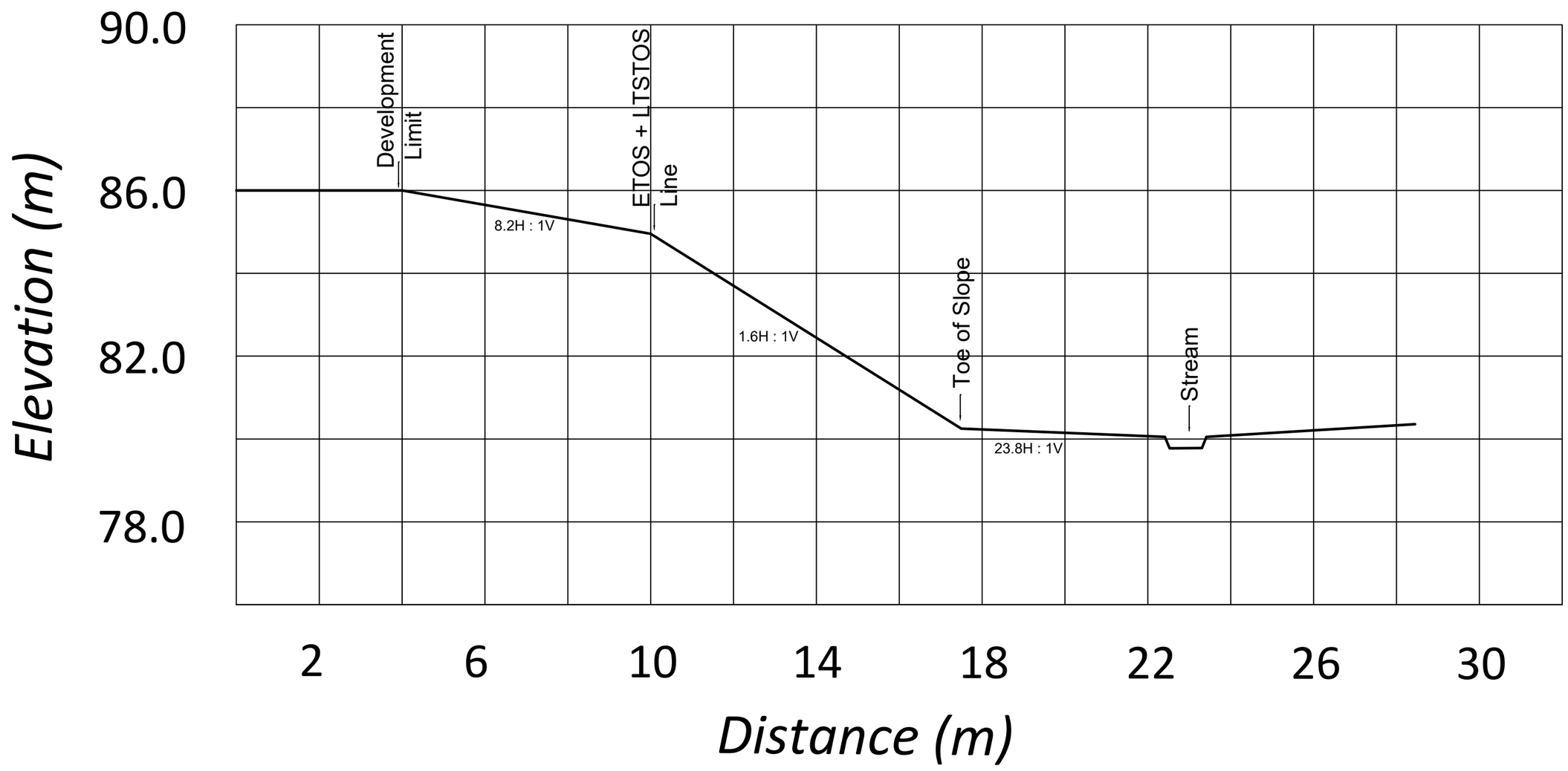


Figure 11

Project Name: Slope Stability Peer Review	Project No. ET26-1013B
Project Location: 900 Lakeshore Road W, Mississauga	Contract No.
Drawing Title: Slope Cross Section B-B	Drawn By: L.W Checked By: M.M
Drawing No. 11	Date: February 24, 2026 Scale: NTS

Engtec Consulting Inc.
1-2447 Anson Drive
Mississauga, ON, L5S 1G1
Tel: (905) 856-2988

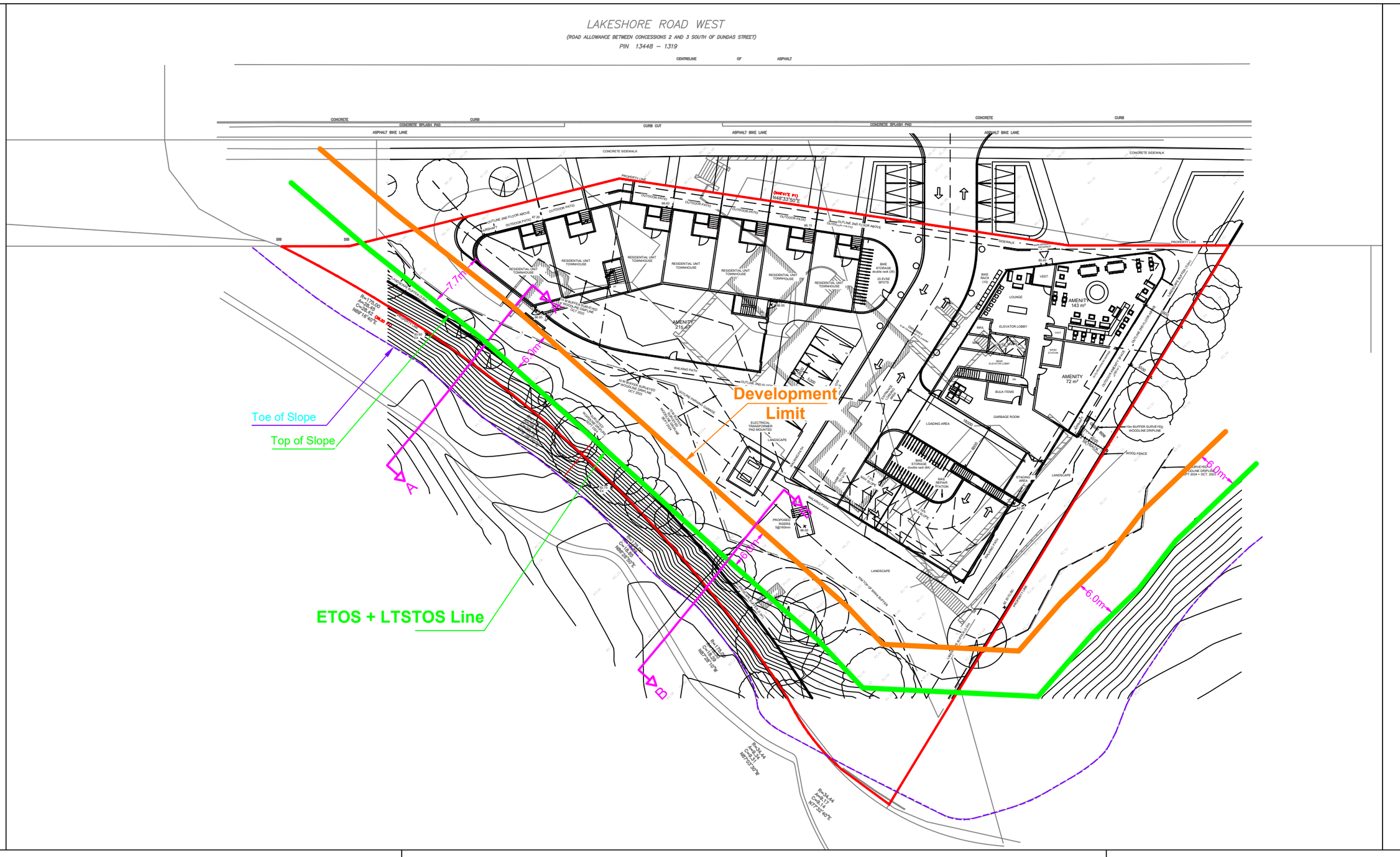


Figure 12

Project Name: Slope Stability Peer Review	Project No. ET26-1013B
Project Location: 900 Lakeshore Drive East, Mississauga	Contract No.
Drawing Title: LTSTOS Line	Drawn By: L.W Checked By: M.M
Drawing No. 01	Date: Febuary 24, 2026 Scale: NTS

Engtec Consulting Inc.
1-2447 Anson Drive
Mississauga, ON, L5S 1G1
Tel: (905) 856-2988

Appendix B

Site Pictures Taken by Engtec (December 5 and 15, 2025)

Picture 1: Front View of the Property (December 5, 2025).

Picture 2: Side View of the Property (December 5, 2025).

Picture 3: View shows Lakeshore Rd W., Slope Area and Culvert (December 15, 2025).

Picture 4: View shows the Culvert underneath the Lakeshore Road West (December 15, 2025)

Picture 5: Rear View Looking North (December 15, 2025).

Picture 6: Rear View of the Residence (December 15, 2025).

Picture 7: View shows the Existing Residence (December 15, 2025).

Picture 8: View shows the Residence (865) on the Other Side of the Slope (December 15, 2025).