GEOTECHNICAL DESKTOP STUDY REPORT
KENNEDY STATION TO MALVERN EGLINTON EAST LIGHT RAIL TRANSIT (EELRT) ALIGNMENT, MAINTENANCE AND STORAGE FACILITY, AND MCCOWAN TO NEILSON ALIGNMENT ALONG SHEPPARD AVENUE, TORONTO, ONTARIO

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PML Ref.: 23TF007

January 12, 2024

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Peto MacCallum Ltd.
CONSULTING ENGINEERS

GEOTECHNICAL DESKTOP STUDY REPORT
KENNEDY STATION TO MALVERN EGLINTON EAST LIGHT RAIL TRANSIT (EELRT), MAINTENANCE AND STORAGE FACILITY, AND MCCOWAN TO NEILSON ALIGNMENT ALONG SHEPPARD AVENUE
TORONTO, ONTARIO

1. INTRODUCTION

The City of Toronto (City/Client) and the Toronto Transit Commission (TTC) plans to undertake rapid transit to Scarborough and approved the Eglinton East Light Rail Transit (EELRT). The Request for Proposal (RFP) for this project was issued with a primary purpose of updating and completing technical and environmental study and impact assessment, stakeholder engagement, and other documentation useful for the city obtain a Notice to Proceed from the Minister of the Environment, Conservation, and Parks (MECP). The secondary purpose was to confirm and update the EELRT core network, and the design of Maintenance & Storage Facility (MSF).

The EELRT (or future Line 7) is an 18 km light rail transit (LRT) system that will commence at Kennedy Station to the future Line 2 terminus at Sheppard Avenue East and McCowan Road via University of Toronto Scarborough Campus (UTSC). with a connection to Malvern Town Centre. The project includes up to 27 stops, three connections to GO Transit (Kennedy, Eglinton & Guildwood), and connection to the proposed Durham-Scarborough Bus Rapid Transit. According to the RFP, the EELRT network is divided into the following three major project components:

1. Kennedy Station to Malvern core EELRT alignment;
2. Maintenance and Storage Facility, to be assumed at Morningside Avenue/University of Toronto Scarborough (UTSC) site, subject to continuing discussions with the UTSC;
3. Potential Neilson Road to McCowan Road alignment along Sheppard Avenue.

The city retained HDR Corporation (HDR) of Richmond Hill, Ontario to provide professional services in connection with EELRT Transit Project Assessment Process (TPAP) and design update. Peto MacCallum Limited (PML) was retained by HDR to carry out Phase One Environmental Site Assessment (ESA) and Geotechnical Desktop Study for the project. The scope of work for the project was outlined in PML's updated proposal (PML Ref.: 23330054), dated May 2, 2023. The geotechnical component was comprised of reviewing available geotechnical information and reports, previous borehole logs, regional geological and soil maps and groundwater information to

understand the subsurface conditions at the project site and prepare a geotechnical desktop study report for the purpose of initial environmental study and impact assessments.

This geotechnical desktop study report provides preliminary geotechnical information based on the subsurface and groundwater information collected from existing borehole logs and published documents. No site visit, drilling or soil sampling was conducted and all the information were gathered by reviewing previous geotechnical works conducted by Golder Associates (Golder), Terraprobe Inc. (Terraprobe), Ministry of Transportation of Ontario (MTO) and from a geological map called “Surface geology of Southern Ontario”, prepared by Ministry of Natural Resources (MNR) and Ontario Geological Survey (OGS). Hence, the information provided in this report should not be used for advanced stages of design and construction work. Any advanced environmental study and related impact assessment, including a full-scale design of the EELRT and construction, will require a comprehensive program of geotechnical investigation involving the drilling of boreholes, and in-situ and soil laboratory tests, and topographical and hydrogeological studies.

2. PROJECT DESCRIPTION

EELRT will operate from Kennedy Station, traverses along Eglinton Avenue East, Kingston Road, and Morningside Avenue (routing through UTSC), with a terminus station at Sheppard Avenue East. The project also involves an extension of EELRT to Malvern Town Centre via Sheppard Avenue East and Neilson Road and the construction of a Maintenance and Storage Facility (MSF). The objective of the project is to improve local accessibility and connectivity, and expand rapid transit service in the surroundings of the areas and communities through which the LRT passes.

The base map supplied by HDR on June 19, 2023 indicates the presence of 3 segments as follows:

- Segment 1 – Eglinton Avenue East and Kingston Road;
- Segment 2 – Morningside Avenue and UTSC;
- Segment 3 – Sheppard Avenue East and Neilson Road.

Drawing 1 (attached) presents the limits and locations of the three segments and other components of the project. The following sections provide brief descriptions of each segment.

2.1 Segment 1 – Eglinton Avenue East and Kingston Road

Segment 1 of the EELRT starts a little from east of Kennedy Station on Eglinton Avenue East to a little west of the intersection of Kingston Road and Morningside Avenue. This segment consists of 14 stops including Kenndy Station (Kenndy GO), Eglinton Railway Station (Eglinton GO), and Guildwood Railway Station (Guildwood GO). The widening of sidewalks under the existing bridge at Eglinton GO is proposed to accommodate a 3 m multi-purpose path (MUP). Background information from HDR indicated that the widening may require extending the footings of the bridge on both sides. **Drawings 2 and 3** (attached) show the extent of Segment 1 of the EELRT.

2.2 Segment 2 – Morningside Avenue and UTSC

This segment of the EELRT runs through Morningside Avenue East, from Kingston Road to Ellesmere Rd, and makes a routing through Ellesmere Road and Military Trail. It ends at the intersection of Morningside Avenue and Sheppard Avenue East. Totally, there are 5 stops in this segment. The University of Toronto Scarborough Campus, and Centennial College, Morningside Avenue Campus are located in this area. This section of the EELRT also crosses Highway 401. There is a plan to widen the Highland Creek valley on both sides by 3 m to accommodate pole zones and MUP, and this may require the construction of a retaining wall to support the valley slopes. Retaining walls may also be required along the south side of Ellesmere Road where a high-pressure watermain is located. It is also understood that the Ministry of Transportation of Ontario (MTO) is undertaking a bridge rehabilitation study of the Highway 401 underpass at Morningside Avenue to assess the effect of the LRT loading and determine if a realignment is required on east and west-bound on-ramps for safety reasons. **Drawing 4** presents the limits of Segment 2.

2.3 Segment 3 – Sheppard Avenue East and Neilson Road

This segment runs through a portion of Sheppard Avenue East (between Conlins Road and McCowan Road) and turns to Neilson Road and ends at Malvern Town Centre. This segment of the EELRT consists of 9 stops and passes mainly through residential buildings along Sheppard Avenue East. The alignment also consists of the Highland Creek Bridges near McCowan Road and Washburn Way along Sheppard Avenue East. **Drawing 5** shows the limits of Segment 3.

In addition, the potential extent from Neilson Road to McCowan Road alignment along Sheppard Avenue is part of Segment 3. This LRT extension goes through Sheppard Avenue East, and

stretches from Neilson Road to McCowan Road with potential future interface with EELRT at McCowan Road and Sheppard Avenue. **Drawing 6** presents the limits of this potential alignment.

2.4 Maintenance and Storage Facility

A Maintenance and Storage Facility (MSF) was planned in the vicinity of Sheppard Avenue East and Conlins Road to serve all nearby Light Rail Transits (LRTs). The proposed location of this MSF is north of Sheppard Avenue East, east of Thornmount Drive. The facility includes a new car house complex that has a maintenance area, a two-storey office building, a general storage area, a new single-storey substation building, new maintenance of a single-storey way building, parking areas and a roadway for passenger cars, parking areas for maintenance trucks and equipment, and a future yard for Low-Floor Light Rail Vehicles (LFLRV). **Drawing 7** shows the location of the MSF.

3. SITE DESCRIPTION

In Segment 1, the elevation along the alignment varies from about 175 m at the start of the project on Eglinton Avenue to 126 m in the last part of Kingston Road. In Segment 2, the local topography along Morningside Avenue is influenced by Highland Creek depressions and associated highs and peaks, with the ground surface gradually sloping towards the valley. The vertical profile in Segment 3 along Sheppard Avenue and Neilson Road is characterized by occasional crests and troughs.

In terms of land use, the proposed alignment passes through commercial zones and residential areas along the corridor of Eglinton Avenue East and Kingston Road and through vegetated Highland Creek watersheds and university campuses when it reaches Morningside Avenue, and through mixed zones of businesses and residential quarters along Sheppard Avenue. The end of the transit along Neilson Road is occupied mainly by Malvern Town Centre.

4. PHYSIOGRAPHY AND REGIONAL GEOLOGY

Based on Chapman and Putnam (1984), the Physiography of Southern Ontario, the western parts of Segment 1 and Segment 3 are located in the physiographic region known as South Slope, whereas the easter part where much of Segment 2 traverses is located in Iroquois Plain. The South Slope contains a variety of soils, including moraine till, lacustrine clay and isolated silt and sand deposits. The Iroquois Plain is characterized by gently rolling, beveled till plains with flat sand and clay plain areas that formed as lake bed deposits. The Lake Iroquois Sand Plain forms the southern

boundary of the South Plain. This ancient shoreline comprised largely of sand and gravel with a major relief provided by the deep valley of Highland Creek and the surrounding hills. Information obtained from maps published by the Ontario Geological Survey, the Quaternary geology in the region consists of glaciomoraine deposits comprised of silty sand/sandy silt tills. Bedrock in the area is very deep, and belongs to the Georgian Bay Formation shale, limestone and siltstone.

5. PREVIOUS STUDIES

In order to assess the subsurface and groundwater conditions along the proposed alignments of the EELRT, SELRT and at proposed location of the MSF, PML reviewed the following documents:

1. Preliminary Geotechnical Data Compilation – Revised Scarborough-Malvern LRT Environmental Assessment, Technical Memorandum, Golder Associates, March 2009.
2. Geotechnical Design Report TTC LFLRV Sheppard Maintenance and Storage Facility, 8304 Sheppard Avenue East, Toronto, Ontario, Terraprobe Inc., March 2010.
3. Foundation Investigation and Design Report, Eglinton GO Station, Scarborough, Ministry of Transportation of Ontario (MTO), June 1977.
4. Regional geological maps prepared by Ontario Geological Survey (OGS), previous boreholes logs (**Appendix A**) prepared by others, and available on OGS online database.
5. Relevant geotechnical information and borehole logs prepared by PML for projects carried out previously, especially in the area near Malvern Town Centre.

6. SUBSURFACE AND GROUNDWATER CONDITIONS

Based on the report prepared by Golder and the information from previous borehole logs, the subsurface conditions along the proposed EELRT alignment generally consist of granular materials (sands and gravels), clays and silts as well as till deposits. The following sections provide brief descriptions of the subsurface conditions along each segment of the project work.

6.1 Segment 1 – Eglinton Avenue East and Kingston Road

Along Segment 1, existing background information indicated that the quaternary deposits contained glaciolacustrine derived silty to clayey silt till. In some places, predominantly cohesionless soils (sands and gravels) are expected. Any granular or cohesive fill that existed along the alignment on

top of the till is expected to be between 0.5 m and 2.0 meters thick. The widening of sidewalks under the existing bridge at Eglinton GO is proposed to accommodate a 3 m multi-purpose path (MUP). This widening as stated earlier will require extending the footings of the bridge on both sides. A review of a Foundation Investigation and Design Report prepared by MTO in 1977 for a Canopy Shelter at the Eglinton Go Station indicated that the area in the surroundings of the station is covered with sand deposited by ancient Lake Iroquois. This sand is underlain by Pleistocene deposits of till, varved clay and interglacial sands of various ages. At the GO station specifically, the subsurface consisted of 3 m to 4 m fill underlain by glacial till. The glacial till was described to be dense to very dense. The groundwater level observations in open boreholes after the completion of drilling indicated that the groundwater existed 2 m to 3 m below the platform surface.

6.2 Segment 2 – Morningside Avenue and UTSC

Based on the surface geology map prepared by Ontario Geological Survey, the areas along Segment 2 consist of gravels and sands with some silt deposits. There is a plan to widen the Highland Creek valley on both sides by 3 m to accommodate pole zones and MUP, and this may require the construction of a retaining wall to support the valley slopes. Similarly, retaining walls are proposed on both sides of Ellesmere Road. At Highland Creek crossing, thick deposits of granular soils and silt layers are anticipated. The granular deposits are expected to be dense to very dense and any proposed retaining wall may be supported by shallow spread footings. At the location of Highway 401 underpass, a soil profile prepared by MTO indicates a subsurface condition made up of a 3 m fill underlain by a sandy silt to silty clay glacial till with a thickness of approximately 6 m. The till is underlain by a dense to very dense sand with silt deposit. Generally, in areas where retaining walls are required or in places where bridges are planned, local site investigation supported by the drilling of boreholes will be needed to identify the subsurface soil materials.

6.3 Segment 3 – Sheppard Avenue East and Neilson Road

The overburden along Sheppard Avenue East in Segment 3 consists of glaciolacustrine clay and silt tills. Along Neilson Road, predominantly gravels and sands are common, with some clayey silts and silty clays. Based on foundation investigation reports from MTO’s, the subsurface consists of about 1.5 m of fill underlain by clayey silt deposits. The clayey silt deposits are underlain by dense to very dense silty sand to sandy silt materials. Near Malvern Town Centre, the subsurface consisted of fill material underlain by sandy silt till and sandy silt/sand/clayey silt till deposits.

6.4 Maintenance and Storage Facility

The review of the geotechnical design report prepared by Terraprobe in 2010 indicated that the stratigraphy at the area consisted of 0.6 to 4.5 m thick fill underlain by cohesionless soils (silty sand, sand, gravel and sandy gravel materials). Beneath the cohesionless soils, a stiff to hard glacial till comprising clayey silt deposits with sands and gravels, was encountered. The groundwater level measured in wells installed in the area varied from 1.1 m to 4.7 m below grade.

6.5 Groundwater Conditions

Groundwater conditions along the proposed LRT alignment is expected to vary from area to area because of a series of aquifers within cohesionless deposits separated by silt and clay layers or fine-grained glacial till. Shallow perched zones are also expected within surficial granular deposits that overlain and underlain by cohesive deposits. Such perched water levels may be highly localized, and are often governed by seasonal conditions, local topography and the underlying soil. Perched water zones may have an implication for dewatering of open-cut excavations and the design of deep foundations. In some cases, the perched water zones represent shallow perched groundwater accumulated primarily as run-off across the ground surface and seepage into the surficial silty clay soil. The silty clay and silty clay till soils encountered in many places have low permeability, resulting in shallow perched conditions due to slow infiltration rate. The effect of surficial perched groundwater can be controlled with the implementation of a storm drainage.

In general, throughout the corridor, the depth of the groundwater table is expected to be in the range from near-surface conditions to depths in the range of 5.0 m below the existing grade, subject to location. Due to the low permeability and confining nature of the till deposits, together with the presence of higher permeability materials interbedded within the till, the water levels reported in some reports and borehole logs may be more of a reflection of a potentiometric surface than an indication of the true depth of the groundwater table within the subsurface.

6.6 Pavement and Track Bed Materials

The EELRT alignment is expected to run mainly along the centerline of existing roadways. The thickness of base and subbase materials underneath the asphalt layer, or ballast and sub-ballast materials for track-beds depends on the engineering properties of the subgrade soils, and the properties of the base (ballast) and subbase (sub-ballast) materials. Generally, the granular soils

(sands and gravels) expected along the proposed alignment provide a good subgrade. However, existing fill material, clay and silt deposits, or recent alluvium or organics near existing watercourses and low-lying areas, are not suitable to support new pavement structures and track beds.

7. SUMMARY AND RECOMMENDATION

The following is a summary of the geotechnical desktop study conducted for this project.

- Along the EELRT alignment, the subsurface materials mainly consist of glaciolacustrine sands, gravels, silts and clays underlain by both till deposits. In some places, thicker zones of topsoil and organics as well soft and loose soils can be presumed to be present.
- There is a potential to encounter cobbles and boulders in the overburden soils and these may influence the choice of excavation equipment and methods.
- The groundwater level along the LRT corridor is expected to be as high as the ground surface and as deep as 5 m below existing grade.
- The clayey silt and silty clay tills are poor pavement and track bed subgrade materials.

In general, additional subsurface investigations consisting of the drilling of boreholes is recommended as the planning and design progresses, in order to provide geotechnical design parameters, identify areas that require special design considerations, and provide sufficient information for costing and construction purposes. In some areas, the use of test pits would provide the opportunity to assess issues associated with the stability of open cut excavations, presence of seepage and/or static groundwater, and the presence of cobbles and/or boulders. The test pits would also provide an opportunity to collect bulk samples for laboratory testing purposes. Excavation in the native till soils should be straight forward using standard excavators.

8. STATEMENT OF LIMITATIONS

The discussions and recommendations in this desktop study report were provided based on the background information collected from various sources. It is generally expected that the subsurface soil and groundwater conditions vary from location to location. Hence, the information provided in this report should not be used for advanced stages of design and construction work. Any advanced environmental study and impact assessment, including a full-scale design of the EELRT and construction, will require a comprehensive program of geotechnical investigation involving the

drilling of boreholes, and in-situ and soil laboratory tests, and topographical and hydrogeological studies. If requested, PML can provide these services and assist during the design stage.

9. CLOSURE

We trust that the information presented in this report is sufficient for your present purposes. Please do not hesitate to contact our office should you have any questions.

Sincerely

Peto MacCallum Ltd.

Lulseged (Lul) Yimam, PhD., P.Eng.
Senior Engineer, Geotechnical Engineering Services

Geoffrey Uwimana, MEng, P.Eng.
Vice President
Discipline Head, Geotechnical Engineering Services

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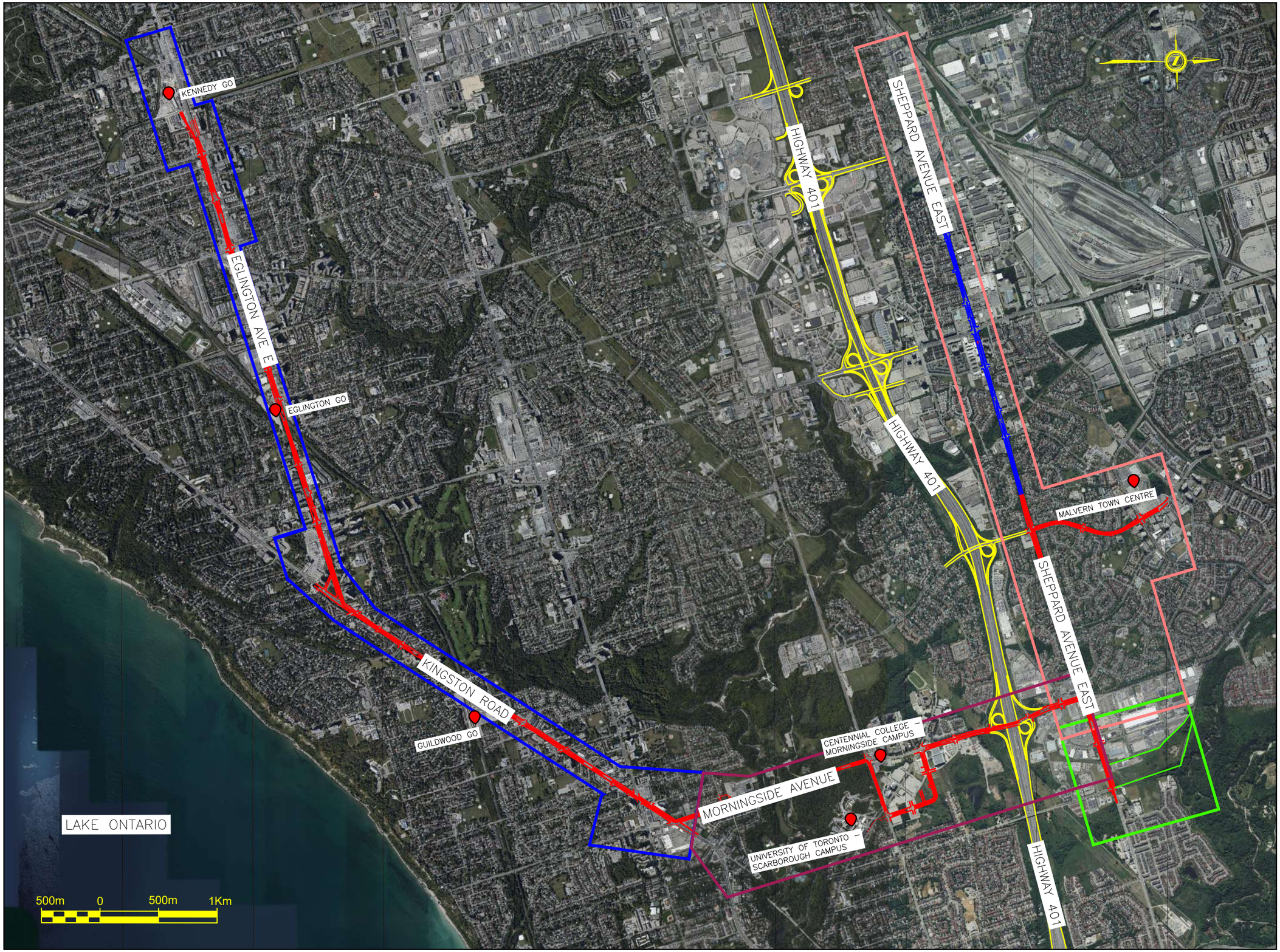
ATTACHMENTS

Drawing 1 – Site Location Plan (Segment 1, Segment 2, Segment 3, and MSF)
Drawing 2 – Segment 1 – Eglinton Avenue East
Drawing 3 – Segment 1 – Kingston Road
Drawing 4 – Segment 2 – Morningside Avenue
Drawing 5 – Segment 3 - Sheppard Avenue East and Nielson Road
Drawing 6 – Segment 3 - Sheppard Avenue East
Drawing 7 – Maintenance and Storage Facility (MSF)



KEY PLAN

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SCALE

NOTES:

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LEGEND:

PROJECT COMPONENT	SEGMENT
KENNEDY TO MALVERN (EELRT) - PROJECT AREA -1	SEGMENT 1 SEGMENT 2 SEGMENT 3
MAINTENANCE AND STORAGE (MSF) - PROJECT AREA -2	MSF
McCOWAN TO NIELSON PROJECT AREA -3	SEGMENT 3

No.	REVISIONS	DATE	BY

GEOTECHNICAL DESKTOP ASSESSMENT
EGLINGTON EAST LIGHT RAIN TRANSIT (EELRT)
BETWEEN KENNEDY STATION TO MALVERN TOWN CENTRE, MAINTENANCE AND STORAGE FACILITY IN CONLINS ROAD (MSF) AND EXTENSION BETWEEN MCCOWAN ROAD TO NEILSON ROAD , TORONTO, ONTARIO.

SITE LOCATION PLAN

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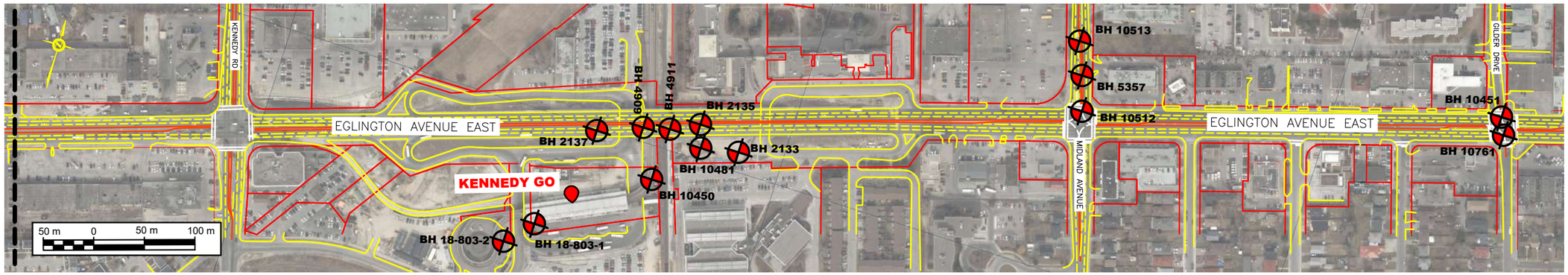

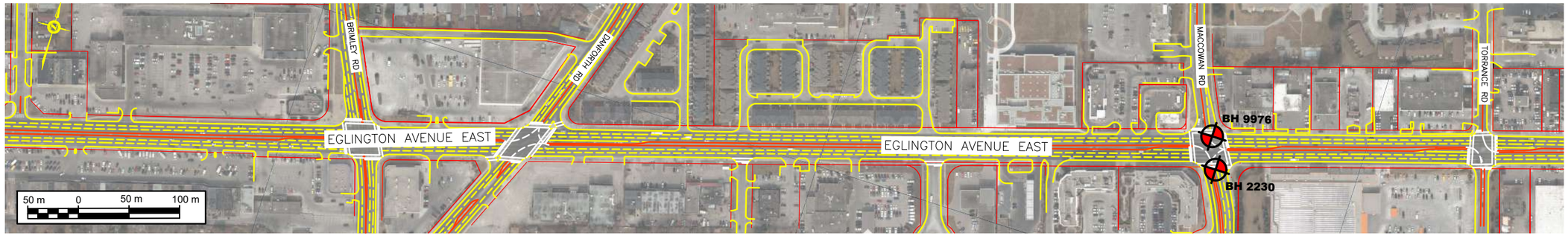

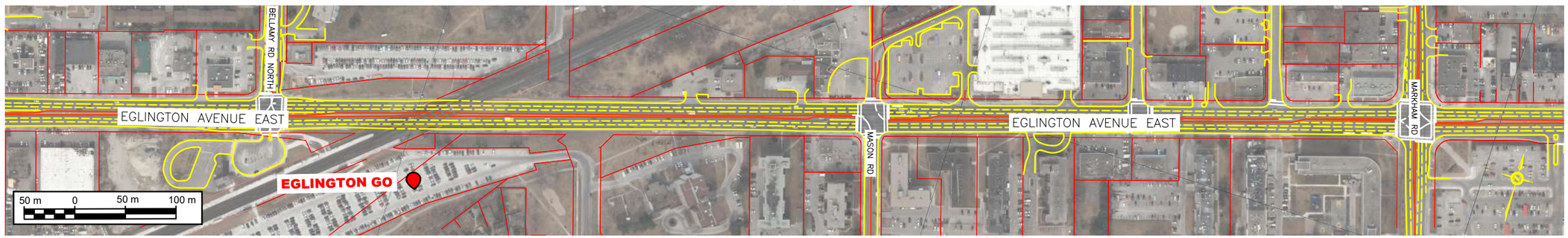

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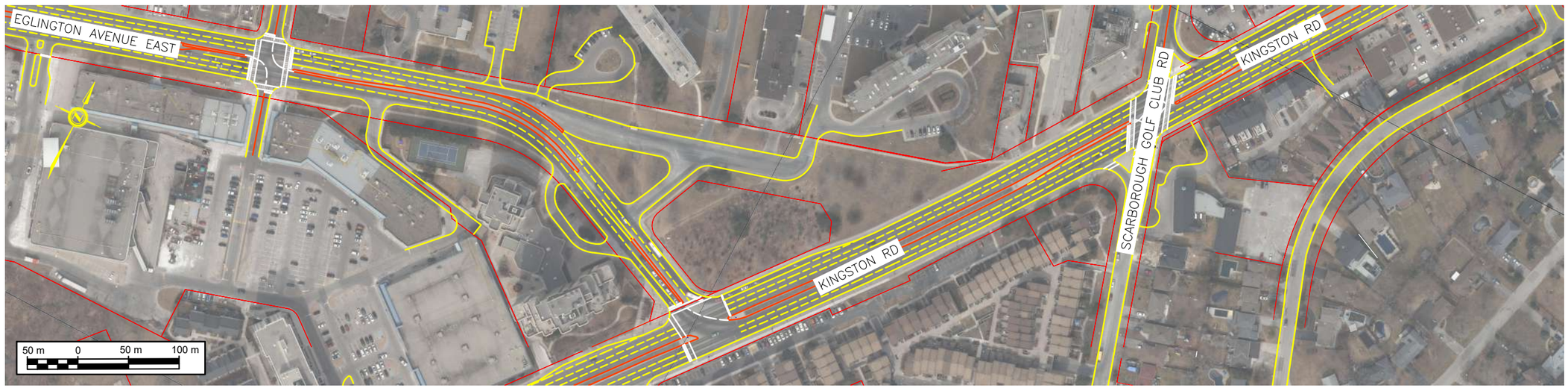

KEY PLAN

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SCALE

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LEGEND:

PREVIOUS BOREHOLES, (By Others)

SEGMENT BOUNDARY

NOTES:

Borehole locations are approximate, drawn as shown on the pdf document provided by the client.

Available borehole logs:
1. BH 18-803-1
2. BH 18-803-2

See Appendix A for borehole logs

No.	REVISIONS	DATE	BY

GEOTECHNICAL DESKTOP ASSESSMENT
EGLINGTON EAST LIGHT RAIN TRANSIT (EELRT)
BETWEEN KENNEDY STATION TO MALVERN TOWN CENTER, TORONTO, ONTARIO.

SEGMENT 1 -
EGLINGTON AVENUE EAST

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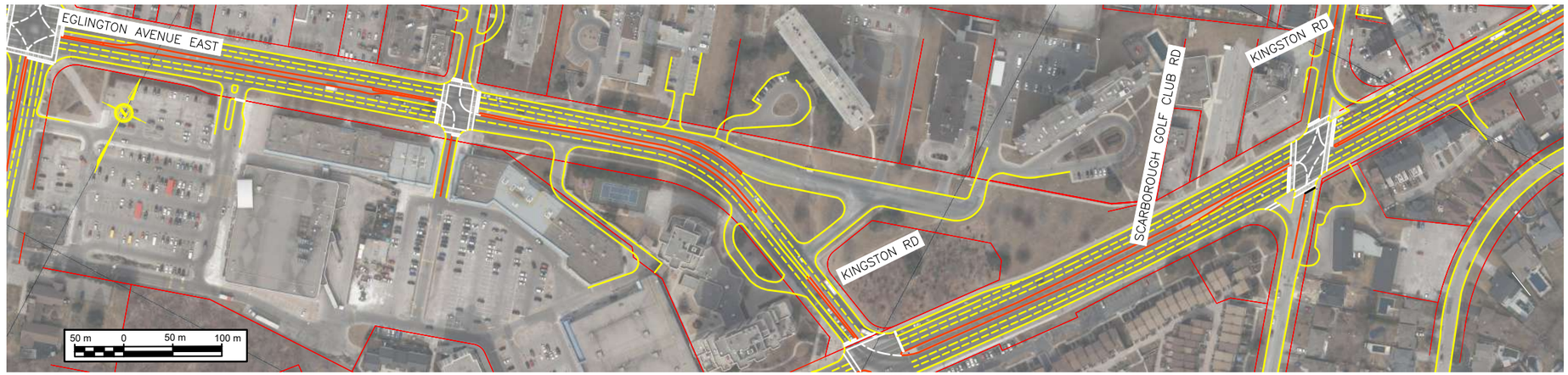

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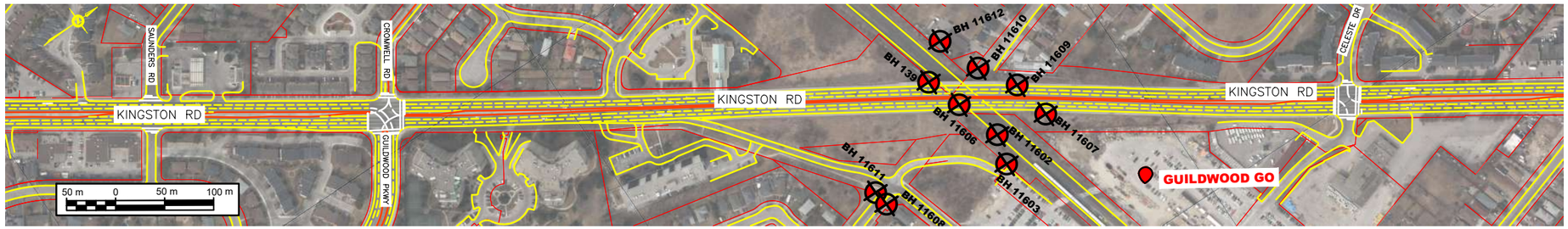

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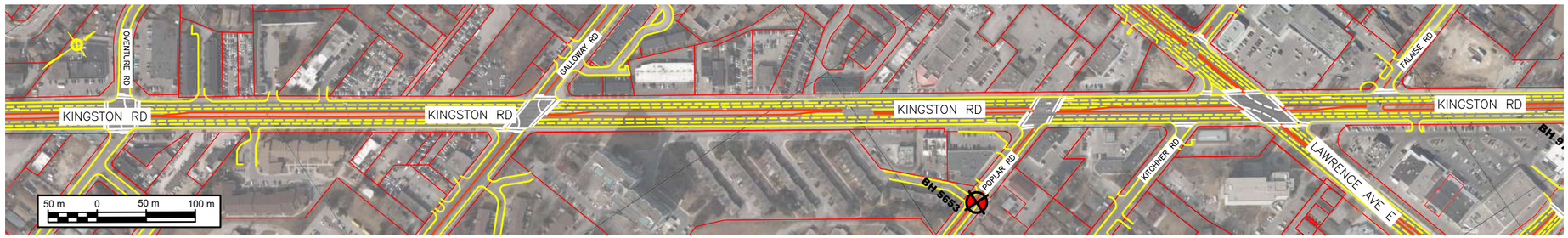

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KEY PLAN

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LEGEND:

PREVIOUS BOREHOLES, (By Others)

SEGMENT BOUNDARY

NOTES:

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No.	REVISIONS	DATE	BY

GEOTECHNICAL DESKTOP ASSESSMENT
EGLINGTON EAST LIGHT RAIN TRANSIT (EELRT)
BETWEEN KENNEDY STATION TO MALVERN TOWN CENTER, TORONTO, ONTARIO.

SEGMENT 1 - KINGSTON ROAD

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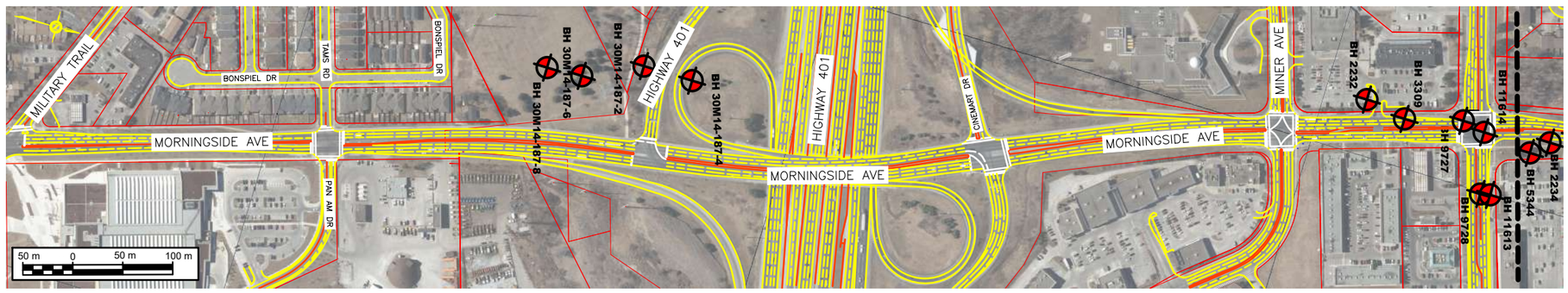

KEY PLAN

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LEGEND:

PREVIOUS BOREHOLES, (By Others)

SEGMENT BOUNDARY

NOTES:

Borehole locations are approximate, drawn as shown on the pdf document provided by the client.

Available borehole logs:

1. **BH 30M14-187-2**
2. **BH 30M14-187-4**
3. **BH 30M14-187-6**
4. **BH 30M14-187-8**

See Appendix A for borehole logs

No.	REVISIONS	DATE	BY

GEOTECHNICAL DESKTOP ASSESSMENT
EGLINGTON EAST LIGHT RAIN TRANSIT (EELRT)
BETWEEN KENNEDY STATION TO MALVERN TOWN CENTER, TORONTO, ONTARIO.

SEGMENT 2 - MORNINGSIDE AVENUE

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CONSULTING ENGINEERS

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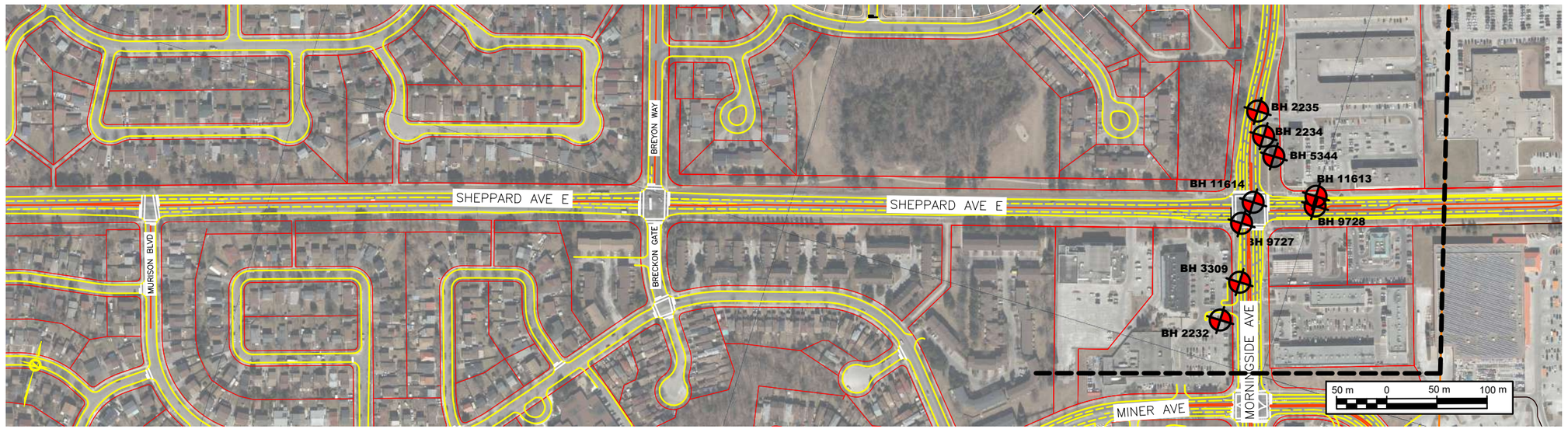

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KEY PLAN

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LEGEND:

PREVIOUS BOREHOLES, (By Others)

SEGMENT BOUNDARY

NOTES:

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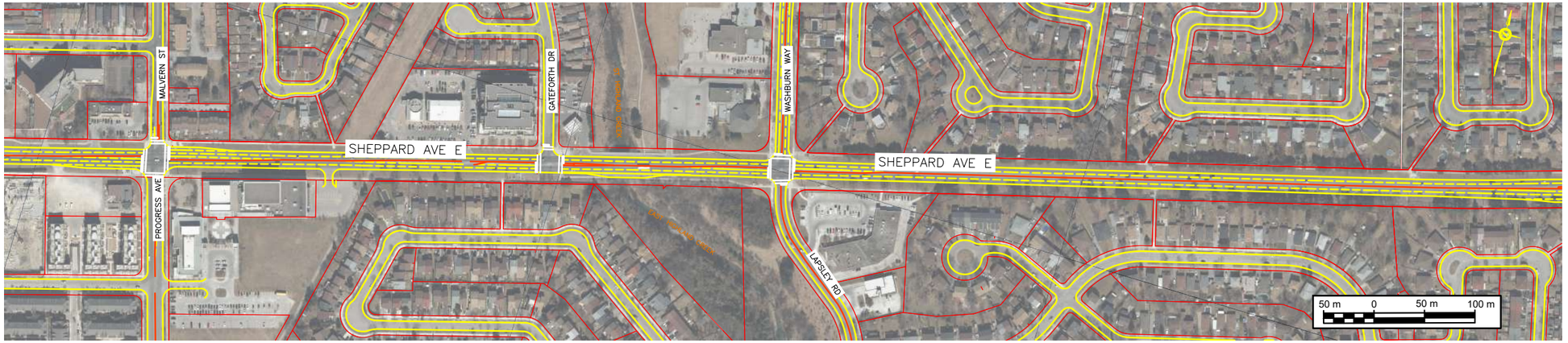
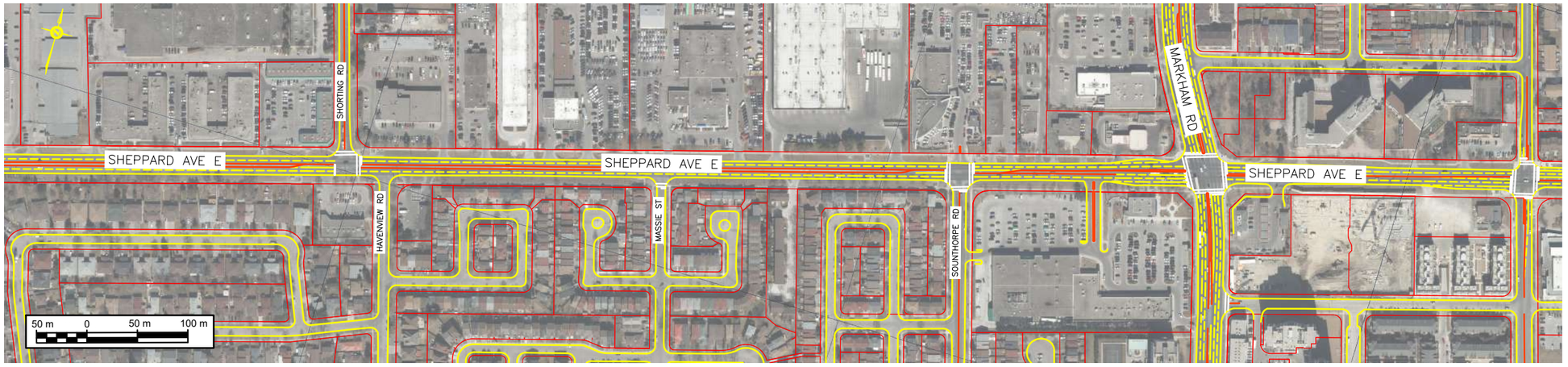
GEOTECHNICAL DESKTOP ASSESSMENT
EGLINGTON EAST LIGHT RAIN TRANSIT (EELRT)
BETWEEN KENNEDY STATION TO MALVERN TOWN CENTER, TORONTO, ONTARIO.

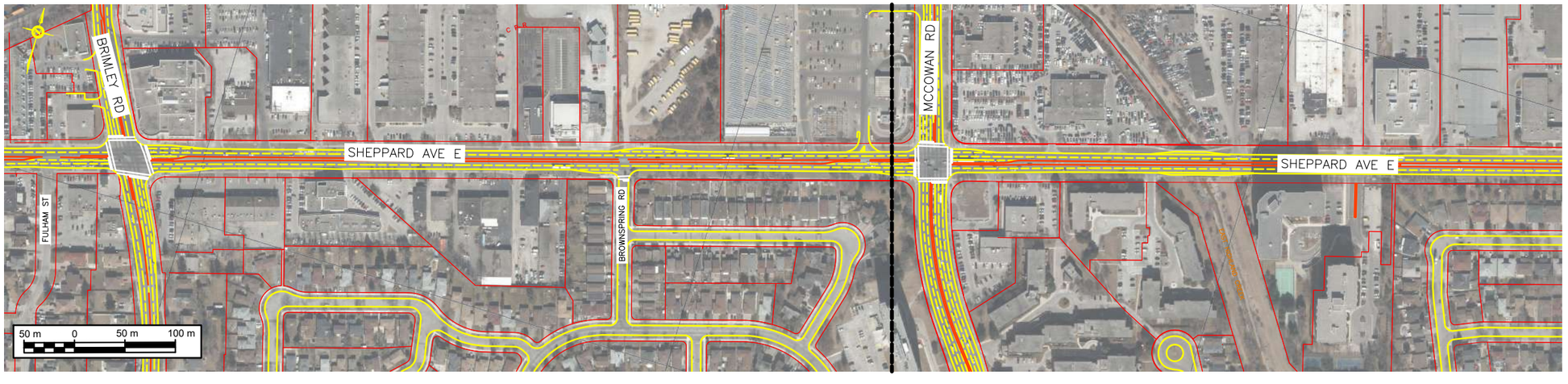
SEGMENT 3 -
SHEPPARD AVENUE EAST AND NIELSON ROAD

Peto MacCallum Ltd.
CONSULTING ENGINEERS

DRAWN: JM	DATE	SCALE	PML REF.	DRAWING NO.
CHECKED: LY	DEC 2023	AS SHOWN	23TF007	5
APPROVED: GU				







(CONTINUE HERE)

(CONTINUE HERE)

KEY PLAN

1 Km 0 1 Km 2 Km

SCALE

NOTES:

1. **THIS DRAWING WAS REPRODUCED FROM THE AUTOCAD DRAWINGS "10325954-CI0000-05-AR001, 10325954-RO0000-05-BP001, 10325954-SV0000-05-DM001," PROVIDED BY THE CLIENT.**
2. **DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.**

LEGEND:

PREVIOUS BOREHOLES, (By Others)

SEGMENT BOUNDARY

NOTES:

Borehole locations are approximate, drawn as shown on the pdf document provided by the client.

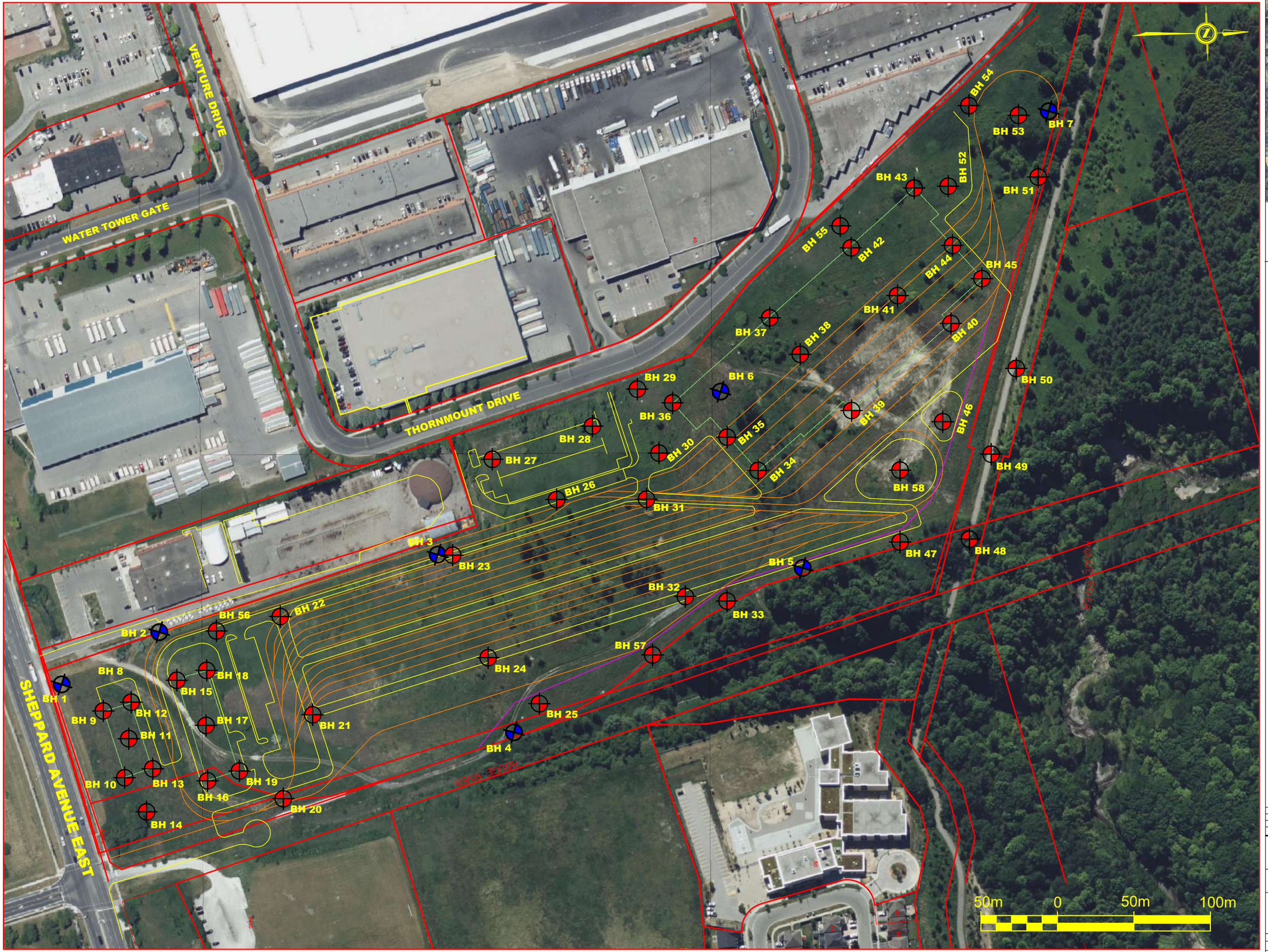
No.	REVISIONS	DATE	BY

GEOTECHNICAL DESKTOP ASSESSMENT
POTENTIAL EXTENSION McCOWAN ROAD TO NEILSON ROAD ALIGNMENT,
TORONTO, ONTARIO.

SEGMENT 3 -
SHEPPARD AVENUE EAST

Peto MacCallum Ltd.
CONSULTING ENGINEERS

DRAWN: JM	DATE	SCALE	PML REF.	DRAWING NO.
CHECKED: LY	JAN 2024	AS SHOWN	23TF007	6
APPROVED: GU				



KEY PLAN

500m 0 500m 1 Km

SCALE

NOTES:

1. THIS DRAWING WAS REPRODUCED FROM THE AUTOCAD DRAWINGS "10325954-CI0000-06-AR001, 10325954-RO0000-06-BP001, 10325954-SV0000-06-DM001," PROVIDED BY THE CLIENT.
2. DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

LEGEND:

PREVIOUS BOREHOLES, (By others)

PREVIOUS BOREHOLES, (By others)

NOTES:

Borehole locations are approximate, as shown on the pdf document provided by the client. Borehole logs are provided in Appendix A.

No.	REVISIONS	DATE	BY

GEOTECHNICAL DESKTOP ASSESSMENT
MAINTENANCE AND STORAGE FACILITY (MSF)
AT SHEPPARD AVENUE EAST AND CONLINS ROAD, TORONTO, ONTARIO.

MAINTENANCE AND STORAGE FACILITY

Peto MacCallum Ltd.
CONSULTING ENGINEERS

DRAWN: JM	DATE	SCALE	PML REF.	DRAWING NO.
CHECKED: LY	DEC 2023	AS SHOWN	23TF007	7
APPROVED: GU				

Appendix A

Previous Borehole Logs

SEGMENT – 1

18-803

Log of Borehole 1

Trow

Auger Sample	⊠	Natural Moisture Content	×
SPT (N) Value	○ ▨	Plastic and Liquid Limit	⊢○
Dynamic Cone Test	———	Undrained Triaxial at Overburden Pressure / % Strain at Failure	15 ⊕ 5 / 10
Shelby Tube	● ■	Penetrometer	▲
Field Vane Test	+s		

Project Kennedy Station Bus Bay Expansion Dwg. No. 2

Kennedy Rd. and Eglinton Ave. East

Scarborough, Ontario Project No. BR-06716-N/G

For Hole Location and Datum, see Drawing 1

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH
		100 mm Asphaltic Concrete	168.25	0
		Fill, crusher-run limestone over silty sand and gravel, contains occasional cohesive sandy silt layers, brick fragments, brown, moist, dense to compact.		
		Sandy Silt Till, with occasional thin silty fine sand layers and oxidized fissures, brown, moist, very dense.	166.9	2
		turns grey and becomes very moist at 4.6 m	164.4	4
		END OF BOREHOLE	163.2	5

N Value: 20 40 60 80

Shear Strength: 0.1 0.2 MPa

Natural Moisture Content and Atterberg Limits, % of Dry Weight: 10 20 30

SAMPLES

Natural Unit Weight kN/m³

NOTES:

1. Borehole drilled with solid stem augers on Jan. 6/93.
2. Combustible gas readings in open borehole were 0 %.
3. Five foot well screen installed with tip at 4.6 m depth and sealed with bentonite from 0.9 to 2.4m. Silica sand backfill below seal and grout above seal. Borehole cover was grouted into hole.
4. Water Level Record:

Elapsed Time	Water Level (m)
On compl	4.6
2 weeks	3.9

5. This drawing to be read with Trow Consulting Engineers Ltd. report No. BR-06716-N/G.See Drawing 1A for Notes on Sample Descriptions.

NOTE: BOREHOLE DATA REQUIRES INTERPRETATION ASSISTANCE FROM TROW BEFORE USE BY OTHERS

SEGMENT – 1

18-803

Log of Borehole 2

Trow

Auger Sample ⊠ | Natural Moisture Content ×
SPT (N) Value ○ ▨ | Plastic and Liquid Limit ⊢—○
Dynamic Cone Test ——— | Undrained Triaxial at Overburden Pressure, % Strain at Failure ⊕
Shelby Tube ● ■ | Penetrometer ▲
Field Vane Test +$_v$

Project Proposed Elevators — Dwg. No. 3
Kennedy Subway Station, Kennedy Rd. and Eglinton Ave. East
Scarborough, Ontario — Project No. BR-06716-1/G
For Hole Location and Datum, see Drawing 1

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH m	N Value (20, 40, 60, 80) / Shear Strength (0.1, 0.2 MPa)	Natural Moisture Content and Atterberg Limits % of Dry Weight (10, 20, 30)	Natural Unit Weight kN/m³
		Fill - 100 mm Concrete followed by crusher- run limestone over brown/black clayey silt fill with sand and gravel, rusted nail fragment, moist to very moist.	168.27	0			23.1
		Silt Till - brown, traces of sand and gravel, moist, oxidized fissures, dense to very dense.	– 166.9	1			20.1
		NOTES: 1. Borehole advanced by continuous flight auger machine on November 23, 1992. 2. Combustible gas readings in open borehole were 0 percent. 3. Five foot well screen installed with tip at 8.5 m; silica sand to 4.3 m and bentonite to 2.4 m. Auger cuttings then used as backfill above the bentonite seal. Borehole cover was grouted into hole. 4. Water Level Record: Elapsed Time — Water Level (m): On compl 8.6; 21 days 6.6; ~5.5 months 4.2	–165.6	2			23.8
				3			23.4
				4			23.8
		Silty Sand Till - grey, trace of gravel, moist to very moist, very dense.	– 163.7	5			23.3
		Silty fine Sand - grey, very moist to wet, very dense.	– 161.8	6			23.3
		Silty Sand Till - grey, trace of gravel, moist to very moist, very dense.	– 160.7	7			
				8	⊕ / 150mm		22.7
				9			23.4
		END OF BOREHOLE	– 158.7	10			
		5. This drawing to be read with Trow Consulting Engineers Ltd. report No.: BR-06716-I/G. See Drawing 1A for Notes on Sample Descriptions.					

NOTE: BOREHOLE DATA REQUIRES INTERPRETATION ASSISTANCE FROM TROW BEFORE USE BY OTHERS

SEGMENT – 2

30M14-187

Ministry of Transportation and Communications Ontario

12

RECORD OF BOREHOLE No 2 METRIC

W P 262-87-02 LOCATION N 4 850 602 E 329 137 ORIGINATED BY RP

DIST 6 HWY 401 BOREHOLE TYPE Solid Stem Auger COMPILED BY TN

DATUM Geodetic DATE November 4, 1987 CHECKED BY MT

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	RESISTANCE PLOT / PENETRATION 20 40 60 80 100	PLASTIC LIMIT Wp / NATURAL MOISTURE CONTENT W / LIQUID LIMIT WL	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES			SHEAR STRENGTH ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE	WATER CONTENT (%) 10 20 30		
149.0	GROUND LEVEL										
0.0	Fill - Mixture of sand, silt & gravel, traces of asphalt, and organics. Compact to Loose Brown moist		1	SS	20	Seal	148		o		
147.4			2	SS	6				o		
1.6	Fill - medium sand, some silt and gravel, traces of cobbles. Dense to Very Dense Brown Moist		3	SS	32				o		
			4	SS	51		146		o		
148.6			5	SS	66				o		
3.5	Silty clay, trace to some sand, traces of gravel. (Glacial Till) Hard Grey Damp		6	SS	67		144		o		
			7	SS	100/ 25cm				o		
141.2			R	SS	50/ 15cm		142		o		
7.8	Sand, fine, silty, traces of clay. Very Dense Brown Damp					Seal Dry 23 Nov. 20	140				
139.6			9	SS	103/ 23cm				o		
9.4	End of Borehole Borehole dry and open on completion of drilling.										

OFFICE REPORT ON SOIL EXPLORATION

+3, ×3 : Numbers refer to Sensitivity

20 / 15 / 10 S (%) STRAIN AT FAILURE

SEGMENT – 2

30M 14 – 187

Ministry of Transportation and Communications Ontario

14

RECORD OF BOREHOLE No 4 METRIC

W P 262-87-02 LOCATION N 4 850 560 E 329 150 ORIGINATED BY BP
DIST 6 HWY 401 BOREHOLE TYPE Solid Stem Auger COMPILED BY TH
DATUM Geodetic DATE November 2, 1987 CHECKED BY MT

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	RESISTANCE PLOT (PENETRATION N) 10 40 60 80 100 — SHEAR STRENGTH: ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE	PLASTIC LIMIT Wp — NATURAL MOISTURE CONTENT W — LIQUID LIMIT WL — WATER CONTENT (%) 10 20 30	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES						
148.4 GROUND LEVEL											
0.0 147.9	FILL - mixture of sand silt and some gravel Compact		1	SS	15		148				
0.5	FILL - Sandy Silt to Silty Sand, traces of clay & gravel. Dense to Compact Brown damp		2	SS	33						
			3	SS	30						
			4	SS	31		146				
144.9			5	SS	28						
3.5	Sandy Silt to Silty clay, trace of gravel, occasional cobbles. (Glacial Till) Hard Grey Damp		6	SS	45		144				2 32 41 25
			7	SS	90		142				
			8	SS	97/8 cm						
			9	SS	90/23 cm		140				
137.3			10	SS	80	Seal Nov. 20 Pea Gravel	138				Water level in borehole at 11.9 m depth (elev. 136.5 m) Nov 2, 1987 Borehole caved at 11.9 m depth.
11.1	Sand, fine, silty, trace clay. Dense Wet Grey		11	SS	31		136				
134.5			12	SS	100/15 cm						
13.9	End of Borehole										

+³, ×³ : Numbers refer to Sensitivity

$13 \frac{20}{10} 5$ (%) STRAIN AT FAILURE

OFFICE REPORT ON SOIL EXPLORATION

SEGMENT – 2

30M 14-187

Ministry of Transportation and Communications Ontario

16

RECORD OF BOREHOLE No 6 METRIC

W P 282-67-02 LOCATION N 4 850 505 E 329 164 ORIGINATED BY BP
DIST 6 HWY 401 BOREHOLE TYPE Solid Stem Auger COMPILED BY TH
DATUM Geodetic DATE November 6, 1987 CHECKED BY MT

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	RESISTANCE PLOT (PENETRATION) 20 40 60 80 100	PLASTIC LIMIT Wp	NATURAL MOISTURE CONTENT W	LIQUID LIMIT WL	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES			SHEAR STRENGTH: ○ UNCONFINED ⊕ QUICK TRIAXIAL ◆ FIELD VANE ✕ LAB VANE	WATER CONTENT (%) 10 20 30				GR SA SI CL
143.7 GROUND LEVEL													
0.0 143.2	Fill-sand, traces of organics. Compact		1	SS	18								
0.5	Fill - Fine sand, silty and gravelly.		2	SS	36								25 49 21 5
			3	SS	69								
141.0	Dense to Very Dense Brown Damp		4	SS	83								
2.7	Sandy silt, some gravel traces of clay and occasional gravel seams		5	SS	88/25cm								
	(Glacial Till)												
	Very Dense Brown Damp		6	SS	77								
137.5			7	SS	86/23cm								
6.2	Sand, fine, silty, traces of clay.					Nov.20							
	Very Dense Brown												
135.9			8	SS	73/15cm								
7.8	End of Borehole												

Borehole caved at 7.3 m depth on completion of drilling.

Water level in borehole 7.6 m (elev. 136.1 m) on completion of drilling.

+³, ×⁵ : Numbers refer to Sensitivity

15 (30/10) 5 (%) STRAIN AT FAILURE

OFFICE REPORT ON SOIL EXPLORATION

SEGMENT – 2

30M14-187

Ministry of Transportation and Communications Ontario

18

RECORD OF BOREHOLE No 8 METRIC

W P 262-87-02 LOCATION N 4 850 471 E 329 172 ORIGINATED BY BP

DIST 6 HWY 401 BOREHOLE TYPE Solid Stem Auger COMPILED BY TM

DATUM Geodetic DATE November 5, 1987 CHECKED BY MT

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	RESISTANCE PLOT PENETRATION 20 40 60 80 100	PLASTIC LIMIT Wp	WATER CONTENT W	LIQUID LIMIT WL	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES			SHEAR STRENGTH ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE		WATER CONTENT (%) 10 20 30			
149.1 0.0	GROUND LEVEL												
	Fill-fine sand, silty		1	SS	3								
			2	SS	16		148						
	Very Loose to Compact Brown Damp		3	SS	9								0 71 24 5
146.4			4	SS	6	Sea							
2.7	Silt, trace fine sand						146						
	Compact to Dense Brown Moist		5	SS	22								
143.5			6	SS	38		144						
5.6	Sandy Silt, some gravel trace clay. (Glacial Till) Very Dense Brown Damp		7	SS	60								
141.1			8	SS	98/25cm		142						
8.0	Sand, fine to medium, silty. Very Dense Brown		9	SS	93/25cm		140						
			10	SS	100/23cm		138						
	Damp Wet					Nov. 20							Borehole caved at 12.8 m depth on completion of drilling. Water level in borehole at 12.2 m depth (elev. 136.9 m) on completion of drilling.
			11	SS	101		136						
135.1			12	SS	111								
14.0	End of Borehole												

$+^3$, $\times^3$: Numbers refer to Sensitivity

$\frac{20}{15 \diamond 5}$ (%) STRAIN AT FAILURE
$\frac{}{10}$

OFFICE REPORT ON SOIL EXPLORATION

RECORD OF BOREHOLE 1

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 16, 2009
COMPLETED : October 16, 2009

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa Pocket ● nat V - ● Q - ✕ Rem rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.4							
		250mm TOPSOIL		0.00							
	POWER AUGER BORING	Loose to compact, moist, brown sandy silt, trace to some clay, trace gravel, trace organics, FILL (SM)			1	SS	12				
					2	SS	13				
2		— silty sand			3	SS	7				
				135.1 2.3							
	200mm O.D. HOLLOW STEM AUGERS	Compact, moist to wet, brown, SAND AND GRAVEL (GP/SP)			4	SS	28				
					5	SS	30				
4				133.6 3.8							
		Hard, grey, moist CLAYEY SILT, sandy, trace to some gravel, TILL (CL -ML)			6	SS	32				
					7	SS	38				
6					8	SS	82				
				130.7 6.7							
		End of Borehole									
8		Water level at 3.0m (not stabilized) and hole open to full depth on completion									
		Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 3.0m slotted screen.									
		Water Level Readings:									
		Date Depth(m) Elevation(m)									
		Oct 26 09 3.6 133.9									
		Feb 10 10 3.7 133.7									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/16/2009 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/15/10

RECORD OF BOREHOLE 2

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 16, 2009
COMPLETED : October 16, 2009

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● nat V - ● Q - ✕ / Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.7							
		200mm TOPSOIL		0.00							
		Firm, brown, moist, clayey silt, some sand, trace gravel, FILL (CL - ML)		136.9 0.8	1	SS	5				
2	POWER AUGER BORING	Stiff to hard, moist, brown, CLAYEY SILT sandy, some gravel, TILL (CL - ML)			2	SS	14				
					3	SS	19	GR SA SI CL 11 38 36 15			
					4	SS	41				
4		grey below			5	SS	32				
					6	SS	41				
					7	SS	50/ 0cm				
6					8	SS	67				
					9	SS	54				
8				129.5							
		End of Borehole		8.2							
10		Borehole was dry (not stabilized) and hole open to full depth on completion. Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 4.6m slotted screen. Water Level Readings: Date Depth(m) Elevation(m); Oct.28.09 1.0 136.7									
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/16/2009 ▼ WATER LEVEL (date) 10/28/2009

LOGGED DB
CHECKED MT

TTC BH 1-09-4947 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 3

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 15, 2009
COMPLETED : October 15, 2009

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH, Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		139.7							
		250mm TOPSOIL		0.00	1	SS	6				
		Firm to stiff, moist, brown, clayey silt, trace sand, trace gravel, FILL (CL - ML)			2	SS	12				
				138.2 1.5							
2	POWER AUGER BORING 200mm O.D. HOLLOW STEM AUGERS	Stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	13				
					4	SS	34				
		grey, damp below			5	SS	50/ 15cm				
4					6	SS	55				
					7	SS	53				
6					8	SS	23				
					9	SS	28				
8				131.5 8.2							
		End of Borehole									
		Water level at 6.4m (not stabilized) and hole open to full depth on completion.									
		Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 3.0m slotted screen.									
		Water Level Readings									
		Date Depth(m) Elevation(m)									
		Oct.26 09 6.3 133.4									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/15/2009 ▼ WATER LEVEL (date) 10/26/2009

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 4

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 15, 2009
COMPLETED : October 15, 2009

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH, Cu, kPa: Pocket / Pen / rem V / U	WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		136.5								
		250mm TOPSOIL		0.00	1	SS	10					
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, organic inclusion, FILL (SM)			2	SS	10					
				135.1 1.4	3	SS	12					
2		Stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	34					
		damp below			5	SS	78/ 25cm					
4		grey below			6	SS	44					
					7	SS	95					
6					8	SS	88/ 28cm					
8					9	RC	92					
					10	SS	50/ 15cm					
10					11	SS	50/ 30cm					
		End of Borehole		125.5 11.0								
12		Water level at 7.6m (not stabilized) and hole open to full depth on completion. Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 4.6m slotted screen. Water Level Readings: Date Depth(m) Elevation(m) Oct.26 09 3.0 133.5										
14												

POWER AUGER BORING
200mm O.D. HOLLOW STEM AUGERS

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/15/2009 ▼ WATER LEVEL (date) 10/26/2009

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 5

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 13, 2009
COMPLETED : October 13, 2009

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● nat V - ● Q - ✕ / Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		139.9							
	POWER AUGER BORING 203mm O.D. HOLLOW STEM AUGERS	150mm TOPSOIL		0.00							
		Stiff, moist, brown, clayey silt, sandy, trace gravel, trace organics, FILL (CL - ML)		139.1 / 0.8	1	SS	9				
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	28				
2					3	SS	33				
		---- cobbles			4	SS	50/ 15cm				
		damp below									
		grey below			5	SS	37				
4					6	SS	48				
					7	SS	82				
6					8	SS	50/ 13cm				
					9	SS	50/ 15cm				
8											
					10	SS	50/ 15cm				
10											
		End of Borehole		129.0 / 10.9	11	SS	50/ 5cm				
12		Water level at 8.5m (not stabilized) and hole open to full depth on completion.									
		Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 3.0m slotted screen.									
		Water Level Readings									
		Date Depth(m) Elevation(m)									
		Oct.28 09 0.9 139.0									
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/13/2009 ▼ WATER LEVEL (date) 10/28/2009

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 6

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 14, 2009
COMPLETED : October 14, 2009

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH, Cu, kPa: Pocket ● nat V - ● Q - ✕ Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp I—⊙—w I wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.3							
	POWER AUGER BORING 200mm Ø TO HOLLOW STEM AUGERS	80mm TOPSOIL		0.00	1	SS	8				
		Loose to compact, moist, brown, sandy silt, trace to some clay, trace gravel, organic inclusions, FILL (SM)			2	SS	12				
				141.8 / 1.5	3	SS	21				
2		Very stiff to hard, damp,brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	53				
					5	SS	50/ 13cm				
4					6	SS	50/ 0cm				
		grey below			7	SS	80				
6					8	SS	50/ 5cm				
8					9	SS	42				
					10	SS	80				
10					11	SS	75				
		End of Borehole		132.1 / 11.2							
12		Borehole was dry (not stabilized) and hole open to full depth on completion. Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 4.6m slotted screen. Water Level Readings: Date Depth(m) Elevation(m) Oct.26 09 7.1 136.2									
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/14/2009 ▼ WATER LEVEL (date) 10/26/2009

LOGGED DB
CHECKED MT

TTC BH 1-09-4047 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 7

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : October 14, 2009
COMPLETED : October 14, 2009

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.2 / 0.00							
		600mm TOPSOIL		141.6 / 0.6	1	SS	4				
		Loose to very loose, moist, brown / dark brown, sandy silt, trace to some clay, organic inclusion, wood chips; FILL (SM)			2	SS	2				
		---- wood chunk			3	SS	50/ 13cm				
2					4	SS	3				
		---- clayey silt, soft			5	SS	3				
				138.4 / 3.8							
4		Stiff to very stiff, very moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL-ML)			6	SS	14				
					7	SS	14				
6		---- grey below			8	SS	16				
		---- damp below			9	SS	25				
8											
					10	SS	23				
10											
					11	SS	15				
				130.9 / 11.3							
12		End of Borehole Water level at 9.1m (not stabilized) and hole open to 10.4m on completion. Monitoring well installation consists of a 50mm diameter, Schedule 40 PVC pipe with a 4.6m slotted screen. Water Level Readings: Date Depth(m) Elevation(m) Oct 26 09 3.4 138.8									
14											

POWER AUGER BORING
250mm O.D. HOLLOW STEM AUGERS

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 10/14/2009

▼ WATER LEVEL (date) 10/26/2009

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 8

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 18, 2010
COMPLETED : January 18, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm)	% LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✕ U - ▲	WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.3									
		230mm TOPSOIL		0.00	1	SS	14						
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			2	SS	60/ 23cm						
				135.8 1.5									
2	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Firm to very stiff, moist, brown, clayey silt, trace sand, trace gravel, FILL (CL - ML)			3	SS	18						
		150mm topsoil layer at 2.4m			4	SS	7						
				134.3 3.0									
4		Very stiff to hard, moist, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			5	SS	37						
					6	SS	33						
6		— damp		131.1 6.2	7	SS	50/ 24cm						
		End of Borehole											
		Water level at 4.6m (not stabilized) and hole open to 5.5m on completion											
8													
10													
12													
14													

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/18/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 9

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 18, 2010
COMPLETED : January 18, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT wp wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.0							
		180mm TOPSOIL		0.00	1	SS	28				
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			2	SS	14				
		— loose			3	SS	7				
2	POWER AUGER BORING	150mm topsoil layer at 2.4m		135.4 2.6	4	SS	10				
	150mm Dia. SOLID STEM AUGERS	Loose, moist, brown, SAND, some silt, trace gravel, (SM)			5	SS	7				
4		— silty sand		133.5 4.5							
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			6	SS	25				
6					7	SS	38				
		End of Borehole		131.4 6.6							
		Water level at 5.8m (not stabilized) and hole open to full depth on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen.									
		Water Level Readings: Date / Depth(m) / Elevation(m); Feb 10 10 / 3.5 / 134.5									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/18/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 10

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 18, 2010
COMPLETED : January 18, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.5							
		200mm TOPSOIL		0.00	1	SS	19				
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			2	SS	32				
					3	SS	36				
2	POWER AUGER BORING 152mm Dia. SOLID STEM AUGERS	---- some gravel, trace organics, dark brown			4	SS	25				
				135.5 3.0							
		Loose, moist, brown, sand and gravel, trace silt, FILL (GW/SW)			5	SS	8				
4				134.0 4.5							
		Firm, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			6	SS	6				
6		---- very stiff		131.9	7	SS	27				
		End of Borehole		6.6							

Wet cave at 5.5m on completion

Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen

Water Level Readings

Date	Depth(m)	Elevation(m)
Feb.10 10	4.7	133.8

8
10
12
14

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/18/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 11

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 18, 2010
COMPLETED : January 18, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH, Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.1							
		150mm TOPSOIL		0.00	1	SS	17				
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, trace organics; FILL (SM)			2	SS	20				
2					3	SS	14				
		--- loose			4	SS	7				
		200mm topsoil layer at 3.0m			5	SS	12				
				134.6 3.5							
4		Very stiff to hard, moist, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)									
					6	SS	21				
6					7	SS	22				
					8	SS	92/ 5cm				
8					9	SS	50/ 5cm				
10					10	SS	74				
				126.9 11.2							
		End of Borehole									
12		Wet cave at 4.4m on completion									
14											

POWER AUGER BORING
150mm Dia. SOLID STEM AUGERS

GROUNDWATER ELEVATIONS

WATER LEVEL (date) 1/18/2010

WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC Bh 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 12

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 18, 2010
COMPLETED : January 18, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; rmd V - ● U - ▲; rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.6							
		150mm TOPSOIL		0.0							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Compact, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			1	SS	18				
					2	SS	14				
2		clayey silt			3	SS	10				
		topsoil inclusions			4	SS	6				
				134.6 3.0							
4		Compact, wet, grey, SILTY SAND, trace gravel, trace organics, (SM)			5	SS	16				
				133.1 4.5							
		Very stiff, moist, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			6	SS	20				
6					7	SS	20				
				131.0 6.6							
		End of Borehole									
8		Water level at 4.3m (not stabilized) and hole open to full depth on completion Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen. Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 2.8 134.8									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/18/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 13

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 16, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / rem V / rem U / WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.8							
	POWER AUGER BORING 152mm Dia. SOLID STEM AUGERS	150mm TOPSOIL		0.00	1	SS	20				
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel; FILL (SM)			2	SS	33				
2					3	SS	14				
					4	SS	10				
		topsoil layer at 3.1m			5	SS	10				
4				133.3							
		Very stiff, moist, grey, CLAYEY SILT, sandy, trace to some gravel; TILL (CL - ML)		4.5	6	SS	32				
6											
					7	SS	19				
				131.2							
		End of Borehole		6.6							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/18/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 14

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 18, 2010
COMPLETED : January 18, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● nat V - ● Q - ✕ / Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp I — O — I wl 10 20 30 40	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.9							
		180mm TOPSOIL		0.00	1	SS	19				
		Compact to dense, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			2	SS	44				
2					3	SS	16				
		— some gravel, topsoil inclusion		136.5 2.4	4	SS	9				
		Loose to dense, moist, brown, SANDY GRAVEL, trace clay, trace silt, (GW)			5	SS	41	GR SA SI CL 66 27 5 2			
4											
		Very stiff, moist, brown, CLAYEY SILT, some sand, trace gravel, TILL (CL - ML)		134.4 4.5	6	SS	21				
6					7	SS	28				
		End of Borehole		132.3 6.6							
		Water level at 5.8m (not stabilized) and hole open to full depth on completion.									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/18/2010 ▼ WATER LEVEL (date)

LOGGED : DB
CHECKED : TM

TTC BH 1-09-4247 TTC.GPJ 02/26/10

RECORD OF BOREHOLE 15

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 19, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen / nat V - ● rem V - ● Q - ✕ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.2							
		180mm TOPSOIL		0.00							
	POWER AUGER BORING	Stiff to very stiff, moist, brown, silty clay, some sand, trace gravel, trace organics; FILL (CL)			1	SS	30				
					2	SS	11				
				135.7 1.5							
2		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel; TILL (CL - ML)			3	SS	30				
					4	SS	37				
					5	SS	58/ 23cm				
4		grey below									
					6	SS	47				
6					7	SS	40				
		End of Borehole		130.9 6.9							
		Water level at 1.8m (not stabilized) and hole open to 1.9m on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date)

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/18/10

RECORD OF BOREHOLE 16

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 19, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH, Cu, kPa: Pocket ● nat V - ● Q - ✕ / Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.0							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	150mm TOPSOIL		0.00	1	SS	10				
		Stiff to very stiff, moist, brown, silty clay, trace gravel, trace organics, occasional sandy silt lenses. FILL (CL)			2	SS	19				
		---- dark brown, topsoil inclusion			3	SS	12				
				134.7 2.3							
		Compact, wet, brown, SILTY SAND, trace gravel, occasional silty clay seams. (SM)			4	SS	16				
					5	SS	17				
				132.5 4.5							
		Very stiff to hard, moist, grey, CLAYEY SILT, sandy, trace to some gravel. TILL (CL - ML)			6	SS	28				
					7	SS	18				
				130.4 6.6							
		End of Borehole									

Water level at 2.3m (not stabilized) and hole open to 3.0m on completion.

Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen.

Water Level Readings

Date	Depth(m)	Elevation(m)
Feb 10 10	2.2	134.8

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 17

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 19, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m
		GROUND SURFACE		137.3			
		150mm TOPSOIL		0.00			
	POWER AUGER BORING 150mm Dia SOLID STEM AUGERS	Firm, moist, brown, clayey silt, sandy, trace to some gravel, FILL (CL - ML)			1	SS	12
					2	SS	6
2					3	SS	7
					4	SS	4
				133.8	5	SS	4
				3.4			
4		Very stiff to hard, moist, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)					
					6	SS	21
6							
					7	SS	82 / 25cm
		— damp		130.7			
		End of Borehole		6.5			

Water level at 5.8m (not stabilized) and hole open to full depth on completion

Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen

Water Level Readings

Date	Depth(m)	Elevation(m)
Feb 10 10	1.6	135.6

ORGANIC VAPOUR READINGS (ppm) ⊗
10 20 30 40
% LEL - (methane) □
40 80 120 160

SHEAR STRENGTH Cu, KPa
Pocket ● Intact V - ● Q - ✕
Pen Rem V - ● U - ▲
20 40 60 80

WATER CONTENT, PERCENT
wp ⊖ w ⊖ wl
10 20 30 40

ADDITIONAL LAB TESTING

PIEZOMETER OR STANDPIPE INSTALLATION

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1409-4247 TTC.GPJ 02/18/10

RECORD OF BOREHOLE 18

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 19, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH, Cu, kPa Pocket * nat V - ● rem V - ● / Pen / WATER CONTENT, PERCENT wp w wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.3							
		200mm TOPSOIL		0.00							
		Weathered		136.5 0.8	1	SS	9				
2	POWER AUGER BORING 150mm Dia SOLID STEM AUGERS	Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel. TILL (CL - ML)			2	SS	13				▼
					3	SS	23				
4					4	SS	36	GR SA SI CL 12 34 38 11			
					5	SS	37				
		grey below			6	SS	57				
6					7	SS	50/ 254mm				
		End of Borehole		130.8 6.5							
		Water level at 4.3m (not stabilized) and hole open to 5.2m on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen									
		Water Level Readings									
		Date Depth(m) Elevation(m)									
		Feb 10 10 1.1 136.2									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 03/19/10

RECORD OF BOREHOLE 19

PROJECT TTC LRV Facility
LOCATION Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED January 19, 2010
COMPLETED January 19, 2010

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH, Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✖ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT: wp I w I wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.1							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	150mm TOPSOIL		0.00	1	SS	21				
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			2	SS	19				
		topsoil layer at 1.8m			3	SS	8				
2		— wet, gravelly sand layer		134.8 2.3	4	SS	13				
		Very stiff, moist, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			5	SS	25				
4											
					6	SS	27				
6		— damp			7	SS	21				
				130.5 6.6							
		End of Borehole									
8		Water level at 3.7m (not stabilized) and hole open to full depth on completion Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 2.2 134.9									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 20

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 19, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH, Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		136.8							
		150mm TOPSOIL		0.00	1	SS	14				
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, FILL (SM)			2	SS	16				
2	POWER AUGER BORING	topsoil layer at 1.8m			3	SS	16				
	150mm Dia. SOLID STEM AUGERS			134.5 2.3							
		Compact, wet, brown, silty sand, trace clay, trace gravel, (SM)		133.8 3.0	4	SS	14				
4		Very stiff to hard, moist, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			5	SS	32				
					6	SS	39				
6					7	SS	37				
		End of Borehole		130.2 6.6							
		Water level at 2.7m (not stabilized) and hole open to 3.4m on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 21

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 20, 2010
COMPLETED : January 20, 2010

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) ⊗ / % LEL - (methane) □	SHEAR STRENGTH: Cu, kPa (Pocket ●, nat V - ●, rem V - ●, U - ▲, Q - ✕) / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		136.5							
		200mm TOPSOIL		0.00							
		Loose, wet, brown, silty sand, trace clay, trace organics, FILL (SM)		135.7 0.8	1	SS	7				
		Very stiff, moist, brown, silty clay, some sand, trace gravel, TILL (CL)			2	SS	15				
2	POWER AUGER BORING				3	SS	26	GR SA SI CL 2 17 45 36			
	150mm Dia. SOLID STEM AUGERS			134.2 2.3							
		Very stiff to hard, moist, greyish brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	27				
					5	SS	29				
6											
					6	SS	33				
				130.3 6.2	7	SS	50/ 0cm				
		End of Borehole									
		Water level at 0.6m (not stabilized) and hole open to 2.7m on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 22

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON PROPOSED MSF
STARTED : January 19, 2010
COMPLETED : January 19, 2010

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; nat V - ● rem V - ● Q - ✖ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp I—○—w I wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.4							
	POWER AUGER BORING 150mm dia SOLID STEM AUGERS	200mm TOPSOIL		0.00	1	SS	5				
		Weathered		137.9 0.6							
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	17				
2					3	SS	29				
		damp below			4	SS	50/ 5cm				
					5	SS	50/ 3cm				
4		grey below			6	SS	56				
6					7	SS	71				
		End of Borehole		131.8 6.6							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date)

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 23

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 20, 2010
COMPLETED : January 20, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / nat V / rem V / Pen / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	GROUND SURFACE		139.7							
		300mm TOPSOIL		0.00 / 139.3 / 0.4	1	SS	3				
		Stiff, moist, brown, silty clay, some sand, trace gravel, TILL (CL)			2	SS	13				
				138.2 / 1.5	3	SS	24				
2		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	50/ 8cm				
		grey below			5	SS	50/ 0cm				
4		damp below			6	SS	50/ 5cm				
6				133.4 / 6.3	7	SS	50/ 5cm				
		End of Borehole									
		Borehole was dry (not stabilized) and hole open to full depth on completion.									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 24

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 20, 2010
COMPLETED : January 20, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH, Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✕ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT: wp I—O—I wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.0							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	150mm TOPSOIL		0.00	1	SS	9				
		Weathered		137.2 0.8	2	SS	17				
		Stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	21				
2		damp below			4	SS	50/ 80mm				
					5	SS	50/ 10cm				
4		grey below			6	SS	50/ 80mm				
6				131.7 6.3	7	SS	50/ 5cm				
		End of Borehole									
		Borehole was dry (not stabilized) and hole open to full depth on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen									
		Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 1.1 136.9									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 25

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 28, 2010
COMPLETED : January 28, 2010

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● nat V - ● Q - ✕ Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp I—○—w I wl 10 20 30 40	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		137.0							
		150mm TOPSOIL		0.00							
		Weathered		136.2	1	SS	5				
				0.8							
		Hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	38				
2					3	SS	36				
					4	SS	71/ 23cm				
		damp below			5	SS	50/ 0cm				
4	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS										
		grey below			6	SS	50/ 3cm				
6					7	SS	50/ 5cm				
					8	SS	50/ 8cm				
8											
		End of Borehole		127.8 / 9.2	9	SS	50/ 0cm				
10		Borehole was dry (not stabilized) and hole open to full depth on completion. Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen. Water Level Readings: Date Feb.10 10 — Depth(m) 1.6 — Elevation(m) 135.4									
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/28/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-42-47 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 26

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON PROPOSED MSF
STARTED : January 20, 2010
COMPLETED : January 20, 2010

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / rem V / U	WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.6								
		150mm TOPSOIL		0.00								
		Loose, moist, brown, GRAVELLY SAND, (SW)			1	SS	6					
		— dense			2	SS	24					
				140.1 1.5								
2		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	29					
					4	SS	30					
					5	SS	50/ 8cm					
4		— damp, grey			6	SS	50/ 8cm					
6				135.3 6.3	7	SS	50/ 6cm					
		End of Borehole										
		Water level at 1.4m (not stabilized) and hole open to 1.5m on completion.										
8												
10												
12												
14												

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED : DD
CHECKED : TM

TTC BH 1-09-4247 TTC.GPJ 02/26/10

RECORD OF BOREHOLE 27

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 20, 2010
COMPLETED : January 20, 2010

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket Pen / nat V / rem V / WATER CONTENT, PERCENT wp, w, wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.5							
		230mm TOPSOIL		0.00							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Compact, moist, brown, MEDIUM SAND, trace silt, (SP)		141.7 0.8	1	SS	18				
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	10				
2		damp below			3	SS	47				
					4	SS	50/ 5cm				
					5	SS	50/ 5cm				
4		grey below			6	SS	50/ 3cm				
6					7	SS	50/ 3cm	GR SA SI CL 4 36 39 21			
		End of Borehole		136.1 6.4							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen									
		Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 1.4 141.1									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 28

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 20, 2010
COMPLETED : January 20, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V	WATER CONTENT, PERCENT: wp / w / wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.6								
		150mm TOPSOIL		0.00								
		Loose, moist, brown, sandy silt, trace organics, FILL (SM)		142.0 / 0.6	1	SS	4					
		Compact, moist, brown, SAND, trace silt, (SP)		141.1 / 1.5	2	SS	10					
2	POWER AUGER BORING 153mm Dia. SOLID STEM AUGERS	Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	32					
					4	SS	43					
		---- damp below			5	SS	50/ 50cm					
4		---- grey below			6	SS	50/ 50cm					
6					7	SS	50/ 50cm	GR SA SI CL 6 39 37 18				
		End of Borehole		136.3 / 6.3								
		Water level at 1.2m (not stabilized) and hole open to 1.4m on completion										
8												
10												
12												
14												

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 29

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 21, 2010
COMPLETED : January 21, 2010

PROPOSED MSF

Toronto Transit Commission

Sheet 1 of 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / Q / U / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.6							
		250mm TOPSOIL		0.00	1	SS	13				
		Stiff, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	9				
2	POWER AUGER BORING 152mm Dia. SOLID STEM AUGERS	hard below			3	SS	44				
		damp below			4	SS	55				
					5	SS	50/ 5cm				
4		grey below			6	SS	50/ 5cm				
6				137.3	7	SS	50/ 5cm				
		End of Borehole		6.3							
		Borehole was dry (not stabilized) and hole open to full depth on completion.									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 30

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 21, 2010
COMPLETED : January 21, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket * / nat V - ● / rem V - ● / C - ✖ / U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp w wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.0							
		230mm TOPSOIL		0.00							
	POWER AUGER BORING	Loose, moist, brown, FINE SAND, trace silt, trace organics, (SP)			1	SS	6				
				141.2							
		Stiff, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)		0.8	2	SS	9				
		very stiff, damp below			3	SS	29				
		hard below			4	SS	65				
					5	SS	70				
		grey below			6	SS	73				
					7	SS	53				
				135.4							
		End of Borehole		6.6							
		Borehole was dry (not stabilized) and hole open to full depth on completion									

150mm Dia. SOLID STEM AUGERS

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 31

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON PROPOSED MSF
STARTED : January 21, 2010
COMPLETED : January 21, 2010

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa Pocket ● nat V - ● Q - ✕ Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.8							
	POWER AUGER BORING 152mm Dia. SOLID STEM AUGERS	200mm TOPSOIL		0.00							
		Loose, moist, brown, SAND, trace gravel, (SW)		141.0 0.8	1	SS	9				
		Dense, moist, brown, SAND AND GRAVEL, (GW/SW)		140.3 1.5	2	SS	37				
2		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	19				
					4	SS	83/ 28cm				
		damp below			5	SS	50/ 15cm				
4											
		grey below			6	SS	50/ 5cm				
6				135.8 6.3	7	SS	50/ 5cm				
		End of Borehole									
8		Water level at 4.6m (not stabilized) and hole open to full depth on completion. Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen. Water Level Readings: Date Depth(m) Elevation(m); Feb.10 10 1.5 140.3									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 32

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 21, 2010
COMPLETED : January 21, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa / WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		139.9							
		150mm TOPSOIL		0.00							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Compact, moist, dark brown, SAND AND GRAVEL, some silt, asphalt pieces, FILL (GM/SM)			1	SS	11				
					2	SS	17				
		moist		138.4 1.5	3	SS	38				
2		Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	46				
					5	SS	50/ 25cm				
4		grey below			6	SS	50/ 8cm				
6				133.6 6.3	7	SS	50/ 8cm				
		End of Borehole									
		Borehole was dry (not stabilized) and hole open to full depth on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 33

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 28, 2010
COMPLETED : January 28, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✕ U - ▲ / 20 40 60 80	WATER CONTENT, PERCENT: wp I — w — wl / 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		139.3								
		50mm TOPSOIL		0.00								
		Compact, moist, brown, sandy silt, some gravel, trace to some clay, FILL (SM)			1	SS	11					
				138.3								
		moist		1.0	2	SS	16					
		Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	58					
2					4	SS	78					
					5	SS	50/ 5cm					
4		grey below			6	SS	50/ 0cm					
6					7	SS	50/ 8cm					
8					8	SS	50/ 8cm					
					9	SS	50/ 3cm					
10		moist			10	SS	47					
				128.2								
		End of Borehole		11.1								

Water level at 5.5m (not stabilized) and hole open to full depth on completion

Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen.

Water Level Readings

Date	Depth(m)	Elevation(m)
Feb.10.10	0.9	138.4

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/28/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 34

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 21, 2010
COMPLETED : January 21, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● nat V - ● rem V - ● Pen / WATER CONTENT, PERCENT wp w wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.0							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	50mm TOPSOIL		0.00	1	SS	24				
		Compact, moist, brown, sandy silt, some gravel, trace to some clay, asphalt pieces; FILL (SM)		140.0							
		— moist		1.0	2	SS	34				
		Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	50/ 15cm				
2					4	SS	50/ 10cm				
					5	SS	22				
4		— grey below			6	SS	50/ 0cm				
6				134.8	7	SS	50/ 3cm				
		End of Borehole		6.2							
		Water level at 4.3m (not stabilized) and hole open to full depth on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen									
		Water Level Readings:									
		Date Depth(m) Elevation(m)									
		Feb 10 10 3.3 137.7									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/18/10

RECORD OF BOREHOLE 35

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON PROPOSED MSF
STARTED : January 21, 2010
COMPLETED : January 21, 2010

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.1							
		50mm TOPSOIL		0.00							
		150mm ASHPALT			1	SS	16				
		Compact, moist, brown, silty sand, some gravel, trace clay, asphalt pieces. FILL (SM)									
		---- trace gravel, trace organics			2	SS	19				
				139.6 1.5							
2	POWER AUGER BORING	Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	50/ 5cm				
	150mm Dia. SOLID STEM AUGERS				4	SS	50/ 5cm				
		---- grey below			5	SS	50/ 0cm				
4											
					6	SS	50/ 0cm				
6				134.8 6.3	7	SS	50/ 5cm				
		End of Borehole									
		Borehole was dry (not stabilized) and hole open to full depth on completion.									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 36

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 21, 2010
COMPLETED : January 21, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa (Pocket ● Pen rem V - ● nat V - ● Q - ✕ U - ▲) 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.4							
		180mm TOPSOIL		0.00	1	SS	9				
		Weathered		141.6 0.8							
	POWER AUGER BOREHOLE 150mm Dia. SOLID STEM AUGERS	Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	20				▼
							50/ 4.5cm				
2		damp below			4	SS	78/ 28cm				
							50/ 3cm				
4		grey below					50/ 3cm				
6				136.2 6.2			50/ 3cm				
		End of Borehole									
8		Borehole was dry (not stabilized) and hole open to full depth on completion. Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen. Water Level Readings: Date Depth(m) Elevation(m) Feb 10 10 1.0 141.4									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/21/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 37

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 22, 2010
COMPLETED : January 22, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa / WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.3							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	300mm TOPSOIL		0.00 143.0	1	SS	7				
		Weathered		0.3							
				142.5 0.8							
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, occasional silty sand seams, TILL (CL - ML)			2	SS	23				
2					3	SS	36				
		damp below			4	SS	58				
					5	SS	60	GR SA SI CL 19 41 27 13			
4		grey below			6	SS	50/ 5cm				
6					7	SS	39				
		End of Borehole		136.7 6.6							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/22/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/18/10

RECORD OF BOREHOLE 38

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 22, 2010
COMPLETED : January 22, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.7							
	POWER AUGER BORING 152mm Dia SOLID STEM AUGERS	150mm TOPSOIL		0.00	1	SS	8				
		Loose, moist, brown, sandy silt, trace to some clay, trace gravel, trace organics, FILL (SM)		141.7							
		moist		1.0	2	SS	17				
					3	SS	50/ 15cm				
2		Very stiff to hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	50/ 3cm				
					5	SS	50/ 0cm				
4		grey below			6	SS	50/ 5cm				
6					7	SS	50/ 5cm				
		End of Borehole		136.4 / 6.3							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen									
		Water Level Readings									
		Date Depth(m) Elevation(m)									
		Feb.10.10 1.4 141.3									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/22/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 39

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 27, 2010
COMPLETED : January 27, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● nat V - ● Q - ✕ / Pen rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.3							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	50mm TOPSOIL		0.00							
		stiff, moist			1	SS	10				
		—			2	SS	50/ 8cm				
		Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	50/ 8cm				
2					4	SS	50/ 0cm				
					5	SS	50/ 3cm				
4		— grey below			6	SS	50/ 3cm				
6					7	SS	50/ 5cm				
				134.9							
		End of Borehole		6.4							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/27/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 40

PROJECT TTC LRV Facility
LOCATION Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED January 27, 2010
COMPLETED January 27, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa Pocket ● Pen nat V - ● rem V - ● U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp wl 10 20 30 40	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.4							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	100mm TOPSOIL stiff, moist		0.00	1	SS	9				
		Hard, damp, brown CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	50/ 5cm				
					3	SS	50/ 5cm				
2					4	SS	50/ 5cm				
		grey below			5	SS	50/ 5cm				
4					6	SS	50/ 5cm				
				136.2 5.2	7	AS					
		End of Borehole Auger Refusal at 5.2m on probable boulder Borehole was dry (not stabilized) and hole open to full depth on completion									
6											
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/27/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 41

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 22, 2010
COMPLETED : January 22, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH: Cu, kPa (Pocket ●, nat V - ●, rem V - ■, Pen, U - ▲) / WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.0							
		130mm TOPSOIL		0.00							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Firm to stiff, moist, brown, clayey silt, trace gravel, FILL (CL - ML)			1	SS	10				
					2	SS	4				
2					3	SS	6				
					4	SS	10				
					5	SS	6				
4											
					6	SS	6				
6											
					7	SS	5				
8					8	SS	10				
				133.9							
		Hard, damp, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)		9.1	9	SS	36				
10											
				132.2	10	SS	50/ 23cm				
		End of Borehole		10.8							
12		Water level at 8.2m (not stabilized) and hole open to 8.7m on completion.									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 4.6m slotted screen.									
		Water Level Readings:									
		Date Depth(m) Elevation(m)									
		Feb.10.10 2.9 140.1									
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/22/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/25/10

RECORD OF BOREHOLE 42

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 22, 2010
COMPLETED : January 22, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / Q / U	WATER CONTENT, PERCENT: wp / w / wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.8								
		180mm TOPSOIL		0.00	1	SS	5					
		Weathered		143.0 0.8								
2	POWER AUGER BORING 150mm Dia SOLID STEM AUGERS	Hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel; TILL (CL - ML)			2	SS	34					
		damp below			3	SS	34					
					4	SS	50/ 0cm					
					5	SS	50/ 5cm					
4		grey below			6	SS	50/ 5cm					
6					7	SS	50/ 5cm					
		End of Borehole		137.4 6.4								
		Borehole was dry (not stabilized) and hole open to full depth on completion										
8												
10												
12												
14												

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/22/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 43

PROJECT TTC LRV Facility
LOCATION Sheppard Ave. E. & Conlins Rd., Scarborough, ON PROPOSED MSF
STARTED January 26, 2010
COMPLETED January 26, 2010

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH: Cu, kPa Pocket ● nat V - ● rem V - ● Q - ✕ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 w wl	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		144.2							
		300mm TOPSOIL		0.00 143.8 0.4	1	SS	7				
		Weathered		143.4 0.8							
		Hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, occasional sandy silt seams, TILL (CL - ML)			2	SS	33				
2	POWER AUGER BORING				3	SS	30				
	150mm Dia. SOLID STEM AUGERS				4	SS	51				
		damp below			5	SS	71				
4											
		grey below			6	SS	46	OR SA SI CL 0 38 40 18			
6		moist			7	SS	33				
		End of Borehole		137.6 6.6							
		Water level at 5.2m (not stabilized) and hole open to 5.7m on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 4.6m slotted screen									
		Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 1.1 143.1									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/20/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ (02/19/10)

RECORD OF BOREHOLE 44

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 26, 2010
COMPLETED : January 26, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen / nat V - ● rem V - ● / Q - ✕ / U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.8							
		300mm TOPSOIL		0.0 / 143.5 / 0.3	1	SS	7				
		Weathered		143.0 / 0.8							
		silty clay seam			2	SS	20				
		Stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	14				
					4	SS	54				
					5	SS	47				
		damp, grey below			6	SS	50/ 80mm				
				137.5 / 6.3	7	SS	50/ 80mm				
		End of Borehole									
		Borehole was dry (not stabilized) and hole open to full depth on completion									

POWER AUGER BORING
150mm Dia. SOLID STEM AUGERS

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/26/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 45

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 26, 2010
COMPLETED : January 26, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / Ω / U	WATER CONTENT, PERCENT (wp, w, wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.7								
		150mm TOPSOIL		0.00	1	SS	12					
		Loose, moist, brown, sandy silt, trace to some clay, trace gravel. FILL (SM)			2	SS	7					
2					3	SS	9					
					4	SS	9					
				140.7 3.0	5	SS	80/ 28cm	GR SA SI CL 6 41 41 12				
4	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, occasional sand and silt seams; TILL (CL - ML)										
		grey below			6	SS	50/ 5cm					
6				137.5 6.2	7	SS	50/ 3cm					
		End of Borehole										
		Water level at 3.0m (not stabilized) and hole open to 4.3m on completion.										
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen.										
		Water Level Readings:										
		Date Depth(m) Elevations(m)										
		Feb 10 10 2.1 141.6										
8												
10												
12												
14												

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/26/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 46

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 27, 2010
COMPLETED : January 27, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT: wp / w / wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		140.7							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	200mm TOPSOIL brown --- Hard, damp, grey, CLAYEY SILT, sandy, trace to some gravel, occasional silty sand seams, TILL (CL - ML)		0.50	1	SS	42				
					2	SS	50/ 5cm				
					3	SS	50/ 5cm				
2					4	SS	50/ 5cm				
					5	SS	50/ 5cm				
4					6	SS	50/ 3cm				
6					7	SS	55				
					8	SS	50/ 5cm	GR SA SI CL 9 41 36 15			
8		End of Borehole		132.7 8.0							
		Borehole was dry (not stabilized) and hole open to full depth on completion. Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen. Water Level Readings: Date Depth(m) Elevation(m) Feb.10 10 5.0 135.7									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/27/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 47

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : February 02, 2010
COMPLETED : February 02, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa / WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		140.2							
	POWER AUGER BORING 152mm Dia. SOLID STEM AUGERS	50mm TOPSOIL		0.00							
		Compact, moist, brown, gravelly sand, trace silt, trace organics, FILL (SW)		139.4 0.8	1	SS	31				
		— moist			2	SS	23				
2		Very stiff to hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	67				
					4	SS	50/ 10cm				
					5	SS	50/ 5cm				
4		— grey below			6	SS	50/ 5cm				
6					7	SS	50/ 5cm				
8					8	SS	50/ 5cm				
		End of Borehole		130.8 9.4	9	SS	50/ 3cm				
10		Borehole was dry (not stabilized) and hole open to full depth on completion. Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen. Water Level Readings: Date Depth(m) Elevation(m) Feb 10 10 dry -									
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 2/2/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED GB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 48

PROJECT TTC LRV Facility
LOCATION Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED February 02, 2010
COMPLETED February 02, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket ● / Pen / nat V - ● / rem V - ● / Q - ✕ / U - ▲ / WATER CONTENT, PERCENT: wp, w, wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		140.0							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	50mm GRAVEL		0.00	1	SS	50/ 3cm				
		Compact, moist, brown, silty sand, some gravel, trace clay, trace organics, FILL (SM)		139.1 0.9	2	SS	20				
		moist			3	SS	54				
2		Very stiff to hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	50/ 5cm				
					5	SS	50/ 5cm				
4		grey below			6	SS	39				
6					7	SS	50/ 5cm				
8					8	SS	50/ 5cm				
		End of Borehole		130.6 9.4	9	SS	50/ 5cm				
10		Borehole was dry (not stabilized) and hole open to full depth on completion Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 1.9 139.1									
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 2/2/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4047 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 49

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : February 03, 2010
COMPLETED : February 03, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✕ U - ▲ / WATER CONTENT, PERCENT: wp, w, wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		140.1							
		50mm GRAVEL		0.00	1	SS	100/ 13cm				
		Compact, wet, brown, SAND, some gravel, (SP)									
				138.9 1.2	2	SS	18				
2		Hard, damp, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	65				
					4	SS	50/ 23cm				
					5	SS	50/ 25cm				
4											
					6	SS	34				
6											
					7	SS	40				
8					8	SS	66				
					9	SS	72				
				130.5 9.6							
10		End of Borehole									
		Water level at 1.6m (not stabilized) and hole open to full depth on completion									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 3.0m slotted screen									
		Water Level Readings: Date / Depth(m) / Elevation(m): Feb.10.10 / 5.9 / 134.2									
12											
14											

POWER AUGER BORING
150mm Dia. SOLID STEM AUGERS

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 2/3/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 50

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : February 03, 2010
COMPLETED : February 03, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		140.8							
	POWER AUGER BORING 150mm Dia SOLID STEM AUGERS	50mm GRAVEL		0.00	1	SS	50/ 5cm				
		Hard, damp, grey, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	63				
					3	SS	50/ 5cm				
					4	SS	50/ 5cm				
					5	SS	50/ 5cm				
					6	SS	50/ 3cm				
					7	SS	73				
					8	SS	50/ 5cm				
				131.4	9	SS	50/ 3cm				
		End of Borehole		9.4							

Water level at 3.0m (not stabilized) and hole open to 7.6m on completion.

Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 1.52m slotted screen.

Water Level Readings

Date	Depth(m)	Elevation(m)
Feb 10 10	7.3	133.5

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 2/3/2010

▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 51

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 27, 2010
COMPLETED : January 27, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH, Cu, kPa / WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		141.3							
		250mm TOPSOIL		0.00	1	SS	9				
		Weathered		140.5							
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)		0.8	2	SS	11				
2	POWER AUGER BORING				3	SS	23				
	150mm Dia. SOLID STEM AUGERS				4	SS	29				
					5	SS	62/ 30cm				
4		grey below			6	SS	18				
6		damp			7	SS	50/ 5cm				
		End of Borehole		134.9 6.4							
		Borehole was dry (not stabilized) and hole open to full depth on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/27/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 52

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 26, 2010
COMPLETED : January 26, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa / WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.9							
		200mm TOPSOIL		0.00	1	SS	9				
		Weathered		143.1							
		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)		0.8	2	SS	22				
2	POWER AUGER BORING 152mm Dia. SOLID STEM AUGERS				3	SS	19				
					4	SS	27				
		damp below			5	SS	50/ 80mm				
4											
					6	SS	70				
6		moist			7	SS	40				
		End of Borehole		137.3 6.6							
		Water level at 5.6m (not stabilized) and hole open to 5.9m on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/26/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 53

PROJECT TTC LRV Facility
LOCATION Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED January 26, 2010
COMPLETED January 26, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✖ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp 10 20 30 40 wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		142.3							
	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	300mm TOPSOIL Compact, moist, brown, sandy silt, trace to some clay, trace gravel, trace organics, FILL (SM)		142.0 0.3	1	SS	9				
					2	SS	13				
				140.8 1.5	3	SS	13				
2		Stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	11				
					5	SS	18				
4											
					6	SS	38				
6		grey			7	SS	33				
		End of Borehole Water level at 5.2m (not stabilized) and hole open to 5.5m on completion		135.7 6.6							
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/26/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 54

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 27, 2010
COMPLETED : January 27, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen; nat V - ● rem V - ●; Q - ✖ U - ▲ / WATER CONTENT, PERCENT wp I w I wl 10 20 30 40	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		143.6							
	POWER AUGER BORING 190mm Dia. SOLID STEM AUGERS	400mm TOPSOIL.		0.00 / 143.2	1	SS	9		○		
		Compact, moist, brown, sandy silt, trace to some clay, trace gravel, trace organics; FILL (SM)		0.4	2	SS	11		○		
				142.2 / 1.4							
		— firm			3	SS	7		○		
2		Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, occasional sand lenses; TILL (CL - ML)			4	SS	30		○		
					5	SS	47		○		
4		— grey below			6	SS	33		○		
6		— damp			7	SS	36		○		
				137.0 / 6.6							
		End of Borehole									
		Water level at 5.5m (not stabilized) and hole open to 5.8m on completion									
8											
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/27/2010 ▼ WATER LEVEL (date)

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 55

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 22, 2010
COMPLETED : January 22, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) / % LEL - (methane)	SHEAR STRENGTH Cu, kPa: Pocket / Pen / nat V / rem V / Q / U	WATER CONTENT, PERCENT	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		144.0								
		280mm TOPSOIL		0.00	1	SS	8					
		Weathered, trace organics		143.2 0.8								
		Very stiff, moist, brown, silty clay, some sand, trace gravel TILL (CL)		142.5 1.5	2	SS	27					
2	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			3	SS	34					
					4	SS	50/ 30cm					
		sand lense			5	SS	50/ 30cm					
4		grey below			6	SS	50/ 30cm					
6				137.7 6.3	7	SS	50/ 30cm					
		End of Borehole										
		Water level at 4.9m (not stabilized) and hole open to 5.6m on completion										
8												
10												
12												
14												

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/22/2010 ▼ WATER LEVEL (date)

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ GINT.GDT

RECORD OF BOREHOLE 56

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 19, 2010
COMPLETED : January 19, 2010

PROPOSED MSF

Toronto Transit Commission
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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm)	% LEL - (methane)	SHEAR STRENGTH Cu, kPa Pocket ● Pen nat V - ● rem V - ● Q - ✖ U - ▲	WATER CONTENT, PERCENT wp I—O—w I wl	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.1									
		200mm TOPSOIL		0.00	1	SS	7						
		Weathered		137.3 0.8									
2	POWER AUGER BORING 150mm Dia. SOLID STEM AUGERS	Very stiff to hard, moist, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			2	SS	35						
					3	SS	39						
					4	SS	28						
		grey below			5	SS	19						
4													
					6	SS	23						
6					7	SS	50						
		End of Borehole		131.5 6.5									
		Borehole was dry (not stabilized) and hole open to full depth on completion											
8													
10													
12													
14													

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/19/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 57

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : January 28, 2010
COMPLETED : January 28, 2010

PROPOSED MSF

Toronto Transit Commission

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DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa Pocket ● Pen / nat V - ● rem V - ● / nat V - ○ U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp I—○—w 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		138.2							
		180mm TOPSOIL		0.00	1	SS	9				
		loose Compact, moist, brown, sandy silt, trace to some clay, trace gravel, trace organics, FILL (SM)			2	SS	35				
				136.7 1.5	3	SS	14				
2		Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			4	SS	38				
					5	SS	39				
4		grey below			6	SS	50/ 5cm				
6	POWER AUGER BORING 150mm Dia SOLID STEM AUGERS				7	SS	50/ 3cm				
					8	SS	50/ 0cm				
8											
				129.0 9.2	9	SS	50/ 0cm				
		End of Borehole Borehole was dry (not stabilized) and hole open to full depth on completion. Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 3.0m slotted screen. Water Level Readings Date Depth(m) Elevation(m) Feb.10 10 1.7 136.5									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 1/28/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED : DB
CHECKED : MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10

RECORD OF BOREHOLE 58

PROJECT : TTC LRV Facility
LOCATION : Sheppard Ave. E. & Conlins Rd., Scarborough, ON
STARTED : February 02, 2010
COMPLETED : February 02, 2010

PROPOSED MSF

Toronto Transit Commission
Sheet 1 of 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	ORGANIC VAPOUR READINGS (ppm) 10 20 30 40 / % LEL - (methane) 40 80 120 160	SHEAR STRENGTH Cu, kPa: Pocket ● Pen / rat V - ● / rem V - ● / Q - ✕ / U - ▲ 20 40 60 80 / WATER CONTENT, PERCENT wp I w I wl 10 20 30 40	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		140.4							
		150mm TOPSOIL		0.00							
	POWER AUGER BORING 150mm Dia SOLID STEM AUGERS	Hard, damp, brown, CLAYEY SILT, sandy, trace to some gravel, TILL (CL - ML)			1	SS	55		o		
					2	SS	50/ 8cm		o		
2					3	SS	50/ 12cm		o		
		grey			4	SS	39		o		
					5	SS	79		o		
4											
					6	SS	50/ 8cm		o		
6					7	SS	79/ 13cm		o		▼
								GR SA SI CL 4 40 40 16			
8				132.9 8.1	8	SS	72		o		
		End of Borehole									
		Borehole was dry (not stabilized) and hole open to full depth on completion.									
		Piezometer installation consists of a 19mm diameter, Schedule 40 PVC pipe with a 3.0m slotted screen.									
		Water Level Readings Date Depth(m) Elevation(m) Feb 10 10 6.0 134.4									
10											
12											
14											

GROUNDWATER ELEVATIONS

▽ WATER LEVEL (date) 2/2/2010 ▼ WATER LEVEL (date) 2/10/2010

LOGGED DB
CHECKED MT

TTC BH 1-09-4247 TTC.GPJ 02/19/10