

APPENDIX F – GEOTECHNICAL REPORTS

Appendix F-1: Preliminary Pavement Evaluation Report

Appendix F-2: Geotechnical Investigation Report

Appendix F-1 – Preliminary Pavement Evaluation Report



Terraprobe

*Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing*

**PRELIMINARY PAVEMENT EVALUATION REPORT
MUNICIPAL CLASS EA STUDY FOR
LAWRENCE PARK NEIGHBOURHOOD
CITY OF TORONTO, ONTARIO**

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File No. 11-12-2126

December 06, 2013

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1 INTRODUCTION

Terraprobe Inc. (Terraprobe) has been retained by Aquafor Beech Limited (Aquafor Beech) to provide pavement evaluations and geotechnical engineering services in support of preliminary designs for the Municipal Class EA Study for Lawrence Park Neighbourhood (LPN), in the City of Toronto, Ontario.

The scope of work for the pavement evaluations and geotechnical engineering services of this project are outlined in Terraprobe's proposal titled "*P12-0282 Lawrence Park Neighbourhood*" dated May 10, 2012, and subsequent revisions made on December 10, 2012 at the request of Aquafor Beech.

This report addresses the preliminary geotechnical investigation and pavement evaluations carried out for this project. The purpose of this study was to evaluate the roadways, investigate their pavement thicknesses and composition and; explore the underlying subsurface conditions by carrying out limited borehole drilling, in-situ testing and laboratory testing on soil samples.

The data obtained from this investigation was used to provide pavement condition survey results, borehole location drawings, borehole logs, laboratory test results, summaries of the pavement thicknesses and composition, a description of the subgrade soil conditions and preliminary pavement design recommendations.

The following documents are referenced in the preparation of this report:

- Terraprobe Inc., "Draft Preliminary Geotechnical Report, Storm Drainage & Sanitary Sewer Systems, Lawrence Park Neighbourhood, City of Toronto, Ontario, dated August 2013.

2 PROJECT AND SITE DESCRIPTION

The LPN is roughly bounded to the south by Blythwood Road, Blyth Hill Road and Sunneydene Crescent; to the north by Lawrence Avenue East, Braeside Road and Mildenhall Road; to the west by Mount Pleasant Road and to the east by Bayview Avenue. A site location plan is provided as Figure 1.

Some of the roads were originally designed as narrow rural roadway pavement surfaces with ditches. The existing road drainage systems to convey storm water runoff are poor to non-existent. Some roads in this area were upgraded to include the features of a typical urban street while other streets were not upgraded and have subsequently deteriorated. Roadway pavement width typically varies from about 6 m to 9 m.

3 INVESTIGATION PROCEDURES

A visual pavement condition survey was carried out between June 25 and 28, 2013 in accordance with the procedures outlined in the Ministry of Transportation of Ontario, (MTO) *Manual for Condition Rating of Flexible Pavements, SP-024* and; the *Manual for Condition Rating of Rigid Pavements – Concrete Surface and Composite Distress Manifestations SP-026*. Typical site photographs for each roadway are provided in Appendix A and the pavement condition evaluation forms are included in Appendix B.

The boreholes were staked in the field by members of Terraprobe's technical staff based on the borehole location plan provided by Aquafor Beech. Utility clearances were obtained by Terraprobe prior to drilling.

The field work (borehole drilling) for this investigation was carried out between February 11 and May 22, 2013, and consisted of drilling and sampling fifty two shallow boreholes (numbered BH1 to BH52) to depths ranging from about 0.8 m to 2.0 m below ground surface and thirty two deep sewer boreholes



(numbered BHS1 to BHS32) to depths ranging from 2.7 m to 6.6 m below ground surface. The approximate borehole locations are shown on the Borehole Location Plan in Figure 2.

The boreholes were drilled with a CME 75 truck-mounted drill rig supplied and operated by Strong Soil Search of Claremont and HL Drilling Service of Mississauga, Ontario. The borings were extended through the overburden soils using solid stem augering techniques and soil samples were obtained at regular intervals of depth using a 50 mm outer diameter (O.D.) split-barrel sampler in conjunction with the Standard Penetration Test (SPT) procedures as specified in ASTM Method D1586¹.

Ground water conditions were observed in the open boreholes during and immediately following the drilling operations. To permit longer term ground water level monitoring, selected sewer boreholes were instrumented with a monitoring well consisting of a 50 mm diameter PVC pipe with a slotted screen enclosed in sand. The ground water observations during and immediately after drilling operations, monitoring well installation details and water level readings are described on the Borehole Logs in Appendices C and D.

Members of Terraprobe's technical staff observed and recorded the drilling and sampling operations on a full-time basis. The soil samples were visually inspected in the field, placed in labelled plastic containers and transported to Terraprobe's Brampton laboratory for further visual examination and laboratory testing.

Select soils samples were subjected to a laboratory testing programme consisting of natural water content and grain size distribution in accordance with MTO and/or ASTM Standards as appropriate. The results of the soil testing programme are presented on the Borehole Logs in Appendices C and D and on the figures in Appendix E.

4 PAVEMENT AND SUBSURFACE CONDITIONS

4.1 Pavement Condition

For flexible pavements, the Pavement Condition Index (PCI) is a value that is derived from the Ride Condition Rating (RCR) and Distress Manifestation Index (DMI). The RCR and DMI values are obtained by the pavement evaluator using the methodology described in MTO's *Pavement Design and Rehabilitation Manual, SDO 90-01*.

For a composite pavement the Pavement Condition Rating (PCR) is value assigned by the evaluator in accordance with MTO's manual *A Guide for Estimating Pavement Condition Rating and Priority of Rehabilitation and Maintenance for Rigid (Composite) Pavements, SP-026, Table B-2*.

The pavement distress features that were noted for the evaluated flexible and composite pavement sections and their estimated PCI and PCR values as appropriate are summarized in Tables 1A and 1B. Additionally, a colour coded pavement condition rating map depicting roadway PCR values and their condition is provided as Figure 3.

¹ ASTM D1586 – Standard Test Method for Standard Penetration Tests and Split Barrel Sampling of Soils.



4.2 Subsurface Conditions

Reference is made to the Borehole Logs in Appendices C and D for details on the thickness and composition of the road network pavements and the encountered soil stratigraphy. An overall description of the pavement structure and subgrade soils to a depth of 2 m below ground surface is given in the following paragraphs. However; the factual data presented in the Borehole Logs governs any interpretation of the site conditions.

The stratigraphic boundaries shown on the Borehole Logs are inferred from non-continuous soil sampling and therefore represent transitions between soil types rather than exact planes of geological change. The subsurface conditions will vary between and beyond the borehole locations.

4.2.1 Existing Pavement Structures

The average pavement structures of the investigated road network are tabulated in Tables 2A (Flexible Pavements) and 2B (Composite Pavements).

Grain size distribution tests were carried out on eight samples of the granular base/subbase material and the results are illustrated on the grain size distribution curves in Figure E1 in Appendix E. The results are compared to the Ontario Provincial Standard specifications (OPSS) Granular A and Granular B Type I specifications as amended by the City of Toronto Standard Specifications TS 1010 (Material Specification for Aggregates).

4.2.2 Fills

Fill material consisting of clayey silt/silty clay, sandy silt/silty sand, gravelly sand/sandy gravel and sand were encountered beneath pavement structures, extending to depths ranging from 0.7 m to 2.0 m below ground surface.

4.2.2.1 Clayey Silt/Silty Clay Fill

Where Standard Penetration Tests were carried out in the clayey silt/silty clay fill material the SPT N-values ranged from 2 blows to 20 blows per 0.3 m of penetration, indicating a soft to very stiff consistency.

Grain size distribution tests were carried out on four samples of the clayey silt/silty clay fill soils and the grain size distribution curves are illustrated on Figure E2 in Appendix E. The test results show a grain size distribution consisting of 0% to 7% gravel, 31% to 43% sand and 50% to 66% silt and clay sized particles. The permeability of these soils was estimated from the grain size distribution curves and the results are tabulated in Appendix E. The moisture content of samples of the clayey silt/silty clay fill material ranged from about 2% to 36% by weight.

4.2.2.2 Cohesionless Fill

Standard Penetration Tests carried out in the fill material consisting of sandy silt/silty sand, gravelly sand/sandy gravel and sand, measured SPT N-values ranging from 0 blows to 30 blows per 0.3 m of penetration, suggesting a very loose to compact relative density.



Grain size distribution tests were carried out on two samples of the silty sand/sandy silt fill material and the grain size distribution curves are illustrated on Figure E3 in Appendix E. The test results show a grain size distribution consisting of 1% to 14% gravel, 46% to 50% sand and 36% to 53% silt and clay sized particles. The permeability of these soils was estimated from the grain size distribution curves and the results are tabulated in Appendix E. The moisture content of the cohesionless fill material typically ranged from 1% to 31% by weight.

4.2.3 Clayey Silt to Silty Clay

Native deposits ranging in composition from clayey silt to silty clay were encountered in the LPN. These deposits extend to depths ranging from 0.8 m to 2.0 m below ground surface.

The SPT N-values measured within the clayey silt to silty clay soils ranges from 14 blows to 49 blows per 0.3 m of penetration, indicating a stiff to hard consistency.

Two samples of the clayey silt to silty clay soils were subjected to grain size distribution tests and the grain size distribution curves are illustrated on Figure E4 in Appendix E. The test results show a grain size distribution consisting of 0% gravel, 14% to 36% sand and 64% to 86% silt and clay sized particles. The permeability of these soils was estimated from the grain size distribution curves and the results are tabulated in Appendix E. The moisture content of samples of the clayey silt to silty clay soils ranges from 7% to 25% by weight.

4.2.4 Sandy Silt to Silty Sand and Sand

Native deposits ranging in composition from sandy silt to silty sand to sand were encountered in the LPN. These deposits extend to depths ranging from 1.2 m to 2.0 m below ground surface.

The SPT N-values measured within the silty sand to sandy silt and sand deposits ranges from 1 blow to 50 blows for less than 0.3 m of penetration, indicating a very loose to very dense relative density.

Five samples of the sandy silt to silty sand soils were subjected to grain size distribution tests and the grain size distribution curves are illustrated on Figure E5 in Appendix E. The test results show a grain size distribution consisting of 1% to 8% gravel, 35% to 55% sand and 40% to 64% silt and clay sized particles. The permeability of these soils was estimated from the grain size distribution curves and the results are tabulated in Appendix E. The moisture content of samples of the sandy silt to silty sand and sand soils ranges from 1% to 20% by weight.

4.2.5 Silt

Native silt deposits were encountered in the LPN. These deposits extend to depths ranging from 0.7 m to 2.0 m below ground surface.

The SPT N-values measured within the silt deposits ranges from 17 blows to 36 blows per 0.3 m of penetration, indicating a compact to dense relative density. The moisture content of samples of the silt soils ranges from 11% to 27% by weight.



4.2.6 Clayey Silt Till

A native deposit of clayey silt till was encountered in the LPN extending to depths ranging from 1.5 m to 2.0 m below ground surface.

The SPT N-values measured within the clayey silt till soils ranges from 17 blows to 19 blows per 0.3 m of penetration, indicating a very stiff consistency. The moisture content of samples of the clayey silt till soils ranges from 22% to 27% by weight.

4.2.7 Sandy Silt to Silt and Sand Till

Native till deposits with a soil matrix that ranges in composition from sandy silt to silt and sand till were encountered in the LPN. These deposits extend to depths ranging from 1.2 m to 2.0 m below ground surface.

The SPT N-values measured within these sandy silt to silt and sand till deposits ranges from 6 blows to 50 blows for less than 0.3 m of penetration, indicating a loose to very dense relative density. The moisture content of samples of the sandy silt to silt and sand till ranges from 7% to 20% by weight.

4.3 Ground Water Levels

Free water was not encountered in the shallow pavement boreholes and these boreholes remained open to their borehole termination depths after drilling was complete.

Select sewer boreholes were instrumented with a 50 mm diameter monitoring well and the water level readings were measured on separate visits made after the completion of drilling. The water level measurements are presented in Table 5.1.

Table 5.1 – Water Level Measurements

| Borehole | Date | Water Levels | |
|----------|---------------|--------------|---------------|
| | | Depth (m) | Elevation (m) |
| S1 | June 04, 2013 | 6.0 | 153.0 |
| | July 12, 2013 | 6.0 | 153.0 |
| S2 | June 04, 2013 | 5.7 | 153.3 |
| | July 12, 2013 | 5.7 | 153.3 |
| S3 | June 04, 2013 | 5.5 | 151.3 |
| | July 12, 2013 | 5.4 | 151.4 |
| S7 | June 04, 2013 | 6.0 | 157.5 |
| | July 12, 2013 | 6.0 | 157.5 |
| S10 | June 04, 2013 | 2.7 | 144.8 |
| | July 12, 2013 | 2.5 | 145.0 |
| S11 | June 04, 2013 | 1.9 | 139.6 |
| | July 12, 2013 | 1.9 | 139.6 |
| S13 | June 04, 2013 | 2.6 | 165.4 |
| | July 12, 2013 | 2.5 | 165.5 |
| S14 | June 04, 2013 | Dry | n/a |
| | July 12, 2013 | 6.0 | 157.5 |
| S16 | June 07, 2013 | 1.5 | 142.0 |
| | July 12, 2013 | 1.3 | 142.2 |
| S19 | June 07, 2013 | 4.6 | 146.9 |
| | July 12, 2013 | 5.0 | 146.5 |



| Borehole | Date | Water Levels | |
|----------|---------------|--------------|---------------|
| | | Depth (m) | Elevation (m) |
| S20 | June 07, 2013 | 2.1 | 146.4 |
| | July 12, 2013 | 1.9 | 146.6 |
| S21 | June 07, 2013 | 5.7 | 163.3 |
| | July 12, 2013 | 5.5 | 163.5 |
| S27 | June 07, 2013 | 6.0 | 158.5 |
| | July 12, 2013 | 6.0 | 158.5 |
| S29 | June 07, 2013 | 3.2 | 146.8 |
| | July 12, 2013 | 3.0 | 147.0 |
| S31 | June 07, 2013 | 5.9 | 159.6 |
| | July 12, 2013 | 5.9 | 159.6 |
| S32 | June 07, 2013 | 6.0 | 143.5 |
| | July 12, 2013 | 6.0 | 143.5 |

All ground water observations in the LPN are short term water levels that are expected to fluctuate seasonally and after severe weather events.



5 DISCUSSIONS AND RECOMMENDATIONS

5.1 General

This section of the report presents an interpretation of the factual geotechnical data and provides preliminary geotechnical design recommendations. These discussions and recommendations are based on our understanding of the project and, our interpretation of the factual data obtained from the pavement condition surveys and subsurface investigations. Further investigations will be required for detail design.

5.2 Traffic Data

A network map of the LPN with Average Annual Daily Traffic (AADT) data was provided by Morrison Hershfield (MH), a copy of which is included as Figure F1 in Appendix F. The AADT data from this map was used to estimate the Equivalent Single Axle Loads (ESAL's) for the pavement designs. The traffic data and design ESAL's for the roadways are summarized below and the ESAL calculations are provided in Tables F1 to F5 in Appendix F.

Traffic Data and Design ESAL's

| Parameters | Lawrence Avenue East | Blythwood Road | Mildenhall Road | LPN Local Residential Roads |
|----------------------------------|----------------------|----------------|-----------------|-----------------------------|
| AADT (2013) | 27,040 | 14,220 | 12,752 | 2,500 to 8,764 |
| Annual Growth Rate (2014 – 2033) | 0 | 0 | 0 | 0 |
| Percent Commercial Vehicles | 4 | 4 | 2 | 1 to 2 |
| Design ESALs (2014 – 2033) | 4,997,000 | 1,264,400 | 1,133,900 | 111,200 to 779,300 |

5.3 Design Parameters

Preliminary pavement designs were carried out based on the traffic data provided by MH and the data obtained from the field investigations.

The following references and guidelines were used for the pavement designs.

- Applied Research Associates, Inc., "Pavement Structural Design Guideline Summary, City of Toronto", November 30, 2006;
- MTO's "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions, MI-183", March 19, 2008; and
- American Association of State Highway and Transportation Officials, "AASHTO Guide for Design of Pavement Structures", 1993



The AASHTO pavement design parameters are summarized in the following tables.

AASHTO Flexible Pavement Design Parameters

| Design Parameter | Blythwood Road Mildenhall Road | LPN Local Residential Roads | |
|---|---|-----------------------------|-----------------------------|
| Initial/Terminal Serviceability Index | $P_i = 4.2$ | $P_t = 2.2$ | $P_i = 4.1$ |
| Loss in Serviceability Index | 2.0 | | 2.1 |
| Desired Reliability (R %) and Standard Deviation (SD) | $R = 85$ | | $SD = 0.45$ |
| Estimated Resilient Modulus of Subgrade Soil (MPa) | | 30 | |
| Layer Coefficients of Hot Mix Asphalt (HMA) | New HMA = 0.42 | | Existing HMA = 0.14 to 0.28 |
| Layer Coefficient of Granular Materials | Gran. A = 0.14 Existing Granular Material = 0.12 | | Gran. B Type II = 0.12 |
| Drainage Coefficient | $m = 1.0$ (new granular base & subbase) $m = 0.9$ (existing granular material) | | |

AASHTO Composite Pavement Design Parameters

| Design Parameter | Lawrence Avenue East | LPN Local Residential Roads | |
|---|----------------------|-----------------------------|-------------|
| Initial/Terminal Serviceability Index | $P_i = 4.4$ | $P_t = 2.5$ | $P_i = 4.1$ |
| Loss in Serviceability Index | 1.9 | | 2.1 |
| Desired Reliability (R %) and Standard Deviation (SD) | $R = 90$ | $SD = 0.35$ | $R = 85$ |
| Estimated Modulus of Subgrade Reaction (MPa/m) | | 60 | |
| PCC Modulus of Rupture (MPa) | | 5.0 | |
| PCC Modulus of Elasticity (MPa) | | 30000 | |
| Joint Load Transfer Coefficient (J) | | 2.5 | |
| Drainage Coefficient (C_d) | | 1.0 | |
| Joints and Cracks Adjustment Factor | | 0.85 | |
| Durability Adjustment Factor | | 1.0 | |
| AC Quality Adjustment Factor | | 0.85 | |

5.4 Flexible Pavement Rehabilitations

Within the LPN, Blythwood Road (from Blyth Hill Road to Bayview Avenue) and Mildenhall Road (from Blythwood Road to Lawrence Avenue East) are collector roads with a flexible pavement structure. There are also a number of local residential roads with flexible pavement structures. Summarized in the following paragraphs are the preliminary pavement design recommendations for the collector and local residential roads. The preliminary pavement design recommendations and the rehabilitated pavement structures are also included in Table 3A follow the text of this report.

5.4.1 LPN Collector Roads

5.4.1.1 Blythwood Road

The structural capacity of Blythwood Road was analyzed using AASHTO's pavement design procedure. The structural number of the existing pavement is 95 mm which is lower than the structural number of 103 mm, required to support the 20 year design load of 1,264,400 ESALs. Therefore, the existing pavement is structurally inadequate to carry the design traffic over a service life extension of 20 years.



Based on the visual pavement condition results and the thickness and composition of the existing pavement, a mill and overlay rehabilitation strategy is recommended. The pavement should be milled to a depth of 40 mm and repaved with either a 50 mm thick HL 3 HMA overlay conforming to the City of Toronto specification TS 1150 or; a 50 mm thick overlay consisting of OPSS MUNI 1151 Superpave SP 12.5.

This pavement rehabilitation treatment (mill and overlay), will result in a minor grade raise of 10 mm which can be accommodate by “feather edging” at the curb line. The average rehabilitated pavement structural number is 103 mm, which is equal to the design structural number of 103 mm.

5.4.1.2 Mildenhall Road

The structural capacity of Mildenhall Road was analyzed using AASHTO's pavement design procedure. The structural number of the existing pavement ranges from 18 mm to 67 mm which is lower than the structural number of 102 mm, required to support the 20 year design load of 1,133,900 ESALs.

Furthermore, the pavement condition survey results rated the condition of Mildenhall Road as poor with an assigned PCR value of 28 and a RCR number of 1.0. Very severe flushing and severe distortions were observed throughout and extensive alligator, map and transverse cracks were noted. Poor pavement drainage was also observed and side ditches were either sub-standard or non-existent.

Based on the roads structural deficiency and its current condition, full depth reconstruction is recommended in accordance with the *City of Toronto Construction Drawing T-216.02-6 Flexible Pavement for All Road Classifications*. The flexible pavement structure required to meet the design structural number (102 mm) is:

| | |
|--------------------------------------|--------|
| Surface Course HMA (HL 3 or SP 12.5) | 40 mm |
| Binder Course HMA (HL 8 or SP 19) | 125 mm |
| Granular A Base | 50 mm |
| Granular B Type II Subbase | 250 mm |
| Total Depth | 465 mm |
| Structural Number Provided | 106 mm |

5.4.2 LPN Local Residential Roads

The PCR value from the pavement condition survey results was used to group the local residential roads into three categories as outlined below.

- PCR less than 40;
- PCR between 40 and 70; and
- PCR greater than 70.

5.4.2.1 LPN Roads - PCR Less than 40

These roads are generally in poor condition with extensive to throughout flushing and distortions and extensive alligator cracking. For roadways with a rural cross-section the ditches are generally substandard and in some cases ditches are non-existent; which contributes to poor drainage of the pavement platform. Based on the condition of these pavements it is recommended that these roads be



rehabilitated by full depth reconstruction in accordance with *City of Toronto Construction Drawing T-216.02-6 Flexible Pavement for All Road Classifications*. The rehabilitated pavement structures of these roads are provided in Table 3A.

5.4.2.2 LPN Roads - PCR between 40 and 70

These roads are generally in fair condition and two rehabilitation alternatives were considered to be feasible and practical depending on the pavement condition, its structure and the severity and types of distresses. The rehabilitation alternatives are:

- Conventional mill and overlay treatment consisting of partial depth milling of the existing pavement and resurfacing with a surface course; and
- Full depth removal of the asphaltic concrete comprising the existing pavement, correcting any structural and drainage deficiencies in the underlying subgrade and, repaving with new asphaltic concrete.

The rehabilitation treatments for roads identified in this category are provided in Table 3A.

5.4.2.3 LPN Roads - PCR greater than 70

These roads are generally in good condition and major rehabilitation such as resurfacing is currently not required. However, routine preventive maintenance, such as crack routing and sealing is recommended to improve the road's functional performance, retard deterioration and extend its service life.

The PCR value, the existing pavement structure and material composition, expected road use (traffic) and subgrade soils were taken into consideration when assessing practical rehabilitation treatments. The rehabilitation treatments for roads identified in this category are provided in Table 3A.

5.5 Composite Pavement Rehabilitations

Within the LPN, Lawrence Avenue East (from Bayview Avenue to Wanless Crescent) is an arterial road with a composite pavement structure. There are also a number of local residential roads with composite pavement structures. Summarized in the following paragraphs are the preliminary pavement design recommendations for Lawrence Avenue East and the local residential roads. The preliminary pavement design recommendations and the rehabilitated pavement structures are also included in Table 3B following the text of this report.

5.5.1 LPN Arterial Roads

5.5.1.1 Lawrence Avenue East

The structural capacity of Lawrence Avenue East was analyzed using AASHTO's Condition Survey Procedure for Portland Cement Concrete Pavements. The derived effective slab thickness is 250 mm, which is greater than the design slab thickness (180 mm) required to carry the 20 year design ESAL's of 4,997,000. Therefore, the existing pavement is structurally adequate to carry the design traffic over a service life extension of 20 years.

However, the pavement condition survey observations indicate that the existing Asphaltic Concrete (AC) overlay is in poor condition with distresses such as very severe ravelling throughout and various severe



cracks ranging in density from intermittent to throughout. Therefore, we recommend that the pavement be rehabilitated by removing the existing AC overlay, repairing any distresses in the underlying concrete pavement (e.g. joint repairs/resealing, replacement of any broken slabs) and, repaving with a 60 mm thick layer of HL1 conforming to the City of Toronto's "TS" specifications. Alternatively the 60 mm thick HL1 surface course can be substituted with a 60 mm thick Superpave SP 12.5 FC1 surface course conforming to OPSS specifications.

5.5.2 LPN Local Residential Roads

The PCR value from the pavement condition survey results was used to group the local residential roads into two categories as outlined below.

- PCR less than 70; and
- PCR equal to or greater than 70.

5.5.2.1 LPN Roads - PCR less than 70

These roads are generally in poor to fair condition and two rehabilitation alternatives were considered to be feasible and practical depending on the pavement condition, its structure and the severity and types of distresses. The rehabilitation alternatives are:

- Removal of the AC overlay over the PCC slab, repairing any distresses in the underlying concrete pavement (e.g. joint repairs/resealing, replacement of any broken slabs) and, repaving with a new AC overlay; and
- Partial depth milling of the existing pavement and resurfacing with a surface course.

The rehabilitation treatments for roads identified in this category are provided in Table 3B.

5.5.2.2 LPN Roads - PCR equal to or greater than 70

These roads are generally in good condition and major rehabilitation is currently not required. However, routine preventive maintenance such as crack routing and sealing is recommended to improve the road's functional performance, retard deterioration and extend its service life.

5.6 Pavement Recommendations and Construction Features

The pavement rehabilitation options will also be governed by utility installations. Where underground utilities are being replaced and/or rehabilitated, it is envisaged that large areas of the existing pavement platform will be removed. For this scenario, a more economical pavement rehabilitation option will be full depth reconstruction.

5.6.1 Pavement Structure and Material Types

The following mix types are considered suitable for this project

| | |
|-------------------|---|
| HL1 or SP12.5 FC1 | Surface Course for Lawrence Avenue East |
| HL3 or SP12.5 | Surface Course for other roadways |



HL8 or SP19.0 Binder Course for all roadways

Granular A material should be used for the base course and Granular B Type II is recommended for the subbase course. Both the Granular A and the Granular B Type II materials should meet the Ontario Provincial Standard specifications (OPSS) Granular A and Granular B Type II specifications as amended by the City of Toronto Standard Specifications TS 1010.

5.6.2 Asphalt Cement Grade

Performance graded asphalt cement PG 64-28 and PG 58-28 conforming to City of Toronto TS 1101 requirements, is recommended for the HMA surface and binder courses respectively.

5.6.3 Tack Coat

A tack coat (SS1) should be applied to all construction joints prior to placing hot mix asphalt to create an adhesive bond. Prior to placing hot mix asphalt SS1 tack coat must also be applied to all existing or milled surfaces and between all new lifts.

5.6.4 Compaction

All granular base and subbase courses should be compacted to 100% of the material's Standard Proctor Maximum Dry Density (SPMDD) at $\pm 2\%$ of its Optimum Moisture Content (OMC). Hot mix asphalt should be placed and compacted in accordance with the City of Toronto's TS 310 specification.

5.7 Drainage

For roads with a rural cross-section, ditches are required to collect and remove excess surface water. In cut sections the ditch will be located adjacent to the roadway and the ditch invert must be at least 0.5 m below the top of the subgrade. For fill sections the ditch invert should extend at least 0.25 m below the base of the fill and should be separated at least 1.5 m horizontally from the toe of the fill. To promote pavement drainage, the granular base material must extend across the full width of the roadway and must daylight in the ditches.

For urban roadway sections a continuous subdrain system designed to drain freely into catch basins should be installed in accordance with the City of Toronto's *T-216.02-8 Roadway Subdrains*. Subdrains should consist of 150 mm diameter perforated plastic pipe wrapped with a knitted geotextile sock and placed in a trench excavated 300 mm wide and 300 mm deep in the subgrade. The backfill around the subdrain can consist of 19 mm Clear Stone conforming to the *OPSS MUNI 1004 Material Specification for Aggregate- Miscellaneous*, provided that the clear stone is wrapped entirely in a Class I non-woven filter cloth.



6 RECOMMENDED ADDITIONAL STUDIES

It is recommended that the following issues be considered during the future detailed design studies:

- Carry out detailed field investigations for the roads to confirm the pavement thickness and composition and the composition and engineering properties of the subgrade soils;
- Perform Falling Weight Deflectometer (FWD) tests on the composite pavements to obtain more refined pavement design parameters for the AASHTO designs;
- Update the traffic information for the arterial and collector roads and obtain additional traffic information where non-existent;
- Complete more rigorous pavement assessments suitable for detail designs; and
- Carry out ground penetrating radar surveys to establish a continuous profile thickness of the pavement layers

7 LIMITATIONS AND RISK

7.1 Procedures

This preliminary investigation has been carried out using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by Terraprobe and other engineering practitioners, working under similar conditions and subject to the time, financial and physical constraints applicable to this project. The discussions and recommendations that have been presented are based on the factual data obtained by Terraprobe.

It must be recognized that there are special risks whenever engineering or related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing programme implemented in accordance with the most stringent level of care may fail to detect certain conditions. Terraprobe has assumed for the purposes of providing design parameters and advice, that the conditions that exist between sampling points are similar to those found at the sample locations. The conditions that Terraprobe has interpreted to exist between sampling points can differ from those that actually exist.

It may not be possible to drill a sufficient number of boreholes or sample and report them in a way that would provide all the subsurface information that could affect construction costs, techniques, equipment and scheduling. Further investigations will be required to complete the detail designs.

7.2 Changes in Site and Scope

It must also be recognized that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site have the potential to alter subsurface conditions. Ground water levels are particularly susceptible to seasonal fluctuations.

The discussion and recommendations are based on the factual data obtained from preliminary investigations made at the site by Terraprobe and are intended for use by the owner and its retained designers in the preliminary design phase of the project. If there are changes to the project scope and development features, the interpretations made of the subsurface information, the preliminary geotechnical design parameters and comments relating to constructability issues and quality control may not be relevant or complete for the revised project. Terraprobe should be retained to review the implications of such changes with respect to the contents of this report.

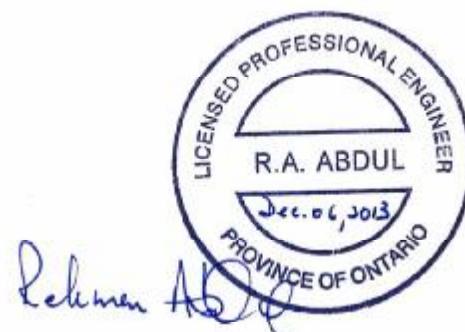
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8 CLOSURE

This report was prepared by Mr. Seth Zhang, M.Sc., P.Eng., a Geotechnical Engineer with Terraprobe, and reviewed by Mr. Rehman Abdul, M.S., P.Eng., a Senior Geotechnical Engineer and Associate with Terraprobe.

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- Applied Research Associates, Inc., Pavement Structural Design Guideline Summary, City of Toronto, November 30, 2006;
- ASTM D1586-08a, Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils, 2008.
- City of Toronto, 2008 Road Classification of City Street List, August, 2008.
- Ministry of Transportation Ontario, Adaption and Verification of AASHTO Pavement Design Guide for Ontario Conditions, MI-183, March 19, 2008.
- Ministry of Transportation Ontario, Pavement Design and Rehabilitation Manual, 1990.

City of Toronto Construction Specifications for Road Works

- TS 310 Construction Specification for Hot Mixed, Hot Laid Asphaltic Concrete Paving
- TS 1010 Material Specification for Aggregates Base, Subbase, Select Subgrade and Backfill Material.
- TS 1101 Material Specification for Performance Graded Asphalt Cement (PGAC) & Performance Graded Asphalt with Elastic Recovery (PGAC-E).
- TS 1150 Material Specification for Hot Mixed, Hot Laid Asphaltic Concrete

City of Toronto Construction Drawings for Road Works

- T-216.02-6 Flexible Pavement for All Road Classifications
- T-216.02-8 Roadway Subdrains

Ontario Standard Specifications

- OPSS MUNI 1004 Material Specification for Aggregates, Miscellaneous.
- OPSS.MUNI 1151 Material Specification for Superpave and Stone Mastic Asphalt Mixtures.



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TABLES



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Table 1A Flexible Pavement Condition Evaluation

| Roadway Sections | From | To | Overall Condition | General Distresses |
|--------------------------------|-------------------------|-------------------|----------------------------------|--|
| Rothmere Drive | Braeside Road | Mildenhall Road | PCR = 29 RCR = 1 Poor | <ul style="list-style-type: none"> • Throughout severe flushing. • Throughout very severe distortion. • Throughout very severe alligator longitudinal wheel track cracking. • Frequent severe single and multiple centreline cracking. • Extensive severe alligator pavement edge cracking. |
| Braeside Crescent | Braeside Road | Proctor Crescent | PCR = 27 RCR = 1 Poor | <ul style="list-style-type: none"> • Throughout severe flushing. • Throughout very severe distortion. • Throughout severe alligator longitudinal wheel track cracking. • Throughout severe alligator pavement edge cracking. • Throughout severe alligator transverse cracking. |
| Proctor Crescent | Mildenhall Road | Rothmere Drive | PCR = 27 RCR = 1 Very Poor | <ul style="list-style-type: none"> • Throughout severe flushing. • Throughout very severe distortion. • Throughout severe alligator longitudinal wheel track cracking. • Throughout severe alligator pavement edge cracking. • Throughout severe alligator transverse cracking. |
| Buckingham Avenue, Section 2 | Wanless Crescent (east) | Mildenhall Road | PCR = 28 RCR = 1 Poor | <ul style="list-style-type: none"> • Few moderate raveling and coarse aggregate loss. • Throughout severe flushing. • Throughout moderate distortion. • Extensive severe alligator longitudinal wheel track cracking. • Intermittent severe alligator pavement edge cracking. • Few very severe alligator transverse cracking. |
| Wanless Crescent, East Section | Buckingham Avenue | Lawrence Avenue E | PCR = 29 RCR = 1 Poor | <ul style="list-style-type: none"> • Throughout very severe flushing. • Throughout very severe distortion. • Extensive severe alligator longitudinal wheel track cracking. • Frequent moderate alligator pavement edge cracking. • Frequent moderate alligator transverse cracking. |
| St. Ives Avenue | Buckingham Avenue | Cheltenham Avenue | PCR = 89 RCR = 8 Good | <ul style="list-style-type: none"> • Frequent slight single and multiple centreline cracking. • Frequent slight single and multiple pavement edge cracking. • Frequent slight half, full, and multiple transverse cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|---------------------------------|-----------------------|-------------------------|-------------------------------------|---|
| Cheltenham Avenue, Section 1 | St. Ives Crescent | Mildenhall Avenue | PCR = 39 RCR = 2 Poor to fair | <ul style="list-style-type: none"> Extensive moderate flushing. Extensive moderate distortion. Intermittent severe alligator longitudinal wheel track cracking. Intermittent severe alligator pavement edge cracking. Frequent very severe alligator transverse cracking. Few moderate longitudinal meander and midlane cracking. |
| St. Ives Crescent, East Section | Cheltenham Avenue | Rochester Avenue | PCR = 39 RCR = 2 Poor to fair | <ul style="list-style-type: none"> Extensive severe flushing. Extensive severe distortion. Frequent severe alligator longitudinal wheel track cracking. Frequent very severe half, full and multiple transverse cracking. Frequent severe alligator transverse cracking. |
| St. Ives Crescent, West Section | Cheltenham Avenue | Rochester Avenue | PCR = 48 RCR = 3 Poor to fair | <ul style="list-style-type: none"> Extensive slight ravelling and coarse aggregate loss. Extensive slight distortion. Intermittent moderate single and multiple pavement edge cracking. Intermittent severe alligator pavement edge cracking. Extensive very severe half, full, and multiple transverse cracking. Extensive severe longitudinal meander and midlane cracking. |
| Rochester Avenue, Section 2 | St. Ives Avenue | Lewes Avenue | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout severe flushing. Throughout severe distortion. Intermittent severe alligator centreline cracking. Intermittent very severe alligator pavement edge cracking. Intermittent very severe alligator transverse cracking. Few slight longitudinal meander and midlane cracking. |
| St. Leonards Avenue, Section 2 | St. Leonards Crescent | 207 St. Leonards Avenue | PCR = 66 RCR = 5 Fairly good | <ul style="list-style-type: none"> Few slight distortions. Few slight single and multiple pavement edge cracking. Extensive severe half, full, and multiple transverse cracking. Intermittent moderate alligator transverse cracking. Extensive severe longitudinal meander and midlane cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|-------------------------------------|-------------------------|----------------------------|---|--|
| St. Leonards Avenue, Section 3 | 207 St. Leonards Avenue | Bayview Avenue | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> • Throughout very severe flushing. • Throughout severe distortion. • Intermittent moderate alligator longitudinal wheel track cracking. • Intermittent severe single and multiple pavement edge cracking. • Frequent moderate alligator transverse cracking. • Few severe longitudinal meander and midlane cracking. |
| St. Ives Avenue | Rochester Avenue | St. Leonards Avenue | PCR = 79 RCR = 7 Good | <ul style="list-style-type: none"> • Intermittent moderate alligator longitudinal wheel track cracking. • Frequent very slight single and multiple centreline cracking. • Few very slight single and multiple pavement edge cracking. • Intermittent moderate half, full, and multiple transverse cracking. • Extensive slight longitudinal meander and midlane cracking. |
| Dawlish Avenue, Section 1 | St. Leonards Crescent | East End of Dawlish Avenue | PCR = 90 RCR = 8 Good | <ul style="list-style-type: none"> • Extensive very slight single and multiple centreline cracking. • Few slight longitudinal meander and midlane cracking. |
| St. Leonards Crescent, East Section | Dawlish Avenue | St. Leonards Avenue | PCR = 39 RCR = 2 Poor to fair | <ul style="list-style-type: none"> • Throughout severe flushing. • Extensive very severe distortion. • Frequent moderate single and multiple pavement edge cracking. • Frequent moderate alligator pavement edge cracking. • Extensive very severe alligator transverse cracking. • Extensive slight ravelling and coarse aggregate loss. |
| St. Leonards Crescent, West Section | Dawlish Avenue | St. Leonards Avenue | PCR = 64 RCR = 5 Fair | <ul style="list-style-type: none"> • Few moderate distortion. • Few slight alligator longitudinal wheel track cracking. • Extensive moderate single and multiple centreline cracking. • Intermittent moderate single and multiple pavement edge cracking. • Frequent severe half, full, and multiple transverse cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|------------------|-----------------------|----------------------|-------------------------------------|---|
| Dawlish Avenue | St. Leonards Crescent | Bayview Avenue | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> Few slight raveling and coarse aggregate loss. Throughout very severe flushing. Throughout very severe distortion. Frequent very severe alligator pavement edge cracking. Intermittent severe alligator transverse cracking. Extensive severe longitudinal meander and midlane cracking. |
| Pinedale Road | Dawlish Avenue | Strathgowan Crescent | PCR = 38 RCR = 2 Poor to fair | <ul style="list-style-type: none"> Extensive moderate raveling and coarse aggregate loss. Throughout very severe flushing. Extensive severe distortion. Intermittent moderate alligator pavement edge cracking. Extensive severe alligator transverse cracking. |
| Fidelia Avenue | Dawlish Avenue | Strathgowan Crescent | PCR = 65 RCR = 5 Fair | <ul style="list-style-type: none"> Throughout very severe flushing. Extensive very severe distortion. Frequent severe flushing. Few slight alligator longitudinal wheel track cracking. Intermittent slight single and multiple pavement edge cracking. Intermittent moderate longitudinal meander and midlane cracking. Intermittent very severe raveling and coarse aggregate loss. Extensive very severe flushing. Few slight distortions. Few severe alligator longitudinal wheel track cracking. Extensive severe single and multiple pavement edge cracking. Throughout severe half, full, and multiple transverse cracking. Few severe alligator transverse cracking. Throughout severe longitudinal meander and midlane cracking. Throughout severe random/map cracking. |
| Glengowan Road | Mount Pleasant Road | Strathgowan Crescent | PCR = 43 RCR = 3 Poor to fair | <ul style="list-style-type: none"> Extensive very severe flushing. Few slight distortions. Few severe alligator longitudinal wheel track cracking. Extensive severe single and multiple pavement edge cracking. Throughout severe half, full, and multiple transverse cracking. Few severe alligator transverse cracking. Throughout severe longitudinal meander and midlane cracking. Throughout severe random/map cracking. |
| Garland Avenue | Glengowan Road | Strathgowan Avenue | PCR = 28 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout slight raveling and coarse aggregate loss. Throughout moderate distortion. Frequent very severe alligator pavement edge cracking. Throughout very severe alligator transverse cracking. Throughout severe longitudinal meander and midlane cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|---------------------------------|------------------------|-----------------------------|-----------------------------|--|
| Strathgowan Crescent, Section 2 | 128 Glengowan Road | Stratheden Road | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout very severe flushing. Throughout severe distortion. Extensive moderate alligator longitudinal wheel track cracking. Extensive severe alligator transverse cracking. |
| Stratford Crescent, Section 1 | Mildenhall Road | 80 m east of Daneswood Road | PCR = 90 RCR = 8 Good | <ul style="list-style-type: none"> Intermittent slight single and multiple pavement edge cracking. Intermittent slight half, full, and multiple transverse cracking. |
| Stratford Crescent, Section 2 | 101 Stratford Crescent | Mildenhall Road | PCR = 56 RCR = 4 Fair | <ul style="list-style-type: none"> Throughout very severe flushing. Extensive moderate distortion. Intermittent severe alligator pavement edge cracking. Intermittent slight half, full, and multiple transverse cracking. Intermittent severe alligator transverse cracking. Few slight longitudinal meander and midlane cracking. Few slight raveling and coarse aggregate loss. Few slight distortions. |
| Stratford Crescent, Section 3 | Blythwood Road | 101 Stratford Crescent | PCR = 61 RCR = 5 Fair | <ul style="list-style-type: none"> Intermittent slight alligator longitudinal wheel track cracking. Throughout moderate single and multiple centline cracking. Few slight alligator pavement edge cracking. Extensive slight half, full, and multiple transverse cracking. Extensive moderate alligator transverse cracking. Intermittent slight random/map cracking. |
| Daneswood Road | Blythwood Road | Stratford Crescent | PCR = 88 RCR = 8 Good | <ul style="list-style-type: none"> Few moderate distortion. Few very slight single and multiple pavement edge cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|-----------------------------|----------------------|---------------------|------------------------------------|---|
| Strathenden Road, Section 1 | Strathgowan Crescent | Mildenhall Road | PCR = 59 RCR = 4 Fair | <ul style="list-style-type: none"> Throughout very severe flushing. Few slight distortions. Intermittent severe alligator centreline cracking. Intermittent severe alligator transverse cracking. |
| Strathenden Road, Section 2 | Mildenhall Road | 35 Strathenden Road | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout very severe flushing. Throughout very severe distortion. Intermittent severe alligator centreline cracking. Frequent severe single and multiple pavement edge cracking. Frequent severe alligator transverse cracking. |
| Strathenden Road, Section 3 | 35 Strathenden Road | Daneswood Road | PCR = 75 RCR = 6 Fairly good | <ul style="list-style-type: none"> Extensive slight single and multiple centreline cracking. Extensive moderate half, full, and multiple transverse cracking. Few slight alligator transverse cracking. Extensive moderate longitudinal meander and midlane cracking. |
| Daneswood Road | Strathenden Road | Dawlish Avenue | PCR = 60 RCR = 5 Fair | <ul style="list-style-type: none"> Intermittent severe flushing. Few severe distortions. Extensive moderate alligator centreline cracking. Few slight single and multiple pavement edge cracking. Frequent slight half, full, and multiple transverse cracking. Extensive moderate alligator transverse cracking. Frequent moderate longitudinal meander and midlane cracking. |
| Glenallen Road, Section 1 | Strathgowan Crescent | Mildenhall Road | PCR = 60 RCR = 4 Fair | <ul style="list-style-type: none"> Throughout severe flushing. Intermittent slight distortion. Frequent moderate half, full, and multiple transverse cracking. Extensive slight alligator transverse cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|---------------------------|-------------------|---------------------|------------------------------------|---|
| Glenallen Road, Section 2 | Mildenhall Road | Daneswood Road | PCR = 69 RCR = 6 Fairly good | <ul style="list-style-type: none"> Few slight rippling and shoving. Throughout slight single and multiple centreline cracking. Few severe alligator centreline cracking. Extensive slight half, full, and multiple transverse cracking. Frequent moderate alligator transverse cracking. Intermittent moderate longitudinal meander and midlane cracking. Extensive slight random/map cracking. |
| Mildenhall Road | Blythwood Road | Lawrence Avenue E | PCR = 28 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout very severe flushing. Throughout severe distortion. Extensive severe alligator longitudinal wheel track cracking. Few slight single and multiple centreline cracking. Intermittent very severe alligator pavement edge cracking. Extensive slight half, full, and multiple transverse cracking. Frequent moderate alligator transverse cracking. Extensive severe random/map cracking. |
| Mildenhall Road | Lawrence Avenue E | Braeside Road | PCR = 22 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout very severe flushing. Throughout very severe distortion. Throughout very severe alligator longitudinal wheel track cracking. Extensive very severe single and multiple centreline cracking. Throughout very severe alligator centreline cracking. Extensive very severe alligator pavement edge cracking. Throughout very severe alligator transverse cracking. Frequent severe longitudinal meander and midlane. |
| Bayview Wood | Mildenhall Road | St. Aubyns Crescent | PCR = 29 RCR = 1 Poor | <ul style="list-style-type: none"> Throughout very severe flushing. Throughout severe distortion. Intermittent severe alligator longitudinal wheel track cracking. Intermittent moderate single and multiple centreline cracking. Few severe alligator pavement edge cracking. Few moderate half, full, and multiple transverse cracking. Intermittent severe alligator transverse cracking. Few moderate longitudinal meander and midlane cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|---------------------|---------------------|-----------------------|-------------------------------------|---|
| Wood Avenue | St. Aubyns Crescent | Bayview Wood | PCR = 33 RCR = 1 Poor to fair | <ul style="list-style-type: none"> Throughout very severe flushing. Throughout severe distortion. Intermittent very severe alligator pavement edge cracking. |
| St. Aubyns Crescent | Bayview Wood | Lewes Crescent | PCR = 32 RCR = 1 Poor to fair | <ul style="list-style-type: none"> Intermittent severe ravelling and coarse aggregate loss. Throughout very severe flushing. Throughout severe distortion. Few severe single and multiple centreline cracking. Intermittent moderate alligator pavement edge cracking. Few moderate longitudinal meander and midlane cracking. |
| Lewes Crescent | St. Leonards Avenue | St. Leonards Avenue | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> Few severe ravelling and coarse aggregate loss. Throughout very severe flushing. Throughout severe distortion. Frequent moderate alligator pavement edge cracking. Intermittent moderate half, full, and multiple transverse cracking. Few moderate alligator transverse cracking. Few severe longitudinal meander and midlane cracking. |
| Blythwood Road | Blyth Hill Road | Bayview Avenue | PCR = 63 RCR = 5 Fair | <ul style="list-style-type: none"> Few slight ravelling and coarse aggregate loss. Few severe distortions. Intermittent slight single and multiple pavement edge cracking. Intermittent very severe half, full, and multiple transverse cracking. Intermittent severe alligator transverse cracking. Extensive moderate random/map cracking. |
| Blyth Hill Road | Blythwood Road | End of Blythwood Road | PCR = 29 RCR = 1 Poor | <ul style="list-style-type: none"> Few moderate ravelling and coarse aggregate loss. Throughout very severe flushing. Throughout severe distortion. Frequent moderate single and multiple centreline cracking Extensive moderate alligator centreline cracking. Intermittent severe alligator pavement edge cracking. Frequent slight alligator transverse cracking. Intermittent moderate longitudinal meander and midlane cracking. |



Table 1A Flexible Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|--------------------|----------------|-------------------------|-----------------------------|---|
| Blyth Dale Road | Blythwood Road | Blyth Hill Road | PCR = 30 RCR = 1 Poor | <ul style="list-style-type: none"> Few moderate ravelling and coarse aggregate loss. Throughout very severe flushing. Intermittent moderate single and multiple centreline cracking. Intermittent severe alligator pavement edge cracking. Extensive moderate alligator transverse cracking. Few severe longitudinal meander and midlane cracking. |
| Ridgefield Road | Blythwood Road | End of Ridgefield Road | PCR = 55 RCR = 4 Fair | <ul style="list-style-type: none"> Extensive moderate ravelling and coarse aggregate loss. Extensive very severe flushing. Frequent moderate distortion. Extensive moderate single and multiple centreline cracking. Few moderate alligator pavement edge cracking. Intermittent moderate half, full, and multiple transverse cracking. Intermittent moderate longitudinal meander and midlane cracking. |
| Sunnydene Crescent | Bayview Avenue | Bayview Avenue | PCR = 82 RCR = 7 Good | <ul style="list-style-type: none"> Intermittent slight distortion. Intermittent moderate single and multiple centreline cracking. Intermittent moderate half, full, and multiple transverse cracking. |
| Lauren Court | Blythwood Road | End of Lauren Court | PCR = 76 RCR = 6 Good | <ul style="list-style-type: none"> Few slight distortions. Intermittent slight single and multiple pavement edge cracking. Few slight alligator transverse cracking. Few moderate longitudinal meander and midlane cracking. |
| Valleyanna Drive | Bayview Avenue | End of Valleyanna Drive | PCR = 76 RCR = 6 Good | <ul style="list-style-type: none"> Few slight rippling and shoving. Few slight distortions. Few moderate pavement edge cracking. Intermittent slight transverse cracking. Few moderate longitudinal meander and midlane cracking. |



Table 1B Composite Pavement Condition Evaluation

| Roadway Sections | From | To | Overall Condition | General Distresses |
|---------------------------------|-----------------------|-----------------------|-------------------------------------|--|
| Braeside Road | Langton Avenue | Rothmere Drive | PCR = 85 RCR = 8 Good | <ul style="list-style-type: none"> Extensive very slight ravelling and coarse aggregate loss. Few very slight single centreline cracking. Few moderate single and multiple (diagonal, corner, edge crescent) cracking. Extensive slight single transverse cracking. Frequent slight single and multiple map cracking. |
| Lawrence Crescent | Mount Pleasant Road | Mount Pleasant Road | PCR = 35 RCR = 4 Poor to fair | <ul style="list-style-type: none"> Extensive very slight ravelling and coarse aggregate loss. Few severe spalling. Extensive moderate distortion and settlement. Extensive severe single and multiple longitudinal meandering cracking. Few severe singe and multiple (diagonal, corner, edge crescent) cracking. Extensive severe multiple transverse cracking. Extensive severe single and multiple map cracking. Extensive moderate reflective transverse joints. |
| Lawrence Avenue E, Section 1 | Bayview Avenue | 224 Lawrence Avenue E | PCR = 40 RCR = 4 Poor to fair | <ul style="list-style-type: none"> Throughout very severe ravelling and coarse aggregate loss. Frequent severe spalling. Few severe distortion and settlement. Extensive severe single centreline cracking. Frequent very severe single and multiple (diagonal, corner, edge crescent) cracking. Extensive severe multiple transverse cracking. Throughout very severe single and multiple map cracking. |
| Lawrence Avenue E, Section 2 | 224 Lawrence Avenue E | Wanless Crescent | PCR = 60 RCR = 5 Fair | <ul style="list-style-type: none"> Extensive very severe joint failures. Frequent very severe ravelling and coarse aggregate loss. Frequent severe spalling. Frequent severe single and multiple longitudinal meandering cracking. Few slight single and multiple (diagonal, corner, edge crescent) cracking. Throughout moderate sawed transverse joints. |



Table 1B Composite Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|--------------------------------|-------------------|-------------------------|------------------------------------|--|
| Dinnick Crescent | Lawrence Avenue E | Mount Pleasant Road | PCR = 70 RCR = 7 Fairly good | <ul style="list-style-type: none"> Extensive slight raveling and coarse aggregate loss. Intermittent moderate spalling. Extensive slight single multiple longitudinal meandering cracking. Extensive very slight single centreline cracking. Few slight single and multiple (diagonal, corner, edge crescent) cracking. Intermittent slight single transverse cracking. Few slight multiple transverse cracking. |
| Lympstone Avenue | Dinnick Crescent | Lawrence Crescent | PCR = 70 RCR = 6 Fairly good | <ul style="list-style-type: none"> Few severe spalling. Few severe distortion and settlement. Extensive slight single and multiple longitudinal meandering cracking. Frequent slight single and multiple (diagonal, corner, edge crescent) cracking. Frequent severe multiple transverse cracking. |
| Buckingham Avenue, Section 1 | Dinnick Crescent | Wanless Crescent (east) | PCR = 85 RCR = 8 Good | <ul style="list-style-type: none"> Few moderate spalling. Few slight distortion and settlement. Few slight single and multiple longitudinal meandering cracking. Intermittent very slight single centreline cracking. Intermittent severe single and multiple (diagonal, corner, edge crescent) cracking. Frequent severe single transverse cracking. Few very severe multiple transverse cracking. Few severe single and multiple map cracking. |
| Wanless Crescent, West Section | Buckingham Avenue | Lawrence Avenue E | PCR = 60 RCR = 6 Fair | <ul style="list-style-type: none"> Extensive very severe raveling and coarse aggregate loss. Intermittent moderate single and multiple longitudinal meandering cracking. Frequent moderate single centreline cracking. Frequent severe single and multiple (diagonal, corner, edge crescent) cracking. Frequent severe single transverse cracking. |



Table 1B Composite Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|------------------------------|------------------|-------------------|-------------------------------------|---|
| Cheltenham Avenue, Section 2 | Dinnick Crescent | St. Ives Crescent | PCR = 45 RCR = 4 Poor to fair | <ul style="list-style-type: none"> Few slight travelling and coarse aggregate loss. Frequent moderate spalling. Intermittent moderate tenting/cupping. Intermittent slight distortion and settlement. Frequent moderate single and multiple longitudinal meandering cracking. Extensive severe single centreline cracking. Intermittent slight single and multiple (diagonal, corner, edge crescent) cracking. Extensive moderate multiple transverse cracking. |
| Rochester Avenue, Section 1 | Dinnick Crescent | St. Ives Avenue | PCR = 70 RCR = 6 Fairly good | <ul style="list-style-type: none"> Few moderate spalling. Few moderate distortion and settlement. Throughout slight single centreline cracking. Few slight single and multiple (diagonal, corner, edge crescent) cracking. Throughout moderate single transverse cracking. Throughout moderate reflective transverse joints. |
| Dundurn Road, Section 1 | Dinnick Crescent | Dawlish Avenue | PCR = 35 RCR = 3 Poor to fair | <ul style="list-style-type: none"> Extensive severe spalling. Frequent slight distortion and settlement. Frequent slight single and multiple longitudinal meandering cracking. Throughout slight single centreline cracking. Throughout very severe single and multiple (diagonal, corner, edge crescent) cracking. Throughout severe multiple transverse cracking. Throughout very severe reflective transverse joints. |
| Dundurn Road, Section 2 | Dawlish Avenue | Glengowan Road | PCR = 70 RCR = 7 Fairly good | <ul style="list-style-type: none"> Throughout moderate ravelling and coarse aggregate loss. Few slight spalling. Few severe tenting/cupping. Frequent severe single and multiple longitudinal meandering cracking. Extensive slight single and multiple (diagonal, corner, edge crescent) cracking. Throughout very slight sawed transverse joints. |



Table 1B Composite Pavement Condition Evaluation (Continued)

| Roadway Sections | From | To | Overall Condition | General Distresses |
|---------------------------------|------------------------------------|-----------------------|-------------------------------------|---|
| St. Leonards Avenue, Section 1 | Mount Pleasant Road | St. Leonards Crescent | PCR = 50 RCR = 5 Poor to fair | <ul style="list-style-type: none"> Few severe ravelling and coarse aggregate loss. Intermittent severe spalling. Few slight distortion and settlement. Throughout moderate single and multiple longitudinal meandering cracking. Extensive moderate single centreline cracking. Intermittent moderate single and multiple (diagonal, corner, edge crescent) cracking. Throughout moderate multiple transverse cracking. |
| Dawlish Avenue, Section 2 | Mount Pleasant Road | St. Leonards Crescent | PCR = 45 RCR = 5 Poor to fair | <ul style="list-style-type: none"> Extensive moderate ravelling and coarse aggregate loss. Intermittent moderate spalling. Few moderate distortion and settlement. Extensive slight single and multiple longitudinal meandering cracking. Intermittent severe single and multiple (diagonal, corner, edge crescent) cracking. Extensive slight multiple transverse cracking. Throughout slight reflective transverse joints. |
| Strathgowan Avenue | 280 m west of Strathgowan Crescent | Strathgowan Crescent | PCR = 35 RCR = 3 Poor to fair | <ul style="list-style-type: none"> Throughout slight ravelling and coarse aggregate loss. Frequent severe spalling. Few slight tenting/cupping. Few severe distortion and settlement. Extensive slight joint failures. Throughout slight sawed transverse joints. Throughout severe reflective transverse joints. |
| Strathgowan Crescent, Section 1 | Blythwood Road | 128 Glengowan Road | PCR = 70 RCR = 6 Fairly good | <ul style="list-style-type: none"> Throughout severe ravelling and coarse aggregate loss. Few severe spalling. Few slight distortion and settlement. Few moderate joint failures. Frequent slight single and multiple longitudinal meandering cracking. Frequent moderate single transverse cracking. Frequent slight sawed transverse joints. |



Table 2A Flexible Pavement Structures

| Roadway Sections | Project Limits | Average Pavement Thickness (mm) | | | Applicable Boreholes |
|---|---|---------------------------------|---------------------|-----------------|----------------------------|
| | | Asphaltic Concrete | Base/Subbase Course | Total Thickness | |
| Rothmere Dr. | Braeside Rd. to Mildenhall Rd. | NA | NA | NA | NA |
| Braeside Cres. | Braeside Rd. to Proctor Cres. | NA | NA | NA | NA |
| Proctor Cres. | Mildenhall Rd. to Rothmere Dr. | 50 | 150 | 200 | BH50 |
| Buckingham Ave., Section 2 | Wanless Cres.(east) to Mildenhall Rd. | 100 | 250 | 350 | BHS27, BHS28,BHS29 |
| Wanless Cres., East Section | Buckingham Ave. to Lawrence Ave. E | 50 | 100 | 150 | BH46, BHS31 |
| St. Ives Ave. ¹ | Buckingham Ave. to Cheltenham Ave. | NA | NA | NA | NA |
| Cheltenham Ave., Section 1 | St. Ives Cres. to Mildenhall Ave. | 70 | 110 | 180 | BH38, BHS23, BHS24 |
| St. Ives Cres., East Section | Cheltenham Ave. to Rochester Ave. | NA | NA | NA | NA |
| St. Ives Cres., West Section ¹ | Cheltenham Ave. to Rochester Ave. | NA | NA | NA | NA |
| Rochester Ave., Section 2 | St. Ives Ave. to Lewes Ave. | 75 | 75 | 150 | BH35, BHS19 |
| St. Leonards Ave., Section 2 | St. Leonards Cres. to 207 St. Leonards Ave. | 150 | 150 | 300 | BHS14 |
| St. Leonards Ave., Section 3 | 207 St. Leonards Ave. to Bayview Ave. | 140 | 160 | 300 | BH30, BH31, BH32, BHS15 |
| St. Ives Ave. ¹ | Rochester Ave. to St. Leonards Ave. | NA | NA | NA | NA |
| Dawlish Ave., Section 1 | St. Leonards Cres.to East End of Dawlish Ave. | 140 | 370 | 510 | BH25, BH26 |
| St. Leonards Cres., East Section | Dawlish Ave. to St. Leonards Ave. | 50 | 100 | 150 | BHS8 |
| St. Leonards Cres., West Section ¹ | Dawlish Ave. to St. Leonards Ave. | NA | NA | NA | NA |
| Dawlish Ave. | St. Leonards Cres. to Bayview Ave. | 45 | 205 | 250 | BH27, BHS9, BHS10 |
| Pinedale Rd. | Dawlish Ave. to Strathgowan Cres. | NA | NA | NA | NA |
| Fidelia Ave. | Dawlish Ave. to Stathgowan Cres. | NA | NA | NA | NA |
| Glengowan Rd., Section 2 | Dundurn Rd. to Strathgowan Cres. | 100 | 190 | 290 | BH18, BH19 |



Table 2A Flexible Pavement Structures (continued)

| Roadway Sections | Project Limits | Average Pavement Thickness (mm) | | | Applicable Boreholes |
|---|---|---------------------------------|---------------------|-----------------|----------------------|
| | | Asphaltic Concrete | Base/Subbase Course | Total Thickness | |
| Garland Ave. | Glengowan Rd. to Strathgowan Ave. | NA | NA | NA | NA |
| Strathgowan Cres., Section 2 | 128 Glengowan Rd. to Strathenden Rd. | 80 | NA | 80 | BH20 |
| Stratford Cres., Section 1 | Mildenhall Rd. to 80m east of Daneswood Rd. | 150 | 180 | 330 | BH10 |
| Stratford Cres., Section 2 | 101 Stratford Cres. to Mildenhall Rd. | 50 | 130 | 180 | BHS1 |
| Stratford Cres., Section 3 ¹ | Blythwood Rd. to #101 Stratford Cres. | NA | NA | NA | NA |
| Daneswood Rd. | Blythwood Rd. to Stratford Cres. | NA | NA | NA | NA |
| Strathenden Rd., Section 1 | Strathgowan Cres. to Mildenhall Rd. | 85 | 260 | 345 | BHS2, BH15 |
| Strathenden Rd., Section 2 | Mildenhall Rd. to 35 Strathenden Rd. | NA | NA | NA | NA |
| Strathenden Rd., Section 3 | 35 Strathenden Rd. to Daneswood Rd. | 130 | 280 | 410 | BH16 |
| Daneswood Rd. | Strathenden Rd. to Dawlish Ave. | 200 | 250 | 450 | BHS4 |
| Glenallen Rd., Section 1 | Strathgowan Cres. to Mildenhall Rd. | 80 | 165 | 245 | BH21 |
| Glenallen Rd., Section 2 | Mildenhall Rd. to Daneswood Rd. | 95 | 305 | 400 | BH22, BHS3 |
| Mildenhall Rd. | Blythwood Rd. to Lawrence Ave. E | 55 | 480 | 535 | BH48 |
| Mildenhall Rd. | Lawrence Ave. E to Braeside Rd. | 45 | 55 | 100 | BHS32 |
| Bayview Wood | Mildenhall Rd. to St. Aubyns Cres. | NA | NA | NA | NA |
| Wood Ave. | St. Aubyns Cres. to Bayview Wood | 50 | 200 | 250 | BHS20 |
| St. Aubyns Cres. | Bayview Wood to Lewes Cres. | 50 | 200 | 250 | BHS20 |
| Lewes Cres. | St. Leonards Ave. to St. Leonards Ave. | NA | NA | NA | NA |
| Blythwood Rd. | Blyth Hill Rd. to Bayview Ave. | 210 | 320 | 530 | BH7, BH8, BH9, BH11 |
| Blyth Hill Rd. | Blythwood Rd. to End of Blythwood Rd. | 55 | 75 | 130 | BH1, BH3 |
| Blyth Dale Rd. | Blythwood Rd. to Blyth Hill Rd. | NA | NA | NA | NA |



Table 2A Flexible Pavement Structures (continued)

| Roadway Sections | Project Limits | Average Pavement Thickness (mm) | | | Applicable Boreholes |
|---------------------------|---|---------------------------------|---------------------|-----------------|----------------------|
| | | Asphaltic Concrete | Base/Subbase Course | Total Thickness | |
| Ridgefield Rd. | Blythwood Rd. to End of Ridgefield Rd. | 100 | 200 | 300 | BH4 |
| Sunnydene Cres. | Bayview Ave. to Bayview Ave. | 115 | 240 | 355 | BH5, BH6 |
| Lauren Court ¹ | Blythwood Rd. to End of Lauren Court | NA | NA | NA | NA |
| Valleyanna Drive | Bayview Avenue to End of Valleyanna Drive | 130 | 300 | 430 | BH23, BHS4, BHS12 |

Notes: 1. Possible flexible pavement structure.



Table 2B Composite Pavement Structures

| Roadway Sections | Project Limits | Average Pavement Thickness (mm) | | | | Applicable Boreholes |
|------------------------------|--|---------------------------------|------------------------------|------------------------------|----------------------|--------------------------|
| | | Asphaltic Concrete (mm) | PC Concrete Base Course (mm) | Granular Subbase Course (mm) | Total Thickness (mm) | |
| Braeside Rd. | Langton Ave. to Rothmere Dr. | 135 | 160 | NA | 295 | BH49, BH51, BH52 |
| Lawrence Cres. | Mount Pleasant Rd. to Mount Pleasant Rd. | 110 | 140 | NA | 250 | BH36, BHS21 |
| Lawrence Ave. E, Section 1 | Bayview Ave. to 224 Lawrence Ave. E | 60 | 250 | 440 | 750 | BH45, BH47, BHS26, BHS30 |
| Lawrence Ave. E, Section 2 | 224 Lawrence Ave. E to Wanless Cres. | 60 | 250 | 440 | 750 | BH45, BH47, BHS26, BHS30 |
| Dinnick Cres. | Lawrence Ave. E to Mount Pleasant Rd. | 115 | 150 | NA | 265 | BH37, BH40 |
| Lympstone Ave. | Dinnick Cres. to Lawrence Cres. | NA | NA | NA | NA | NA |
| Buckingham Ave., Section 1 | Dinnick Cres. to Wanless Cres. (east) | 130 | 150 | NA | 280 | BH41 |
| Wanless Cres., West Section | Buckingham Ave. to Lawrence Ave. E | 150 | 100 | 100 | 350 | BHS31 |
| Cheltenham Ave., Section 2 | Dinnick Cres. to St. Ives Cres. | 100 | 200 ¹ | 50 | 350 | BHS22 |
| Rochester Ave., Section 1 | Dinnick Cres. to St. Ives Ave. | 100 | 165 | NA | 265 | BH33, BH34, BHS17, BHS18 |
| Dundurn Rd. , Section 1 | Dinnick Cres. to Dawlish Ave. | NA | NA | NA | NA | NA |
| Dundurn Rd., Section 2 | Dawlish Ave. to Glengowan Rd. | NA | NA | NA | NA | NA |
| St. Leonards Ave., Section 1 | Mount Pleasant Rd. to St. Leonards Cres. | 90 | 150 | 210 | 450 | BH28, BH29, BHS13 |
| Dawlish Ave., Section 2 | Mount Pleasant Rd. to St. Leonards Cres. | 75 | 165 | 80 | 320 | BH24, BHS6, BHS7 |
| Glengowan Rd, Section 1 | Mount Pleasant Rd. to Dundurn Rd. | 75 | 225 ² | NA | 300 | BH17 |
| Strathgowan Ave. | 280 m west of Strathgowan Cres. to Strathgowan Cres. | 75 | 150 | 65 | 290 | BH12, BH13 |
| Strathgowan Cres., Section 1 | Blythwood Rd. to 128 Glengowan Rd. | 50 | 110 | 200 | 360 | BH14 |

Notes: 1. Pavement structure consists of 100 mm granular material over 100 mm Portland cement concrete; and
2. Pavement structure consists of 75 mm granular material over 150 mm Portland cement concrete.



Table 3A Preliminary Flexible Pavement Design Recommendations

| Roadway Sections | Limits | Approx. Length (m) | RCR | PCR | ADT | Average Existing Pavement Structure | Rehabilitation Recommendations | Rehabilitated Pavement Structure |
|---|--|--------------------|-----|-----|--------------|---|-----------------------------------|--|
| Rothmere Dr. | Briarside Rd. to Midenhall Rd. | 300 | 1 | 29 | 630 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II ³ |
| Briarside Cres. | Briarside Rd. to Proctor Cres. | 130 | 1 | 27 | 220 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Proctor Cres. | Midenhall Rd. to Rothmere Dr. | 130 | 1 | 27 | 220 | 50 mm AC, 150 mm Gran Base ² | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Buckingham Ave., Section 2 | Wanless Cres.(east) to Midenhall Rd. | 350 | 1 | 28 | 1200 to 7154 | 100 mm AC, 250 mm Gran Base/Subbase | Full Depth Reconstruction | 40 mm HL3, 65 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Wanless Cres., East Section | Buckingham Ave. to Lawrence Ave. E | 130 | 1 | 29 | 2180 to 4566 | 50 mm AC, 100 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Ives Ave. ¹ | Buckingham Ave. to Cheltenham Ave. | 90 | 8 | 89 | 856 | No Data | Routine Preventive Maintenance | Not Applicable |
| Cheltenham Ave., Section 1 | St. Ives Cres. to Midenhall Ave. | 350 | 2 | 39 | 952 to 3348 | 70 mm AC, 110 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Ives Cres., East Section | Cheltenham Ave. to Rochester Ave. | 130 | 2 | 39 | 2460 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Ives Cres., West Section ¹ | Cheltenham Ave. to Rochester Ave. | 150 | 3 | 48 | 3296 | No Data | Full Depth Asphalt Removal | Repare 40 mm HL3, 60 mm HL8, on Existing Granular Base/Subbase |
| Rochester Ave., Section 2 | St. Ives Ave. to Lewes Ave. | 550 | 1 | 30 | 186 to 6716 | 75 mm AC, 75 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 65 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Leonards Ave., Section 2 | St. Leonards Cres. to 207 St. Leonards Ave. | 160 | 5 | 66 | 2586 | 150 mm AC, 150 mm Gran Base | Mill 40 mm Overlay with 40 mm HL3 | Repare 40 mm HL3, 110 mm Existing AC, 150 mm Existing Gran Base |
| St. Leonards Ave., Section 3 | 207 St. Leonards Ave. to Bayview Ave. | 550 | 1 | 30 | 1160 to 8764 | 140 mm AC, 160 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 65 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Ives Ave. ¹ | Rochester Ave. to St. Leonards Ave. | 90 | 7 | 79 | 5676 | No Data | Routine Preventive Maintenance | Not Applicable |
| Dawlish Ave., Section 1 | St. Leonards Cres. to East End of Dawlish Ave. | 130 | 8 | 90 | 0 | 140 mm AC, 370 mm Gran Base/Subbase | Routine Preventive Maintenance | Not Applicable |
| St. Leonards Cres., East Section | Dawlish Ave. to St. Leonards Ave. | 130 | 2 | 39 | 5460 | 50 mm AC, 100 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 65 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Leonards Cres., West Section ¹ | Dawlish Ave. to St. Leonards Ave. | 120 | 5 | 64 | 1544 | No Data | Mill 40 mm Overlay with 40 mm HL3 | Repare 40 mm HL3 on Existing Pavement |
| Dawlish Ave. | St. Leonards Cres. to Bayview Ave. | 660 | 1 | 30 | 1280 to 4616 | 45 mm AC, 205 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 70 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Pinedale Rd. | Dawlish Ave. to Strathgowan Cres. | 140 | 2 | 38 | 962 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Fidella Ave. | Dawlish Ave. to Strathgowan Cres. | 140 | 5 | 65 | 2820 | No Data | Mill 40 mm Overlay with 40 mm HL3 | Repare 40 mm HL3 on Existing Pavement |
| Glengowan Rd., Section 2 | Dundum Rd. to Strathgowan Cres. | 325 | 3 | 43 | 440 to 1820 | 100 mm AC, 190 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Garland Ave. | Glengowan Rd. to Strathgowan Ave. | 80 | 1 | 28 | 1424 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Strathgowan Cres., Section 2 | 12B Glengowan Rd. to Strathenden Rd. | 220 | 1 | 30 | 2400 to 3046 | 80 mm AC | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Stratford Cres., Section 1 | Midenhall Rd. to 80m east of Dameswood Rd. | 270 | 8 | 90 | 0 to 7866 | 150 mm AC, 180 mm Gran Base | Routine Preventive Maintenance | Not Applicable |
| Stratford Cres., Section 2 | 101 Stratford Cres. to Midenhall Rd. | 100 | 4 | 56 | 706 | 50 mm AC, 130 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |

Table 3A Preliminary Flexible Pavement Design Recommendations (Continued)

| Roadway Sections | Limits | Approx. Length (m) | RCR | PCR | ADT | Average Existing Pavement Structure | Rehabilitation Recommendations | Rehabilitated Pavement Structure |
|----------------------------|--|--------------------|-----|-----|---------------|-------------------------------------|------------------------------------|---|
| Stratford Cres., Section 3 | Blythwood Rd. to #101 Stratford Cres. | 170 | 5 | 61 | 1958 | No Data | Mill 40 mm. Overlay with 40 mm HL3 | 40 mm HL3 on Existing Pavement |
| Danewood Rd. | Blythwood Rd. to Stratford Cres. | 70 | 8 | 88 | 480 | No Data | Routine Preventive Maintenance | Not Applicable |
| Strathinden Rd., Section 1 | Strathgowan Cres. to Mildenhall Rd. | 230 | 4 | 59 | 3048 | 85 mm AC, 260 mm Gran Base/Subbase | Full Depth Asphalt Removal | Repare 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Strathinden Rd., Section 2 | Mildenhall Rd. to Strathinden Rd. | 70 | 1 | 30 | 300 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm Existing Gran Base/Subbase |
| Strathinden Rd., Section 3 | 35 Strathinden Rd. to Daneswood Rd. | 130 | 6 | 75 | 300 | 130 mm AC, 280 mm Gran Base/Subbase | Routine Preventive Maintenance | Not Applicable |
| Danewood Rd. | Strathinden Rd. to Dawlish Ave. | 200 | 5 | 60 | 512 | 200 mm AC, 250 mm Gran Base/Subbase | Mill 40 mm Overlay with 40 mm HL3 | Repare 40 mm HL3, 160 mm Existing AC, 250 mm Existing Gran Base/Subbase |
| Glenallen Rd., Section 1 | Strathgowan Cres. to Mildenhall Rd. | 300 | 4 | 60 | 0 | 80 mm AC, 125 mm Gran Base | Full Depth Asphalt Removal | Repare 40 mm HL3, 50 mm HL8, 165 mm Existing Gran Base |
| Glenallen Rd., Section 2 | Mildenhall Rd. to Daneswood Rd. | 210 | 6 | 69 | 0 | 95 mm AC, 305 mm Gran Base/Subbase | Mill 40 mm Overlay with 40 mm HL3 | Repare 40 mm HL3, 55 mm Existing AC, 305 mm Gran Base/Subbase |
| Mildenhall Rd. | Blythwood Rd. to Lawrence Ave. E | 940 | 1 | 28 | 5020 to 12752 | 55 mm AC, 480 mm Gran Base/Subbase | Full Depth Reconstruction | 40 mm HL3, 125 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Mildenhall Rd. | Lawrence Ave. E to Braeside Rd. | 450 | 1 | 22 | 5980 | 45 mm AC, 55 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 65 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Bayview Wood | Mildenhall Rd. to St. Aubyns Cres. | 170 | 1 | 29 | 5036 | No Data | Full Depth Reconstruction | 40 mm HL3, 70 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Wood Ave. | St. Aubyns Cres. to Bayview Wood | 90 | 1 | 33 | 440 | 50 mm AC, 200 mm Gran Base/Subbase | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| St. Aubyns Cres. | Bayview Wood to Lanes Cres. | 220 | 1 | 32 | 4862 | 50 mm AC, 200 mm Gran Base/Subbase | Full Depth Reconstruction | 40 mm HL3, 70 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Leaves Cres. | St. Leonards Ave. to St. Leonards Ave. | 260 | 1 | 30 | 4274 to 6072 | No Data | Full Depth Reconstruction | 40 mm HL3, 85 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Blythwood Rd. | Blyth Hill Rd. to Bayview Ave. | 650 | 5 | 63 | 9502 to 14220 | 210 mm AC, 320 mm Gran Base/Subbase | Mill 40 mm Overlay with 50 mm HL1 | Repare 50 mm HL3, 170 mm Existing AC, 320 mm Gran Base/Subbase |
| Blyth Hill Rd. | Blythwood Rd. to End of Blythwood Rd. | 500 | 1 | 29 | 220 | 55 mm AC, 75 mm Gran Base | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Blyth Dale Rd. | Blythwood Rd. to Blyth Hill Rd. | 250 | 1 | 30 | 220 | No Data | Full Depth Reconstruction | 40 mm HL3, 60 mm HL8, 50 mm Gran A, 250 mm Gran B Type II |
| Ridgefield Rd. | Blythwood Rd. to End of Ridgefield Rd. | 120 | 4 | 55 | 50 | 100 mm AC, 200 mm Gran Base/Subbase | Mill 40 mm Overlay with 40 mm HL3 | Repare 40 mm HL3, 60 mm Existing Gran Base |
| Sunnydene Cres. | Bayview Ave. to Bayview Ave. | 700 | 7 | 82 | 110 | 115 mm AC, 240 mm Gran Base/Subbase | Routine Preventive Maintenance | Not Applicable |
| Lauren Court ¹ | Blythwood Rd. to End of Lauren Court | 50 | 6 | 76 | 20 | No Data | Routine Preventive Maintenance | Not Applicable |
| Valleyanna Drive | Bayview Ave. to End of Valleyanna Dr. | 400 | 6 | 76 | - | 130 mm AC, 300 mm Gran Base/Subbase | Routine Preventive Maintenance | Not Applicable |

Notes: 1. Possible flexible pavement;

2. Gran Base or Subbase refers to granular base or subbase course; and

3. Gran A and Gran B Type II OFSS specification as amended by City of Toronto Standard Specification TS1010.

Prepared and Checked by: S. Zhang, P.Eng.
Reviewed by: R. Abdul, P.Eng.

Table 3B Preliminary Composite Pavement Design Recommendations

| Roadway Sections | Limits | Approx. Length (m) | RCR | PCR | ADT | Average Existing Pavement Structure | Rehabilitation Recommendations | Rehabilitated Pavement Structure |
|---------------------------------|--|--------------------|-----|-----|----------------|--|---|--|
| Braeside Rd. | Langton Ave. to Rothmere Dr. | 350 | 8 | 85 | 220 | 135 mm AC, 160 mm PCC ³ | Routine Preventive Maintenance | Not Applicable |
| Lawrence Cres. | Mount Pleasant Rd. to Mount Pleasant Rd. | 265 | 4 | 35 | 0 to 380 | 80 mm AC, 170 mm PCC | Full Depth Asphalt Removal | 80 mm HL3 (two lifts), 170 mm Existing PCC |
| Lawrence Avenue E, Section 1 | Bayview Ave. to 224 Lawrence Ave. E | 650 | 4 | 40 | 19800 to 27040 | 60 mm AC, 250 mm PCC | Full Depth Asphalt Removal | 60 mm HL1, 170 mm Existing PCC |
| Lawrence Avenue E, Section 2 | 224 Lawrence Ave. E to Wanless Cres. | 180 | 5 | 60 | 20510 | 60 mm AC, 250 mm PCC | Full Depth Asphalt Removal | 60 mm HL1, 170 mm Existing PCC |
| Dinnick Cres. | Lawrence Ave. E to Mount Pleasant Rd. | 550 | 7 | 70 | 1240 to 5370 | 85 mm AC, 155 mm PCC | Routine Preventive Maintenance | NA |
| Lymstone Ave. ¹ | Dinnick Cres. to Lawrence Cres. | 90 | 6 | 60 | 200 | No Data | Routine Preventive Maintenance | Not Applicable |
| Buckingham Ave., Section 1 | Dinnick Cres. to Wanless Cres. (east) | 350 | 8 | 85 | 480 to 8224 | 130 mm AC, 150 mm PCC | Routine Preventive Maintenance | Not Applicable |
| Wanless Cres., West Section | Buckingham Ave. to Lawrence Ave. E | 170 | 6 | 60 | 8152 | 150 mm AC, 100 mm Gran Subbase | Mill 40 mm, Overlay 40 mm HL3 | Repare 40 mm HL3, 110 mm Existing AC, 100 mm Existing PCC, 100 mm Existing Gran Subbase |
| Cheltenham Ave., Section 2 | Dinnick Cres. to St. Ives Cres. | 300 | 4 | 45 | 860 to 3348 | 100 mm AC, 100 mm Gran Base, 100 mm PCC Subbase and 50 mm Gran Subbase | Mill 40 mm, HL3, 60 mm HL3, 100 mm Existing Gran Base, 100 mm Existing PCC, 50 mm Existing Gran Subbase | Repare 40 mm HL3, 60 mm HL3, 100 mm Existing Gran Base, 100 mm Existing PCC, 50 mm Existing Gran Subbase |
| Rochester Ave., Section 1 | Dinnick Cres. to St. Ives Ave. | 400 | 6 | 70 | 250 to 3356 | 100 mm AC, 165 mm PCC | Routine Preventive Maintenance | Not Applicable |
| Dundurn Rd., Section 1 | Dinnick Cres. to Davlish Ave. | 230 | 3 | 35 | 4216 to 5326 | No Data | Full Depth Asphalt Removal | Assume Repaving 40 mm HL3, 30 mm HL8 |
| Dundurn Rd., Section 2 | Davlish Ave. to Glengowan Rd. | 110 | 7 | 70 | 2828 | No Data | Routine Preventive Maintenance | Not Applicable |
| St. Leonards Ave., Section 1 | Mount Pleasant Rd. to St. Leonards Cres. | 600 | 5 | 50 | 1380 to 3860 | 90 mm AC, 150 mm PCC, 210 mm Gran Subbase | Full Depth Asphalt Removal | Repare 40 mm HL3, 50 mm HL3, 150 mm Existing PCC, 210 mm Existing Gran Subbase |
| Davlish Ave., Section 2 | Mount Pleasant Rd. to St. Leonards Cres. | 450 | 5 | 45 | 740 to 1658 | 75 mm AC, 160 mm PCC, 80 mm Gran Subbase | Full Depth Asphalt Removal | Repare 80 mm HL3 (two lifts), 160 mm Existing PCC, 80 mm Existing Gran Subbase |
| Glengowan Rd., Section 1 | Mount Pleasant Rd. to Dundurn Rd. | 145 | 3 | 43 | 440 to 1820 | 75 mm AC, 75 mm Gran Base / 150 mm PCC | Full Depth Asphalt Removal | Repare 40 mm HL3, 50 mm HL3, 50 mm Existing Gran Base / 150 mm Existing PCC |
| Strathgowan Ave. | 280 m west of Strathgowan Cres. to Strathgowan Cres. | 280 | 3 | 35 | 40 to 3182 | 100 mm AC, 100 mm PCC, 130 mm Gran Subbase | Full Depth Asphalt Removal | Repare 40 mm HL3, 60 mm HL8, 100 mm Existing PCC, 130 mm Existing Gran Subbase |
| Strathgowan Cres., Section 1 | Blythwood Rd. to 128 Glengowan Rd. | 270 | 6 | 60 | 2328 to 3242 | 50 mm AC, 110 mm PCC, 200 mm Gran Subbase | Routine Preventive Maintenance | Not Applicable |

Notes: 1. Possible composite pavement;

2. Gran Base or Subbase refers to granular base or subbase course; and

3. PCC refers to Portland cement concrete.

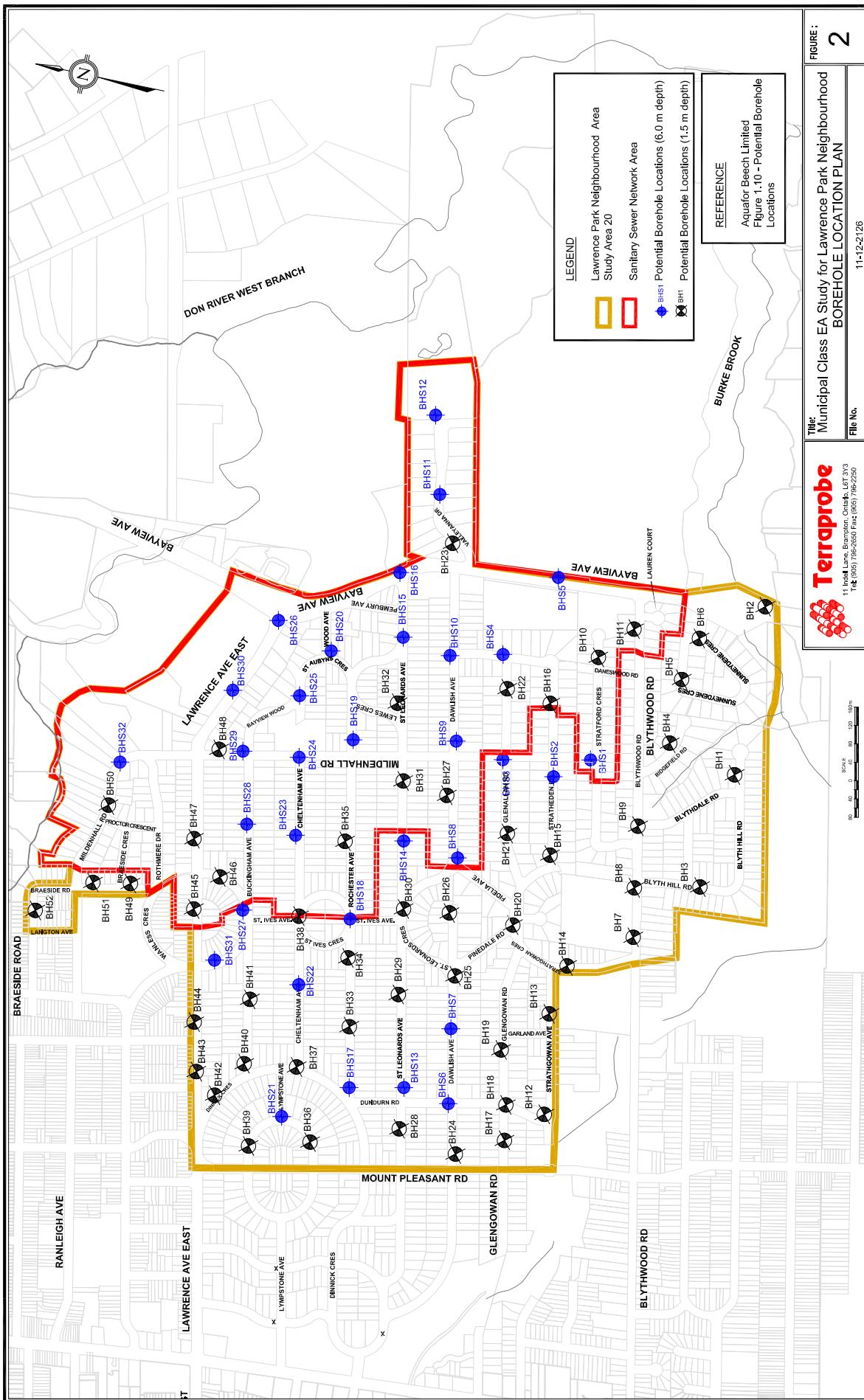
FIGURES

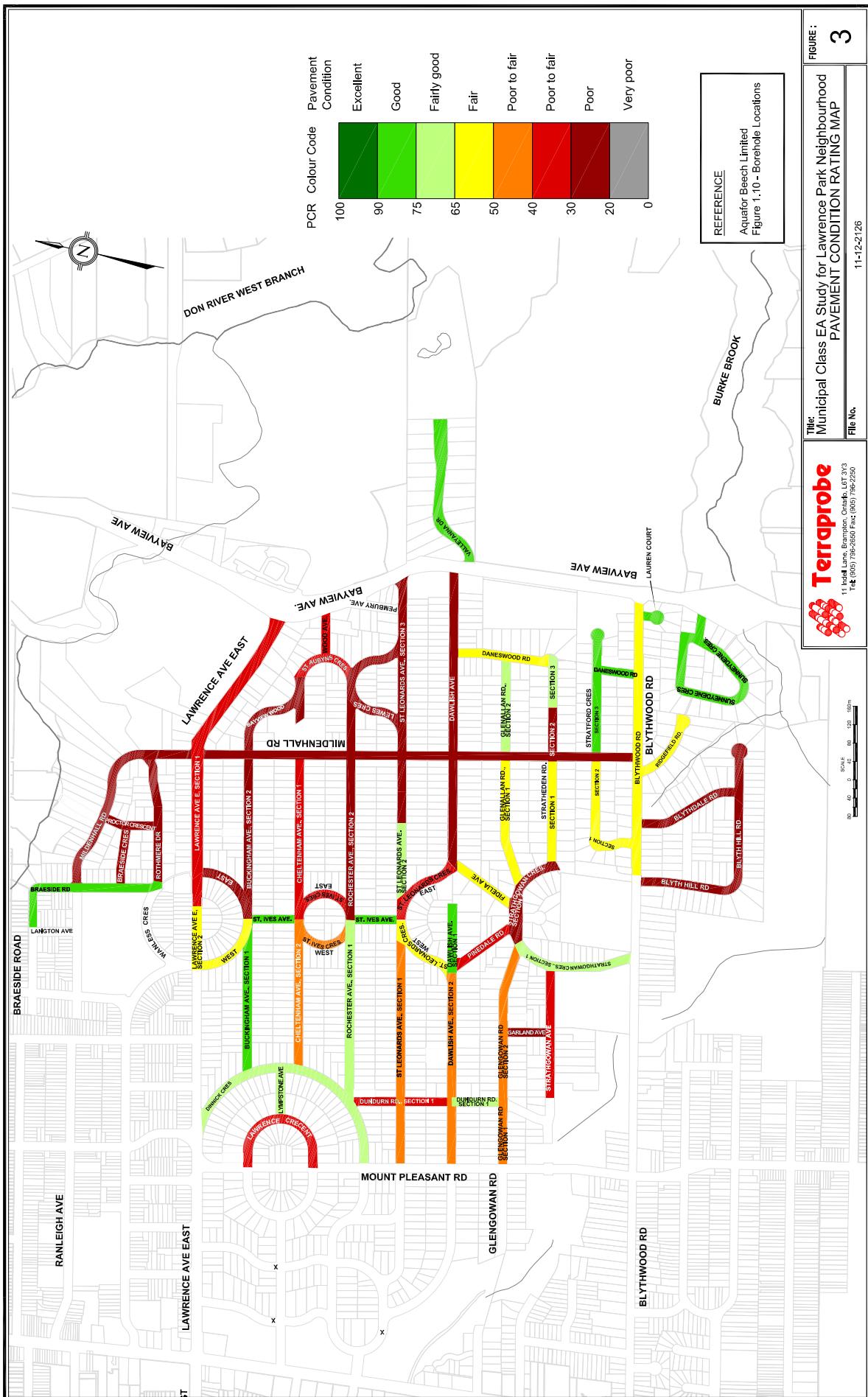


Terraprobe Inc



| | | |
|--|---|-----------------------------|
|  Terraprobe 11 Indell Lane, Brampton, Ontario, L6T 3Y3 Tel: (905) 796-2650 Fax: (905) 796-2250 | Title: Municipal Class EA Study for Lawrence Park Neighbourhood SITE LOCATION PLAN File No. 11-12-2126 | FIGURE : 1 |
|--|---|-----------------------------|





APPENDICES



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APPENDIX A

Site Photographs



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PHOTOGRAPH 1. Braeside Road from Langton Avenue to Rothmere Drive, urban cross section, looking north.



PHOTOGRAPH 2. Rothmere Drive from Braeside Road to Mildenhall Road, rural cross section, looking west.





PHOTOGRAPH 3. Braeside Crescent from Braeside Road to Proctor Crescent, rural cross section, looking west.



PHOTOGRAPH 4. Proctor Crescent from Mildenhall Road to Rothmere Drive, rural cross section, looking north.





PHOTOGRAPH 5. Lawrence Crescent from Mount Pleasant Road to Mount Pleasant Road, urban cross section, looking north.



PHOTOGRAPH 6. Lawrence Avenue East, Section 1 from Bayview Avenue to 224 Lawrence Avenue East, urban cross section, looking west.



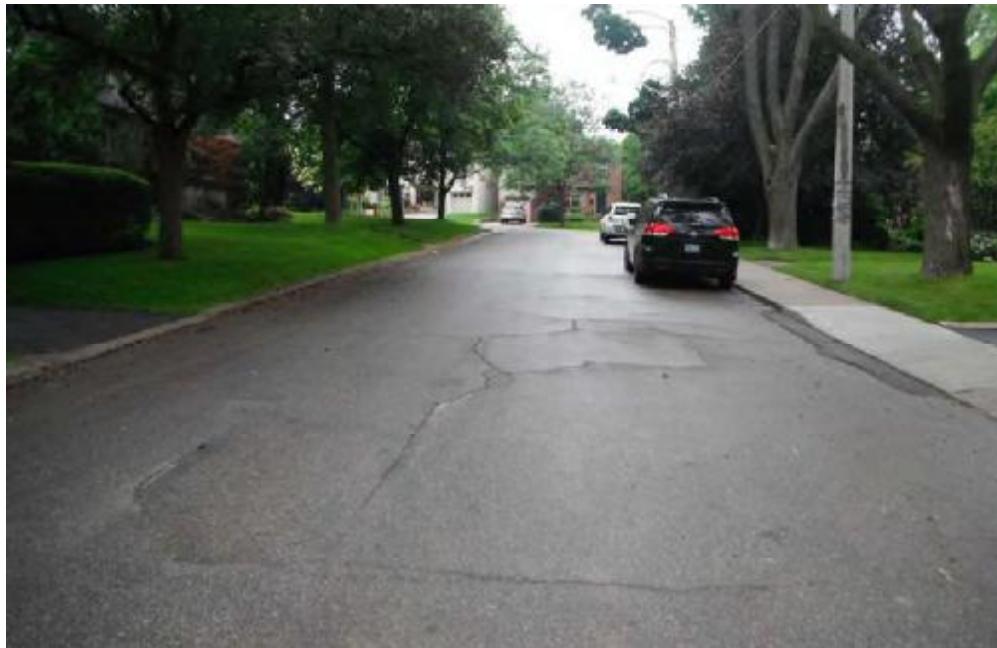


PHOTOGRAPH 7. Lawrence Avenue East, Section 2 from 224 Lawrence Avenue East to Wanless Crescent, urban cross section, looking west.



PHOTOGRAPH 8. Dinnick Crescent from Lawrence Avenue East to Mount Pleasant Road, urban cross section, looking north.





PHOTOGRAPH 9. Lympstone Avenue from Lawrence Crescent to Dinnick Crescent, urban cross section, looking west.



PHOTOGRAPH 10. Buckingham Avenue, Section 1 from Dinnick Crescent to Wanless Crescent (east), urban cross section, looking west.





PHOTOGRAPH 11. Buckingham Avenue, Section 2 from Wanless Crescent (east) to Mildenhall Road, rural cross section, looking west.



PHOTOGRAPH 12. Wanless Crescent, East Section from Buckingham Avenue to Lawrence Avenue East, rural cross section, looking north.





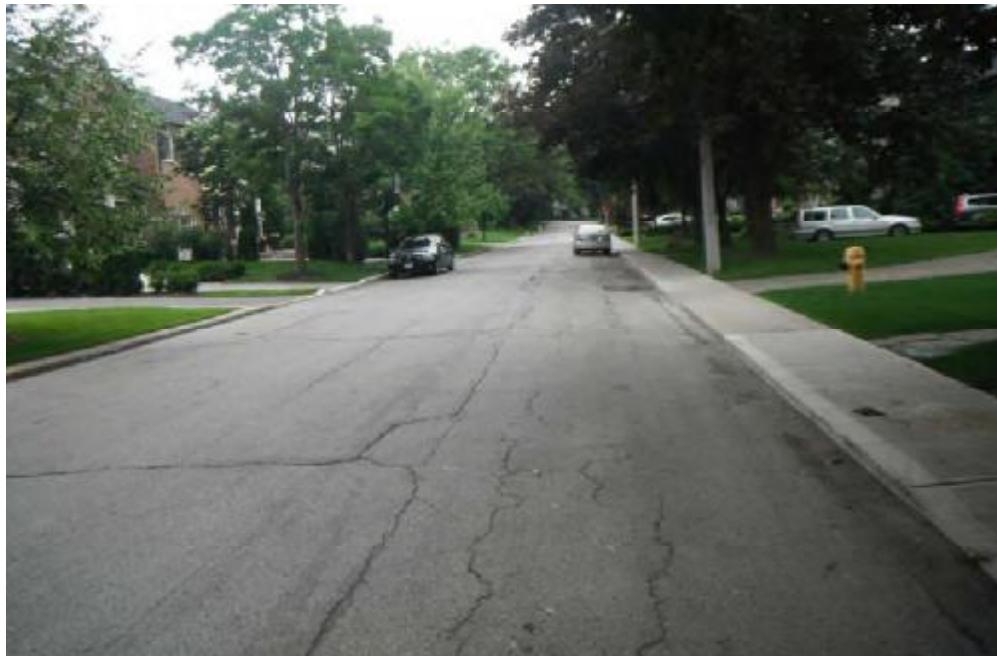
PHOTOGRAPH 13. Wanless Crescent, West Section from Buckingham Avenue to Lawrence Avenue East, urban cross section, looking north.



PHOTOGRAPH 14. St. Ives Avenue from Buckingham Avenue to Cheltenham Avenue, urban cross section, looking north.



PHOTOGRAPH 15. Cheltenham Avenue, Section 1 from St. Ives Crescent to Mildenhall Avenue, rural cross section, looking west.



PHOTOGRAPH 16. Cheltenham Avenue, Section 2 from Dinnick Crescent to St. Ives Crescent, urban cross section, looking west.





PHOTOGRAPH 17. St. Ives Crescent, East Section from Cheltenham Avenue to Rochester Avenue, semi-urban cross section, looking north.



PHOTOGRAPH 18. St. Ives Crescent, West Section from Cheltenham Avenue to Rochester Avenue, urban cross section, looking north.





PHOTOGRAPH 19. Rochester Avenue, Section 1 from Dinnick Crescent to St. Ives Avenue, urban cross section, looking west.



PHOTOGRAPH 20. Rochester Avenue, Section 2 from St. Ives Avenue to Lewes Crescent, rural cross section, looking west.





PHOTOGRAPH 21. Dundurn Road, Section 1 from Dinnick Crescent to Dawlish Avenue, urban cross section, looking north.



PHOTOGRAPH 22. Dundurn Road, Section 2 from Dawlish Avenue to Glengowan Road, urban cross section, looking north.





PHOTOGRAPH 23. St. Leonards Avenue, Section 1 from Mount Pleasant Road to St. Leonards Crescent, urban cross section, looking east.



PHOTOGRAPH 24. St. Leonards Avenue, Section 2 from St. Leonards Crescent to 207 St. Leonards Avenue, urban cross section, looking east.





PHOTOGRAPH 25. St. Leonards Avenue, Section 3 from 207 St. Leonards Avenue to Bayview Avenue, rural cross section, looking east.

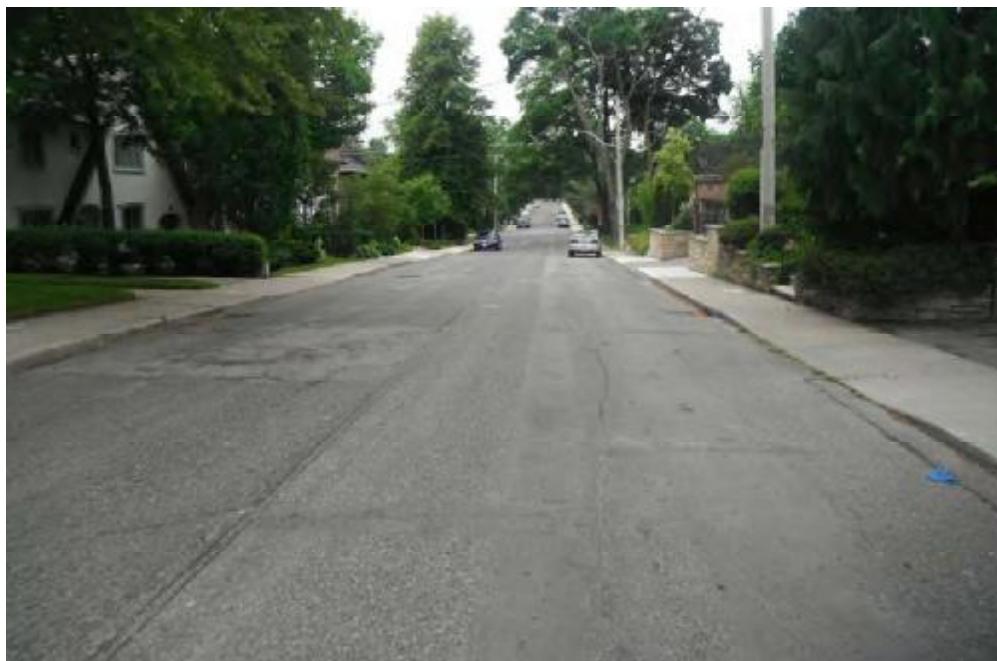


PHOTOGRAPH 26. St. Ives Avenue from Rochester Avenue to St. Leonards Avenue, urban cross section, looking north.





PHOTOGRAPH 27. Dawlish Avenue, Section 1 from St. Leonards Crescent to East End, urban cross section, looking west.



PHOTOGRAPH 28. Dawlish Avenue, Section 2 from Mount Pleasant Road to St. Leonards Crescent, urban cross section, looking west.





PHOTOGRAPH 29. St. Leonards Crescent, East Section from Dawlish Avenue to St. Leonards Avenue, rural cross section, looking north.



PHOTOGRAPH 30. St. Leonards Crescent, West Section from Dawlish Avenue to St. Leonards Avenue, urban cross section, looking north.





PHOTOGRAPH 31. Dawlish Avenue from St. Leonards Crescent to Bayview Avenue, rural cross section, looking west.



PHOTOGRAPH 32. Pinedale Road from Dawlish Avenue to Strathgowan Crescent, rural cross section, looking north.



PHOTOGRAPH 33. Fidelia Avenue from Dawlish Avenue to Strathgowan Crescent, rural cross section, looking north.



PHOTOGRAPH 34. Glengowan Road from Mount Pleasant Road to Strathgowan Crescent, urban cross section, looking west.





PHOTOGRAPH 35. Strathgowan Avenue from 280 m West of Strathgowan Crescent to Strathgowan Crescent, urban cross section, looking west.



PHOTOGRAPH 36. Garland Avenue from Glengowan Road to Strathgowan Crescent, semi-urban cross section, looking north.



PHOTOGRAPH 37. Strathgowan Crescent, Section 1 from Blythwood Road to 128 Glengowan Road, urban cross section, looking north.



PHOTOGRAPH 38. Strathgowan Crescent, Section 2 from 128 Glengowan Road to Stratheden Road, rural cross section, looking north.





PHOTOGRAPH 39. Stratford Crescent, Section 1 from Mildenhall Road to 80 m east of Daneswood Road, urban cross section, looking west.



PHOTOGRAPH 40. Stratford Crescent, Section 2 from 101 Stratford Crescent to Mildenhall Road, rural cross section, looking west.

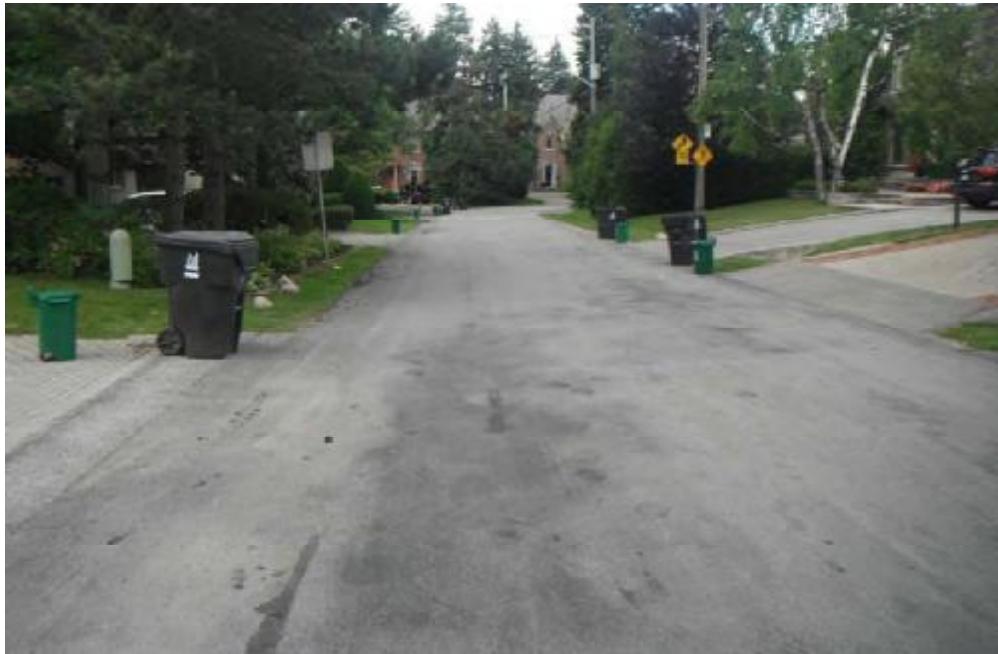




PHOTOGRAPH 41. Stratford Crescent, Section 3 from Blythwood Road to 101 Stratford Crescent, urban cross section, looking west.



PHOTOGRAPH 42. Daneswood Road from Blythwood Road to Stratford Crescent, urban cross section, looking north.



PHOTOGRAPH 43. Stratheden Road, Section 1 from Strathgowan Crescent to Mildenhall Road, rural cross section, looking west.



PHOTOGRAPH 44. Stratheden Road, Section 2 from Strathgowan Crescent to 35 Stratheden Road, rural cross section, looking west.





PHOTOGRAPH 45. Stratheden Road, Section 3 from 35 Stratheden Road to Daneswood Road, urban cross section, looking west.



PHOTOGRAPH 46. Daneswood Road from Stratheden Road to Dawlish Avenue, urban cross section, looking north.



PHOTOGRAPH 47. Glenallan Road, Section 1 from Strathgowan Crescent to Mildenhall Road, rural cross section, looking north.



PHOTOGRAPH 48. Glenallan Road, Section 2 from Mildenhall Road to Daneswood Road, urban cross section, looking north.



PHOTOGRAPH 49. Mildenhall Road from Blythwood Road to Lawrence Avenue East, rural cross section, looking north.



PHOTOGRAPH 50. Mildenhall Road from Lawrence Avenue East to Braeside Road, rural cross section, looking west.





PHOTOGRAPH 51. Bayview Wood from Mildenhall Road to St. Aubyns Crescent, rural cross section, looking north.



PHOTOGRAPH 52. Wood Avenue from St. Aubyns Crescent to Bayview Avenue, rural cross section, looking west.



PHOTOGRAPH 53. St. Aubyns Crescent from Bayview Wood to Lewes Crescent, rural cross section, looking north.



PHOTOGRAPH 54. Lewes Crescent from St. Leonards Avenue to St. Leonards Avenue, rural cross section, looking north.





PHOTOGRAPH 55. Blythwood Road from Blyth Hill Road to Bayview Avenue, urban cross section, looking west.



PHOTOGRAPH 56. Blyth Hill Road from Blythwood Road to end of Blyth Hill Road, rural cross section, looking west.





PHOTOGRAPH 57. Blyth Dale Road from Blythwood Road to Blyth Hill Road, rural cross section, looking north.



PHOTOGRAPH 58. Ridgefield Road from Blythwood Road to end of Ridgefield Road, rural cross section, looking north.





PHOTOGRAPH 59. Sunnydene Crescent from Bayview Avenue to Bayview Avenue, urban cross section, looking west.



PHOTOGRAPH 60. Lauren Court from Blythwood Road to end of Lauren Court, urban cross section, looking north.



APPENDIX B

Pavement Condition Evaluation Forms



Terraprobe Inc



Composite Pavement Condition Evaluation Form

Ministry of Transportation

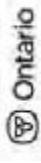
Composite Pavement Condition Evaluation Form

| Location: | | Braside Road | | | | District | | Highway | | | | |
|---|--|---|---|--|---|---|---|---|---|---|---|---|
| From: | Langton Avenue | To: | Rothmere Drive | | | Traffic Direction | B | B - both directions; N - northbound; S - southbound | | | | |
| LHRS | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> • <input type="text"/> km offset | <input type="text"/> 3 <input type="text"/> 5 <input type="text"/> 0 m | | | Facility | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | | |
| Survey Date | <input type="text"/> 1 <input type="text"/> 3 | <input type="text"/> 0 <input type="text"/> 6 month | PCR | <input type="text"/> 8 <input type="text"/> 5 | RCR | <input type="text"/> 8 • 0 | Class | L | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | |
| Contract No. | <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> WPN. | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | |
| PAVEMENT DISTRESS | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Excellent (smooth) 1 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous, at 80 km/hr) 0 | Ext. of Distress Very Severe Severe Moderate Slight Very Slight | Ext. of Distress Extensive Few Infrequent 10-20 20-50 50-80 80-100 Throughout | Surface | Width | Distress | Right | Left | Right | Left | Ext. of Distress | |
| Surface Defects | Raveling & C. Agg. Loss Flushing Spalling | 1 ✓ 2 ✓ 3 ✓ | 10 10 10 | Few Few Few | Fully Paved Partially Paved | ✓ ✓ ✓ | Mod. Sev. Mod. Sev. Mod. Sev. | Mod. Sev. Mod. Sev. Mod. Sev. | 10-30 10-30 10-30 | >30 >30 >30 | >30 >30 >30 | |
| Surface Deformations | Tenting/ Cupping Wheel Track Rutting Distortion & Settlement Joint Failures | 1 ✓ 2 ✓ 3 ✓ 4 ✓ 5 ✓ 6 ✓ 7 ✓ | 10 10 10 10 10 10 10 | Hot Mix Partially Paved Partially Paved Partially Paved Partially Paved Partially Paved Partially Paved | ✓ ✓ ✓ ✓ ✓ ✓ ✓ | Cracking Pav Edge/Shoulder (Curb) Separation Distortion | Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. | Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. | 1 1 1 1 1 1 1 | 2 2 2 2 2 2 2 | 1 1 1 1 1 1 1 | 2 2 2 2 2 2 2 |
| Long. Meandering Centreline | Single and Multiple Single Multiple | 1 ✓ 2 ✓ 3 ✓ 4 ✓ 5 ✓ 6 ✓ 7 ✓ 8 ✓ 9 ✓ 10 ✓ | 10 10 10 10 10 10 10 10 10 10 | Primed Partially Paved Partially Paved Partially Paved Partially Paved Partially Paved Partially Paved Partially Paved Partially Paved Gravel | ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ | Cracking Edge Break/ Separation Break-up | Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. | Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. Mod. Sev. | 1 1 1 1 1 1 1 1 1 | 2 2 2 2 2 2 2 2 2 | 1 1 1 1 1 1 1 1 1 | 2 2 2 2 2 2 2 2 2 |
| Cracking | | | | | | | | | | | | |
| Dia/Corner/Edge Cies. | Single Transverse Multiple Map Transverse Joints | 11 ✓ 12 ✓ 13 ✓ 14 ✓ 15 ✓ | 10 10 10 10 10 | ✓ ✓ ✓ ✓ ✓ | ✓ ✓ ✓ ✓ ✓ | Ext. of Occurrence, % | MAINTENANCE TREATMENT | | | | | |
| | | | | | | <10 | 10-20 | 20-50 | 50-80 | >80 | | |
| | | | | | | 1 | 2 | 3 | 4 | 5 | | |
| | | | | | | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint/ Slab Replacement | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint/ Slab Replacement | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint/ Slab Replacement | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint/ Slab Replacement | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint/ Slab Replacement | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | | |
| Urban Cross Section: 40 km/hour Speed Limit | | | | | | | | | | | | |

Evaluated by:

9-14-001-111-11

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: _____ Rothmere Drive _____

From: _____ Braeside Road _____ To: _____ Mildenhall Road _____

LHRS • km offset

Survey Date year month

Contract No. - WP No.

PCR 2 9 RCR 1 0

B - both directions; N - northbound; S - southbound;
E - eastbound; W - westbound

A - all lanes; C - collector; E - express;
O - others (additional lanes)

Traffic Direction 3 0 m

Facility A

Class L

F - freeway; A - arterial; C - collector; L - local;
S - secondary

| Ride Condition Rating (at 80 km/hr) | Pavement | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | |
|---|----------------------------------|--|---|---------------------------------|------------|---------------|--|----------|------------|---------------|-----------------|------------|
| | | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Severe Very Severe Extensive | Few Intermittent Frequent | Throughout | Dominant Type | Distress | Cracking | Paved Full | Paved Partial | Curb Separation | Distortion |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | |
| | 7 | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | | | | | | | |
| | 9 | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | | | | | | | | | | |
| | 11 | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 | | | | | | | | | | |
| | 13 | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |

| Shoulders | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|--------------|----------------------|------|------|------|------|---|-------|------|------|------|
| | Right | Mod. | Sev. | Left | Mod. | Sev. | Right | Mod. | Sev. | Left |
| Thoroughfare | | | | | | | | | | |
| Extensive | | | | | | | | | | |
| Intermittent | | | | | | | | | | |
| Frequent | | | | | | | | | | |
| Very Severe | | | | | | | | | | |
| Moderate | | | | | | | | | | |
| Slight | | | | | | | | | | |
| Very Slight | | | | | | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Speed limit: 40km/hr

Substandard rural cross section, poor pavement drainage

PCI Value: **29**

Distress Comments: (items not covered above)

Evaluated by: **Seth/Matteo**

Flexible Pavement Condition Evaluation Form

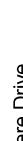
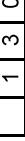
| | | | |
|--------------|-------------------------|----------------|-----------------------|
| Location: | Braeside Crescent | | |
| From: | Braeside Road | To: | Proctor Crescent |
| LHRS | □ □ □ □ □ begins offset | Section Length | □ □ 1 3 0 m |
| Survey Date | 1 3 year | PCR | 1 2 7 RCR 1 • 0 month |
| Contract No. | □ - □ □ □ WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|-----------|------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 10 | | | | | | | | | | | | | | |
| | 11 | | | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | | | |
| | 13 | | | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | |

| District | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|-------------------|----------------------|------|------|------|------|---|-------|------|------|------|
| | Right | Mod. | Sev. | Left | Mod. | Sev. | Right | Mod. | Sev. | Left |
| Traffic Direction | | | | | | | | | | |
| Facility | A | | | | | | | | | |

Other Comments: (e.g., subsections, additional contracts)

| | |
|--|--|
| PCI Value: | 27 |
| Distress Comments: (items not covered above) | Substandard rural cross section, poor pavement drainage Speed limit: 40km/hr Nonexistent to shallow side ditches |
| Evaluated by: | Seth/Matteo |

| | | | | | | | | | | | |
|---------------------|---|--|--|--|--|--|--|--|--|--|--|
| Location: | Proctor Crescent | | | | | | | | | | |
| From: | Mildenhall Road | | | | | To: | Rothmere Drive | | | | |
| LHRS |  begins | | | | |  km offset | Section Length  m | | | | |
| Survey Date |  year | | | | | PCR  month | PCR  RCR  1 • 0 | | | | |
| Contract No. |  | | | | | WP No.  | | | | | |
| District |  | | | | | Traffic Direction  | Facility  | | | | |
| B |  | | | | | B - both directions; N - northbound; S - southbound; | A | | | | |
| E |  | | | | | E - eastbound; W - westbound | O | | | | |
| F |  | | | | | A - all lanes; C - collector; E - express; | S | | | | |
| G |  | | | | | O - others (additional lanes) | L | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo



Ministry of Transportation

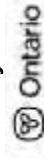
Composite Pavement Condition Evaluation Form

| Location: | Lawrence Crescent | | | | District | | | | | | | | | |
|---|--|----------------------------|----------------------------|-------------------------------------|----------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---------------------------------------|-----------------------|---|-------------------------------------|
| From: | Mount Pleasant Road | | | | To: | Mount Pleasant Road | | | | | | | | |
| LHRS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | km | Section Length | <input type="checkbox"/> 2 | <input type="checkbox"/> 6 | <input type="checkbox"/> 5 | m | | | | |
| Survey Date | <input type="checkbox"/> 1 | <input type="checkbox"/> 3 | <input type="checkbox"/> 0 | <input type="checkbox"/> 6 | month | PCR | <input type="checkbox"/> 3 | <input type="checkbox"/> 5 | RCR | <input type="checkbox"/> 4 | <input checked="" type="checkbox"/> 0 | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> WP No. | | | | Facility | | | | | Class | <input type="checkbox"/> L | | | |
| Ride Condition Rating (at 80 km/hr) | 1 | Excellent (smooth) | 2 | Good (comfortable) | 3 | Moderate | 4 | Slight | 5 | Fair (uncomfortable) | 6 | Poor (v. rough/bumpy) | 7 | Very Poor. (dangerous, at 80 km/hr) |
| PAVEMENT DISTRESS | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Aug. Loss | | 1 | ✓ | 2 | ✓ | 3 | ✓ | 4 | ✓ | 5 | ✓ | | |
| | Flushing | | 2 | | 3 | | 4 | | 5 | | 6 | | | |
| | Spalling | | 3 | | 4 | | 5 | | 6 | | 7 | | | |
| Surface Deformations | Tenting/ Cupping | | 4 | | 5 | | 6 | | 7 | | 8 | | | |
| | Wheel Track Rutting | | 5 | | 6 | | 7 | | 8 | | 9 | | | |
| | Distortion & Settlement | | 6 | | 7 | | 8 | | 9 | | 10 | | | |
| | Joint Failures | | 7 | | 8 | | 9 | | 10 | | 11 | | | |
| Long. Meandering | Single and Multiple | | 8 | ✓ | 9 | ✓ | 10 | ✓ | 11 | ✓ | 12 | ✓ | | |
| Centreline Dia/Corner/Edge Ccs. | Single | | 9 | | 10 | | 11 | | 12 | | | | | |
| Cracking | Multiple | | 10 | | 11 | | 12 | | | | | | | |
| | Single | | 11 | ✓ | 12 | ✓ | 13 | ✓ | 14 | ✓ | 15 | ✓ | | |
| | Multiple | | 12 | | 13 | | 14 | | 15 | | | | | |
| | Single & Multiple | | 13 | | 14 | | 15 | | | | | | | |
| | Sawed | | 14 | | 15 | | | | | | | | | |
| | Reflective | | 15 | | | | | | | | | | | |
| MAINTENACE TREATMENT | | | | | | | | | | | | | | |
| | <10 | | 10-20 | | 20-50 | | 50-80 | | >80 | | EXTENT OF OCCURRENCE, % | | | |
| | 1 | | 2 | | 3 | | 4 | | 5 | | | | | |
| Manul Patching, Hot or Cold Mix | | | | | | | | | | | | | | |
| Machine Patching, Partial or Full Width | | | | | | | | | | | | | | |
| Microsurfacing | | | | | | | | | | | | | | |
| Grooving | | | | | | | | | | | | | | |
| Pavement Rout and Seal Cracks or Joints | | | | | | | | | | | | | | |
| Concrete Joint/Slab Replacement | | | | | | | | | | | | | | |
| Manual Patching, Hot or Cold Mix | | | | | | | | | | | | | | |
| Machine Patching, Partial or Full Width | | | | | | | | | | | | | | |
| Spray Patching/ Chip Seal | | | | | | | | | | | | | | |
| Sealing Cracks or Joints | | | | | | | | | | | | | | |
| Shoulders | | | | | | | | | | | | | | |
| Urban cross section; Speed limit: 40km/hr | | | | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | | | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | | | | |

Evaluated by:

South Africa

Ministry of Transportation



Composite Pavement Condition Evaluation Form

| | | | | | | | | |
|--|---|---|---|---|--|--|---|----------------------------|
| Location: | Lawrence Avenue East, Section 1 | | | | District | Highway | | |
| From: | Bayview Avenue | | | | To: | 224 Lawrence Avenue East | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> km | | offset | Section Length | <input type="checkbox"/> 6 <input type="checkbox"/> 5 <input type="checkbox"/> 0 m | Traffic Direction | <input type="checkbox"/> B | |
| | | | | | | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | <input type="checkbox"/> 0 <input type="checkbox"/> 6 month | PCR | <input type="checkbox"/> 4 <input type="checkbox"/> 0 | RCR | <input type="checkbox"/> 4 <input type="checkbox"/> • <input type="checkbox"/> 0 | Facility | <input type="checkbox"/> A |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | Class | <input type="checkbox"/> A | F - freeway; A - arterial; C - collector; L - local; S - secondary | |
| Ride Condition Rating (at 80 km/hr) | | | | | SHOULDERS | | | |
| | 1 <input type="checkbox"/> n Excellent (smooth) | 2 <input type="checkbox"/> Good (comfortable) | 3 <input type="checkbox"/> Fair (uncomfortable) | 4 <input type="checkbox"/> Poor (very rough/bumpy) | 5 <input type="checkbox"/> Very Poor; (dangerous, at 80 km/hr) | Extent of Distress | Extent of Distress | |
| | Very Slight | Slight | Moderate | Severe | Very Severe | Extensive | Extremely Extensive | |
| | <10 | 10-20 | 20-50 | 50-80 | 80-100 | Throughout | Throughout | |
| PAVEMENT DISTRESS | 1 | 2 | 3 | 4 | 5 | WIDTH | DISTRESS | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | ✓ | ✓ | Fully Paved | Cracking | |
| | Flushing | 2 | ✓ | ✓ | ✓ | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | |
| | Spalling | 3 | ✓ | ✓ | ✓ | Hot Mix | Distortion | |
| | Tenting/Cupping | 4 | ✓ | ✓ | ✓ | | | |
| Surface Deformations | Wheel Track Rutting | 5 | ✓ | ✓ | ✓ | Fully Paved | Cracking | |
| | Distortion & Settlement | 6 | ✓ | ✓ | ✓ | Partially Paved | Edge Break/ Separation | |
| | Joint Failures | 7 | ✓ | ✓ | ✓ | | Break-up | |
| Long. Meandering | Single and Multiple | 8 | ✓ | ✓ | ✓ | Fully Paved | | |
| Centreline | Single | 9 | ✓ | ✓ | ✓ | Partially Paved | | |
| | Multiple | 10 | ✓ | ✓ | ✓ | Gravel | | |
| Crazing | Single & Multiple | 11 | ✓ | ✓ | ✓ | | | |
| Cracking | Single | 12 | ✓ | ✓ | ✓ | | | |
| | Multiple | 13 | ✓ | ✓ | ✓ | | | |
| Map | Single & Multiple | 14 | ✓ | ✓ | ✓ | | | |
| Transverse Joints | Sawed | 15 | ✓ | ✓ | ✓ | | | |
| Transverse Joints | Reflective | | | | | | | |
| MAINTENANCE TREATMENT | | | | | | | | |
| | EXTENT OF OCCURRENCE, % | | | | | | | |
| | <10 | 10-20 | 20-50 | 50-80 | >80 | | | |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | Manual Patching, Hot or Cold Mix | Machine Patching, Partial or Full Width | Microsurfacing | Grooving | Rout and Seal Cracks or Joints | Concrete Joint Slab Replacement | | |
| | | | | | | Manual Patching, Hot or Cold Mix | | |
| | | | | | | Machine Patching, Partial or Full Width | | |
| | | | | | | Spray Patching/Chip Seal | | |
| | | | | | | Sealing Cracks or Joints | | |
| Distress Comments: (items not covered above) | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | |
| Urban cross section; Speed limit: 50km/hr; 50m west of Bayview Avenue recently repaved/rehabilitated | | | | | | | | |
| Evaluated by: <u>Seth Matteo</u> | | | | | | | | |

Composite Pavement Condition Evaluation Form

| | | | | | | | |
|-------------------------------------|---|---|-----|---|---|--|----------|
| Location: | Lawrence Avenue East, Section 2 | | | District | Highway | | |
| From: | 224 Lawrence Avenue East | | | To: | Wanless Crescent | | |
| LHRS | <input type="checkbox"/> • <input type="checkbox"/> km begins offset | | | Section Length | <input type="checkbox"/> 1 <input type="checkbox"/> 8 <input type="checkbox"/> 0 m | | |
| | | | | Traffic Direction | <input type="checkbox"/> B B - both directions; N - northbound; S - southbound; <input type="checkbox"/> E - eastbound; W - westbound | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | <input type="checkbox"/> 0 <input type="checkbox"/> 6 month | PCR | <input type="checkbox"/> 6 <input type="checkbox"/> 0 | RCR | <input type="checkbox"/> 5 <input type="checkbox"/> • <input type="checkbox"/> 0 | Facility |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | Class | <input type="checkbox"/> A A - all lanes; C - collector; E - express; <input type="checkbox"/> O - others (additional lanes) | | |
| Ride Condition Rating (at 80 km/hr) | | | | Class | <input type="checkbox"/> F - freeway; A - arterial; C - collector; L - local; <input type="checkbox"/> S - secondary | | |

| Ride Condition Rating (at 80 km/hr) | PAVEMENT DISTRESS | | | SHOULDERS | | | EXTENT OF DISTRESS | | |
|--|-------------------------------------|--------------------|--------------|-----------|-------------------------------------|-----------|--------------------|-------|------|
| | Severity of Distress | Extent of Distress | SURFACE | WIDTH | DISTRESS | Mod. Sev. | Mod. Sev. | Right | Left |
| 1 | Excellent (smooth) | Very Slight | Few | ✓ | Cracking | 1 | 2 | 1 | 2 |
| 8 | Good (comfortable) | Light | Intermittent | ✓ | Pav/Edge/Shoulder (Curb) Separation | 2 | 1 | 2 | 1 |
| 6 | Fair (uncomfortable) | Moderate | Frequent | ✓ | Distortion | 1 | 2 | 1 | 2 |
| 4 | Poor (very rough/bumpy) | Severe | Extensive | ✓ | Distortion | 1 | 2 | 1 | 2 |
| 2 | Very Poor; (dangerous, at 80 km/hr) | Very Severe | Throughout | ✓ | Distortion | 1 | 2 | 1 | 2 |
| 0 | | | | | | 10-30 | >30 | 10-30 | >30 |
| Contract No. <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | | | | | |

| Cracking Cres. | MAINTENANCE TREATMENT | | | EXTENT OF OCCURRENCE, % | | |
|-------------------|-----------------------|--------------|------|-------------------------|-------|-------|
| | Transverse | Longitudinal | Edge | <10 | 10-20 | 20-50 |
| Transverse Joints | Single | 12 | | 1 | 2 | 3 |
| | Multiple | 13 | | 1 | 2 | 4 |
| Map | Single & Multiple | 14 | | 1 | 2 | 5 |
| | Sawed Reflective | 15 | | | | |
| Transverse Joints | | | | | | |
| Shoulders | | | | | | |

Distress Comments: (items not covered above)

Other Comments: (e.g., subsections, additional contracts)

Urban cross section; Speed limit: 50km/hr

Evaluated by:

Seth Matteo

Composite Pavement Condition Evaluation Form

| Location: | Dinnick Crescent | | | | District | Highway | | | | | | | | |
|---|---|---|--------------------------|--|---|--|--|----------------------------|--|---|--------------------------|--------------------------|--------------------------|--------------------------|
| From: | Lawrence Avenue East | | To: | Mount Pleasant Road | | Traffic Direction | B | | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | | | | | |
| LHRS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> • <input type="checkbox"/> km | Section Length | <input type="checkbox"/> 5 <input type="checkbox"/> 5 <input type="checkbox"/> 0 m | Facility | <input type="checkbox"/> A | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 | <input type="checkbox"/> 0 <input type="checkbox"/> 6 | month | PCR | <input type="checkbox"/> 7 <input type="checkbox"/> 0 | RCR | <input type="checkbox"/> 7 <input type="checkbox"/> • <input type="checkbox"/> 0 | Class | <input type="checkbox"/> L | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | | | | | | | | | |
| PAVEMENT DISTRESS | | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | Extent of Distress | | | SHOULDERS | | | | | | | |
| | Very Slight | Slight | Moderate | Severe | Very Severe | Extremely Severe | Surface | Width | Distress | | | | | |
| <input type="checkbox"/> 1 | Excellent (smooth) | 1 | | | | <input type="checkbox"/> | | | Right | | | | | |
| <input type="checkbox"/> 8 | Good (comfortable) | 2 | ✓ | | | <input type="checkbox"/> | | | Left | | | | | |
| <input type="checkbox"/> 6 | Fair (uncomfortable) | 3 | | ✓ | | <input type="checkbox"/> | | | | | | | | |
| <input type="checkbox"/> 4 | Poor (very rough/bumpy) | 4 | | | ✓ | <input type="checkbox"/> | | | | | | | | |
| <input type="checkbox"/> 2 | Very Poor; (dangerous, at 80 km/hr) | 5 | | | | <input type="checkbox"/> | | | | | | | | |
| <input type="checkbox"/> 0 | | | | | | <input type="checkbox"/> | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | | |
| | Flushing | 2 | | | | | <input type="checkbox"/> | | | | | | | |
| | Spalling | 3 | | | | | <input type="checkbox"/> | | | | | | | |
| | Tenting/Cupping | 4 | | | | | <input type="checkbox"/> | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 5 | | | | | <input type="checkbox"/> | | | | | | | |
| | Distortion & Settlement | 6 | | | | | <input type="checkbox"/> | | | | | | | |
| | Joint Failures | 7 | | | | | <input type="checkbox"/> | | | | | | | |
| Long. Meandering | Single and Multiple | 8 | | ✓ | | | <input type="checkbox"/> | | | | | | | |
| Centreline | Single | 9 | ✓ | | | | <input type="checkbox"/> | | | | | | | |
| | Multiple | 10 | | | ✓ | | <input type="checkbox"/> | | | | | | | |
| Dia/Corner/Edge Cres. | Single & Multiple | 11 | ✓ | | | ✓ | | | | | | | | |
| Cracking | Single | 12 | | | ✓ | | | | | | | | | |
| | Transverse | 13 | ✓ | | | <input type="checkbox"/> | | | | | | | | |
| | Map | 14 | | | | <input type="checkbox"/> | | | | | | | | |
| Transverse Joints | Sawed | 15 | | | | | | | | | | | | |
| Reflective | | | | | | | | | | | | | | |
| MAINTENANCE TREATMENT | | | | | | | | | | EXTENT OF OCCURRENCE, % | | | | |
| | | | | | | | | | | <10 | 10-20 | 20-50 | 50-80 | >80 |
| | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | | | | | Manual Patching, Hot or Cold Mix | | | | |
| | | | | | | | | | | Machine Patching, Partial or Full Width | | | | |
| | | | | | | | | | | Microsurfacing | | | | |
| | | | | | | | | | | Grooving | | | | |
| | | | | | | | | | | ROUT and Seal Cracks or Joints | | | | |
| | | | | | | | | | | Concrete Joint Slab Replacement | | | | |
| | | | | | | | | | | Manual Patching, Hot or Cold Mix | | | | |
| | | | | | | | | | | Machine Patching, Partial or Full Width | | | | |
| | | | | | | | | | | Spray Patching/Chip Seal | | | | |
| | | | | | | | | | | Sealing Cracks or Joints | | | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | | | | |
| Urban cross section; Speed limit: 40km/hr | | | | | | | | | | | | | | |
| Evaluated by: Seth Matteo | | | | | | | | | | | | | | |

Composite Pavement Condition Evaluation Form

| | | | | |
|---|---|---|--|--|
| Location: | Lymstone Avenue | | Highway | |
| From: | Dinnick Crescent | To: | Lawrence Crescent | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> • <input type="checkbox"/> km begins offset | Section Length | <input type="checkbox"/> 9 <input type="checkbox"/> 0 m | Traffic Direction |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | PCR | <input type="checkbox"/> 7 <input type="checkbox"/> 0 month | RCR <input type="checkbox"/> 6 • <input type="checkbox"/> 0 |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | Class <input type="checkbox"/> L S - secondary | |
| PAVEMENT DISTRESS | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | Extent of Distress | |
| 1 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (very rough/bumpy) 2 Very Poor; (dangerous, at 80 km/hr) 0 | Very Slight <input type="checkbox"/> | Severe <input type="checkbox"/> | Few <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-50 <input type="checkbox"/> 50-80 <input type="checkbox"/> 80-100 <input type="checkbox"/> | Extensive <input type="checkbox"/> In-between <input type="checkbox"/> Throughout <input type="checkbox"/> |
| Surface Defects | Raveling & C. Agg. Loss Flushing Spalling | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Surface Deformations | Tenting/Cupping Wheel Track Rutting Distortion & Settlement Joint Failures | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Long. Meandering Centreline | Single and Multiple Single Multiple | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Cracking Cres. | Single & Multiple Single Multiple | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Transverse Joints | Transverse Map Sawed Reflective | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| SHOULDERS | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | Extent of Distress | |
| 1 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (very rough/bumpy) 2 Very Poor; (dangerous, at 80 km/hr) 0 | Very Slight <input type="checkbox"/> | Severe <input type="checkbox"/> | Width <input type="checkbox"/> Mod. Sev. <input type="checkbox"/> Distress <input type="checkbox"/> | Right <input type="checkbox"/> Left <input type="checkbox"/> Mod. Sev. <input type="checkbox"/> Distress <input type="checkbox"/> |
| Surface Defects | Hot Mix Partially Paved | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Surface Deformations | Surface Treatment Primed Gravel | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Long. Meandering Centreline | Fully Paved Partially Paved | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Cracking Cres. | Fully Paved Partially Paved | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Transverse Joints | Fully Paved Partially Paved | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| MAINTENANCE TREATMENT | | | | |
| EXTENT OF OCCURRENCE, % | | | | |
| Ride Condition Rating (at 80 km/hr) | <10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-50 <input type="checkbox"/> 50-80 <input type="checkbox"/> >80 <input type="checkbox"/> | | | |
| Surface Defects | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| Surface Deformations | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| Long. Meandering Centreline | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| Cracking Cres. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| Transverse Joints | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| OTHER COMMENTS | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | |
| Urban cross-section: Speed limit: 40km/hr; Possible composite pavement; further verification possible if construction records are provided | | | | |
| Evaluated by: Seth Matteo | | | | |

Composite Pavement Condition Evaluation Form

| Location: | Buckingham Avenue, Section 1 | | | | District | Highway | | | | | |
|---|---|-------------------|-----------------|-------------------------------------|-------------|--------------------|-------------|----------|---|---|--|
| From: | Dinnick Crescent | | To: | Wanless Crescent (east) | | Traffic | B | | B - both directions; N - northbound; S - southbound; | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> begins | | km offset | Section Length | | Direction | B | | E - eastbound; W - westbound | | |
| | | | | [] [] [] m | | | | | | | |
| Survey Date | 1 [] 3 | 0 [] 6 | month | PCR | [] 8 [] 5 | RCR | [] 8 [] 0 | Facility | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | |
| Contract No. | [] - [] [] [] [] WP No. | | | | | Class | L | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | |
| PAVEMENT DISTRESS | | | | | | | | | | SHOULDERS | |
| Ride Condition Rating (at 80 km/hr) | Extensivethroughout | Extensive | Moderate | Severe | Very Severe | Extent of Distress | DISTRESS | | Extent of Distress | | |
| | | | | | | | SURFACE | WIDTH | Mod. Sev. | Right | |
| 10 | Excellent (smooth) | 1 | Full Paved | Cracking | Right | Left | | | | | |
| 8 | Good (comfortable) | 2 | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | Mod. Sev. | Mod. Sev. | | | | | |
| 6 | Fair (uncomfortable) | 3 | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | | | | |
| 4 | Poor (v. rough/bumpy) | 4 | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | | | | |
| 2 | Very Poor. (dangerous, at 80 km/hr) | 5 | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | | | | |
| 0 | | 5 | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | | | | |
| | | | | | | | | | | EXTENT OF OCCURRENCE, % | |
| MAINTENANCE TREATMENT | | | | | | | | | | <10 | |
| Cracking | Transverse Joints | Single | 12 | ✓ | ✓ | ✓ | 10-20 | 20-50 | 50-80 | >80 | |
| | Transverse Joints | Multiple | 13 | ✓ | ✓ | ✓ | 1 | 2 | 3 | 5 | |
| | Map | Single & Multiple | 14 | ✓ | ✓ | ✓ | | | | | |
| | | Sawed | 15 | | | | | | | | |
| | | Reflective | | | | | | | | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | |
| Urban cross-section; Speed limit: 40km/hr | | | | | | | | | | | |

Seth Matteo

Evaluated by:

Flexible Pavement Condition Evaluation Form

| | | | |
|--------------|--------------------------------|----------------|----------------------|
| Location: | Wanless Crescent, East Section | | |
| From: | Buckingham Avenue | To: | Lawrence Avenue East |
| LHRS | □ □ □ □ □ km begins offset | Section Length | □ □ 1 3 0 m |
| Survey Date | 1 3 year | PCR | 2 9 RCR 1 • 0 |
| Contract No. | □ □ - □ □ □ WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|---|----------------------------------|--------|----------|--------|-------------|--|--------------|-------|-----------|------------|
| | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Often | Extensive | Throughout |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | |
| | Flushing | 2 | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | |
| | Distortion | 5 | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 10 | | | | | | | | | |
| | 11 | | | | | | | | | |
| | 12 | | | | | | | | | |
| | 13 | | | | | | | | | |
| | 14 | | | | | | | | | |
| | 15 | | | | | | | | | |

| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|-----------|------|------|--------------------------------|------|------|---|------|------|
| | Right | Mod. | Left | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | | | | Cracking | | | | | |
| | | | | Pavement Edge/ Curb Separation | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|--------------------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | |
| Spray Patching | | | |
| Pavement Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders Manual Patching | | | |
| Machine Patching | | | |
| Chip Seal Rout and Seal Cracks | | | |

Other Comments: (e.g., subsections, additional contracts)

| | |
|--|--|
| PCI Value: | 29 |
| Distress Comments: (items not covered above) | Substandard rural cross section, poor pavement drainage Speed limit: 40km/hr Nonexistent to shallow side ditches |
| Evaluated by: | Seth/Matteo |

Flexible Pavement Condition Evaluation Form

Location: Wanless Crescent, West Section

From: Buckingham Avenue To: Lawrence Avenue East

LHRS km
begins offset

Survey Date 1 3 0 6 month

Contract No. - WP No.

Highway

Traffic Direction B
B - both directions; N - northbound; S - southbound;
 E - eastbound; W - westbound

Facility A
A - all lanes; C - collector; E - express;
 O - others (additional lanes)

Class L
F - freeway; A - arterial; C - collector; L - local;
 S - secondary

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|-------------------------------------|--|--|---|------------|---------------------------|--|-----------------------|----------------------|-----------------------|----------------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Moderate Severe Very Severe Extremely Severe | Few Intermittent Often Extremely Often | Throughout | Right Mod. Distress | Left Mod. Distress | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | | | ✓ | | | | | |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 9 | | | ✓ | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | | | ✓ | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 13 | | | ✓ | | | | | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | | | ✓ | | | | | |

| CRACKING | Maintenance Treatment | | | | | EXTENT OF OCCURRENCE % | | | | |
|----------------------------------|-----------------------------------|-------|-------|-------|-----|------------------------|---|---|---|---|
| | <10 | 10-20 | 20-50 | 50-80 | >80 | 1 | 2 | 3 | 4 | 5 |
| Centre Line | Manual Patching | | | | | | | | | |
| Pavement Edge | Machine Patching | | | | | | | | | |
| Transverse | Spray Patching | | | | | | | | | |
| Longitudinal Meander and Midlane | Rout and Seal Cracks Chip Seal | | | | | | | | | |
| Random Map | Manual Patching | | | | | | | | | |

PCI Value: **75**

Distress Comments: (items not covered above)

Urban cross section

Speed limit: 40km/hr

| | |
|-----------|------------------|
| Shoulders | Manual Patching |
| | Machine Patching |

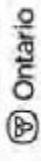
Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

Composite Pavement Condition Evaluation Form

| Location: | Wainless Crescent, West Section | | | District | Highway | | | |
|---|---|-----------------------------------|----------------------------------|------------------------------------|--|---|----------------------------|----------------------------|
| From: | Buckingham Avenue | To: | Lawrence Avenue East | Traffic Direction | <input type="checkbox"/> B - both directions; N - northbound; S - southbound; <input type="checkbox"/> E - eastbound; W - westbound | | | |
| LHRS | <input type="checkbox"/> km begins offset | Section Length | <input type="checkbox"/> m | Facility | <input type="checkbox"/> A - all lanes; C - collector; E - express; <input type="checkbox"/> O - others (additional lanes) | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | <input type="checkbox"/> 06 month | PCR <input type="checkbox"/> 6 0 | RCR <input type="checkbox"/> 6 • 0 | Class | <input type="checkbox"/> L F - freeway; A - arterial; C - collector; L - local; <input type="checkbox"/> S - secondary | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | | | |
| PAVEMENT DISTRESS | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | Extent of Distress | | SURFACE | | DISTRESS | |
| | Very Slight | Slight | Few | Moderate | Severe | Very Severe | Mod. Sev. | Sev. |
| 1 | Excellent (smooth) | 1 | 1 | 2 | 3 | 4 | 5 | |
| 2 | Good (comfortable) | 2 | 2 | 3 | 4 | 5 | 5 | |
| 3 | Fair (uncomfortable) | 3 | 3 | 4 | 5 | 5 | 5 | |
| 4 | Poor (very rough/bumpy) | 4 | 4 | 5 | 5 | 5 | 5 | |
| 5 | Poor (dangerous, at 80 km/hr) | 5 | 5 | 5 | 5 | 5 | 5 | |
| SHOULDERS | | | | | | | | |
| | Severity of Distress | | Extent of Distress | | SURFACE | | DISTRESS | |
| | Very Slight | Slight | Few | Moderate | Severe | Very Severe | Mod. Sev. | Sev. |
| | 10-20 | 20-50 | 50-80 | 80-100 | Throughout | Extensive | Mod. Sev. | Sev. |
| | <10 | 10-20 | 20-50 | 50-80 | Intermittent | Frequent | Mod. Sev. | Sev. |
| | | | | | Concrete | Concrete | Mod. Sev. | Sev. |
| | | | | | Partially Paved | Partially Paved | Mod. Sev. | Sev. |
| | | | | | Fully Paved | Fully Paved | Mod. Sev. | Sev. |
| | | | | | Cracking | Cracking | Mod. Sev. | Sev. |
| | | | | | Pav. Edge/Shoulder (Curb) Separation | Pav. Edge/Shoulder (Curb) Separation | Mod. Sev. | Sev. |
| | | | | | Distortion | Distortion | Mod. Sev. | Sev. |
| | | | | | Fully Paved | Fully Paved | Mod. Sev. | Sev. |
| | | | | | Cracking | Cracking | Mod. Sev. | Sev. |
| | | | | | Edge Break/ Separation | Edge Break/ Separation | Mod. Sev. | Sev. |
| | | | | | Break-up | Break-up | Mod. Sev. | Sev. |
| | | | | | Gravel | Gravel | Mod. Sev. | Sev. |
| MAINTENANCE TREATMENT | | | | | | | | |
| | | | | | EXTENT OF OCCURRENCE, % | | | |
| | | | | | <10 | 10-20 | 20-50 | 50-80 |
| | | | | | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| | | | | | <input type="checkbox"/> 5 | | | |
| | | | | | Manual Patching, Hot or Cold Mix | | | |
| | | | | | Machine Patching, Partial or Full Width | | | |
| | | | | | Microsurfacing | | | |
| | | | | | Grooving | | | |
| | | | | | Rout and Seal Cracks or Joints | | | |
| | | | | | Concrete Joint Slab Replacement | | | |
| | | | | | Manual Patching, Hot or Cold Mix | | | |
| | | | | | Machine Patching, Partial or Full Width | | | |
| | | | | | Spray Patching/ Chip Seal | | | |
| | | | | | Sealing Cracks or Joints | | | |
| Evaluated by: _____ | | | | | | | | |
| Distress Comments: (items not covered above) Urban Cross Section, Speed Limit: 40 km/hour Other Comments: (e.g., subsections, additional contracts) | | | | | | | | |

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| | | | | | | |
|--------------|-------------------|-----------|----------------|-------------------|--|-------------------|
| Location: | St. Ives Avenue | | District | | Highway | |
| From: | Buckingham Avenue | | To: | Cheltenham Avenue | | Traffic Direction |
| LHRS | offset begins | km | Section Length | 90 m | B - both directions; N - northbound; S - southbound; | B |
| | | | | | E - eastbound; W - westbound | |
| Survey Date | 1 3 year | 0 6 month | PCR | 8 9 | RCR | 8 • 0 |
| Contract No. | | | WP No. | | | |

| Ride Condition Rating (at 80 km/hr) | Pavement | Severity of Distress | | Density of Distress Extent of Occurrence % | | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence, % | | | | | | | | | | | |
|-------------------------------------|---|----------------------|--------|--|--------|-------------|-----|----------------------|-----------|---|---------------|----------|----------|------------|--|------------|--------------------|------------|--------------------|--------|------|
| | | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | Dominant Type | Distress | Cracking | Paved Full | Paved Edge/Pavement Edge/Curb Separation | Distortion | Breakup/Separation | Edge Break | Breakup/Separation | Gravel | Left |
| 10 8 6 4 2 0 | Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | | | | | | <10 | 10-20 | 20-50 | 50-80 | 80-100 | | | | | | | | | >30 | |
| | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | | | | | | | |
| | Flushing | | 2 | | | | | | | | | | | | | | | | | | |
| | Rippling and Shoving | | | 3 | | | | | | | | | | | | | | | | | |
| | Surface Deformations | | | | 4 | | | | | | | | | | | | | | | | |
| | Wheel Track Rutting | | | | | 5 | | | | | | | | | | | | | | | |
| | Distortion | | | | | | | | | | | | | | | | | | | | |
| | Longitudinal Wheel Track Alligator | | | | | 6 | | | | | | | | | | | | | | | |
| | Centre Line | | | | | | 7 | | | | | | | | | | | | | | |
| | Pavement Edge | | | | | | | 8 | | | | | | | | | | | | | |
| | Transverse | | | | | | | | 9 | | | | | | | | | | | | |
| | Longitudinal Meander and Midlane Random Map | | | | | | | | | 10 | | | | | | | | | | | |
| | | | | | | | | | | | 11 | | | | | | | | | | |
| | | | | | | | | | | | | 12 | | | | | | | | | |
| | | | | | | | | | | | | | 13 | | | | | | | | |
| | | | | | | | | | | | | | | 14 | | | | | | | |
| | | | | | | | | | | | | | | | 15 | | | | | | |

PCI Value: 89

Distress Comments: (items not covered above)

Urban cross section

Speed limit: 40km/hr
Possible flexible pavement

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|-------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Machine Patching | | | | |
| Root and Seal Cracks | | | | |
| Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

Flexible Pavement Condition Evaluation Form

| | | | | | | | | | | |
|---|--|---|---|--|---|---|----------------------|--|---|------------------------|
| Location: | Cheltenham Avenue, Section 1 | | | | District | Highway | | | | |
| From: | St. Ives Crescent | To: | Mildenhall Avenue | | | Traffic Direction | B | B - both directions; N - northbound; S - southbound; | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> • <input type="checkbox"/> km offset begins | Section Length | <input type="checkbox"/> 3 <input type="checkbox"/> 5 <input type="checkbox"/> 0 m | | | E | E - eastbound; W - westbound | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | <input type="checkbox"/> 0 <input type="checkbox"/> 6 month | PCR | <input type="checkbox"/> 3 <input type="checkbox"/> 9 | RCR | <input type="checkbox"/> 2 <input type="checkbox"/> 0 | Facility | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> WP No. | | Class | <input type="checkbox"/> L | | S - secondary | F | F - freeway; A - arterial; C - collector; L - local; | | |
| Ride Condition Rating (at 80 km/hr) | 10 8 6 4 2 0 | Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | Severity of Distress | Density of Distress Extent of Occurrence % | | Shoulders | Severity of Distress | | Density of Distress Extent of Occurrence, % | |
| PAVEMENT | 1 2 3 4 5 6 7 8 9 10 | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Few Intermittent Often Throughout | Dominant Type | Distress | Right | Mod. | Left | Right | Left |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | 1 | Paved Full | Cracking Pavement Edge/ Curb Separation Distortion | 1 2 | 1 | 2 | 1 2 | 1 2 |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | ✓ ✓ ✓ | Partial Surface Treated Primed Gravel | Breakup/Separation Edge Break Breakup/Separation | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | ✓ ✓ | | | | | | | |
| CRACKING | Centre Line Pavement Edge Transverse Longitudinal Meander and Midlane Random Map | Single and Multiple Alligator Single and Multiple Alligator Half Full and Multiple Alligator Random Map | 8 9 10 11 12 13 14 15 | | | Maintenance Treatment | <10 1 | 10-20 2 | 20-50 3 | 50-80 4 5 >80 |
| PCI Value: | 39 | Distress Comments: (items not covered above) | | | | | | | | |
| Substandard rural cross section, poor pavement drainage | | | | | | | | | | |
| Speed limit: 40km/hr | | | | | | | | | | |
| No side ditch | | | | | | | | | | |
| Roadway was widened on the north side | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | |
| Evaluated by: Seth/Matteo | | | | | | | | | | |

Composite Pavement Condition Evaluation Form

| Location: | Cheltenham Avenue, Section 2 | | | District | Highway | | |
|---|---|-------------------------------------|-------------------------------------|---|---|-------------------------------------|-------------------------------------|
| From: | Dinnick Crescent | | | To: | St. Ives Crescent | | |
| LHRS | <input type="checkbox"/> • <input type="checkbox"/> km begins offset | | | Section Length | <input type="checkbox"/> 3 <input type="checkbox"/> 0 <input type="checkbox"/> 0 m | | |
| | | | | Traffic Direction | <input type="checkbox"/> B B - both directions; N - northbound; S - southbound; <input type="checkbox"/> E - eastbound; W - westbound | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | | | PCR | <input type="checkbox"/> 4 <input type="checkbox"/> 5 RCR <input type="checkbox"/> 4 • 0 | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> WP No. | | | Class | <input type="checkbox"/> A A - all lanes; C - collector; E - express; <input type="checkbox"/> O - others (additional lanes) | | |
| Ride Condition Rating (at 80 km/hr) | | | | Facility | <input type="checkbox"/> F - freeway; A - arterial; C - collector; L - local; <input type="checkbox"/> S - secondary | | |
| PAVEMENT DISTRESS | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | Extent of Distress | | | Extent of Distress |
| | Very Slight | Slight | Moderate | Severe | Very Severe | Frequent | |
| 1 | Excellent (smooth) | 1 | Good (comfortable) | 1 | 10-20 | 50-80 | 80-100 |
| 2 | Fair (uncomfortable) | 2 | Poor (v. rough/bumpy) | 2 | 10-20 | 20-50 | 50-80 |
| 3 | Poor (v. rough/bumpy) | 3 | Poor (v. rough/bumpy) | 3 | 10-20 | 20-50 | 50-80 |
| 4 | Poor (v. rough/bumpy) | 4 | Poor (v. rough/bumpy) | 4 | 10-20 | 20-50 | 50-80 |
| 5 | Poor (v. rough/bumpy) | 5 | Poor (v. rough/bumpy) | 5 | 10-20 | 20-50 | 50-80 |
| 6 | Poor (v. rough/bumpy) | 6 | Poor (v. rough/bumpy) | 6 | 10-20 | 20-50 | 50-80 |
| 7 | Poor (v. rough/bumpy) | 7 | Poor (v. rough/bumpy) | 7 | 10-20 | 20-50 | 50-80 |
| 8 | Poor (v. rough/bumpy) | 8 | Poor (v. rough/bumpy) | 8 | 10-20 | 20-50 | 50-80 |
| 9 | Poor (v. rough/bumpy) | 9 | Poor (v. rough/bumpy) | 9 | 10-20 | 20-50 | 50-80 |
| 10 | Poor (v. rough/bumpy) | 10 | Poor (v. rough/bumpy) | 10 | 10-20 | 20-50 | 50-80 |
| SHOULDERS | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Surface | | | Width | | | Distress |
| | Concrete | Partially Paved | Fully Paved | Concrete | Partially Paved | Fully Paved | |
| 1 | Cracking | Cracking | Cracking | Cracking | Cracking | Cracking | Cracking |
| 2 | Pav/Edge/Shoulder (Curb) Separation | Pav/Edge/Shoulder (Curb) Separation | Pav/Edge/Shoulder (Curb) Separation | Pav/Edge/Shoulder (Curb) Separation | Pav/Edge/Shoulder (Curb) Separation | Pav/Edge/Shoulder (Curb) Separation | Pav/Edge/Shoulder (Curb) Separation |
| 3 | Distortion | Distortion | Distortion | Distortion | Distortion | Distortion | Distortion |
| EXTENT OF OCCURRENCE, % | | | | | | | |
| MAINTENANCE TREATMENT | | | | EXTENT OF OCCURRENCE, % | | | |
| <input type="checkbox"/> Transverse <input type="checkbox"/> Map <input type="checkbox"/> Transverse Joints | | | | <10 10-20 20-50 50-80 >80 <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Microsurfacing <input type="checkbox"/> Pavement Grooving <input type="checkbox"/> Rout and Seal Cracks or Joints <input type="checkbox"/> Concrete Joint Slab Replacement <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Spray Patching/Chip Seal <input type="checkbox"/> Sealing Cracks or Joints | | | |
| <input type="checkbox"/> Cres. <input type="checkbox"/> Ctes. <input type="checkbox"/> Map <input type="checkbox"/> Sawed <input type="checkbox"/> Transverse Joints <input type="checkbox"/> Reflective | | | | 1 2 3 4 5 <input type="checkbox"/> Shoulders | | | |
| Distress Comments: (items not covered above) | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) <input type="checkbox"/> Urban cross section <input type="checkbox"/> Speed limit: 40km/hr | | | | | | | |

Evaluated by: **Seth Matteo**

Flexible Pavement Condition Evaluation Form

| | | | |
|---------------|---------------------------------|----------------|----------------------------|
| Location: | St. Ives Crescent, East Section | | |
| From: | Cheltenham Avenue | | |
| To: | Rochester Avenue | | |
| LHRS | □ □ □ □ □ | • □ □ km | Section Length □ □ 1 3 0 m |
| begins offset | | | |
| Survey Date | 1 3 year | 0 6 month | PCR □ 3 9 RCR □ 2 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. □ □ □ □ | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|-----------|------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| | Alligator | 7 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 10 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 11 | | | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | | | |
| | 13 | | | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | |

| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|-----------|------|------|--------------------------------|------|------|---|------|------|
| | Right | Mod. | Left | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | | | | Cracking | | | | | |
| | | | | Pavement Edge/ Curb Separation | | | | | |
| | | | | Distortion | | | | | |
| | | | | Breakup/Separation | | | | | |
| | | | | Edge Break | | | | | |
| | | | | Breakup/Separation | | | | | |
| | | | | Gravel | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | | |
|---|-------------------------|-------|-------|-------|-----|
| | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Manual Patching | 1 | 2 | 3 | 4 | 5 |
| Machine Patching | | | | | |
| Spray Patching | | | | | |
| Pavement Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |
| Shoulders Manual Patching | | | | | |
| Machine Patching | | | | | |
| Root and Seal Cracks Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Speed limit: 40km/hr

Evaluated by: Seth/Matteo

PCI Value: 39

Distress Comments: (items not covered above)

Substandard semi-urban cross section

Speed limit: 40km/hr

Flexible Pavement Condition Evaluation Form

| | | | |
|--------------|--------------------------------|----------------|---------------------|
| Location: | St. Ives Crescent West Section | | |
| From: | Cheltenham Avenue | To: | Rochester Avenue |
| LHRS | □ □ □ □ □ km begins offset | Section Length | □ □ 1 5 0 m |
| Survey Date | 1 3 year | PCR | 4 8 RCR 3 • 0 month |
| Contract No. | □ - □ □ □ WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|------------|--------------------------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Paved | Cracking | Pavement Edge/ Curb Separation | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | | | | | | | | Partial | Distortion | | | |
| | Flushing | 2 | | | | | | | | | | | Breakup/Separation | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | Edge Break | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | |
| | Distortion | 5 | ✓ | | | | | | | | | | Breakup/Separation | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 10 | | | | | | | | | | | | | | |

| District | Highway | | | Density of Distress Extent of Occurrence, % | | |
|-------------------|---------|---------|---------|--|------|-------|
| | Highway | Highway | Highway | Right | Left | Right |
| Traffic Direction | B | B | B | B - both directions; N - northbound; S - southbound; | | |
| Facility | A | A | A | A - all lanes; C - collector; E - express; | | |
| Class | L | L | S | F - freeway A - arterial; C - collector; L - local; | | |
| | | | | Others (additional lanes) | | |

| Shoulders | Severity of Distress | | | Severity of Distress | | |
|------------|----------------------|-----------------|------|----------------------|------|-------|
| | Dominant Type | Distress | Mod. | Right | Mod. | Right |
| Paved Full | Paved Full | Paved Partial | 1 | 2 | 1 | 2 |
| | | Surface Treated | | | | |
| | | Primed | | | | |
| | | Gravel | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|-----------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | |
| Spray Patching | | | |
| Pavement | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders | | | |
| Machine Patching | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

PCI Value: 48

Distress Comments: (items not covered above)

Urban cross-section

Speed limit: 40km/hr

Composite Pavement Condition Evaluation Form

| | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|--|--|---|-------|----------------|---|---|---|--|--|----------------------------|--|----------------------------|------------|----------------------------------|---|---|--------------------------|--------------------------------|
| Location: | Rochester Avenue, Section 1 | | | | | | | | | | | | | | | | | | |
| From: | Dinnick Crescent | | | | | To: | St. Ives Avenue | | | | | | | | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> • <input type="checkbox"/> | km | Section Length | <input type="checkbox"/> 4 <input type="checkbox"/> 0 <input type="checkbox"/> 0 | | m | Traffic Direction | <input type="checkbox"/> B | | | | | | | | | |
| | | | | | | offset | | | | | | E - both directions; N - northbound; S - southbound; | | | | | | | |
| | | | | | | | | | | | | E - eastbound; W - westbound | | | | | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 | | <input type="checkbox"/> 0 <input type="checkbox"/> 6 | month | PCR | <input type="checkbox"/> 7 <input type="checkbox"/> 0 | | RCR | <input type="checkbox"/> 6 <input type="checkbox"/> • <input type="checkbox"/> 0 | | Facility | <input type="checkbox"/> A | | | | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | | | | Class | <input type="checkbox"/> L | | | | | | |
| Ride Condition Rating (at 80 km/hr) | | | | | | <input type="checkbox"/> 1 <input type="checkbox"/> 1 Excellent (smooth) | <input type="checkbox"/> 8 Good (comfortable) | <input type="checkbox"/> 6 Fair (uncomfortable) | <input type="checkbox"/> 4 Poor (very rough/bumpy) | <input type="checkbox"/> 2 Very Poor; (dangerous, at 80 km/hr) | <input type="checkbox"/> 0 | Severity of Distress | Extent of Distress | | | | | | |
| | | | | | | Very Slight | Slight | Moderate | Severe | Very Severe | | Very Severe | Severe | Moderate | Very Slight | | | | |
| | | | | | | 10 | 10 | 10 | 10 | 10 | 10 | 10-20 | 20-50 | 50-80 | 80-100 | | | | |
| | | | | | | Few | Infrequent | Intermittent | Severe | Very Severe | Very Severe | Extensive | Extremely Extensive | Throughout | | | | | |
| PAVEMENT DISTRESS | | | | | | 1 | 2 | 3 | 4 | 5 | 5 | 1 | 2 | 3 | 4 | 5 | | | |
| Surface Defects | | | | | | Raveling & C. Agg. Loss | 1 | | | | | | Fully Paved | | Cracking | | | | |
| | | | | | | Flushing | 2 | | | | | | Partially Paved | | Pav. Edge/Shoulder Separation | | | | |
| | | | | | | Spalling | 3 | | | | | | Hot Mix | | (Curb) Separation | | | | |
| Surface Deformations | | | | | | Tenting/Cupping | 4 | | | | | | | | Distortion | | | | |
| | | | | | | Wheel Track Rutting | 5 | | | | | | | | | | | | |
| | | | | | | Distortion & Settlement | 6 | | | | | | | | | | | | |
| | | | | | | Joint Failures | 7 | | | | | | | | | | | | |
| Long. Meandering | | | | | | Single and Multiple | 8 | | | | | | | | | | | | |
| Centreline Cres. | | | | | | Single | 9 | | | | | | | | | | | | |
| Transverse Cres. | | | | | | Multiple | 10 | | | | | | | | | | | | |
| Cracking | | | | | | Single & Multiple | 11 | | | | | | | | | | | | |
| Transverse Joints | | | | | | Single | 12 | | | | | | | | | | | | |
| Map | | | | | | Multiple | 13 | | | | | | | | | | | | |
| Transverse Joints | | | | | | Single & Multiple | 14 | | | | | | | | | | | | |
| | | | | | | Sawed | 15 | | | | | | | | | | | | |
| | | | | | | Reflective | | | | | | | | | | | | | |
| MAINTENANCE TREATMENT | | | | | | | | | | | | | | | EXTENT OF OCCURRENCE, % | | | | |
| | | | | | | | | | | | | | | | <10 | 10-20 | 20-50 | 50-80 | >80 |
| | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | 5 |
| | | | | | | | | | | | | | | | Manual Patching, Hot or Cold Mix | Machine Patching, Partial or Full Width | Microsurfacing | Grooving | Rout and Seal Cracks or Joints |
| | | | | | | | | | | | | | | | Concrete Joint Slab Replacement | Manual Patching, Hot or Cold Mix | Machine Patching, Partial or Full Width | Spray Patching/Chip Seal | Sealing Cracks or Joints |
| | | | | | | | | | | | | | | | Shoulders | | | | |

Distress Comments: (items not covered above)

Other Comments: (e.g., subsections, additional contracts)

Urban cross section

Speed limit: 40km/hr

Evaluated by: **Seth Matteo**

Flexible Pavement Condition Evaluation Form

| | | | | | | | | | | |
|---|--|---|--|--|---|--|--|--|---|------|
| Location: | Rochester Avenue, Section 2 | | | | District | Highway | | | | |
| From: | St. Ives Avenue | To: | Lewes Avenue | | | Traffic Direction | B | B - both directions; N - northbound; S - southbound; | | |
| LHRS | □ □ □ □ □ begins | □ □ • □ km offset | Section Length | □ □ 5 0 m | | | E | E - eastbound; W - westbound | | |
| Survey Date | 1 3 year | 0 6 month | PCR | 3 0 | RCR | 1 • 0 | Facility | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | |
| Contract No. | □ - □ □ □ WP No. | WP No. | Class | L | | S - secondary | F | F - freeway A - arterial; C - collector; L - local; | | |
| Ride Condition Rating (at 80 km/hr) | 10 8 6 4 2 0 | Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | Severity of Distress | Density of Distress Extent of Occurrence % | | Shoulders | Severity of Distress | | Density of Distress Extent of Occurrence, % | |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Dominant Type | Distress | Mod. | Right | Mod. | Left | Right | Left |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Cracking | 1 | 2 | 1 | 2 | 1 | 2 |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Paved Full | Paved Partial | Crack Pavement Edge/ Curb Separation Distortion | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Very Slight Slight Moderate Severe Very Severe Extremely Severe | |
| CRACKING | Centre Line Pavement Edge Transverse Longitudinal Meander and Midlane Random Map | 8 9 10 11 12 13 14 15 | Very Slight Slight Moderate Severe Very Severe Extremely Severe | Maintainence Treatment | <10 1 Machine Patching Machine Patching Spray Patching Pavement Rout and Seal Cracks Chip Seal Shoulders Machine Patching Machine Patching Chip Seal | >10-20 2 Machine Patching Machine Patching Spray Patching Pavement Rout and Seal Cracks Chip Seal Shoulders Machine Patching Machine Patching Chip Seal | >20-50 3 Machine Patching Machine Patching Spray Patching Pavement Rout and Seal Cracks Chip Seal Shoulders Machine Patching Machine Patching Chip Seal | >50-80 4 Machine Patching Machine Patching Spray Patching Pavement Rout and Seal Cracks Chip Seal Shoulders Machine Patching Machine Patching Chip Seal | >80 5 Machine Patching Machine Patching Spray Patching Pavement Rout and Seal Cracks Chip Seal Shoulders Machine Patching Machine Patching Chip Seal | |
| PCI Value: | 30 | DISTRESS COMMENTS: (items not covered above) | | | | | | | | |
| Substandard rural cross section, poor pavement drainage | | | | | | | | | | |
| Speed limit: 40km/hr | | | | | | | | | | |
| Nonexistent to shallow side ditches | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | |
| Evaluated by: Seth/Matteo | | | | | | | | | | |

Composite Pavement Condition Evaluation Form

| Location: | Dundurn Road, Section 1 | | | | | | | | | | | | |
|---|--|----------------------------|--|----------------------------|----------------|--|----------------------------|-------------------|---|----------------------------|--|-------------------------------------|----------------------------|
| From: | Dinnick Crescent | | | | | To: | Dawlish Avenue | | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> • <input type="checkbox"/> km | offset | Section Length | <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 0 m | | Traffic Direction | <input type="checkbox"/> B | | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 | | <input type="checkbox"/> 0 <input type="checkbox"/> 6 | month | PCR | <input type="checkbox"/> 3 <input type="checkbox"/> 5 | | RCR | <input type="checkbox"/> 3 • 0 | | A - all lanes; C - collector; E - express; O - others (additional lanes) | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | Class | <input type="checkbox"/> L | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | | |
| PAVEMENT DISTRESS | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | Extent of Distress | | | SURFACE | | | DISTRESS | | | |
| | Very Slight | Slight | Moderate | Severe | Very Severe | Extremely Severe | Few | Intermittent | Often | Throughout | Mod. Sev. | Sev. | |
| <input type="checkbox"/> 1 | Excellent (smooth) | 1 | <input type="checkbox"/> 2 | Good (comfortable) | 2 | <input type="checkbox"/> 3 | Fair (uncomfortable) | 3 | Poor (very rough/bumpy) | 4 | <input type="checkbox"/> 5 | Very Poor; (dangerous, at 80 km/hr) | <input type="checkbox"/> 6 |
| <input type="checkbox"/> 8 | | | <input type="checkbox"/> 7 | | | <input type="checkbox"/> 6 | | | | <input type="checkbox"/> 5 | | | |
| <input type="checkbox"/> 6 | | | <input type="checkbox"/> 5 | | | <input type="checkbox"/> 4 | | | | <input type="checkbox"/> 3 | | | |
| <input type="checkbox"/> 4 | | | <input type="checkbox"/> 3 | | | <input type="checkbox"/> 2 | | | | <input type="checkbox"/> 1 | | | |
| <input type="checkbox"/> 2 | | | <input type="checkbox"/> 1 | | | | | | | | | | |
| <input type="checkbox"/> 0 | | | | | | | | | | | | | |
| SHOULDERS | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | Extent of Distress | | | SURFACE | | | DISTRESS | | | |
| | Very Slight | Slight | Moderate | Severe | Very Severe | Extremely Severe | Few | Intermittent | Often | Throughout | Mod. Sev. | Sev. | |
| <input type="checkbox"/> 1 | Excellent (smooth) | 1 | <input type="checkbox"/> 2 | Good (comfortable) | 2 | <input type="checkbox"/> 3 | Fair (uncomfortable) | 3 | Poor (very rough/bumpy) | 4 | <input type="checkbox"/> 5 | Very Poor; (dangerous, at 80 km/hr) | <input type="checkbox"/> 6 |
| <input type="checkbox"/> 8 | | | <input type="checkbox"/> 7 | | | <input type="checkbox"/> 6 | | | | <input type="checkbox"/> 5 | | | |
| <input type="checkbox"/> 6 | | | <input type="checkbox"/> 5 | | | <input type="checkbox"/> 4 | | | | <input type="checkbox"/> 3 | | | |
| <input type="checkbox"/> 4 | | | <input type="checkbox"/> 3 | | | <input type="checkbox"/> 2 | | | | <input type="checkbox"/> 1 | | | |
| <input type="checkbox"/> 2 | | | <input type="checkbox"/> 1 | | | | | | | | | | |
| <input type="checkbox"/> 0 | | | | | | | | | | | | | |
| MAINTENANCE TREATMENT | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | Extent of Occurrence, % | | | Treatment | | | | | | |
| | <10 | 10-20 | 20-50 | 50-80 | >80 | | | | | | | | |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | | | | | | | | | |
| <input type="checkbox"/> 8 | | | | | | | | | | | | | |
| <input type="checkbox"/> 6 | | | | | | | | | | | | | |
| <input type="checkbox"/> 4 | | | | | | | | | | | | | |
| <input type="checkbox"/> 2 | | | | | | | | | | | | | |
| <input type="checkbox"/> 0 | | | | | | | | | | | | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | | | |
| Urban cross section | | | | | | | | | | | | | |
| Speed Limit: 40km/hr | | | | | | | | | | | | | |
| Evaluated by: Seth Matteo | | | | | | | | | | | | | |

Composite Pavement Condition Evaluation Form

| Location: | Dundum Road, Section 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|---------------------------------|--|---------------------------------|---------------------------------|---|-----------------------|--|-------------------------|--|--------------------|--|-----------|-------|-------------------------------------|--------|-------------|----------|----------|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------|--|---|--|--|---|--------------------|---|--|--|--|--|--|---|----------------------|---|---|--|--|--|--|---|-----------------------|---|--|---|--|--|--|---|-------------------------------------|---|--|---|--|--|--|---|--|---|--|---|--|--|--|-----------------|--|-------|-------|-------|--------|------------|-----------|----------------------|--|-------|-------|-------|--------|-----------|----------|------------------|--|---|---|---|---|---|--------------------|------------|--|---|---|---|---|---|--------------------|------------------------|--|---|---|---|---|---|--------------------|----------|--|---|---|---|---|---|--------------------|-------------------|--|---|---|---|---|---|--------------------|-----|--|---|---|---|---|---|--------------------|-------------------|--|---|---|---|---|---|--------------------|
| From: | Dawlish Avenue | | To: | Glengowan Road | | District | Highway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> • <input type="checkbox"/> km begins offset | | Section Length | <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 0 m | | Traffic Direction | <input type="checkbox"/> B B - both directions; N - northbound; S - southbound; <input type="checkbox"/> E - eastbound; W - westbound | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | | PCR | <input type="checkbox"/> 7 <input type="checkbox"/> 0 month | | RCR | <input type="checkbox"/> 7 • 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | Class | <input type="checkbox"/> L F - freeway; A - arterial; C - collector; L - local; <input type="checkbox"/> S - secondary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; padding: 2px;">PAVEMENT DISTRESS</th> <th colspan="2" style="text-align: center; padding: 2px;">Severity of Distress</th> <th colspan="2" style="text-align: center; padding: 2px;">Extent of Distress</th> <th colspan="2" style="text-align: center; padding: 2px;">SHOULDERS</th> </tr> <tr> <th>Ride Condition Rating (at 80 km/hr)</th> <th>Defect</th> <th>Very Slight</th> <th>Slight</th> <th>Moderate</th> <th>Severe</th> <th>Very Severe</th> <th>Extremely Severe</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Raveling & C. Agg. Loss</td> <td>1</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>Good (comfortable)</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>Fair (uncomfortable)</td> <td>3</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Poor (v. rough/bumpy)</td> <td>4</td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Very Poor; (dangerous, at 80 km/hr)</td> <td>5</td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td></td> <td>6</td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Surface Defects</td> <td>10-20</td> <td>20-50</td> <td>50-80</td> <td>80-100</td> <td>Throughout</td> <td>Extensive</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Surface Deformations</td> <td>10-20</td> <td>20-50</td> <td>50-80</td> <td>80-100</td> <td>Irregular</td> <td>Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Long. Meandering</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Centreline</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Dia./Corner/Edge Cres.</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Cracking</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Transverse Joints</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Map</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Transverse Joints</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>Extremely Frequent</td> </tr> </tbody> </table> | | | | | | | | PAVEMENT DISTRESS | | Severity of Distress | | Extent of Distress | | SHOULDERS | | Ride Condition Rating (at 80 km/hr) | Defect | Very Slight | Slight | Moderate | Severe | Very Severe | Extremely Severe | 1 | Raveling & C. Agg. Loss | 1 | ✓ | | | | | 8 | Good (comfortable) | 2 | | | | | | 8 | Fair (uncomfortable) | 3 | ✓ | | | | | 4 | Poor (v. rough/bumpy) | 4 | | ✓ | | | | 2 | Very Poor; (dangerous, at 80 km/hr) | 5 | | ✓ | | | | 0 | | 6 | | ✓ | | | | Surface Defects | | 10-20 | 20-50 | 50-80 | 80-100 | Throughout | Extensive | Surface Deformations | | 10-20 | 20-50 | 50-80 | 80-100 | Irregular | Frequent | Long. Meandering | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | Centreline | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | Dia./Corner/Edge Cres. | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | Cracking | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | Transverse Joints | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | Map | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | Transverse Joints | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent |
| PAVEMENT DISTRESS | | Severity of Distress | | Extent of Distress | | SHOULDERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Defect | Very Slight | Slight | Moderate | Severe | Very Severe | Extremely Severe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Raveling & C. Agg. Loss | 1 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Good (comfortable) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Fair (uncomfortable) | 3 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Poor (v. rough/bumpy) | 4 | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Very Poor; (dangerous, at 80 km/hr) | 5 | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | | 6 | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Defects | | 10-20 | 20-50 | 50-80 | 80-100 | Throughout | Extensive | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Deformations | | 10-20 | 20-50 | 50-80 | 80-100 | Irregular | Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Long. Meandering | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centreline | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dia./Corner/Edge Cres. | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cracking | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transverse Joints | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Map | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transverse Joints | | 1 | 2 | 3 | 4 | 5 | Extremely Frequent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; padding: 2px;">MAINTENANCE TREATMENT</th> <th colspan="2" style="text-align: center; padding: 2px;">EXTENT OF OCCURRENCE, %</th> </tr> <tr> <th colspan="2"></th> <th><10</th> <th>10-20</th> <th>20-50</th> <th>50-80</th> <th>>80</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Pavement</td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Microsurfacing <input type="checkbox"/> Grooving <input type="checkbox"/> Rout and Seal Cracks or Joints <input type="checkbox"/> Concrete Joint Slab Replacement </td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> 1 1 </td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> 2 2 </td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> 3 3 </td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> 4 4 </td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> 5 5 </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">Shoulders</td> <td style="text-align: center; padding: 2px;"> <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Spray Patching/Chip Seal <input type="checkbox"/> Sealing Cracks or Joints </td> <td style="text-align: center; padding: 2px;"></td> </tr> </tbody> </table> | | | | | | | | MAINTENANCE TREATMENT | | EXTENT OF OCCURRENCE, % | | | | <10 | 10-20 | 20-50 | 50-80 | >80 | Pavement | | <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Microsurfacing <input type="checkbox"/> Grooving <input type="checkbox"/> Rout and Seal Cracks or Joints <input type="checkbox"/> Concrete Joint Slab Replacement | <input type="checkbox"/> 1 1 | <input type="checkbox"/> 2 2 | <input type="checkbox"/> 3 3 | <input type="checkbox"/> 4 4 | <input type="checkbox"/> 5 5 | Shoulders | | <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Spray Patching/Chip Seal <input type="checkbox"/> Sealing Cracks or Joints | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAINTENANCE TREATMENT | | EXTENT OF OCCURRENCE, % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <10 | 10-20 | 20-50 | 50-80 | >80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pavement | | <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Microsurfacing <input type="checkbox"/> Grooving <input type="checkbox"/> Rout and Seal Cracks or Joints <input type="checkbox"/> Concrete Joint Slab Replacement | <input type="checkbox"/> 1 1 | <input type="checkbox"/> 2 2 | <input type="checkbox"/> 3 3 | <input type="checkbox"/> 4 4 | <input type="checkbox"/> 5 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoulders | | <input type="checkbox"/> Manual Patching, Hot or Cold Mix <input type="checkbox"/> Machine Patching, Partial or Full Width <input type="checkbox"/> Spray Patching/Chip Seal <input type="checkbox"/> Sealing Cracks or Joints | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Distress Comments: (items not covered above)</p> <hr/> <p>Other Comments: (e.g., subsections, additional contracts)</p> <p>Urban cross section</p> <p>Speed limit: 40km/hr</p> <p>Sawed joints south of Dawlish Avenue</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Evaluated by:

Seth Matteo

Composite Pavement Condition Evaluation Form

| Location: | St. Leonards Avenue, Section 1 | | | District | Highway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|------------------------------------|-------------|------------------------------|----------------------------------|-------------------------------------|----------------------|----------------------------------|---|---|---|---|---|---|--|--|--|--|--|----------------|--|--|--|--|--|-------------------|--|--|--|--|--|--------------------------------|--|--|--|--|--|---------------------------------|--|--|--|--|--|----------------------------------|--|--|--|--|--|---|--|--|--|--|--|--------------------------|--|--|--|--|--|--------------------------|--|--|--|--|--|
| From: | Mount Pleasant Road | | | To: | St. Leonards Crescent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LHRS | <input type="checkbox"/> • <input type="checkbox"/> km begins offset | | | Section Length | <input type="checkbox"/> 6 0 0 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Date | <input type="checkbox"/> 1 3 year | <input type="checkbox"/> 0 6 month | PCR | <input type="checkbox"/> 5 0 | RCR | <input type="checkbox"/> 5 • 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> WP No. | | | Class | <input type="checkbox"/> L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | | | | SURFACE | WIDTH | DISTRESS | Severity of Distress | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Excellent (smooth) | Very Slight | Severe | Very Severe | 10-20 | 10-20 | Cracking | Right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Good (comfortable) | Light | Moderate | Severe | 20-50 | 20-50 | Pav/Edge/Shoulder (Curb) Separation | Left | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Fair (uncomfortable) | Medium | Intermittent | Very Severe | 50-80 | 50-80 | Distortion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Poor (v. rough/bumpy) | Heavy | Frequent | Extensive | 80-100 | 80-100 | Distortion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Very Poor; (dangerous, at 80 km/hr) | Very Heavy | Thoroughout | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAVEMENT DISTRESS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | 2 | 3 | 4 | 5 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Flushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Spalling | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Tenting/Cupping | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Distortion & Settlement | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Joint Failures | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Long. Meandering | Single and Multiple | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centreline | Single | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Multiple | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dia/Corner/Edge Cres. | Single & Multiple | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cracking | Single | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Multiple | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transverse Joints | Transverse | 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Map | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Sawed | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transverse Joints | Reflective | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAINTENANCE TREATMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | <10 | 10-20 | 20-50 | >80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Manual Patching, Hot or Cold Mix</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Machine Patching, Partial or Full Width</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Microsurfacing</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pavement Grooving</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Rout and Seal Cracks or Joints</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Concrete Joint Slab Replacement</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Manual Patching, Hot or Cold Mix</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Machine Patching, Partial or Full Width</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Spray Patching/Chip Seal</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sealing Cracks or Joints</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | Manual Patching, Hot or Cold Mix | 1 | 2 | 3 | 4 | 5 | Machine Patching, Partial or Full Width | | | | | | Microsurfacing | | | | | | Pavement Grooving | | | | | | Rout and Seal Cracks or Joints | | | | | | Concrete Joint Slab Replacement | | | | | | Manual Patching, Hot or Cold Mix | | | | | | Machine Patching, Partial or Full Width | | | | | | Spray Patching/Chip Seal | | | | | | Sealing Cracks or Joints | | | | | |
| Manual Patching, Hot or Cold Mix | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Machine Patching, Partial or Full Width | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Microsurfacing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pavement Grooving | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rout and Seal Cracks or Joints | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Concrete Joint Slab Replacement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Manual Patching, Hot or Cold Mix | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Machine Patching, Partial or Full Width | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spray Patching/Chip Seal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sealing Cracks or Joints | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXTENT OF OCCURRENCE, % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Distress Comments: (items not covered above)

Other Comments: (e.g., subsections, additional contracts)

Urban cross section

Speed limit: 40km/hr

Evaluated by:
Seth Matteo

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: St. Leonards Avenue, Section 2

From: St. Leonards Crescent To: 207 St. Leonards Avenue

LHRS • km offset begins

Survey Date 1 3 0 6 month

Contract No. - WP No.

Highway

B - both directions; N - northbound; S - southbound;
E - eastbound; W - westbound

A - all lanes; C - collector; E - express;
O - others (additional lanes)

F - freeway A - arterial; C - collector; L - local;
S - secondary

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|---|--|--|--|--|--|--|--|---|--|---|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Severe Very Severe Few Intermittent Extensive Throughout | 1 2 3 4 5 1 2 3 4 5 | 1 2 3 4 5 1 2 3 4 5 | Right Mod. Distress Paved Full | Left Mod. Distress Partial Curb Separation Distortion | Right Mod. Sev. Pavement Edge/ Pavement Edge/ Curb Separation Breakup/Separation Edge Break | Left Mod. Sev. Pavement Edge/ Pavement Edge/ Curb Separation Breakup/Separation Edge Break | Right Mod. Sev. Pavement Edge/ Pavement Edge/ Curb Separation Breakup/Separation Edge Break | Left Mod. Sev. Pavement Edge/ Pavement Edge/ Curb Separation Breakup/Separation Edge Break |
| PAVEMENT | 1 Raveling & C. Agg. Loss Flushing | 1 2 | 1 2 | 1 2 | 1 2 | 1 2 | 1 2 | 1 2 | 1 2 | 1 2 |
| Surface Defects | 2 Rippling and Shoving | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Surface Deformations | 3 Wheel Track Rutting | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Longitudinal Wheel Track | 5 Distortion | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Centre Line | 6 Single and Multiple Alligator | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Pavement Edge | 7 Single and Multiple Alligator | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Transverse | 8 Half Full and Multiple Alligator | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Longitudinal Meander and Midlane Random Map | 9 Longitudinal Meander and Midlane Random Map | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |

| District | Traffic Direction | | | | | Facility | Class | | | | |
|----------|-------------------|---|---|---|---|----------|-------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | | A | B | C | D | E |
| | | | | | | | | | | | |

| Shoulders | Severity of Distress | | | | | Facility | Density of Distress Extent of Occurrence, % | | | | |
|-----------|----------------------|---|---|---|---|----------|---|-----|-------|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | | 10-30 | >30 | 10-30 | >30 | >30 |
| | | | | | | | | | | | |

Other Comments: (e.g., subsections, additional contracts)
Pictures taken facing east.

Urban cross section

Speed limit: 40km/hr

PCI Value: **66**

Distress Comments: (items not covered above)

Evaluated by: **Seth/Matteo**

Flexible Pavement Condition Evaluation Form

| | | | |
|--------------|--------------------------------|------------|--------------------------|
| Location: | St. Leonards Avenue, Section 3 | | |
| From: | 207 St. Leonards Avenue | To: | Bayview Avenue |
| LHRS | □ □ □ □ □ begins offset | □ □ • □ km | Section Length □ □ 5 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR □ 3 0 RCR □ 1 • 0 |
| Contract No. | □ - □ □ □ □ | WP No. | □ □ □ □ □ □ |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------------|-----------|-----------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Paved | Partial | Curb Separation | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | Distortion | | | | |
| | Flushing | 2 | | | | | | | | | Breakup/Separation | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | Edge Break | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | Breakup/Separation | | | | |
| | Distortion | 5 | | | | | | | | | Gravel | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| | Alligator | 7 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| | Alligator | 9 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | | | | | | | | | | | | | |
| | Alligator | 11 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 | | | | | | | | | | | | | |
| | Alligator | 13 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | | | | |
| | Random Map | 15 | | | | | | | | | | | | | |

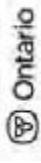
| District | Highway | | |
|---|-------------------|----------|-------|
| | Traffic Direction | Facility | Class |
| B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | B | A | L |
| A - all lanes; C - collector; E - express; O - others (additional lanes) | | | |
| F - freeway A - arterial; C - collector; L - local; S - secondary | | | |

| SHOULDERS | | SEVERITY OF DISTRESS | | | DENSITY OF DISTRESS | | |
|---------------|-------------------------|----------------------|------------|-----------------|---------------------|------------|------|
| Dominant Type | Distress | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | Cracking Pavement Edge/ | Paved Partial | Distortion | Surface Treated | Breakup/Separation | Edge Break | |
| | | | | | | | |

Other Comments: (e.g., subsections, additional contracts)

| | |
|--|---|
| PCI Value: | 30 |
| Distress Comments: (items not covered above) | Substandard rural cross section, poor pavement drainage Shallow side ditch |
| Evaluated by: | Seth/Matteo |

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|------------------|---------------|---------------------|-------------------|--|
| Location: | St. Ives Avenue | | District | Highway | |
| From: | Rochester Avenue | To: | St. Leonards Avenue | Traffic Direction | B - both directions; N - northbound; S - southbound; |
| LHRS | □ □ □ □ □ | offset begins | Section Length | □ □ □ 9 0 m | E - eastbound; W - westbound |
| Survey Date | 1 3 year | 0 6 month | PCR | 7 9 | RCR 7 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. | | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | Density of Distress Extent of Occurrence % | | Throughput Extentive | Severity of Distress | | Density of Distress Extent of Occurrence, % | |
|---|--|--|--|---------------------------|--------------------------|-----------------------|----------------------|---|----------------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Severe Very Severe Extremely Few Infrequent 10 20-50 50-80 80-100 | Very Slight Severe Moderate Severe Very Severe Extremely Few Infrequent 10 20-50 50-80 80-100 | Right Mod. Distress | Left Mod. Distress | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. |
| PAVEMENT | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | |
| | Flushing | 2 | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | |
| | Distortion | 5 | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | |
| | Alligator | 7 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Centre Line | Single and Multiple Alligator | 8 | ✓ | | | | | | |
| | Alligator | 9 | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | ✓ | | | | | | |
| | Alligator | 11 | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 | | ✓ | | | | | |
| | Alligator | 13 | | | | | | | |
| Longitudinal Meander and Midlane Random Map | Longitudinal Meander and Midlane Random Map | 14 | ✓ | | | | | | |
| | Random Map | 15 | | | | | | | |

| Shoulders | Severity of Distress | | Pavement Edge/Curb Separation Distortion Breakup/Separation Edge Break Breakup/Separation Gravel | Density of Distress Extent of Occurrence, % | |
|-----------|---------------------------|--------------------------|---|---|----------------------|
| | Right Mod. Distress | Left Mod. Distress | | Right Mod. Sev. | Left Mod. Sev. |
| | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Possible flexible pavement, further verification possible if construction records are provided
Urban cross section
Speed limit: 40km/hr

Evaluated by: Seth/Matteo

PCI Value: 79

Distress Comments: (items not covered above)

Urban cross section

Speed limit: 40km/hr

Flexible Pavement Condition Evaluation Form

Location: Dawlish Avenue, Section 1

From: St. Leonards Crescent To: East End of Dawlish Avenue

LHRS offset begins km

Survey Date 1 3 year

month

Contract No. - WP No.

Highway

District Traffic Direction

B - both directions; N - northbound; S - southbound;
 E - eastbound; W - westbound

A - all lanes; C - collector; E - express;

O - others (additional lanes)

F - freeway A - arterial; C - collector; L - local;

S - secondary

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | |
|-------------------------------------|--|---|---|-------------------------|-------------------------|--|--------------------------|-----------------------|----------------------|-----------------------|----------------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Slight Few Intermittent Frequent >10 | Very Severe Severe Moderate Slight Few Intermittent Frequent 50-80 | Extensive Throughout | Extensive Throughout | Right Mod. Distress | Left Mod. Distress | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | | | | | | | | | |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 9 | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 13 | | | | | | | | | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | | | | | | | | | |

PCI Value: **90**

Distress Comments: (items not covered above)

Urban cross section

Speed Limit: 40km/hr

Utility cut along north road side

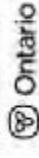
| Facility | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|----------|----------------------|---|---------------|---|---|--|---|------------------------------|--|----------|
| | Class | L | S - secondary | F - freeway A - arterial; C - collector; L - local; | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | B | E - eastbound; W - westbound | B - both directions; N - northbound; S - southbound; | District |
| | | | | | | | | | | |

| Shoulders | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|-----------|----------------------|----------|------------|---------------|-----------------|---|-----------------|------------|--------------------|------|
| | Dominant Type | Cracking | Paved Full | Paved Partial | Curb Separation | Distortion | Surface Treated | Edge Break | Breakup/Separation | Left |
| | | | | | | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: **Seth/Matteo**

Ministry of Transportation



Composite Pavement Condition Evaluation Form

| Location: | Dawlish Avenue, Section 2 | | | | District | Highway | | | | | |
|---|--|---|---------------------------------|-----------------|---|--|---|---|-------|-------|-----|
| From: | Mount Pleasant Road | To: | St. Leonards Crescent | | | Traffic Direction | B | | | | |
| LHRS | [] [] [] [] [] • [] km offset begins | Section Length | [] 4 [] 5 [] 0 m | Facility | A | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | | | | | |
| Survey Date | [] 1 [] 3 [] 0 [] 6 month | PCR | [] 4 [] 5 [] RCR [] 5 [] 0 | Class | L | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | | | |
| Contract No. | [] - [] [] [] [] WP No. | | | | | | | | | | |
| | | | | | | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | | |
| | | | | | | | SHOULDERS | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | Extent of Distress | SURFACE | WIDTH | DISTRESS | Mod. Sev. | Right | | | | |
| 1 (Excellent (smooth)) | Very Slight | Very Severe | Concrete | Fully Paved | Cracking | 1 | Right | | | | |
| 2 (Good (comfortable)) | Slight | Moderate | Concrete | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 2 | Left | | | | |
| 3 (Fair (uncomfortable)) | Medium | Severe | Concrete | Fully Paved | Distortion | 1 | >30 | | | | |
| 4 (Poor (rough/bumpy)) | Severe | Extremely Severe | Concrete | Partially Paved | Cracking | 2 | 10-30 | | | | |
| 5 (Very Poor; (dangerous, at 80 km/hr)) | Severe | Extremely Severe | Concrete | Fully Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | | | |
| | | | | | | | Extent of Distress | | | | |
| PAVEMENT DISTRESS | Severity of Distress | Extent of Distress | SURFACE | WIDTH | DISTRESS | Mod. Sev. | Right | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 (Excellent (smooth)) | Concrete | Fully Paved | Cracking | 1 | Right | | | | |
| | Flushing | 2 (Good (comfortable)) | Concrete | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 2 | Left | | | | |
| | Spalling | 3 (Fair (uncomfortable)) | Concrete | Fully Paved | Distortion | 1 | >30 | | | | |
| | Tenting/Cupping | 4 (Poor (rough/bumpy)) | Concrete | Partially Paved | Cracking | 2 | 10-30 | | | | |
| Surface Deformations | Wheel Track Rutting | 5 (Very Poor; (dangerous, at 80 km/hr)) | Concrete | Fully Paved | Edge Break/ Separation | 1 | 2 | | | | |
| | Distortion & Settlement | 6 (Extremely Severe) | Concrete | Partially Paved | Break-up | 2 | 1 | | | | |
| | Joint Failures | 7 (Extremely Severe) | Concrete | Fully Paved | Break-up | 1 | 2 | | | | |
| Long. Meandering | Single and Multiple | 8 (Extremely Severe) | Concrete | Partially Paved | Break-up | 2 | 1 | | | | |
| Centreline | Single | 9 (Extremely Severe) | Concrete | Fully Paved | Break-up | 1 | 2 | | | | |
| | Multiple | 10 (Extremely Severe) | Concrete | Partially Paved | Break-up | 2 | 1 | | | | |
| Crazing Cres. | Single & Multiple | 11 (Extremely Severe) | Concrete | Gravel | Break-up | 1 | 2 | | | | |
| | | | | | | | MAINTENANCE TREATMENT | | | | |
| | | | | | | | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Transverse Joints | Transverse | Single | 12 (Extremely Severe) | Concrete | Manual Patching, Hot or Cold Mix | 1 | 2 | 3 | 4 | 5 | |
| | Map | Multiple | 13 (Extremely Severe) | Concrete | Machine Patching, Partial or Full Width | | | | | | |
| | | Single & Multiple | 14 (Extremely Severe) | Concrete | Microsurfacing | | | | | | |
| | | Sawed | 15 (Extremely Severe) | Concrete | Grooving | | | | | | |
| | | Reflective | | Concrete | Rein and Seal Cracks or Joints | | | | | | |
| | | | | | | | Shoulders | Concrete Joint Slab Replacement | | | |
| | | | | | | | | Manual Patching, Hot or Cold Mix | | | |
| | | | | | | | | Machine Patching, Partial or Full Width | | | |
| | | | | | | | | Microsurfacing | | | |
| | | | | | | | | Grooving | | | |
| | | | | | | | | Rein and Seal Cracks or Joints | | | |
| | | | | | | | | Concrete Joint Slab Replacement | | | |
| | | | | | | | | Manual Patching, Hot or Cold Mix | | | |
| | | | | | | | | Machine Patching, Partial or Full Width | | | |
| | | | | | | | | Spray Patching/Chip Seal | | | |
| | | | | | | | | Sealing Cracks or Joints | | | |

Distress Comments: (items not covered above)

Other Comments: (e.g., subsections, additional contracts)

Urban cross section

Speed limit: 40km/hr

Evaluated by:
Seth Matteo

Flexible Pavement Condition Evaluation Form

| | | | | | |
|-------------------------------------|---|---|---|--|--|
| Location: | St. Leonards Crescent, East Section | | District | Highway | |
| From: | Dawlish Avenue | | To: | St. Leonards Avenue | |
| LHRS | <input type="checkbox"/> | <input type="checkbox"/> | Section Length | <input type="checkbox"/> 1 <input type="checkbox"/> 3 <input type="checkbox"/> 0 | m |
| | <input type="checkbox"/> | <input type="checkbox"/> | offset | B | B - both directions; N - northbound; S - southbound; |
| | <input type="checkbox"/> | <input type="checkbox"/> | | E | E - eastbound; W - westbound |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 | <input type="checkbox"/> 0 <input type="checkbox"/> 6 | PCR | <input type="checkbox"/> 3 <input type="checkbox"/> 9 | RCR <input type="checkbox"/> 2 • 0 |
| Contract No. | <input type="checkbox"/> | - <input type="checkbox"/> | WP No. | <input type="checkbox"/> | <input type="checkbox"/> |
| Ride Condition Rating (at 80 km/hr) | <input type="checkbox"/> 10 Excellent (smooth) Good (comfortable) | <input type="checkbox"/> 8 Fair (uncomfortable) | <input type="checkbox"/> 6 Poor (v. rough/bumpy) | <input type="checkbox"/> 4 Very Poor. (dangerous at 80 km/hr) | <input type="checkbox"/> 2 <input type="checkbox"/> 0 |

| PAVEMENT | Severity of Distress | | | | | |
|---|----------------------------------|----------|--------|-------------|-----|-----------|
| | Very Slight | Moderate | Severe | Very Severe | Few | Extensive |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | |
| | Flushing | 2 | | | | |
| | Rippling and Shoving | 3 | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | |
| | Distortion | 5 | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | |
| | 7 | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | |
| Pavement Edge | Single and Multiple Alligator | 9 | | | | |
| Transverse | Half Full and Multiple Alligator | 10 | | | | |
| | 11 | | | | | |
| | 12 | | | | | |
| Longitudinal Meander and Midlane Random Map | Alligator | 13 | | | | |
| | 14 | | | | | |
| | 15 | | | | | |

| Shoulders | Severity of Distress | | | | | | Density of Distress Extent of Occurrence, % | | | |
|-----------------|----------------------|--|------|------|------|------|---|------|-------|------|
| | Dominant Type | Distress | Mod. | Sev. | Mod. | Sev. | Right | Left | Right | Left |
| Paved Full | Cracking | Paved Edge/Pavement Edge/Curb Separation | | | | | | | | |
| Paved Partial | Distortion | | | | | | | | | |
| Surface Treated | Breakup/Separation | | | | | | | | | |
| Primed | Edge Break | | | | | | | | | |
| Gravel | Breakup/Separation | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|--------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Machine Patching | | | | |
| Root and Seal Cracks Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

PCI Value: **39**

Distress Comments: (items not covered above)

Speed limit: 40km/hr

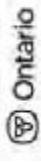
Localized severe potholes

No side ditch

Substandard rural cross section, poor pavement drainage

Evaluated by: **Seth/Matteo**

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| Location: | St. Leonards Crescent, West Section | | | | District | Highway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------------------------|----------------|--|----------------------|---|---|--|--|--|-------------|--------|----------|--------|----|--------------------|---|---|---|---|---|--------------------|---|--|--|--|---|----------------------|--|--|--|--|---|-----------------------|--|--|--|--|---|---|--|--|--|--|---|--|--|--|--|--|--|--|--|--|----------------------|--|--|--|--|--|-------------|--------|----------|-----|----|-----------|---|---|---|---|------|--------------|---|---|---|---|-----|----------|---|---|---|---|-----|--------------|---|---|---|---|-----|-----|---|---|---|---|-----|-----------|---|---|---|---|--|--|--|--|-----------|--|--|--|--|--|---------------|----------|------|------|----|------------|----------|---|---|---|---|---------------|-------------------------------|---|---|---|---|---------|------------|---|---|---|---|-----------------|--------------------|---|---|---|---|--------|------------|---|---|---|---|--------|--------------------|---|---|---|
| From: | Dawlish Avenue | | To: | St. Leonards Avenue | | Traffic Direction | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> km begins offset | | Section Length | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 0 m | | E - eastbound; W - westbound | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | | PCR | <input type="checkbox"/> 6 <input type="checkbox"/> 4 RCR | | <input type="checkbox"/> 5 • 0 | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | Class | <input type="checkbox"/> L | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | <table border="1"> <tr> <th colspan="2"></th> <th colspan="2">Severity of Distress</th> <th colspan="2">Density of Distress Extent of Occurrence %</th> </tr> <tr> <th colspan="2"></th> <th>Very Slight</th> <th>Slight</th> <th>Moderate</th> <th>Severe</th> </tr> <tr> <td>10</td> <td>Excellent (smooth)</td> <td>1</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>8</td> <td>Good (comfortable)</td> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Fair (uncomfortable)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Poor (v. rough/bumpy)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | Very Slight | Slight | Moderate | Severe | 10 | Excellent (smooth) | 1 | ✓ | ✓ | ✓ | 8 | Good (comfortable) | 2 | | | | 6 | Fair (uncomfortable) | | | | | 4 | Poor (v. rough/bumpy) | | | | | 2 | Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | | | | | 0 | | | | | | <table border="1"> <tr> <th colspan="2"></th> <th colspan="2">Severity of Distress</th> <th colspan="2">Density of Distress Extent of Occurrence %</th> </tr> <tr> <th colspan="2"></th> <th>Very Severe</th> <th>Severe</th> <th>Mod. Few</th> <th>Few</th> </tr> <tr> <td>10</td> <td>Extensive</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>8-10</td> <td>Intermittent</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>6-8</td> <td>Frequent</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>4-6</td> <td>Intermittent</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>2-4</td> <td>Few</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>0-2</td> <td>Extensive</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </table> | | | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | Very Severe | Severe | Mod. Few | Few | 10 | Extensive | ✓ | ✓ | ✓ | ✓ | 8-10 | Intermittent | ✓ | ✓ | ✓ | ✓ | 6-8 | Frequent | ✓ | ✓ | ✓ | ✓ | 4-6 | Intermittent | ✓ | ✓ | ✓ | ✓ | 2-4 | Few | ✓ | ✓ | ✓ | ✓ | 0-2 | Extensive | ✓ | ✓ | ✓ | ✓ | <table border="1"> <tr> <th colspan="2"></th> <th colspan="2">Shoulders</th> <th colspan="2">Density of Distress Extent of Occurrence %</th> </tr> <tr> <th colspan="2"></th> <th>Dominant Type</th> <th>Distress</th> <th>Mod.</th> <th>Sev.</th> </tr> <tr> <td>10</td> <td>Paved Full</td> <td>Cracking</td> <td>1</td> <td>2</td> <td>1</td> </tr> <tr> <td>8</td> <td>Paved Partial</td> <td>Pavement Edge/Curb Separation</td> <td>1</td> <td>2</td> <td>1</td> </tr> <tr> <td>6</td> <td>Partial</td> <td>Distortion</td> <td>1</td> <td>2</td> <td>1</td> </tr> <tr> <td>4</td> <td>Surface Treated</td> <td>Breakup/Separation</td> <td>1</td> <td>2</td> <td>1</td> </tr> <tr> <td>2</td> <td>Primed</td> <td>Edge Break</td> <td>1</td> <td>2</td> <td>1</td> </tr> <tr> <td>0</td> <td>Gravel</td> <td>Breakup/Separation</td> <td>1</td> <td>2</td> <td>1</td> </tr> </table> | | | | Shoulders | | Density of Distress Extent of Occurrence % | | | | Dominant Type | Distress | Mod. | Sev. | 10 | Paved Full | Cracking | 1 | 2 | 1 | 8 | Paved Partial | Pavement Edge/Curb Separation | 1 | 2 | 1 | 6 | Partial | Distortion | 1 | 2 | 1 | 4 | Surface Treated | Breakup/Separation | 1 | 2 | 1 | 2 | Primed | Edge Break | 1 | 2 | 1 | 0 | Gravel | Breakup/Separation | 1 | 2 | 1 |
| | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Very Slight | Slight | Moderate | Severe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Excellent (smooth) | 1 | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Good (comfortable) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Fair (uncomfortable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Poor (v. rough/bumpy) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Very Severe | Severe | Mod. Few | Few | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Extensive | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-10 | Intermittent | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-8 | Frequent | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-6 | Intermittent | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4 | Few | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-2 | Extensive | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Shoulders | | Density of Distress Extent of Occurrence % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Dominant Type | Distress | Mod. | Sev. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Paved Full | Cracking | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Paved Partial | Pavement Edge/Curb Separation | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Partial | Distortion | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Surface Treated | Breakup/Separation | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Primed | Edge Break | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | Gravel | Breakup/Separation | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | Right | Right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | | | Mod. | Mod. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Flushing | 2 | | | | Sev. | Sev. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Distortion | 5 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 7 | ✓ | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | ✓ | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | ✓ | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 | ✓ | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCI Value: | 64 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Urban cross section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Speed limit: 40km/hr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Evaluated by: Seth/Matteo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|-------------------------------|------------|----------------|-----------|-------------------|
| Location: | Dawlish Avenue | | District | Highway | |
| From: | St. Leonards Crescent | To: | Bayview Avenue | | |
| LHRS | □ □ □ □ □ km begins offset | □ □ • □ km | Section Length | □ 6 6 0 m | Traffic Direction |
| Survey Date | 1 3 year | 0 6 month | PCR | 3 0 | RCR 1 • 0 |
| Contract No. | □ - □ □ □ □ | WP No. | □ □ □ □ | □ □ □ □ | □ □ □ □ |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress | | Extent of Occurrence % | |
|-------------------------------------|---|--------|----------|--------|-------------|---------------------|--------------|------------------------|-----------|
| | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Frequent | Extensive |
| 10 | Excellent (smooth) | | | | | | | | |
| 8 | Good (comfortable) | | | | | | | | |
| 6 | Fair (uncomfortable) | | | | | | | | |
| 4 | Poor (v. rough/bumpy) | | | | | | | | |
| 2 | Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | | | | | | | | |
| 0 | | | | | | | | | |

PAVEMENT

| | | | | | | | | | |
|-----------------|-------------------------------|---|---|---|---|---|---|---|---|
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Flushing | 2 | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | |
| | Wheel Track Rutting | 4 | | | | | | | |
| | Distortion | 5 | | | | | | | |
| | Longitudinal Wheel Track | 6 | | | | | | | |
| | Alligator | 7 | | | | | | | |
| | Single and Multiple Alligator | 8 | | | | | | | |
| | Centre Line Alligator | 9 | | | | | | | |

| | | | | | | | | | |
|---------------|---|----|--|--|--|--|--|--|--|
| Pavement Edge | Single and Multiple Alligator | 10 | | | | | | | |
| | Half Full and Multiple Alligator | 11 | | | | | | | |
| | Transverse Alligator | 12 | | | | | | | |
| | Longitudinal Meander and Midlane Random Map | 13 | | | | | | | |
| | | 14 | | | | | | | |
| | | 15 | | | | | | | |

PCI Value: 30

Distress Comments: (items not covered above)

Inferred speed limit: 40km/hr

Substandard rural cross section, poor pavement drainage

Nonexistent to shallow side ditches

| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|-----------|------|------|----------------------|------|------|---|-----|------|
| | Right | Mod. | Sev. | Right | Mod. | Sev. | 10-30 | >30 | Left |
| Paved Full | | | | Cracking | | | | | |
| | | | | Paved Partial | | | | | |
| | | | | Distortion | | | | | |
| | | | | Surface Treated | | | | | |
| | | | | Edge Break | | | | | |
| | | | | Primed | | | | | |
| | | | | Breakup/Separation | | | | | |
| | | | | Gravel | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|--------------------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | |
| Spray Patching | | | |
| Pavement Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders Manual Patching | | | |
| Machine Patching | | | |
| Chip Seal Rout and Seal Cracks | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

Flexible Pavement Condition Evaluation Form

| | | | | |
|--------------|-------------------------|-----------|----------------------|-----------------|
| Location: | Pinedale Road | | | |
| From: | Dawlish Avenue | To: | Strathgowan Crescent | |
| LHRS | □ □ □ □ □ begins offset | km | Section Length | □ □ 1 4 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR | □ 3 8 RCR 2 • 0 |
| Contract No. | □ - □ □ □ WP No. | | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|-----------|------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | | | | | | ✓ | | | | | | |
| | Flushing | 2 | | ✓ | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | ✓ | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | ✓ | | | | | | | | | |
| | Distortion | 5 | | ✓ | | | ✓ | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | ✓ | | | | | | | |
| | Alligator | 7 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 10 | | | | | | | | | | | | | |
| | Alligator | 11 | | ✓ | | | | | | | | | | | |
| | Half Full and Multiple Alligator | 12 | | | ✓ | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | Alligator | 13 | | | | ✓ | | | | | | | | | |
| | Alligator | 14 | | | | | ✓ | | | | | | | | |
| | Random Map | 15 | | | | | | | | | | | | | |

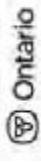
| District | Highway | | | |
|----------|-------------------|--|---------------|---------------|
| | Traffic Direction | B | E - eastbound | W - westbound |
| Facility | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | | |
| Class | L | F - freeway A - arterial; C - collector; L - local; S - secondary | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

- PCI Value: 38
 Distress Comments: (items not covered above)
 Substandard rural cross section, poor pavement drainage
 Speed limit: 40km/hr
 No side ditch

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| | | | | | | |
|---------------|----------------|-----------|----------------|-------------|------------------------------|---------|
| Location: | Fidella Avenue | | District | | Highway | |
| From: | Dawlish Avenue | | To: | | Strathgowan Crescent | |
| LHRS | □ □ □ □ □ | • □ □ km | Section Length | □ □ 1 4 0 m | Traffic Direction | B |
| begins offset | | | | | E - eastbound; W - westbound | |
| Survey Date | 1 3 year | 0 6 month | PCR | 6 5 | RCR | 5 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. | □ □ □ □ | □ □ □ □ | □ □ □ □ | □ □ □ □ |

| Ride Condition Rating (at 80 km/hr) | Pavement | Severity of Distress | | Density of Distress Extent of Occurrence % | | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence, % | | | | | |
|-------------------------------------|---|----------------------------------|--------|--|----------|-----------|--------------|----------------------|------------|---|------|------|-------|------|------|
| | | Very Slight | Slight | Very Severe | Moderate | Few | Intermittent | Extensive | Throughout | Right | Mod. | Sev. | Right | Mod. | Sev. |
| 10 | Raveling & C. Agg. Loss | 1 | | | | | | | | Paved | 1 | 2 | 10-30 | >30 | Left |
| 8 | Flushing | 2 | | | | | | | | Partial | 2 | 1 | 2 | 1 | 2 |
| 6 | Rippling and Shoving | 3 | | | | | | | | Distortion | | | | | >30 |
| 4 | Wheel Track Rutting | 4 | | | | | | | | Surface Treated | | | | | |
| 2 | Distortion | 5 | | | | | | | | Edge Break | | | | | |
| 0 | Longitudinal Wheel Track Alligator | 6 | | | | | | | | Primed | | | | | |
| | | 7 | ✓ | | | | | | | Gravel | | | | | |
| | Centre Line | Single and Multiple Alligator | 8 | | | | | | | | | | | | |
| | Pavement Edge | Single and Multiple Alligator | 9 | | | | | | | | | | | | |
| | Transverse | Half Full and Multiple Alligator | 10 | ✓ | | | | | | | | | | | |
| | Longitudinal Meander and Midlane Random Map | 11 | | | | | | | | | | | | | |
| | | 12 | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | |
| | | 14 | ✓ | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|--------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Shoal Seal Machine Patching | | | | |
| Shallow side ditches Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

PCI Value: 65

Distress Comments: (items not covered above)

Speed limit: 40km/hr

Substandard rural cross section, poor pavement drainage

Shallow side ditches

Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|---------------------|-----------|----------------|----------------------|-----------|
| Location: | Mount Pleasant Road | | To: | Glengowan Road | |
| From: | | | | Strathgowan Crescent | |
| LHRS | offset begins | km | Section Length | 4 7 0 | m |
| Survey Date | 1 3 year | 0 6 month | PCR | 4 3 | RCR 3 • 0 |
| Contract No. | | | WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | |
|-------------------------------------|--|---|------------------------------|------------|------------------------|------------------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Severe Very Severe Extensive | Few Intermittent Often | Throughout | Extent of Occurrence % | Extent of Occurrence % |
| PAVEMENT | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | 3 ✓ | 4 ✓ | 5 ✓ | 1 2 3 4 5 |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | ✓ | ✓ | ✓ | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | ✓ | ✓ | ✓ | |
| Centre Line | Single and Multiple Alligator | 8 9 | ✓ | ✓ | ✓ | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | ✓ | ✓ | ✓ | |
| Transverse | Half Full and Multiple Alligator | 12 13 | ✓ | ✓ | ✓ | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | ✓ | ✓ | ✓ | |

| District | Traffic Direction | | | Facility | A - all lanes; C - collector; E - express; O - others (additional lanes) |
|----------|-------------------|--|------------------------------|----------|---|
| | Highway | B - both directions; N - northbound; S - southbound; | E - eastbound; W - westbound | | |
| | | | | | |
| | | | | | |

| Class | Severity of Distress | | | Other Comments: (e.g., subsections, additional contracts) |
|-------|----------------------|------|------|---|
| | Right | Mod. | Left | |
| | | | | |
| | | | | |

| | |
|--|-------------|
| PCI Value: | 43 |
| Distress Comments: (items not covered above) | |
| Urban cross section | |
| Speed limit: 40km/hr | |
| Evaluated by: | Seth/Matteo |

Composite Pavement Condition Evaluation Form

| Location: | Strathgowan Avenue | | | | | | | | Highway | | | | | |
|---|---|---|---|--|--|--|--|-----------------------------------|--|---|---|---|-----------------------------------|------|
| From: | 280 m West of Strathgowan Crescent | | To: | Strathgowan Crescent | | Traffic Direction | B | | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> begins offset | | km | Section Length | | <input type="checkbox"/> 2 <input type="checkbox"/> 8 <input type="checkbox"/> 0 m | Facility | A | | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | | <input type="checkbox"/> 0 <input type="checkbox"/> 6 month | PCR | | <input type="checkbox"/> 3 <input type="checkbox"/> 5 RCR | <input type="checkbox"/> 3 • 0 | Class | L | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | | | | | | | | | | |
| PAVEMENT DISTRESS | | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | Extent of Distress | | | SHOULDERS | | | Extent of Distress | | | | |
| | Very Slight | Slight | Moderate | Severe | Very Severe | Severe | Few | Intermittent | Extensive | Throughout | Width | Distress | Right | Left |
| <input type="checkbox"/> 1 Excellent (smooth) | <input type="checkbox"/> 2 Good (comfortable) | <input type="checkbox"/> 3 Fair (uncomfortable) | <input type="checkbox"/> 4 Poor (very rough/bumpy) | <input type="checkbox"/> 5 Very Poor; (dangerous, at 80 km/hr) | <input type="checkbox"/> 6 | <input type="checkbox"/> 7 | <input type="checkbox"/> 8 | <input type="checkbox"/> 9 | <input type="checkbox"/> 10 | <input type="checkbox"/> 11 | <input type="checkbox"/> 12 | <input type="checkbox"/> 13 | <input type="checkbox"/> 14 | |
| <input type="checkbox"/> 1 Ravelling & C. Agg. Loss | <input type="checkbox"/> 2 Flushing | <input type="checkbox"/> 3 Spalling | <input type="checkbox"/> 4 Tenting/ Cupping | <input type="checkbox"/> 5 Wheel Track Rutting | <input type="checkbox"/> 6 Distortion & Settlement | <input type="checkbox"/> 7 Joint Failures | <input type="checkbox"/> 8 Single and Multiple | <input type="checkbox"/> 9 Single | <input type="checkbox"/> 10 Multiple | <input type="checkbox"/> 11 Single & Multiple | <input type="checkbox"/> 12 Transverse | <input type="checkbox"/> 13 Map | <input type="checkbox"/> 14 Sawed | |
| <input type="checkbox"/> 15 Dia./Corner/Edge Cres. | <input type="checkbox"/> 16 Cracking | <input type="checkbox"/> 17 Transverse Joints | <input type="checkbox"/> 18 Map | <input type="checkbox"/> 19 Single & Multiple | <input type="checkbox"/> 20 Sawed | <input type="checkbox"/> 21 Reflective | <input type="checkbox"/> 22 | <input type="checkbox"/> 23 | <input type="checkbox"/> 24 | <input type="checkbox"/> 25 | <input type="checkbox"/> 26 | <input type="checkbox"/> 27 | <input type="checkbox"/> 28 | |
| <input type="checkbox"/> 29 Contract No. | <input type="checkbox"/> 30 Year | <input type="checkbox"/> 31 Month | <input type="checkbox"/> 32 Day | <input type="checkbox"/> 33 Hour | <input type="checkbox"/> 34 Min. | <input type="checkbox"/> 35 Sec. | <input type="checkbox"/> 36 | <input type="checkbox"/> 37 | <input type="checkbox"/> 38 | <input type="checkbox"/> 39 | <input type="checkbox"/> 40 | <input type="checkbox"/> 41 | <input type="checkbox"/> 42 | |
| MAINTENANCE TREATMENT | | | | | | | | | | | | EXTENT OF OCCURRENCE, % | | |
| | | | | | | | | | | | | <input type="checkbox"/> <10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-50 <input type="checkbox"/> 50-80 <input type="checkbox"/> >80 | | |
| | | | | | | | | | | | | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 | | |
| | | | | | | | | | | | | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint Slab Replacement Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Spray Patching/Chip Seal Sealing Cracks or Joints | | |
| | | | | | | | | | | | | Shoulders | | |

Distress Comments: (items not covered above)

Other Comments: (e.g., subsections, additional contracts)

Urban cross section

Speed limit: 40km/hr

Evaluated by: **Seth Matteo**

Flexible Pavement Condition Evaluation Form

| | | | | | |
|-------------------------------------|--|--|----------------------|---|---|
| Location: | Garland Avenue | | District | Highway | |
| From: | Glengowan Road | | To: | Strathgowan Avenue | |
| LHRS | <input type="checkbox"/> | <input type="checkbox"/> | Section Length | <input type="checkbox"/> 8 <input type="checkbox"/> 0 | m |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 | <input type="checkbox"/> 0 <input type="checkbox"/> 6 | RCR | <input type="checkbox"/> 2 <input type="checkbox"/> 8 | <input type="checkbox"/> 1 • 0 |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> WP No. | | Class | <input type="checkbox"/> L | F - freeway; A - arterial; C - collector; L - local; S - secondary |
| Ride Condition Rating (at 80 km/hr) | <input type="checkbox"/> 10 Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | <input type="checkbox"/> 8 Very Slight Severe Moderate Severe Very Severe | Severity of Distress | Extent of Occurrence % | Severity of Distress |

| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
|---|----------------------------------|---|---|---|---|----|---|---|---|---|
| Surface Defects | Raveling & C. Agg. Loss | 1 | | ✓ | | | | ✓ | | |
| | Flushing | | 2 | | | | | | | |
| | Rippling and Shoving | | | 3 | | | | | | |
| Surface Deformations | Wheel Track Rutting | | | | 4 | | | | | |
| | Distortion | | | | | 5 | ✓ | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | | | | | 6 | | | | |
| | | | | | | 7 | | | | |
| Centre Line | Single and Multiple Alligator | | | | | 8 | | | | |
| Pavement Edge | Single and Multiple Alligator | | | | | 9 | | | | |
| Transverse | Half Full and Multiple Alligator | | | | | 10 | | | | |
| | | | | | | 11 | | | | |
| Longitudinal Meander and Midlane Random Map | | | | | | 12 | | | | |
| | | | | | | 13 | | | | |
| | | | | | | 14 | | | | |
| | | | | | | 15 | | | | |

| Dominant Type | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence, % | |
|---------------|-----------|------|--------------------------------|------|---|------|
| | Right | Mod. | Right | Mod. | Right | Left |
| Paved Full | | | Cracking | | | |
| | | | Pavement Edge/ Curb Separation | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|-------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Machine Patching | | | | |
| Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

PCI Value: 28

Distress Comments: (items not covered above)

Substandard semi-urban cross section

Gravel shoulder on eastside of roadway

Speed limit: 40km/hr

Composite Pavement Condition Evaluation Form

| Location: | Stratygowan Crescent, Section 1 | | | | District | Highway | | | |
|--|---|---|--------------------|---|--|--|--|--|-----|
| From: | Blythwood Road | To: | 128 Glengowan Road | | | Traffic Direction | B | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> begins | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> offset | km | Section Length | <input type="checkbox"/> 2 <input type="checkbox"/> 7 <input type="checkbox"/> 0 m | | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | <input type="checkbox"/> 0 <input type="checkbox"/> 6 month | PCR | <input type="checkbox"/> 7 <input type="checkbox"/> 0 | RCR | <input type="checkbox"/> 6 <input type="checkbox"/> • <input type="checkbox"/> 0 | A - all lanes; C - collector; E - express; O - others (additional lanes) | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | Class | L | F - freeway; A - arterial; C - collector; L - local; S - secondary | | |
| PAVEMENT DISTRESS | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | Severity of Distress | Extent of Distress | SHOULDERS | | Extent of Distress | Extent of Distress | Extent of Distress | | |
| 1 (Excellent (smooth)) | Very Slight | Very Severe | SURFACE | WIDTH | DISTRESS | Right | Left | | |
| 2 (Good (comfortable)) | Light | Moderate | Concrete | Fully Paved | Cracking | Mod. Sev. | Mod. Sev. | | |
| 3 (Fair (uncomfortable)) | Medium | Severe | Concrete | Partially Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | |
| 4 (Poor (very rough/bumpy)) | Heavy | Extremely Severe | Concrete | Fully Paved | Distortion | 10-30 | >30 | | |
| 5 (Very Poor; (dangerous, at 80 km/hr)) | Very Heavy | Very Severe | Hot Mix | Partially Paved | Cracking | 10-30 | >30 | | |
| 6 (Very Poor; (dangerous, at 80 km/hr)) | Very Heavy | Extremely Severe | Surface Treatment | Fully Paved | Pav/Edge/Shoulder (Curb) Separation | 1 | 2 | | |
| 7 (Very Poor; (dangerous, at 80 km/hr)) | Very Heavy | Extremely Severe | Surface Treatment | Partially Paved | Distortion | 1 | 2 | | |
| 8 (Very Poor; (dangerous, at 80 km/hr)) | Very Heavy | Extremely Severe | Primed | Fully Paved | Cracking | 1 | 2 | | |
| 9 (Very Poor; (dangerous, at 80 km/hr)) | Very Heavy | Extremely Severe | Gravel | Partially Paved | Edge Break/ Separation | 1 | 2 | | |
| 10 (Very Poor; (dangerous, at 80 km/hr)) | Very Heavy | Extremely Severe | Gravel | Fully Paved | Break-up | 1 | 2 | | |
| MAINTENANCE TREATMENT | | | | | | | | | |
| | | | | <10 | | 10-20 | 20-50 | 50-80 | >80 |
| | | | | 1 | 2 | 3 | 4 | 5 | |
| Pavement | | | | | | | | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Microsurfacing Grooving Rout and Seal Cracks or Joints Concrete Joint Slab Replacement | |
| Shoulders | | | | | | | | Manual Patching, Hot or Cold Mix Machine Patching, Partial or Full Width Spray Patching/ Chip Seal Sealing Cracks or Joints | |

Distress Comments: (items not covered above)

Other Comments: (e.g., subsections, additional contracts)
Urban cross section

Evaluated by: **Seth Matteo**

Flexible Pavement Condition Evaluation Form

| | | | | |
|--------------|---------------------------------|-----------|-----------------|-----------------|
| Location: | Strathgowan Crescent, Section 2 | | | |
| From: | 128 Glengowan Road | To: | Stratheden Road | |
| LHRS | □ □ □ □ □ begins offset | km | Section Length | □ □ □ 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR | □ 3 0 RCR 1 • 0 |
| Contract No. | □ - □ □ □ WP No. | | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|-------------------------------------|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|-----|--------------|-----------|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Severe | Moderate | Few | Intermittent | Extensive |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | |
| | Flushing | 2 | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | |
| | Distortion | 5 | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | |
| | 7 | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | | | | | |
| | 9 | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | | | | | | | | |
| | 11 | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 | | | | | | | | |
| | 13 | | | | | | | | | |
| Longitudinal Meander and Midlane | 14 | | | | | | | | | |
| | 15 | | | | | | | | | |

| Shoulders | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|------------|----------------------|--|------|------|------|---|------|------|------|------|
| | Dominant Type | Distress | Mod. | Sev. | Mod. | Sev. | Mod. | Sev. | Mod. | Sev. |
| Paved Full | Cracking | Paved Edge/Pavement Edge/Curb Separation | | | | | | | | |
| | | Distortion | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | | |
|-----------------------|-------------------------|-------|-------|-------|-----|
| | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Manual Patching | 1 | 2 | 3 | 4 | 5 |
| Machine Patching | | | | | |

| CRACKING | Maintenance Treatment | | | | |
|----------------------------------|-----------------------|-----------|------------------|----------------|----------------------|
| | Pavement | Shoulders | Machine Patching | Spray Patching | Rout and Seal Cracks |
| Centre Line | | | | | |
| Pavement Edge | | | | | |
| Transverse | | | | | |
| Longitudinal Meander and Midlane | | | | | |
| Random Map | | | | | |

PCI Value: 30

Distress Comments: (items not covered above)

Substandard rural cross section, poor pavement drainage

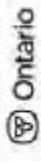
Nonexistent to shallow side ditch

Distortions included catch-basin settlement

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: _____ Stratford Crescent, Section 1

From: _____ Mildenhall Road To: _____ 80 m East of Daneswood Road

LHRS _____ km offset begins _____ • _____ km

Survey Date 1 3 0 6 month

Contract No. _____ - _____ WP No. _____

Highway _____

B - both directions; N - northbound; S - southbound;
E - eastbound; W - westbound

A - all lanes; C - collector; E - express;
O - others (additional lanes)

F - freeway A - arterial; C - collector; L - local;

S - secondary

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|-------------------------------------|--|---|------------------------------|------------|---------------|--|----------|------------|---------------|-----------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Severe Very Severe Extensive | Few Intermittent Often | Throughout | Dominant Type | Distress | Cracking | Paved Full | Paved Partial | Curb Separation |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | | | | | | | | |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 9 | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 13 | | | | | | | | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | | | | | | | | |

| District | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|-------------------|----------------------|------|------|------|------|---|-------|------|------|------|
| | Right | Mod. | Sev. | Left | Mod. | Sev. | Right | Mod. | Sev. | Left |
| Traffic Direction | | | | | | | | | | |
| Facility | A | | | | | | | | | |
| Class | L | | | | | | | | | |
| | | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | | |
|-----------------------|-------------------------|-------|-------|-------|-----|
| | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Manual Patching | 1 | 2 | 3 | 4 | 5 |
| Machine Patching | | | | | |
| Spray Patching | | | | | |
| Pavement | | | | | |
| Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |
| Shoulders | | | | | |
| Machine Patching | | | | | |
| Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Speed limit: 40km/hr

Urban cross section

PCI Value: 90

Distress Comments: (items not covered above)

Evaluated by: Seth/Matteo

Flexible Pavement Condition Evaluation Form

| | | | | |
|--------------|-------------------------------|------------|-----------------|-----------------|
| Location: | Stratford Crescent, Section 2 | | | |
| From: | 101 Stratford Crescent | To: | Mildenhall Road | |
| LHRS | □ □ □ □ begins offset | □ □ • □ km | Section Length | □ □ 1 0 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR | □ 5 6 RCR 4 • 0 |
| Contract No. | □ - □ □ □ □ | WP No. | □ □ □ □ □ □ | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | |
|-------------------------------------|---|--------|----------|--------|-------------|--|--------------|-------|--------------------|------------|---|
| | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Often | Extremely Frequent | Throughout | |
| 0 | Pavement | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1 | Raveling & C. Agg. Loss | 1 | | | | | | | | | |
| 2 | Flushing | 2 | | | | | | | | | |
| 3 | Rippling and Shoving | | 3 | | | | | | | | |
| 4 | Wheel Track Rutting | | | 4 | | | | | | | |
| 5 | Distortion | | | | 5 | | | | | | |
| 6 | Longitudinal Wheel Track Alligator | | | | | 6 | | | | | |
| 7 | Centre Line Alligator | | | | | | 7 | | | | |
| 8 | Single and Multiple Alligator | | | | | | | 8 | | | |
| 9 | Pavement Edge Alligator | | | | | | | | 9 | | |
| 10 | Single and Multiple Alligator | | | | | | | | | 10 | |
| 11 | Transverse Half Full and Multiple Alligator | | | | | | | | | 11 | |
| 12 | | | | | | | | | 12 | | |
| 13 | | | | | | | | | | 13 | |
| 14 | Longitudinal Meander and Midlane Random Map | | | | | | | | | 14 | |
| 15 | | | | | | | | | | 15 | |

| District | Highway | | |
|---|-------------------|----------|-------|
| | Traffic Direction | Facility | Class |
| B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | B | A | L |
| A - all lanes; C - collector; E - express; O - others (additional lanes) | | | |
| F - freeway A - arterial; C - collector; L - local; S - secondary | | | |

| SHOULDERS | | SEVERITY OF DISTRESS | | | DENSITY OF DISTRESS | | |
|-----------------|----------|----------------------|------|------|---------------------|------|------|
| Dominant Type | Distress | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | Cracking | | | | Curb Separation | | |
| Paved Partial | | | | | Distortion | | |
| Surface Treated | | | | | Breakup/Separation | | |
| Primed | | | | | Edge Break | | |
| Gravel | | | | | Breakup/Separation | | |

Other Comments: (e.g., subsections, additional contracts)

| | |
|--|--|
| PCI Value: | 56 |
| Distress Comments: (items not covered above) | Substandard rural cross section, poor pavement drainage Speed limit: 40km/hr No side ditch |
| Evaluated by: | Seth/Matteo |

Flexible Pavement Condition Evaluation Form

| | | | | |
|--------------|-------------------------------|-----------|------------------------|---------------|
| Location: | Stratford Crescent, Section 3 | | | |
| From: | Blythwood Road | To: | 101 Stratford Crescent | |
| LHRS | □ □ □ □ □ begins offset | km | Section Length | □ □ 1 7 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR | 6 1 RCR 5 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|-----|--------------|-------|-----------|--------------------------------|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Severe | Moderate | Few | Intermittent | Often | Extensive | Throughout |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Paved | Pavement Edge/ Curb Separation |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | | | | | | | | Partial | Distortion |
| | Flushing | 2 | | | | | | | | | | Breakup/Separation |
| | Rippling and Shoving | 3 | | | | | | | | | | Edge Break |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | Breakup/Separation |
| | Distortion | 5 | ✓ | | | | | | | | | Gravel |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | ✓ | | | ✓ | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | | ✓ | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | | | ✓ | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 10 | 11 | ✓ | | | | | | | | | |
| | 12 | 13 | | ✓ | | | | | | | | |
| | 14 | 15 | | | ✓ | | | | | | | |

| District | Highway | | | |
|---------------|--------------------------------|---|---------------|-----------------|
| | Traffic Direction | B | E - eastbound | W - westbound |
| Class | L | F - freeway A - arterial; C - collector; L - local; S - secondary | | |
| Shoulders | Severity of Distress | | | |
| Dominant Type | Distress | Mod. | Sev. | Left |
| Paved Full | Cracking | 1 | 2 | Right |
| | Pavement Edge/ Curb Separation | | | Mod. Sev. Right |
| | Distortion | | | Mod. Sev. Right |
| | Surface Treated | | | Mod. Sev. Right |
| | Primed | | | Mod. Sev. Right |
| | Gravel | | | Mod. Sev. Right |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|--------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Machine Patching | | | | |
| Root and Seal Cracks Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

PCI Value: 61

Distress Comments: (items not covered above)

Urban cross section

Speed limit: 40km/hr

Flexible Pavement Condition Evaluation Form

| | | | | | | | | | |
|-------------------------------------|-----------------------------|---|--|--|-------------------------|----------------------|--------------------------|--|--|
| Location: | Daneswood Road | | | | District | Highway | | | |
| From: | Blythwood Road | | | | To: | Stratford Crescent | | | |
| LHRS | □ □ □ □ | □ □ • □ | km | offset | Section Length | □ □ 7 0 | m | Traffic Direction | B |
| | | | | | | | | B - both directions; N - northbound; S - southbound; | |
| | | | | | | | | E - eastbound; W - westbound | |
| Survey Date | 1 3 | 0 6 | month | PCR | 8 8 | RCR | 8 • 0 | Facility | A |
| Contract No. | □ □ | - | □ □ □ □ | WP No. | □ □ □ □ | □ □ □ □ | □ □ □ □ | | A - all lanes; C - collector; E - express; |
| Ride Condition Rating (at 80 km/hr) | 10 8 6 4 2 0 | Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | Very Slight Slight Moderate Severe Very Severe | Few Fewer Intermittent Often Extremely | Throughout Extensive | Severity of Distress | Severity of Occurrence % | Shoulders | O - others (additional lanes) |

| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Severity of Distress | Extent of Occurrence % |
|---|---|---|---|---|---|---|---|----|----|---|----------------------|------------------------|
| | | | | | | | | | | | Very Slight | Slight |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | Very Slight | Slight |
| | Flushing | | 2 | | | | | | | | Moderate | Severe |
| | Rippling and Shoving | | | 3 | | | | | | | Severe | Very Severe |
| Surface Deformations | Wheel Track Rutting | | | | 4 | | | | | | Extremely | Extremely |
| | Distortion | | | | | 5 | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | | | | | 6 | | | | | | |
| | | | | | | 7 | | | | | | |
| Centre Line | Single and Multiple Alligator | | | | | | 8 | | | | | |
| Pavement Edge | Single and Multiple Alligator | | | | | | 9 | | | | | |
| Transverse | Half Full and Multiple Alligator | | | | | | | 10 | | | | |
| Longitudinal Meander and Midlane Random Map | Longitudinal Meander and Midlane Random Map | | | | | | | | 11 | | | |
| | | | | | | | | | 12 | | | |
| | | | | | | | | | 13 | | | |
| | | | | | | | | | 14 | | | |
| | | | | | | | | | 15 | | | |

| Ride Condition Rating (at 80 km/hr) | 10 8 6 4 2 0 | Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | Very Slight Slight Moderate Severe Very Severe | Few Fewer Intermittent Often Extremely | Throughout Extensive | Severity of Distress | | Shoulders | | Density of Distress Extent of Occurrence, % | | |
|-------------------------------------|-----------------------------|---|--|--|-------------------------|----------------------|------|-----------|------|---|------|------|
| | | | | | | Right | Left | Mod. | Sev. | Right | Left | Mod. |
| | | | | | | | | 1 | 2 | | | >30 |
| | | | | | | | | | | 10-30 | | |
| | | | | | | | | | | 2-10 | | |
| | | | | | | | | | | 1-2 | | |
| | | | | | | | | | | 2 | | |
| | | | | | | | | | | | | >30 |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|-----------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement | | | | |
| Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders | | | | |
| Machine Patching | | | | |
| Rout and Seal Cracks | | | | |
| Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

Urban cross section

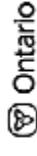
Speed limit: 40km/hr

Evaluated by: Seth/Matteo

PCI Value: 88

Distress Comments: (items not covered above)

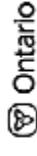
Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| Location: | Stratheden Road, Section 1 | | | | District | <input type="checkbox"/> Highway <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|----------------|--|----------------------|---|--|--|--|--|-------------|----------|--------|-------------|----|--------------------|---|---|---|---|---|--------------------|--|--|--|--|---|----------------------|---|--|--|--|---|-----------------------|--|--|--|--|---|--------------------------------------|---|--|--|--|---|------------------------|---|--|--|--|---|--|--|--|----------------------|--|--|--|--|--|----------|-----|--------------|-----------|----|-----|---|---|---|--------|---|--|--|--|--|-------|---|--|--|--|--|-------|---|--|--|--|--|-------|---|--|--|--|--|------|---|--|--|--|--|----|--|--|--|--|-----------|--|----------------------|--|--|--|--|--|---------------|----------|------|------|-------|------|----|------------|----------|---|---|---|---|-------|---|---------------|-------------------------------|--|--|--|--|-----|---|---------|------------|--|--|--|--|--|---|-----------------|--------------------|--|--|--|--|--|---|--------|------------|--|--|--|--|--|---|--------|--------------------|--|--|--|--|--|
| From: | Strathgowan Crescent | | To: | Mildenhall Road | | Traffic Direction | <input type="checkbox"/> B - both directions; N - northbound; S - southbound | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> km begins offset | | Section Length | <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> m | | Facility | <input type="checkbox"/> B - eastbound; W - westbound | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Date | <input type="checkbox"/> 1 <input type="checkbox"/> 3 year | <input type="checkbox"/> 0 <input type="checkbox"/> 6 month | PCR | <input type="checkbox"/> 5 <input type="checkbox"/> 9 | RCR | <input type="checkbox"/> 4 <input type="checkbox"/> 0 | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | Class | <input type="checkbox"/> L | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ride Condition Rating (at 80 km/hr) | <table border="1"> <tr> <th colspan="2"></th> <th colspan="2">Severity of Distress</th> <th colspan="2">Density of Distress Extent of Occurrence %</th> </tr> <tr> <th colspan="2"></th> <th>Very Slight</th> <th>Moderate</th> <th>Severe</th> <th>Very Severe</th> </tr> <tr> <td>10</td> <td>Excellent (smooth)</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>8</td> <td>Good (comfortable)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Fair (uncomfortable)</td> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Poor (v. rough/bumpy)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Poor (v. rough/bumpy) at 80 km/hr</td> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td>Very Poor. (dangerous)</td> <td>4</td> <td></td> <td></td> <td></td> </tr> </table> | | | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | Very Slight | Moderate | Severe | Very Severe | 10 | Excellent (smooth) | 1 | 2 | 3 | 4 | 8 | Good (comfortable) | | | | | 6 | Fair (uncomfortable) | 2 | | | | 4 | Poor (v. rough/bumpy) | | | | | 2 | Poor (v. rough/bumpy) at 80 km/hr | 3 | | | | 0 | Very Poor. (dangerous) | 4 | | | | <table border="1"> <tr> <th colspan="2"></th> <th colspan="2">Severity of Distress</th> <th colspan="2">Density of Distress Extent of Occurrence %</th> </tr> <tr> <th colspan="2"></th> <th>Very Few</th> <th>Few</th> <th>Intermittent</th> <th>Extensive</th> </tr> <tr> <td>10</td> <td><10</td> <td>1</td> <td>2</td> <td>3</td> <td>40-100</td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td>50-80</td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td>20-50</td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td>10-20</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td>2-10</td> </tr> <tr> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td><2</td> </tr> </table> | | | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | Very Few | Few | Intermittent | Extensive | 10 | <10 | 1 | 2 | 3 | 40-100 | 8 | | | | | 50-80 | 6 | | | | | 20-50 | 4 | | | | | 10-20 | 2 | | | | | 2-10 | 0 | | | | | <2 | <table border="1"> <tr> <th colspan="2"></th> <th colspan="2">Shoulders</th> <th colspan="2">Severity of Distress</th> <th colspan="2">Density of Distress Extent of Occurrence %</th> </tr> <tr> <th colspan="2"></th> <th>Dominant Type</th> <th>Distress</th> <th>Mod.</th> <th>Sev.</th> <th>Right</th> <th>Left</th> </tr> <tr> <td>10</td> <td>Paved Full</td> <td>Cracking</td> <td>1</td> <td>2</td> <td>1</td> <td>2</td> <td>10-30</td> </tr> <tr> <td>8</td> <td>Paved Partial</td> <td>Pavement Edge/Curb Separation</td> <td></td> <td></td> <td></td> <td></td> <td>>30</td> </tr> <tr> <td>6</td> <td>Partial</td> <td>Distortion</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Surface Treated</td> <td>Breakup/Separation</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Primed</td> <td>Edge Break</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td>Gravel</td> <td>Breakup/Separation</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | Dominant Type | Distress | Mod. | Sev. | Right | Left | 10 | Paved Full | Cracking | 1 | 2 | 1 | 2 | 10-30 | 8 | Paved Partial | Pavement Edge/Curb Separation | | | | | >30 | 6 | Partial | Distortion | | | | | | 4 | Surface Treated | Breakup/Separation | | | | | | 2 | Primed | Edge Break | | | | | | 0 | Gravel | Breakup/Separation | | | | | |
| | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Very Slight | Moderate | Severe | Very Severe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Excellent (smooth) | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Good (comfortable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Fair (uncomfortable) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Poor (v. rough/bumpy) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Poor (v. rough/bumpy) at 80 km/hr | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | Very Poor. (dangerous) | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Very Few | Few | Intermittent | Extensive | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | <10 | 1 | 2 | 3 | 40-100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | 50-80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | 20-50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | 10-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | 2-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | | | | | <2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Dominant Type | Distress | Mod. | Sev. | Right | Left | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Paved Full | Cracking | 1 | 2 | 1 | 2 | 10-30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Paved Partial | Pavement Edge/Curb Separation | | | | | >30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Partial | Distortion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Surface Treated | Breakup/Separation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Primed | Edge Break | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | Gravel | Breakup/Separation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Alligator | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centre Line | Single and Multiple | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Alligator | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Alligator | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transverse | Half, Full and Multiple | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Alligator | 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane | Random Map | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Random Map | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCI Value: | 59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Distress Comments: (items not covered above) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Substandard rural cross section, poor pavement drainage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Speed limit: 40km/hr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Norexistent to shallow side ditches | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rural cross-section ends at #35 Stratheden Road | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Evaluated by: | Seth/Matteo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

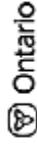
Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| | | | | | |
|---|--|--|--|--------------------------------|---|
| Location: | Stratheden Road, Section 2 | | District | Highway | |
| From: | Mildenhall Road | To: | 35 Stratheden Road | | |
| LHRS | □ □ □ □ □ km begins offset | Section Length | □ □ 7 0 m | Traffic Direction | B B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound |
| Survey Date | 1 3 year | PCR | □ 3 0 | RCR | 1 • 0 |
| Contract No. | □ □ - □ □ □ WP No. | Class | L | | F - freeway; A - arterial; C - collector; L - local; S - secondary |
| Ride Condition Rating (at 80 km/hr) | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous, at 80 km/hr) 0 | Severity of Distress | Extent of Occurrence % | Severity of Distress | Extent of Occurrence, % |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | Very Slight Slight Moderate Severe Very Severe Few Intermittent Frequent Extensive | Throughout Few Intermittent Frequent Extensive | Dominant Type | Right Mod. Distress Cracking Paved Full Paved Partial Curb Separation Distortion Breakup/Separation Edge Break Breakup/Separation Gravel |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | | | |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | | | |
| Centre Line | Single and Multiple Alligator | 8 9 | | | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | | | |
| Transverse | Half, Full and Multiple Alligator | 12 13 | | | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | | | |
| PCI Value: | 30 | | Maintenance Treatment | EXTENT OF OCCURRENCE, % | |
| Distress Comments: (items not covered above) | | | <10 | 10-20 | 20-50 |
| Substandard rural cross section, poor pavement drainage | | | 1 | 2 | 3 |
| Speed limit: 40km/hr | | | | | 4 |
| Nonexistent to shallow side ditches | | | | | 5 |
| Other Comments: (e.g., subsections, additional contracts) | | | | | |
| Rural cross-section ends at #35 Stratheden Road | | | | | |
| Evaluated by: | | | Seth/Matteo | | |

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: Stratheden Road, Section 3

From: 35 Stratheden Road

To: Daneswood Road

LHRS km
begins offset

Survey Date

1 3 year
0 6 month

Contract No. - WP No.

Ride Condition Rating (at 80 km/hr)

| | |
|----|-------------------------------------|
| 10 | Excellent (smooth) |
| 8 | Good (comfortable) |
| 6 | Fair (uncomfortable) |
| 4 | Poor (v. rough/bumpy) |
| 2 | Very Poor. (dangerous, at 80 km/hr) |
| 0 | |

PAVEMENT

| Surface Defects | Severity of Distress | | | | | Extent of Occurrence % |
|----------------------------------|-------------------------|----------|--------|-------------|-----|------------------------|
| | Very Slight | Moderate | Severe | Very Severe | Few | |
| Raveling & C. Agg. Loss | 1 | | | | | |
| Flushing | | 2 | | | | |
| Rippling and Shoving | | | 3 | | | |
| Surface Deformations | | | | 4 | | |
| Wheel Track Rutting | | | | | 4 | |
| Distortion | | | | | 5 | |
| Longitudinal Wheel Track | | | | | | 6 |
| Alligator | 7 | | | | | |
| Centre Line | Single and Multiple | 8 | ✓ | | | |
| Pavement Edge | Alligator | 9 | | | | |
| Transverse | Single and Multiple | 10 | | | | |
| Longitudinal Meander and Midlane | Alligator | 11 | | | | |
| Random Map | Half, Full and Multiple | 12 | ✓ | | | |
| | Alligator | 13 | ✓ | | | |
| | Random Map | 14 | ✓ | | | |
| | | 15 | | | | |

CRACKING

| Crack Type | Severity of Distress | | | | | Extent of Occurrence % |
|----------------------------------|-------------------------|----------|--------|-------------|-----|------------------------|
| | Very Slight | Moderate | Severe | Very Severe | Few | |
| Centre Line | Single and Multiple | 8 | ✓ | | | |
| Pavement Edge | Alligator | 9 | | | | |
| Transverse | Single and Multiple | 10 | | | | |
| Longitudinal Meander and Midlane | Alligator | 11 | | | | |
| | Half, Full and Multiple | 12 | ✓ | | | |
| | Alligator | 13 | ✓ | | | |
| | Random Map | 14 | ✓ | | | |
| | | 15 | | | | |

PCI Value: **75**

Distress Comments: (items not covered above)

Urban cross section

Speed limit: 40km/hr

| | | |
|--|--|--|
| Location: <u>Stratheden Road, Section 3</u> | District <input type="checkbox"/> <input type="checkbox"/> | Highway <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| From: <u>35 Stratheden Road</u> | To: <u>Daneswood Road</u> | Traffic Direction <input type="checkbox"/> B <input type="checkbox"/> E - both directions; N - northbound; S - southbound |
| LHRS <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> begins | Section Length <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> km | Facility <input type="checkbox"/> A <input type="checkbox"/> C - collector; E - express; O - others (additional lanes) |
| Survey Date <input type="checkbox"/> <input type="checkbox"/> year | PCR <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> month | Class <input type="checkbox"/> L <input type="checkbox"/> F - freeway; A - arterial; C - collector; L - local; S - secondary |

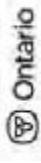
| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|-----------------|-----------|------|------|----------------------|--------------------------------|------|---|------|------|
| | Right | Mod. | Left | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | | | | Cracking | | | | | |
| Paved Partial | | | | | Pavement Edge/ Curb Separation | | | | |
| Surface Treated | | | | | Distortion | | | | |
| Primed | | | | | Breakup/Separation | | | | |
| Gravel | | | | | Edge Break | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|-----------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | 4 |
| Spray Patching | | | 5 |
| Pavement | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders | | | |
| Machine Patching | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: **Seth/Matteo**

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| Location: | Daneswood Road | | | | District | Highway | | | | | | | | | | |
|---|--|-------------------------|---------------------------|---|---|----------------------------|--|----------|----------------------|---|----------|-------------|---------------------|-------------|--------|--|
| From: | Stratheden Road | | To: | Dawlish Avenue | | Traffic Direction | B - both directions; N - northbound; S - southbound; | | | | | | | | | |
| LHRS | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> begins | | offset | <input type="checkbox"/> <input type="checkbox"/> • <input type="checkbox"/> km | | Section Length | <input type="checkbox"/> 2 0 0 m | | B | E - eastbound; W - westbound | | | | | | |
| Survey Date | <input type="checkbox"/> 1 3 year | | month | <input type="checkbox"/> 0 6 | | PCR | <input type="checkbox"/> 6 0 | | RCR | <input type="checkbox"/> 5 • 0 | | | | | | |
| Contract No. | <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> WP No. | | | | Class | <input type="checkbox"/> L | | | | F - freeway; A - arterial; C - collector; L - local; S - secondary | | | | | | |
| Ride Condition Rating (at 80 km/hr) | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| PAVEMENT | Severity of Distress | | | | Density of Distress | | | | Severity of Distress | | | | Density of Distress | | | |
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | 0 Very Slight | Severe | Moderate | Very Severe | Severe | Moderate | Very Severe | Severe | Very Severe | Severe | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | | | | |
| Surface Deformations | Rippling and Shoving | 3 | | | | | | | | | | | | | | |
| | Wheel Track Rutting | 4 | | | | | | | | | | | | | | |
| Longitudinal Wheel Track | Distortion | 5 | | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 6 | | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 7 | | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 8 | | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | Longitudinal Meander and Midlane Random Map | 9 | | | | | | | | | | | | | | |
| | | | | | | | | | | EXTENT OF OCCURRENCE, % | | | | | | |
| | | | | | | | | | | MAINTENANCE TREATMENT | | | | | | |
| | | | | | | | | | | <10 | 10-20 | 20-50 | 50-80 | >80 | | |
| | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | | |
| | | | | | | | | | | CRACKING | | | | | | |
| | | | | | | | | | | Pavement | | | | | | |
| | | | | | | | | | | Shoulders | | | | | | |
| | | | | | | | | | | Other Comments: (e.g., subsections, additional contracts) From #49 Daneswood Road to Dawlish Avenue, rural cross-section with none to shallow side ditch | | | | | | |
| | | | | | | | | | | Evaluated by: Seth/Matteo | | | | | | |
| | | | | | | | | | | PCI Value: 60 | | | | | | |
| | | | | | | | | | | Distress Comments: (items not covered above) Substandard rural cross section, poor pavement drainage Speed limit: 40km/hr | | | | | | |

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: Glenallen Road, Section 1

From: Strathgowan Crescent To: Mildenhall Road

LHRS offset begins km

Survey Date 1 3 year 0 6 month

Contract No. - WP No.

PCR 6 0 RCR 4 • 0

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|-------------------------------------|-----------------------------------|--------|----------|--------|-------------|--|--------------|-------|-----------|------------|
| | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Often | Extremely | Throughout |
| 10 | Excellent (smooth) | | | | | | | | | |
| 8 | Good (comfortable) | | | | | | | | | |
| 6 | Fair (uncomfortable) | | | | | | | | | |
| 4 | Poor (v. rough/bumpy) | | | | | | | | | |
| 2 | Poor (v. rough/bumpy) at 80 km/hr | | | | | | | | | |
| 0 | | | | | | | | | | |

PAVEMENT

Surface Defects Raveling & C. Agg. Loss 1

Flushing 2

Rippling and Shoving 3

Wheel Track Rutting 4

Distortion 5

Single and Multiple 6

Longitudinal Wheel Track Alligator 7

Centre Line Single and Multiple 8

Alligator 9

Pavement Edge Single and Multiple 10

Alligator 11

Transverse Half Full and Multiple 12

Alligator 13

Longitudinal Meander and Midlane 14

Random Map 15

| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|-----------|------|------|--------------------------------|------|------|---|------|------|
| | Right | Mod. | Left | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | | | | Cracking | | | | | |
| Paved Partial | | | | Pavement Edge/ Curb Separation | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|-------------------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | |
| Spray Patching | | | |
| Pavement Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders Manual Patching | | | |
| Machine Patching | | | |
| Chip Seal | | | |

Other Comments: (e.g., subsections, additional contracts)

PCI Value: **60**

Distress Comments: (items not covered above)

Substandard rural cross section, poor pavement drainage

Distortions: potholes

Norexistent to shallow side ditches

Evaluated by: **Seth/Matteo**

Flexible Pavement Condition Evaluation Form

| | | | |
|--------------|---------------------------|------------|----------------------------|
| Location: | Glenallen Road, Section 2 | | |
| From: | Mildenhall Road | To: | Daneswood Road |
| LHRS | □ □ □ □ □ begins offset | □ □ • □ km | Section Length □ □ 2 1 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR □ 6 9 RCR □ 6 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. | □ □ □ □ □ □ |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------------|-----------|-----------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Paved | Partial | Curb Separation | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | Distortion | | | | |
| | Flushing | 2 | | | | | | | | | Breakup/Separation | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | Edge Break | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | Breakup/Separation | | | | |
| | Distortion | 5 | | | | | | | | | Gravel | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 10 | | | | | | | | | | | | | | |

| District | Highway | | | Density of Distress Extent of Occurrence, % | | |
|-------------------|-------------------------------|------|------|--|------|------|
| | Right | Mod. | Left | Right | Mod. | Left |
| Traffic Direction | B | | | B - both directions; N - northbound; S - southbound; | | |
| Facility | A | | | E - eastbound; W - westbound | | |
| | O - others (additional lanes) | | | A - all lanes; C - collector; E - express; | | |
| | S - secondary | | | F - freeway A - arterial; C - collector; L - local; | | |
| | | | | | | |

| Shoulders | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|--------------------------------|------|------|---|------|------|
| | Right | Mod. | Left | Right | Mod. | Left |
| Dominant Type | Distress | | | 10-30 | >30 | <10 |
| Paved Full | Cracking | | | 1 | 2 | 1 |
| | Pavement Edge/ Curb Separation | | | | | |
| | Distortion | | | | | |
| | Surface Treated | | | | | |
| | Primed | | | | | |
| | Gravel | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|-----------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | 4 |
| Spray Patching | | | 5 |
| Pavement | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders | | | |
| Machine Patching | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |

Other Comments: (e.g., subsections, additional contracts)

Speed limit: 40km/hr

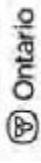
Urban cross section

PCI Value: **69**

Distress Comments: (items not covered above)

Evaluated by: Seth/Matteo

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|-----------------|-------------------|----------------------|---------------|--|
| Location: | Mildenhall Road | | District | Highway | |
| From: | Blythwood Road | To: | Lawrence Avenue East | | Traffic Direction |
| LHRS | □ □ □ □ begins | □ □ • □ km offset | Section Length | □ 9 □ 4 □ 0 m | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound |
| Survey Date | 1 □ 3 year | 0 □ 6 month | PCR | □ 2 □ 8 | RCR □ 1 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. | | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | | Density of Distress Extent of Occurrence % | |
|-------------------------------------|-----------------------------------|--------|----------|--------|-------------|-----|--|-----------|
| | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive |
| 10 | Excellent (smooth) | | | | | | | |
| 8 | Good (comfortable) | | | | | | | |
| 6 | Fair (uncomfortable) | | | | | | | |
| 4 | Poor (v. rough/bumpy) | | | | | | | |
| 2 | Poor (v. rough/bumpy) at 80 km/hr | | | | | | | |
| 0 | | | | | | | | |

PAVEMENT

Raveling & C. Agg. Loss

Flushing

Rippling and Shoving

Wheel Track Rutting

Distortion

Single and Multiple Alligator

Longitudinal Wheel Track

Centre Line Alligator

Pavement Edge Alligator

Transverse Alligator

Longitudinal Meander and Midlane

Random Map

| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|-----------|------|--------------------------------|----------------------|------|------|---|------|------|
| | Mod. | Sev. | Distress | Mod. | Sev. | Left | Right | Mod. | Sev. |
| Paved Full | | | Cracking | | | | | | |
| Paved Partial | | | Pavement Edge/ Curb Separation | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|--------------------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | |
| Spray Patching | | | |
| Pavement Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders Manual Patching | | | |
| Shoulders Machine Patching | | | |
| Shoulders Rout and Seal Cracks | | | |
| Shoulders Chip Seal | | | |

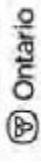
Other Comments: (e.g., subsections, additional contracts)

At the intersection of Mildenhall Road and Glenallen Road curb is provided

Evaluated by: Seth/Matteo

| | | |
|------------|----|---|
| PCI Value: | 28 | Distress Comments: (items not covered above) |
| | | Substandard rural and semi-urban cross sections, poor pavement drainage |
| | | Speed limit: 40km/hr |

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: Mildenhall Road

From: Lawrence Avenue East To: Braeside Road

LHRS begins offset • km

Survey Date year month

Contract No. - WP No.

Section Length 4 5 0 m

Traffic Direction B E - both directions; N - northbound; S - southbound;
 E - eastbound; W - westbound

Facility A C - collector; E - express;
 O - others (additional lanes)

Class C F - freeway; A - arterial; C - collector; L - local;
 S - secondary

| Ride Condition Rating (at 80 km/hr) | Pavement | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|-------------------------------------|--|----------------------|----------------------|-----------------------|-----------------------------------|-------------|--|--------------|-----------|------------|------|------|------|------|------|------|
| | | Very Slight | Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | Mod. | Sev. | Mod. | Sev. | Mod. | Sev. |
| 10 | Excellent (smooth) | Good (comfortable) | Fair (uncomfortable) | Poor (v. rough/bumpy) | Poor (v. rough/bumpy at 80 km/hr) | <10 | 10-20 | 20-50 | 50-80 | 80-100 | Mod. | Sev. | Mod. | Sev. | Mod. | Sev. |
| 8 | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | | |
| 6 | Flushing | 2 | | | | | | | | | | | | | | |
| 4 | Rippling and Shoving | 3 | | | | | | | | | | | | | | |
| 2 | Wheel Track Rutting | 4 | | | | | | | | | | | | | | |
| 0 | Distortion | 5 | | | | | | | | | | | | | | |
| | Longitudinal Wheel Track Alligator | 6 | | | | | | | | | | | | | | |
| | Centre Line Alligator | 7 | | | | | | | | | | | | | | |
| | Single and Multiple Alligator | 8 | | | | | | | | | | | | | | |
| | Pavement Edge Alligator | 9 | | | | | | | | | | | | | | |
| | Single and Multiple Half Full and Multiple Alligator | 10 | | | | | | | | | | | | | | |
| | Transverse Alligator | 11 | | | | | | | | | | | | | | |
| | Longitudinal Meander and Midlane Random Map | 12 | | | | | | | | | | | | | | |
| | Transverse Alligator | 13 | | | | | | | | | | | | | | |
| | Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | | | | |
| | Transverse Alligator | 15 | | | | | | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE % | | | | |
|--------------------------------|------------------------|-------|-------|-------|-----|
| | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Manual Patching | 1 | 2 | 3 | 4 | 5 |
| Machine Patching | | | | | |
| Spray Patching | | | | | |
| Pavement Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |
| Shoulders Manual Patching | | | | | |
| Machine Patching | | | | | |
| Root and Seal Cracks Chip Seal | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Speed limit: 40km/hr

Noexistent to shallow side ditches

Evaluated by: Seth/Matteo

PCI Value: 22

Distress Comments: (items not covered above)

Substandard rural cross section, poor pavement drainage

Flexible Pavement Condition Evaluation Form

| | | | | |
|--------------|-------------------------|-----------|---------------------|-----------------|
| Location: | Bayview Wood | | | |
| From: | Mildenhall Road | To: | St. Aubyns Crescent | |
| LHRS | □ □ □ □ □ begins offset | km | Section Length | □ □ 1 7 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR | □ 2 9 RCR 1 • 0 |
| Contract No. | □ - □ □ □ □ | WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|---|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|-----------|------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 10 | | | | | | | | | | | | | | |
| | Alligator | 11 | | | | | | | | | | | | | |
| | Half Full and Multiple Alligator | 12 | | | | | | | | | | | | | |
| | Alligator | 13 | | | | | | | | | | | | | |
| | Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | | | |
| | Alligator | 15 | | | | | | | | | | | | | |

| Shoulders | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | | | |
|-----------|----------------------|----------|----------|------------|---------------|---|------|------|------|-------|------|-----|
| | Dominant Type | Distress | Cracking | Paved Full | Paved Partial | Mod. | Sev. | Mod. | Sev. | Right | Left | |
| | | | | | | | | | | | | >30 |
| | | | | | | | | | | | | 2 |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | 2 |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | 2 |

Other Comments: (e.g., subsections, additional contracts)

| | |
|--|--|
| PCI Value: | 29 |
| Distress Comments: (items not covered above) | Substandard rural cross section, poor pavement drainage Speed limit: 40km/hr No side ditches |
| Evaluated by: | Seth/Matteo |

Flexible Pavement Condition Evaluation Form

| | | | | | | |
|--------------|-------------------------|-----------|----------------|-----------|------------------------------|-------|
| Location: | Wood Avenue | | District | | Highway | |
| From: | St. Aubyns Crescent | To: | Bayview Wood | | Traffic Direction | B |
| LHRS | □ □ □ □ □ begins offset | km | Section Length | □ □ 9 0 m | E - eastbound; W - westbound | |
| Survey Date | 1 3 year | 0 6 month | PCR | 3 3 | RCR | 1 • 0 |
| Contract No. | □ □ - □ □ □ □ | WP No. | | | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | Density of Distress Extent of Occurrence % | | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence, % | | | | |
|---|--|--|---|-------------------------|---------------|----------|----------------------|------------|---|---|-----------------------|----------------------|-----------------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Slight Moderate Severe Very Severe | Few Infrequent Intermittent Few Extensive | Throughout Extensive | Dominant Type | Distress | Cracking | Paved Full | Paved Partial | Curb Separation Distortion Breakup/Separation Edge Break Primed Gravel | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | |
| | | 7 | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | | | | | | | | |
| | | 9 | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | | | | | | | | | | | |
| | | 11 | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|--------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Machine Patching | | | | |
| Root and Seal Cracks Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

No side ditch

Speed limit: 40km/hr

Evaluated by: Seth/Matteo

PCI Value: 33

Distress Comments: (items not covered above)

Substandard rural cross section, poor pavement drainage

Flexible Pavement Condition Evaluation Form

| | | | |
|--------------|-------------------------------|----------------|----------------|
| Location: | St. Aubyns Crescent | | |
| From: | Bayview Wood | To: | Lewes Crescent |
| LHRS | □ □ □ □ □ km begins offset | Section Length | □ □ 2 0 m |
| Survey Date | 1 3 year | PCR | 3 2 RCR 1 • 0 |
| Contract No. | □ - □ □ □ WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|-----------|------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | ✓ | | | ✓ | | | | | | |
| | Flushing | 2 | | | | ✓ | | | ✓ | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | |
| | Distortion | 5 | | | | ✓ | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| | | 7 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | | | | ✓ | | | ✓ | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 10 | | | | | | | | | | | | | |
| | | 11 | | | | ✓ | | | ✓ | | | | | | |
| | | 12 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | Alligator | 13 | | | | | | | | | | | | | |
| | | 14 | | | | ✓ | | | ✓ | | | | | | |
| | | 15 | | | | | | | | | | | | | |

| District | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|-------------------|----------------------|------|------|------|------|---|-------|------|-------|------|
| | Right | Mod. | Sev. | Left | Mod. | Sev. | Right | Mod. | Sev. | Left |
| Traffic Direction | | 1 | 2 | 1 | 2 | 1 | 10-30 | >30 | 10-30 | >30 |
| Facility | A | | | | | | 1 | 2 | 1 | 2 |

Other Comments: (e.g., subsections, additional contracts)

No side ditches

Speed limit: 40km/hr

Substandard rural cross section, poor pavement drainage

PCI Value: 32

Distress Comments: (items not covered above)

Evaluated by: Seth/Matteo

Flexible Pavement Condition Evaluation Form

| | | | | | | | | | | | |
|--|--|---|--|--|----------|-----------------------|--|---|---|---|---|
| Location: | Lewes Crescent | | | | District | Highway | | | | | |
| From: | St. Leonards Avenue | To: | St. Leonards Avenue | | | Traffic Direction | B | B - both directions; N - northbound; S - southbound; | | | |
| LHRS | offset begins | km | Section Length | □ □ • □ □ m | | | E | E - eastbound; W - westbound | | | |
| Survey Date | 1 3 year | 0 6 month | PCR | 3 0 | RCR | 1 • 0 | A | A - all lanes; C - collector; E - express; O - others (additional lanes) | | | |
| Contract No. | □ □ - □ □ □ □ | WP No. | | | | | L | F - freeway A - arterial; C - collector; L - local; S - secondary | | | |
| Ride Condition Rating (at 80 km/hr) | 10 8 6 4 2 0 | Excellent (smooth) Good (comfortable) Fair (uncomfortable) Poor (v. rough/bumpy) Very Poor. (dangerous at 80 km/hr) | Severity of Distress | Density of Distress Extent of Occurrence % | | Shoulders | Severity of Distress | | | Density of Distress Extent of Occurrence, % | |
| PAVEMENT | 1 2 3 4 5 | Very Slight Slight Moderate Severe Very Severe | Few Intermittent Extensive | Throughput Extent of Occurrence % | | Dominant Type | Right Mod. Cracking | Left Mod. Paved Full | Right Mod. Curb Separation | Left Mod. Distortion | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | ✓ ✓ | 80-100 | | Paved Partial | 1 2 | 1 2 | 1 2 | 1 2 | |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | ✓ ✓ ✓ | 50-80 | | Surface Treated | Breakup/Separation | | | Breakup/Separation | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | ✓ ✓ | 20-50 | | Primed Gravel | Edge Break | | | Edge Break | |
| CRACKING | Centre Line Pavement Edge Transverse Longitudinal Meander and Midlane Random Map | Single and Multiple Alligator Single and Multiple Alligator Half Full and Multiple Alligator Random Map | 8 9 10 11 12 13 14 15 | <10 | | Maintenance Treatment | <10 1 Manual Patching Machine Patching Spray Patching Pavement Shoulders | 10-20 2 Machine Patching Spray Patching Rout and Seal Cracks Chip Seal Manual Patching Machine Patching Rout and Seal Cracks Chip Seal | 20-50 3 Machine Patching Spray Patching Rout and Seal Cracks Chip Seal | 50-80 4 Machine Patching Spray Patching Rout and Seal Cracks Chip Seal | >80 5 Machine Patching Spray Patching Rout and Seal Cracks Chip Seal |
| PCI Value: | 30 | Other Comments: (e.g., subsections, additional contracts) | | | | | | | | | |
| Substandard rural cross section, poor pavement drainage Speed limit: 40km/hr Shallow side ditch on west roadside | | | | | | | | | | Evaluated by: Seth/Matteo | |

Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|------------------|-------------------|----------------|-----------|-------------------|
| Location: | Blythwood Road | | District | Highway | |
| From: | Blyth Hill Road | To: | Bayview Avenue | | |
| LHRS | □ □ □ □ □ begins | □ □ • □ km offset | Section Length | □ 6 5 0 m | Traffic Direction |
| Survey Date | 1 3 year | 0 6 month | PCR | 6 3 | RCR 5 • 0 |
| Contract No. | □ - □ □ □ | WP No. | | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | | Density of Distress Extent of Occurrence % | |
|-------------------------------------|--|--|---|------------|-------------|-----------|--|-----------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Slight Moderate Severe Very Severe | Few Intermittent Often Extensive | Throughout | Thoroughout | Extensive | Very High High Medium Low Very Low | Extensive |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | | | | | |
| | Flushing | 2 | | | | | | |
| | Rippling and Shoving | 3 | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | |
| | Distortion | 5 | ✓ | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | |
| | Centre Line | 7 | | | | | | |
| CRAKING | Single and Multiple Alligator | 8 | | | | | | |
| | Pavement Edge | 9 | | | | | | |
| | Transverse | 10 | ✓ | | | | | |
| | Longitudinal Meander and Midlane Random Map | 11 | | ✓ | | | | |
| | | 12 | | | ✓ | | | |
| | | 13 | | | | ✓ | | |
| | | 14 | | | | | ✓ | |
| | | 15 | | | | | | ✓ |

| Dominant Type | Shoulders | | | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|---------------|-----------|----------|------|--|------|------|---|------|------|
| | Right | Mod. | Left | Right | Mod. | Left | Right | Mod. | Left |
| Paved Full | | Cracking | | Paved Edge/Pavement Edge/Curb Separation | | | | | |
| | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | |
|-----------------------|-------------------------|-------|-------|
| | <10 | 10-20 | 20-50 |
| Manual Patching | 1 | 2 | 3 |
| Machine Patching | | | |
| Spray Patching | | | |
| Pavement | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |
| Shoulders | | | |
| Machine Patching | | | |
| Rout and Seal Cracks | | | |
| Chip Seal | | | |

Other Comments: (e.g., subsections, additional contracts)

| | |
|-------------------------|---------------------------|
| PCI Value: | 63 |
| Distress Comments: | (items not covered above) |
| Urban cross section | |
| Speed limit: 40-60km/hr | |
| Evaluated by: | Seth/Matteo |

Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|-----------------------|------------|-----------------------|-----------|--|
| Location: | Blyth Hill Road | | District | Highway | |
| From: | Blythwood Road | To: | End of Blythwood Road | | |
| LHRS | □ □ □ □ begins offset | □ □ • □ km | Section Length | □ 5 0 0 m | Traffic Direction |
| | | | | | B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound |
| Survey Date | 1 3 year | 0 6 month | PCR | 2 9 | RCR |
| Contract No. | □ - □ □ □ | WP No. | □ □ □ | □ □ □ | □ □ □ |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | |
|-------------------------------------|--|---|------------------------------|------------|-------------|--|--------------------------|-----------------------|----------------------|-----------------------|----------------------|
| | 10 Excellent (smooth) 8 Good (comfortable) 6 Fair (uncomfortable) 4 Poor (v. rough/bumpy) 2 Very Poor. (dangerous at 80 km/hr) 0 | Very Slight Severe Moderate Severe Very Severe Extensive | Few Intermittent Often | Throughout | Thoroughout | Right Mod. Distress | Left Mod. Distress | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | ✓ ✓ | ✓ ✓ | ✓ ✓ | | | | | | |
| Surface Deformations | Rippling and Shoving Wheel Track Rutting Distortion | 3 4 5 | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 9 | ✓ ✓ | ✓ ✓ | ✓ ✓ | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 12 13 | | | | | | | | | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | ✓ ✓ | ✓ ✓ | ✓ ✓ | | | | | | |

| Dominant Type | Shoulders | | | | | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|---------------|-----------|------------|---------------|-----------------|------------|---------------------------|--------------------------|-----------------------|----------------------|-----------------------|---|-----------------------|----------------------|-----------------------|----------------------|
| | Cracking | Paved Full | Paved Partial | Curb Separation | Distortion | Right Mod. Distress | Left Mod. Distress | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. | Right Mod. Sev. | Left Mod. Sev. |
| Extensive | | | | | | | | | | | | | | | |
| Intermittent | | | | | | | | | | | | | | | |
| Frequent | | | | | | | | | | | | | | | |
| Very Severe | | | | | | | | | | | | | | | |
| Moderate | | | | | | | | | | | | | | | |
| Severe | | | | | | | | | | | | | | | |
| Very Slight | | | | | | | | | | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | | |
|-----------------------|-------------------------|-------|-------|-------|-----|
| | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Manual Patching | 1 | 2 | 3 | 4 | 5 |
| Machine Patching | | | | | |
| Spray Patching | | | | | |
| Pavement | | | | | |
| Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |
| Shoulders | | | | | |
| Machine Patching | | | | | |
| Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Speed limit: 40km/hr

Noexistent to shallow side ditch

Substandard rural cross section, poor pavement drainage

Evaluated by: Seth/Matteo

PCI Value: 29

Distress Comments: (items not covered above)

Flexible Pavement Condition Evaluation Form

| | | | | | |
|--------------|------------------|-------------------|----------------|-----------------|-------------------|
| Location: | Blyth Dale Road | | District | Highway | |
| From: | Blythwood Road | | To: | Blyth Hill Road | |
| LHRS | □ □ □ □ □ begins | □ □ • □ km offset | Section Length | □ □ 2 5 0 m | Traffic Direction |
| Survey Date | 1 3 year | 0 6 month | PCR | 3 0 | RCR 1 • 0 |
| Contract No. | □ - □ □ □ □ | | WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | Density of Distress Extent of Occurrence % | | Throughput Extensive | Dominant Type | Shoulders | | Severity of Distress | | Density of Distress Extent of Occurrence, % | |
|---|---|--------|--|--------------|----------------------|---------------|-----------------|--------------------|----------------------|-------------|---|----------------|
| | Very Slight | Slight | Few | Intermittent | | | Very Severe | Moderate | Severe | Very Severe | Moderate | Extremely High |
| PAVEMENT | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | ✓ | ✓ | ✓ | ✓ | Paved | Partial | Curb Separation | Right | Mod. | Left |
| | Flushing | 2 | ✓ | ✓ | ✓ | ✓ | Distortion | Distortion | Distortion | Right | Mod. | Left |
| | Rippling and Shoving | 3 | ✓ | ✓ | ✓ | ✓ | Surface Treated | Breakup/Separation | Breakup/Separation | Right | Mod. | Left |
| Surface Deformations | Wheel Track Rutting | 4 | ✓ | ✓ | ✓ | ✓ | Primed | Edge Break | Edge Break | Right | Mod. | Left |
| | Distortion | 5 | ✓ | ✓ | ✓ | ✓ | Gravel | Breakup/Separation | Breakup/Separation | Right | Mod. | Left |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Centre Line | Single and Multiple Alligator | 7 | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 8 | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Transverse | Half Full and Multiple Alligator | 9 | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Longitudinal Meander and Midlane Random Map | Longitudinal Meander and Midlane Random Map | 10 | ✓ | ✓ | ✓ | ✓ | | | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | |
|-------------------------------|-------------------------|-------|-------|-------|
| | <10 | 10-20 | 20-50 | 50-80 |
| Manual Patching | 1 | 2 | 3 | 4 |
| Machine Patching | | | | 5 |
| Spray Patching | | | | |
| Pavement Rout and Seal Cracks | | | | |
| Chip Seal | | | | |
| Shoulders Manual Patching | | | | |
| Machine Patching | | | | |
| Chip Seal | | | | |

Other Comments: (e.g., subsections, additional contracts)

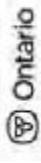
Substandard rural cross section, poor pavement drainage
Speed limit: 40km/hr
No side ditches

Evaluated by: Seth/Matteo

PCI Value: 30

Distress Comments: (items not covered above)

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

Location: Ridgefield Road

From: Blythwood Road To: End of Ridgefield Road

LHRS begins offset • km

Survey Date year month

Contract No. - WP No.

Section Length m

RCR 4 • 0

Facility A

Class L

S - secondary

Traffic Direction B

B - both directions; N - northbound; S - southbound;

E - eastbound; W - westbound

A - all lanes; C - collector; E - express;

O - others (additional lanes)

F - freeway; A - arterial; C - collector; L - local;

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | |
|-------------------------------------|---|------------------------------|------------|---------------|----------|--|------------|---------------|-----------------|--|
| | Very Slight Severe Moderate Severe Very Severe Extensive | Few Intermittent Often | Throughout | Dominant Type | Distress | Cracking | Paved Full | Paved Partial | Curb Separation | |
| PAVEMENT | 1 2 3 4 5 1 2 3 4 5 | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss Flushing | 1 2 | | | ✓ | ✓ | | | | |
| | Rippling and Shoving | 3 | | | | ✓ | | | | |
| Surface Deformations | Wheel Track Rutting Distortion | 4 5 | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 7 | | | | ✓ | | | | |
| Centre Line | Single and Multiple Alligator | 8 9 | | | | ✓ | | | | |
| Pavement Edge | Single and Multiple Alligator | 10 11 | | | | ✓ | | | | |
| Transverse | Half Full and Multiple Alligator | 12 13 | | | | ✓ | | | | |
| Longitudinal Meander and Midlane | Random Map | 14 15 | | | | ✓ | | | | |

| Maintenance Treatment | EXTENT OF OCCURRENCE % | | | | |
|-----------------------|------------------------|-------|-------|-------|-----|
| | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Manual Patching | 1 | 2 | 3 | 4 | 5 |
| Machine Patching | | | | | |
| Spray Patching | | | | | |
| Pavement | | | | | |
| Rout and Seal Cracks | | | | | |
| Chip Seal | | | | | |
| Shoulders | | | | | |
| Machine Patching | | | | | |
| ROUT AND SEAL CRACKS | | | | | |
| Chip Seal | | | | | |

Other Comments: (e.g., subsections, additional contracts)

No side ditches, catchbasins observed

Speed limit: 40km/hr

Substandard rural cross section, poor pavement drainage

PCI Value: **55**

Distress Comments: (items not covered above)

Evaluated by: **Seth/Matteo**

Flexible Pavement Condition Evaluation Form

| | | | | |
|--------------|--------------------|-----------|----------------|----------------|
| Location: | Sunnydene Crescent | | | |
| From: | Bayview Avenue | To: | Bayview Avenue | |
| LHRS | □ □ □ □ □ | • | □ □ km | Section Length |
| | offset begins | | | □ 7 0 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR | 8 2 RCR 7 • 0 |
| Contract No. | □ - □ □ □ | WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | | | | |
|---|----------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|--|----------|--------|-------------|-----|--------------|-----------|------------|--|--|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous at 80 km/hr) | Very Slight | Moderate | Severe | Very Severe | Few | Intermittent | Extensive | Throughout | | |
| PAVEMENT | | | | | | | | | | | | | | | |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | | | | | |
| | Flushing | 2 | | | | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | | | | |
| | Distortion | 5 | ✓ | | | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | 6 | | | | | | | | | | | | | |
| | Alligator | 7 | | | | | | | | | | | | | |
| Centre Line | Single and Multiple Alligator | 8 | ✓ | | | | | | | | | | | | |
| Pavement Edge | Single and Multiple Alligator | 9 | | | | | | | | | | | | | |
| Transverse | Half Full and Multiple Alligator | 10 | | | | | | | | | | | | | |
| | Alligator | 11 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | Half Full and Multiple Alligator | 12 | ✓ | | | | | | | | | | | | |
| | Alligator | 13 | | | | | | | | | | | | | |
| Longitudinal Meander and Midlane Random Map | 14 | | | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | | |

| District | Highway | | | | Density of Distress Extent of Occurrence, % | | | |
|----------|-------------------|---|---|---|---|---|---|---|
| | Traffic Direction | B | E | W | A | O | C | L |
| Facility | | | | | | | | |
| Class | | | | | | | | |

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

PCI Value: 82

Distress Comments: (items not covered above)

Urban cross section

Inferred speed limit: 40km/hr

Distortions: manholes settlement and heaving

Flexible Pavement Condition Evaluation Form

Location: Lauren Court

From: Blythwood Road To: End of Lauren Court

LHRS • km
begins offset

Survey Date 1 3 0 6 month

Contract No. - WP No.

Section Length 5 0 m

RCR 6 0

Facility A

Class L

Highway

A - all lanes; C - collector; E - express;
O - others (additional lanes)

F - freeway; A - arterial; C - collector; L - local;
S - secondary

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | Density of Distress Extent of Occurrence % | Shoulders | | | | | Severity of Distress | | | | | Density of Distress Extent of Occurrence, % | | | | |
|-------------------------------------|------------------------------------|--|-----------------|--------------------|------|------|-------|----------------------|------|------|-------|------|---|------|-------|------|------|
| | | | Dominant Type | Distress | Mod. | Sev. | Right | Mod. | Sev. | Left | Right | Mod. | Sev. | Left | Right | Mod. | Sev. |
| 10 | Excellent (smooth) | Throughout | Paved Full | Cracking | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | >30 |
| 8 | Good (comfortable) | | Paved Partial | Curb Separation | | | | | | | | | | | | | |
| 6 | Fair (uncomfortable) | Few | Distortion | | | | | | | | | | | | | | |
| 4 | Poor (v. rough/bumpy) | Intermittent | Surface Treated | | | | | | | | | | | | | | |
| 2 | Poor (v. rough/bumpy) at 80 km/hr | Extensive | Edge Break | | | | | | | | | | | | | | |
| 0 | Very Poor, (dangerous at 80 km/hr) | Very Severe | Primed | Breakup/Separation | | | | | | | | | | | | | |
| | | Moderate | Gravel | | | | | | | | | | | | | | |

| PAVEMENT | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
|--------------------------|-------------------------------|---|---|---|---|---|---|---|---|---|---|
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | |
| | Flushing | | 2 | | | | | | | | |
| | Rippling and Shoving | | | 3 | | | | | | | |
| Surface Deformations | Wheel Track Rutting | | | | 4 | | | | | | |
| | Distortion | | | | | 5 | | | | | |
| Longitudinal Wheel Track | Single and Multiple Alligator | | | | | | 6 | | | | |
| | | | | | | | | 7 | | | |

| CRACKING | Maintenance Treatment | EXTENT OF OCCURRENCE, % | | | | |
|----------------------------------|----------------------------------|-------------------------|-------|-------|-------|-----|
| | | <10 | 10-20 | 20-50 | 50-80 | >80 |
| Centre Line | Single and Multiple Alligator | 8 | | | | |
| | | | 9 | | | |
| Pavement Edge | Single and Multiple Alligator | 10 | | | | |
| | | | 11 | | | |
| Transverse | Half Full and Multiple Alligator | 12 | | | | |
| | | | 13 | | | |
| Longitudinal Meander and Midlane | 14 | | | | | |
| | Random Map | 15 | | | | |

PCI Value: **76**

Distress Comments: (items not covered above)

Urban cross section

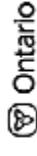
Inferred speed limit: 40km/hr

Possible flexible pavement, further verification possible if construction records are provided

Other Comments: (e.g., subsections, additional contracts)

Evaluated by: Seth/Matteo

Ministry of Transportation



Flexible Pavement Condition Evaluation Form

| | | | |
|--------------|-------------------------------|------------|--------------------------|
| Location: | Valleyanna Drive | | |
| From: | Bayview Avenue | To: | End of Valleyanna Drive |
| LHRS | □ □ □ □ □ km begins offset | □ □ • □ km | Section Length □ 4 0 0 m |
| Survey Date | 1 3 year | 0 6 month | PCR □ 7 6 RCR □ 6 • 0 |
| Contract No. | □ - □ □ □ □ WP No. | | |

| Ride Condition Rating (at 80 km/hr) | Severity of Distress | | | | | Density of Distress Extent of Occurrence % | | | | | | |
|-------------------------------------|-------------------------|----------------------|------------------------|-------------------------|---------------------------------------|--|----------|-----|--------------|----------|-----------|-----------------|
| | 10 Excellent (smooth) | 8 Good (comfortable) | 6 Fair (uncomfortable) | 4 Poor (v. rough/bumpy) | 2 Very Poor. (dangerous, at 80 km/hr) | Very Severe | Moderate | Few | Intermittent | Frequent | Extensive | Throughout |
| PAVEMENT | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Paved | Curb Separation |
| Surface Defects | Raveling & C. Agg. Loss | 1 | | | | | | | | | Partial | Distortion |
| | Flushing | 2 | | | | | | | | | | |
| | Rippling and Shoving | 3 | | | | | | | | | | |
| Surface Deformations | Wheel Track Rutting | 4 | | | | | | | | | | |
| | Distortion | 5 | | | | | | | | | | |
| Longitudinal Wheel Track | Single and Multiple | 6 | | | | | | | | | | |
| | Alligator | 7 | | | | | | | | | | |
| Centre Line | Single and Multiple | 8 | | | | | | | | | | |
| | Alligator | 9 | | | | | | | | | | |
| Pavement Edge | Single and Multiple | 10 | | | | | | | | | | |
| | Alligator | 11 | | | | | | | | | | |
| Transverse | Half, Full and Multiple | 12 | | | | | | | | | | |
| | Alligator | 13 | | | | | | | | | | |
| Longitudinal Meander and Midlane | 14 | | | | | | | | | | | |
| | Random / Map | 15 | | | | | | | | | | |

| District | Highway | | |
|--|-------------------|----------|-------|
| | Traffic Direction | Facility | Class |
| B - both directions; N - northbound; S - southbound; E - eastbound; W - westbound | B | A | L |
| A - all lanes; C - collector; E - express; O - others (additional lanes) | | | |
| F - freeway; A - arterial; C - collector; L - local; S - secondary | | | |

| Shoulders | Severity of Distress | | | Density of Distress Extent of Occurrence, % | | |
|------------|----------------------|----------|------|---|------|------|
| | Dominant Type | Distress | Mod. | Right | Mod. | Left |
| Paved Full | Cracking | | 1 | 2 | 1 | 2 |
| | Pavement Edge/ | | | | | |
| | Curb Separation | | | | | |
| | Distortion | | | | | |
| | Breakup/Separation | | | | | |
| | Edge Break | | | | | |
| | Primed | | | | | |
| | Breakup/Separation | | | | | |
| | Gravel | | | | | |

Other Comments: (e.g., subsections, additional contracts)

PCI Value: **76**
 Distress Comments: (items not covered above)
 Urban cross-section
 Inferred speed limit: 40km/hr
 Localized very severe transverse cracking
 Distortions: manholes heaving

Evaluated by: **Seth/Matteo**

APPENDIX C

Pavement Borehole Logs



Terraprobe Inc



| SAMPLING METHODS | | PENETRATION RESISTANCE |
|---|--|---|
| AS Auger sample GS Grab sample SS Split spoon ST Shelby tube WS Wash sample RC Rock core SC Soil core | | <p>Standard Penetration Test (SPT) N-value (penetration resistance) is defined as the number of blows required to advance a standard 50 mm (2 in.) diameter split spoon sampler for a distance of 0.3 m (12 in.) with a hammer weighing 63.5 kg (140 lb.) falling freely for a distance of 0.76 m (30 in.).</p> <p>Dynamic Cone Penetration Test (DCPT) resistance is defined as the number of blows required to advance a conical steel point 50 mm (2 in.) base diameter tapered 60° to the apex and attached to 'A' size drill rods for a distance of 0.3 m (12 in.), with a hammer weighing 63.5 kg (140 lb.) falling freely for a distance of 0.76 m (30 in.).</p> |

| COHESIONLESS SOILS | | COHESIVE SOILS | | | MINOR SOIL CONSTITUENTS | |
|--------------------|--------------------|----------------|--------------------|--------------------------------|-------------------------|-------------|
| Relative Density | N-value Blows/0.3m | Consistency | N-value Blows/0.3m | Undrained Shear Strength (kPa) | Modifier (e.g) | % by weight |
| Very loose | < 5 | Very soft | < 2 | < 12 | trace (trace silt) | < 10 |
| Loose | 5 – 10 | Soft | 2 – 4 | 12 – 25 | some (some silt) | 10 – 20 |
| Compact | 10 – 30 | Firm | 4 – 8 | 25 – 50 | (ey) or (y) (sandy) | 20 – 35 |
| Dense | 30 – 50 | Stiff | 8 – 15 | 50 – 100 | and (sand and silt) | > 35 |
| Very dense | > 50 | Very stiff | 15 – 30 | 100 – 200 | | |
| | | Hard | > 30 | > 200 | | |

TESTS AND SYMBOLS

| | | | |
|------------------|---|--|---|
| MH | combined sieve and hydrometer analysis | | Unstabilized water level |
| w, | water content | | 1 st water level measurement |
| w _L , | liquid limit | | 2 nd water level measurement |
| w _P , | plastic limit | | Most recent water level measurement |
| I _P , | plasticity index | | Undrained shear strength from field vane (with sensitivity) |
| k | coefficient of permeability | | compression index (normally consolidated range) |
| γ | soil unit weight, bulk | | recompression index (overconsolidated range) |
| G _s | specific gravity | | coefficient of consolidation |
| φ' | effective angle of internal friction | | coefficient of compressibility (volume change) |
| c' | effective cohesion | | void ratio |
| c _u | undrained shear strength ($\phi = 0$ analysis) | | |

FIELD MOISTURE DESCRIPTIONS

| | |
|--------------|---|
| Dry | refers to a soil sample with a moisture content well below optimum ($w < w_{opt}$), absence of moisture, dusty, dry to the touch. |
| Moist | refers to a soil sample with a moisture content at or near optimum ($w \approx w_{opt}$), no visible pore water. |
| Wet | refers to a soil sample with a moisture content well above optimum ($w > w_{opt}$), has visible pore water. |



Client : Aquafor Beech Ltd.

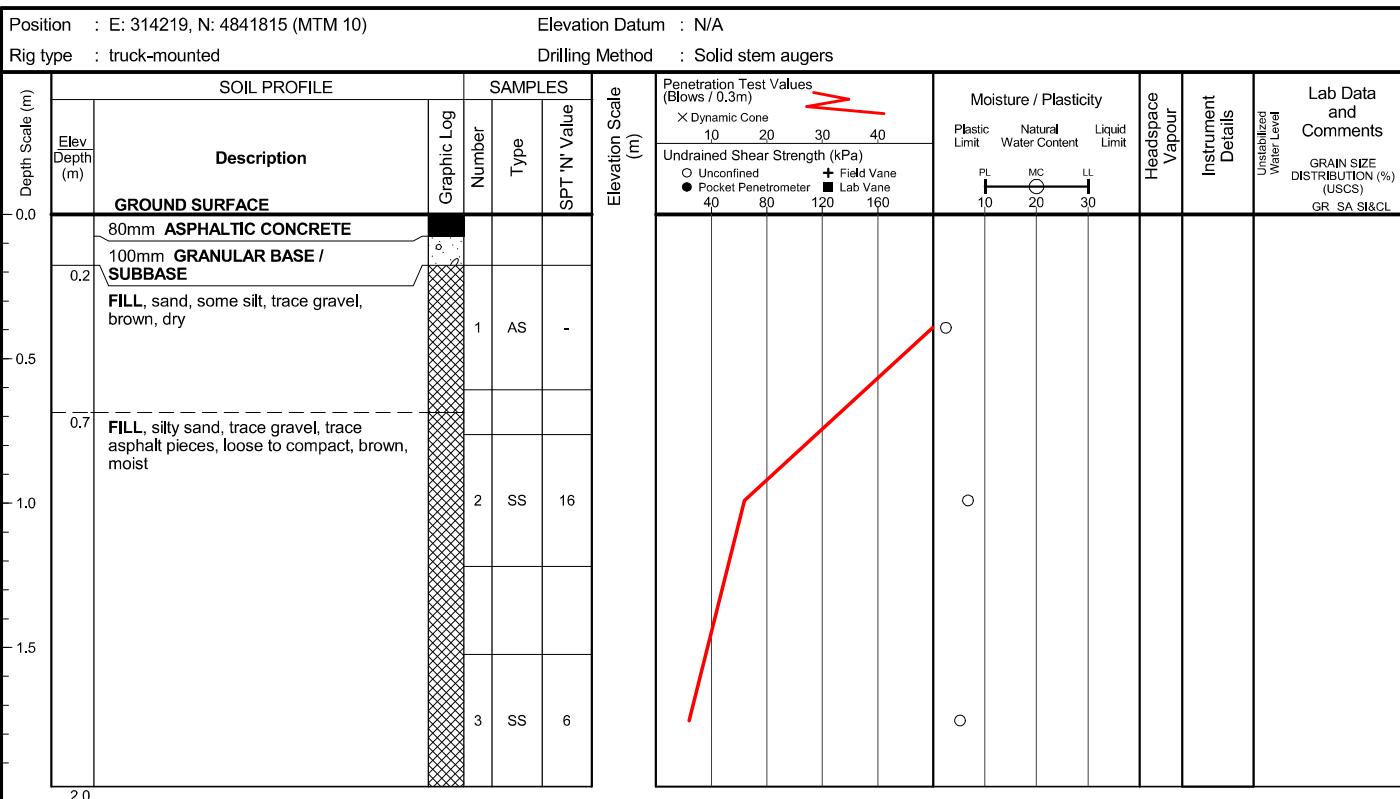
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

**END OF BOREHOLE**

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314589, N: 4841855 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | GROUND SURFACE | | Number | Type |
| 0.0 | | 340mm ASPHALTIC CONCRETE | | | |
| 0.3 | | 410mm GRANULAR BASE / SUBBASE | ○ ○ ○ ○ | | |
| 0.8 | | SILT AND SAND, trace gravel, trace clay, dense to very dense, brown, moist | | 1 SS 45 | |
| 1.0 | | | | 2 SS 57 | |
| 1.5 | | | | | |
| 2.0 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

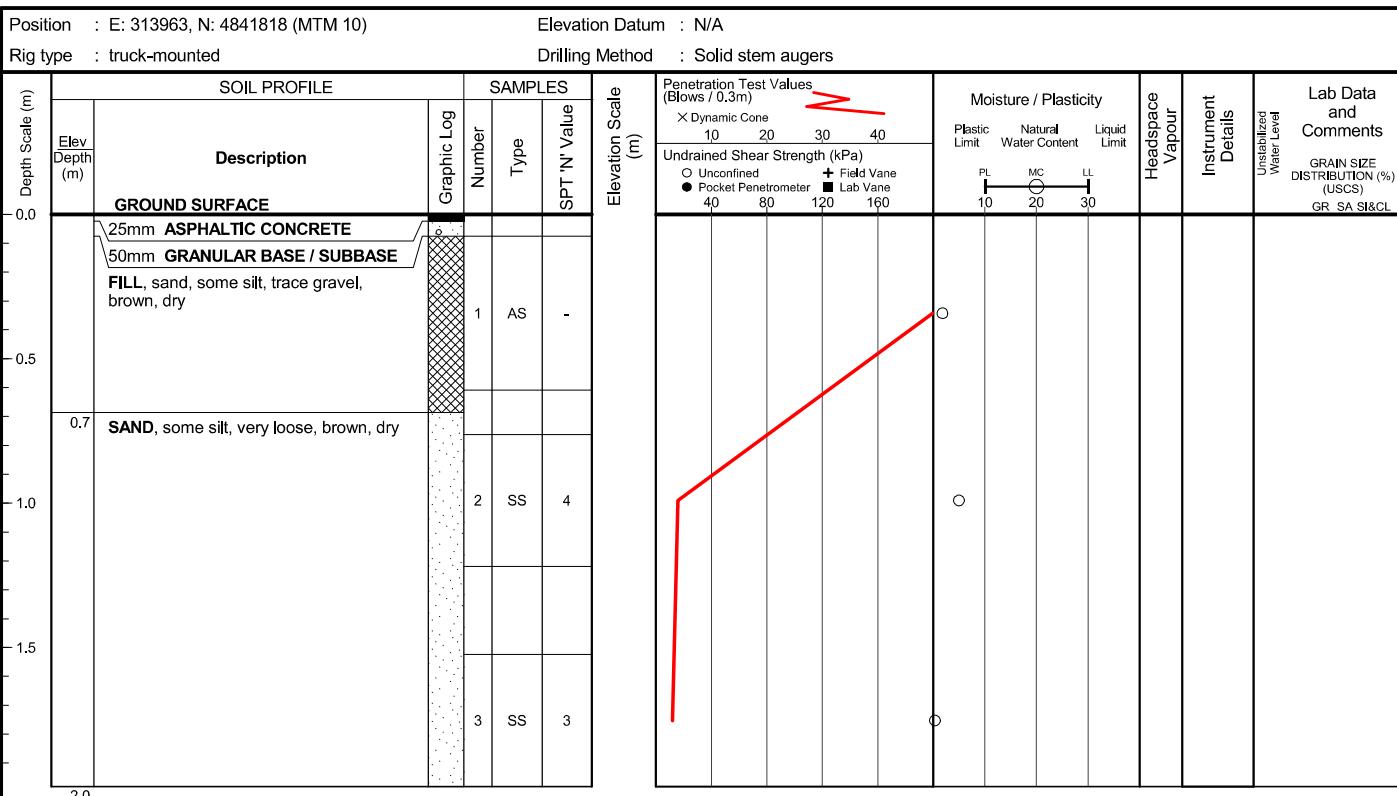
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

**END OF BOREHOLE**

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314245, N: 4841970 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | | | Number | Type |
| 0.0 | | GROUND SURFACE | | | |
| 0.0 | 0.1 | 100mm ASPHALTIC CONCRETE | | | |
| 0.1 | 0.2 | 200mm GRANULAR BASE / SUBBASE | | | |
| 0.3 | 0.4 | FILL, sand, some silt, brown, moist | | 1 AS - | |
| 0.7 | 0.8 | SAND, some silt, trace gravel, compact to dense, brown, dry to wet | | 2 SS 28 | |
| 1.0 | 1.1 | | | | |
| 1.5 | 1.6 | | | | |
| 2.0 | 2.1 | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

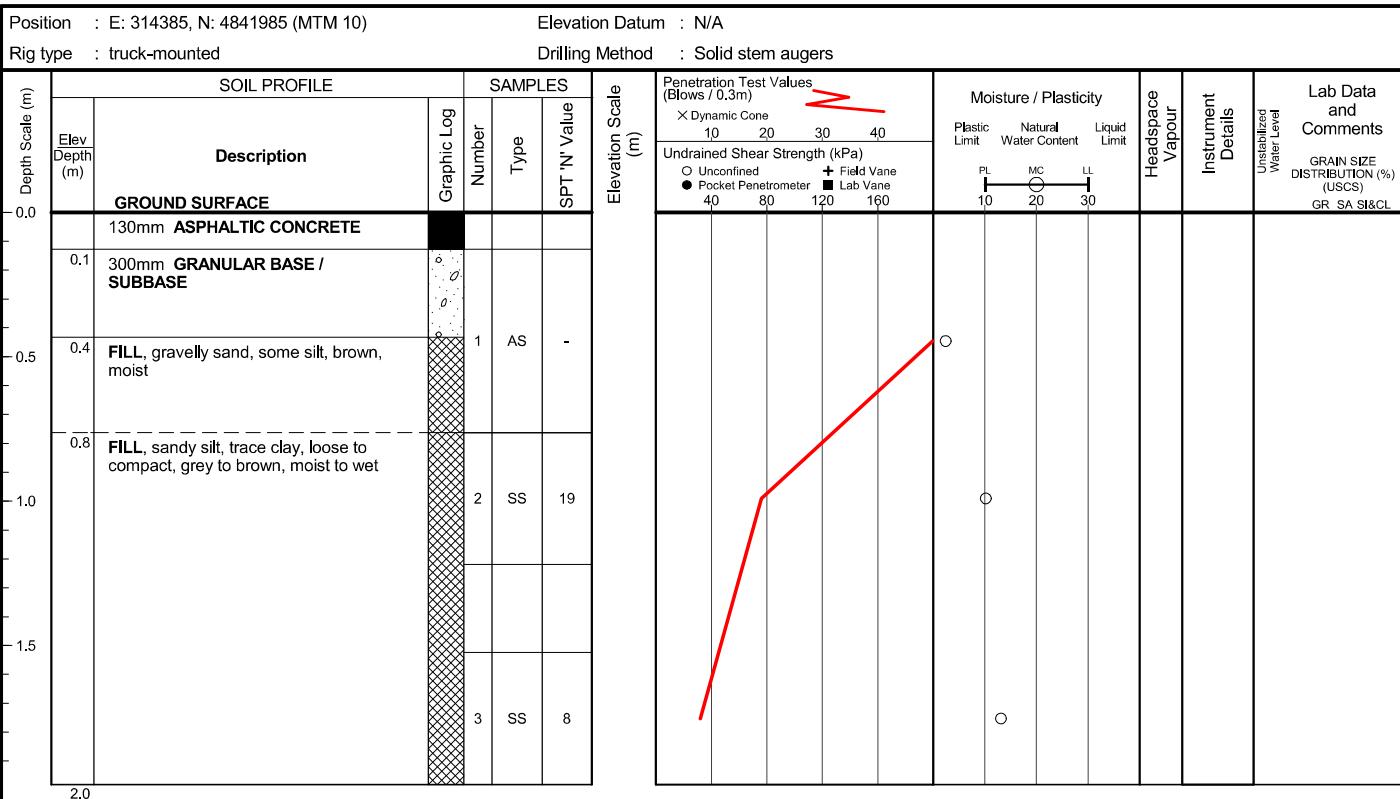
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 11, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

**END OF BOREHOLE**

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314482, N: 4841973 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|---|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | | | Number | Type |
| 0.0 | | GROUND SURFACE | | | |
| 0.0 | 100mm | ASPHALTIC CONCRETE | | | |
| 0.1 | 180mm | GRANULAR BASE / SUBBASE | | | |
| 0.3 | | FILL, silty sand, some gravel, trace clay, loose, brown to grey, dry to moist | | | |
| 0.5 | | | | | |
| 1.0 | | | | | |
| 1.2 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313817, N: 4841926 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|-------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | Number | Penetration Test Values (Blows / 0.3m) |
| | | 200mm ASPHALTIC CONCRETE | | Type | X Dynamic Cone 10 20 30 40 |
| 0.2 | | 280mm GRANULAR BASE / SUBBASE | | SPT N Value | Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160 |
| 0.5 | | FILL, gravelly sand, some silt, brown, dry | | | Plastic Limit 10 20 30 Natural Water Content MC Liquid Limit LL |
| 0.8 | | SILTY SAND, trace gravel, brown, moist | | | Headspace Vapour |
| 1.0 | | | | | Instrument Details |
| 1.5 | | | | | Lab Data and Comments Unstabilized Water Level GRAIN SIZE DISTRIBUTION (%) (USCS) GR SA SI&CL |
| 1.7 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313921, N: 4841954 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|---|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | Number | Type |
| 0.2 | | 230mm ASPHALTIC CONCRETE | | | |
| 0.3 | | 75mm GRANULAR BASE / SUBBASE | | | |
| 0.5 | | FILL, sand, some gravel, trace to some silt, brown, dry | | 1 | AS |
| 1.0 | | | | 2 | AS |
| 1.4 | | | | | |

Penetration Test Values (Blows / 0.3m)
X Dynamic Cone
10 20 30 40

Undrained Shear Strength (kPa)
○ Unconfined + Field Vane
● Pocket Penetrometer ■ Lab Vane
40 80 120 160

| | | | | |
|----|----|----|----|----|
| PL | 10 | 20 | 30 | LL |
| | | MC | | |

Moisture / Plasticity
Plastic Limit Natural Water Content Liquid Limit
Headspace Vapour
Instrument Details
Unstabilized Water Level
Lab Data and Comments
GRAIN SIZE DISTRIBUTION (%) (USCS)
GR SA SI&CL

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314052, N: 4841985 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | | | Number | Type |
| 0.0 | | GROUND SURFACE | | | |
| 0.0 | | 230mm ASPHALTIC CONCRETE | | | |
| 0.2 | | | | | |
| 0.3 | | 80mm GRANULAR BASE / SUBBASE | | | |
| 0.5 | | FILL, gravelly sand, some silt, brown, dry | | 1 AS - | |
| 0.8 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314380, N: 4842172 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| | 150mm | ASPHALTIC CONCRETE | | | | |
| 0.2 | 180mm | GRANULAR BASE / SUBBASE | | | | |
| 0.3 | | FILL, sand, some gravel, trace silt, trace asphalt pieces, brown, dry | | 1 | AS | - |
| 0.8 | | SAND, trace gravel, trace silt, dense to very dense, brown, dry | | 2 | SS | 48 |
| 1.0 | | | | 3 | SS | 56 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314461, N: 4842115 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 175mm ASPHALTIC CONCRETE | Black | | | |
| 0.2 | | 365mm GRANULAR BASE / SUBBASE | ○ ○ ○ ○ | | | |
| 0.5 | 0.5 | FILL, silt and sand, trace gravel, trace clay, loose, dark brown, moist to wet | X | | | |
| 1.0 | | | | 1 | SS | 5 |
| 1.5 | 1.5 | SANDY SILT, trace gravel, trace clay, dense, brown, moist to wet | X | 2 | SS | 32 |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313392, N: 4842002 (MTM 10) | | | Elevation Datum : N/A | | | |
|--|----------------|---|-------------------------------------|--------|---------------------|---|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 50mm ASPHALTIC CONCRETE | | | | |
| 0.0 | | 200mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | FILL, sandy silt, trace gravel, trace clay, trace construction debris, loose, brown, moist to wet | | 1 | AS | - |
| 0.5 | | | | 2 | SS | 7 |
| 1.0 | | | | 3 | SS | 6 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |
| END OF BOREHOLE | | | | | | |
| Borehole was dry and open upon completion of drilling. | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |



Client : Aquafor Beech Ltd.

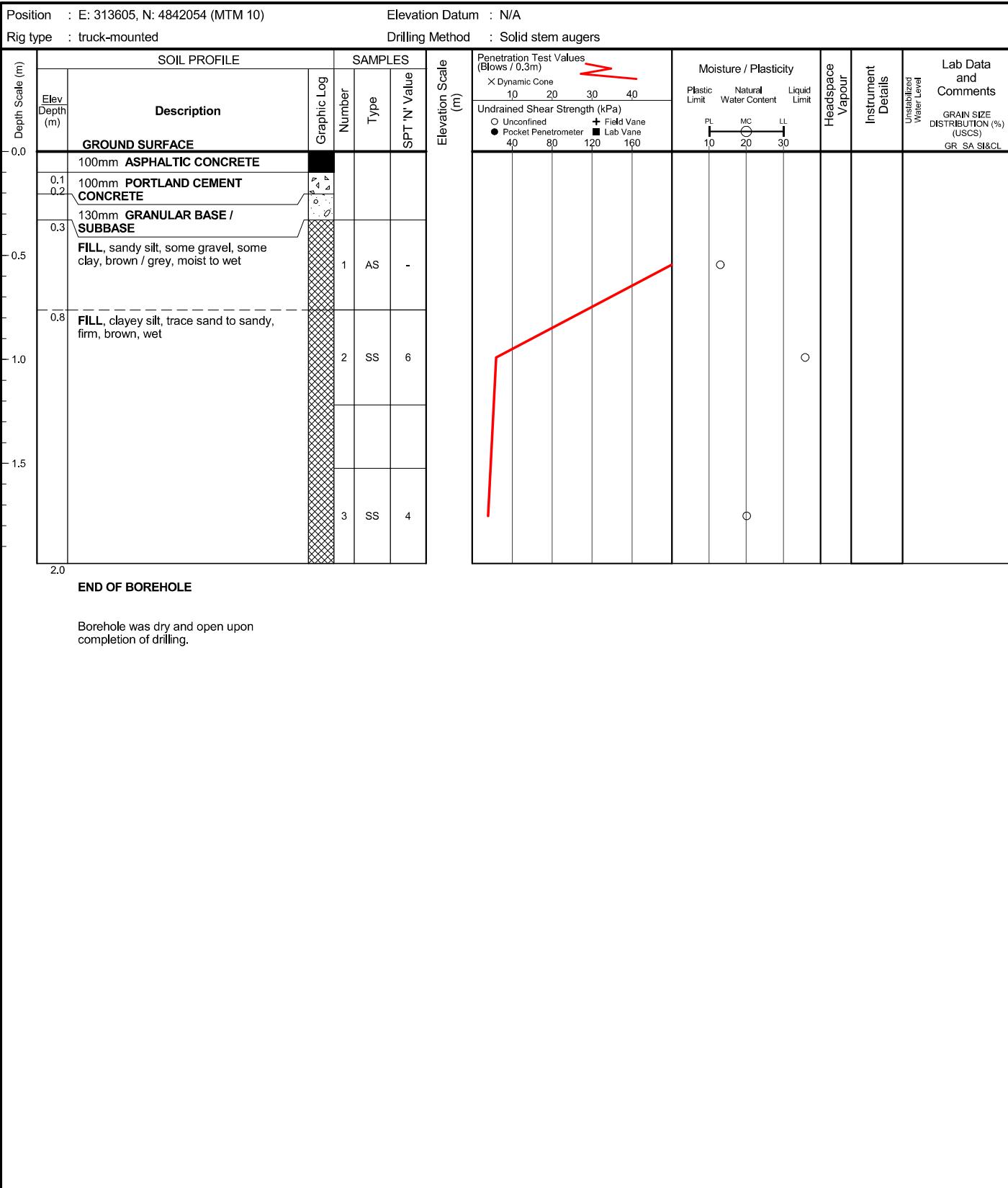
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313716, N: 4842046 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.2 | | 50mm ASPHALTIC CONCRETE | | | | |
| 0.2 | | 110mm PORTLAND CEMENT CONCRETE | | | | |
| 0.4 | | 200mm GRANULAR BASE / SUBBASE | | | | |
| 0.4 | | SANDY SILT, trace to some gravel, trace clay, compact to dense, brown, moist | | | | |
| 1.0 | | | | | | |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313937, N: 4842151 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 75mm ASPHALTIC CONCRETE | | | | |
| 0.0 | | 320mm GRANULAR BASE / SUBBASE | | | | |
| 0.4 | | FILL, sandy silt to silty sand, trace gravel, trace clay, trace organics, loose, dark brown, moist to wet | x | | | |
| 0.5 | | | | | | |
| 1.0 | | | | | | |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314254, N: 4842244 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|---|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 130mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 280mm GRANULAR BASE / SUBBASE | | | | |
| 0.4 | | FILL, sand, trace gravel, trace silt, brown, dry | | 1 | AS | - |
| 0.8 | | SAND, some silt, trace gravel, very loose, brown, moist | | 2 | SS | 3 |
| 1.0 | | | | 3 | SS | 1 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313313, N: 4842069 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.2 | | 75mm ASPHALTIC CONCRETE | | | | |
| 0.2 | | 75mm GRANULAR BASE / SUBBASE | | | | |
| 0.3 | | 150mm PORTLAND CEMENT CONCRETE | | | | |
| 0.5 | | FILL, clayey silt, some sand, trace gravel, firm, brown, moist | | 1 | AS | - |
| 1.0 | | | | 2 | SS | 5 |
| 1.5 | 1.5 | CLAYEY SILT, some sand, trace gravel, very stiff, brown, moist | | 3 | SS | 24 |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 11, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313388, N: 4842088 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | | | Number | Type |
| 0.0 | | GROUND SURFACE | | | |
| 0.0 | 0.1 | 100mm ASPHALTIC CONCRETE | | | |
| 0.1 | 0.2 | 200mm GRANULAR BASE / SUBBASE | | | |
| 0.3 | 0.4 | FILL, sandy gravel, trace silt, greyish brown, dry | | | |
| 0.8 | 0.9 | FILL, clayey silt, trace sand to sandy, trace gravel, soft to firm, brown, moist | | | |
| 1.0 | 1.1 | | | | |
| 1.5 | 1.6 | | | | |
| 2.0 | 2.1 | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 12, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313500, N: 4842132 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|---|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 100mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 180mm GRANULAR BASE / SUBBASE | | | | |
| 0.3 | | FILL, gravelly sand, trace silt, trace clay, brown, moist to wet | | | | |
| 0.8 | | FILL, clayey silt, some sand to sandy, trace gravel, soft to firm, dark brown, moist | | | | |
| 1.0 | | | | 1 | AS | - |
| 1.0 | | | | 2 | SS | 5 |
| 1.5 | | | | 3 | SS | 4 |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313768, N: 4842185 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | | 80mm ASPHALTIC CONCRETE | | | | |
| 0.0 | | FILL, sandy silt, some clay, trace gravel, brown, dry | | | | |
| 0.5 | | | | 1 | SS | |
| 0.7 | | FILL, clayey silt, trace sand to sandy, trace gravel, firm, brown, moist | | | | |
| 1.0 | | | | 2 | SS | 7 |
| 1.5 | | ...trace organics, dark brown, very stiff | | | | |
| 2.0 | | | | 3 | SS | 16 |

Penetration Test Values
(Blows / 0.3m)

| | | | |
|----|---------------|----|----|
| X | Dynamite Cone | | |
| 10 | 20 | 30 | 40 |

Undrained Shear Strength (kPa)

| | | | |
|----|---------------------|-----|-----|
| O | Unconfined | | |
| ● | Pocket Penetrometer | | |
| + | Field Vane | | |
| ■ | Lab Vane | | |
| 40 | 80 | 120 | 160 |

Moisture / Plasticity

| | | |
|---------------|-----------------------|--------------|
| Plastic Limit | Natural Water Content | Liquid Limit |
| 10 | 20 | 30 |

Headspace Vapour

Instrument Details

Unstabilized
Water Level

GRAIN SIZE
DISTRIBUTION (%)
(USCS)
GR SA SI&CL

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313956, N: 4842253 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 70mm ASPHALTIC CONCRETE | | | | |
| 0.0 | | 165mm GRANULAR BASE / SUBBASE | | | | |
| 0.2 | | SAND, some silt, trace gravel, compact to dense, brown, dry | | | | |
| 0.5 | | | | | | |
| 1.0 | | | | | | |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 12, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314258, N: 4842343 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|---|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | | 100mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 300mm GRANULAR BASE / SUBBASE | | | | |
| 0.4 | | FILL, gravelly sand, some silt, brown, dry | | 1 | AS | - |
| 0.7 | | FILL, silty sand, trace gravel, loose, brown, dry | | | | |
| 1.0 | | | | 2 | SS | 5 |
| 1.5 | | | | 3 | SS | 7 |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

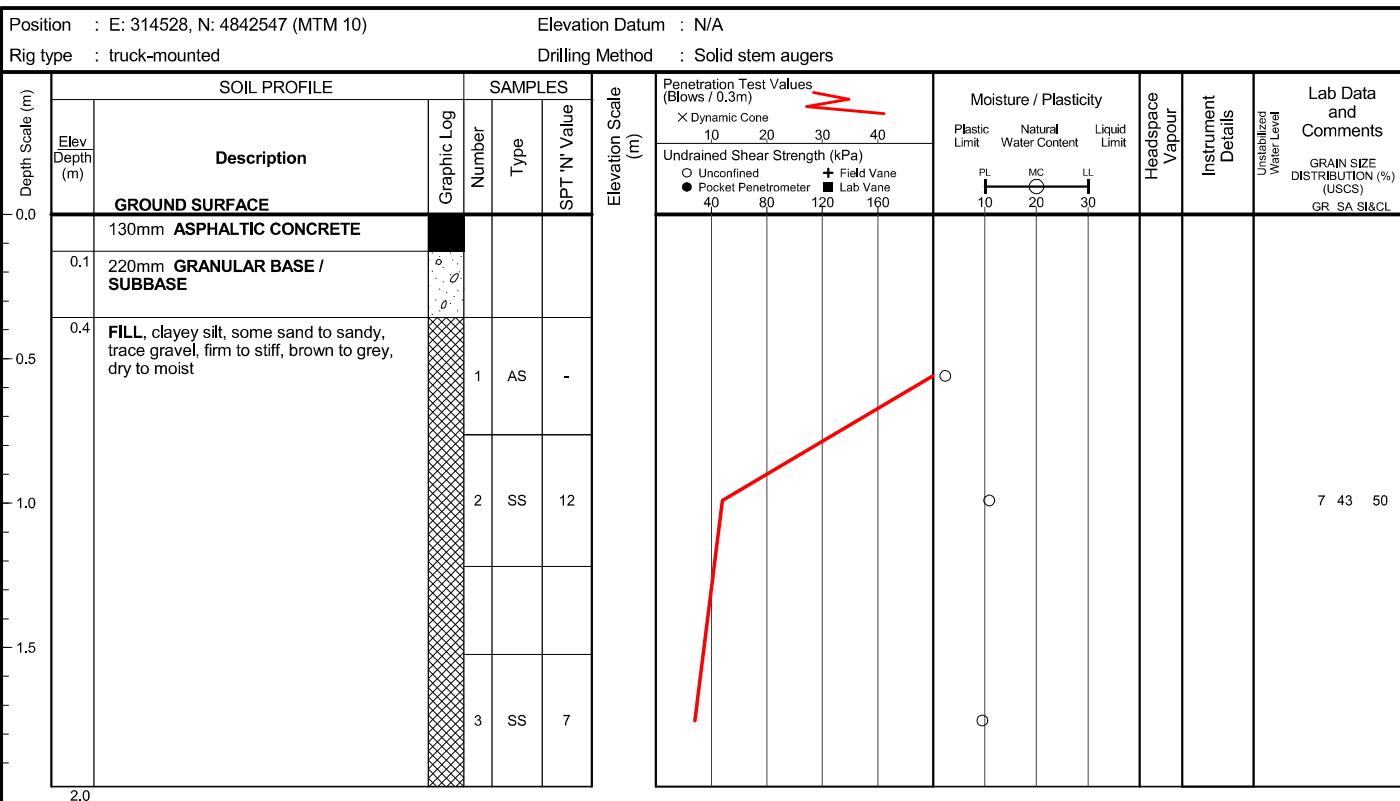
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

**END OF BOREHOLE**

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

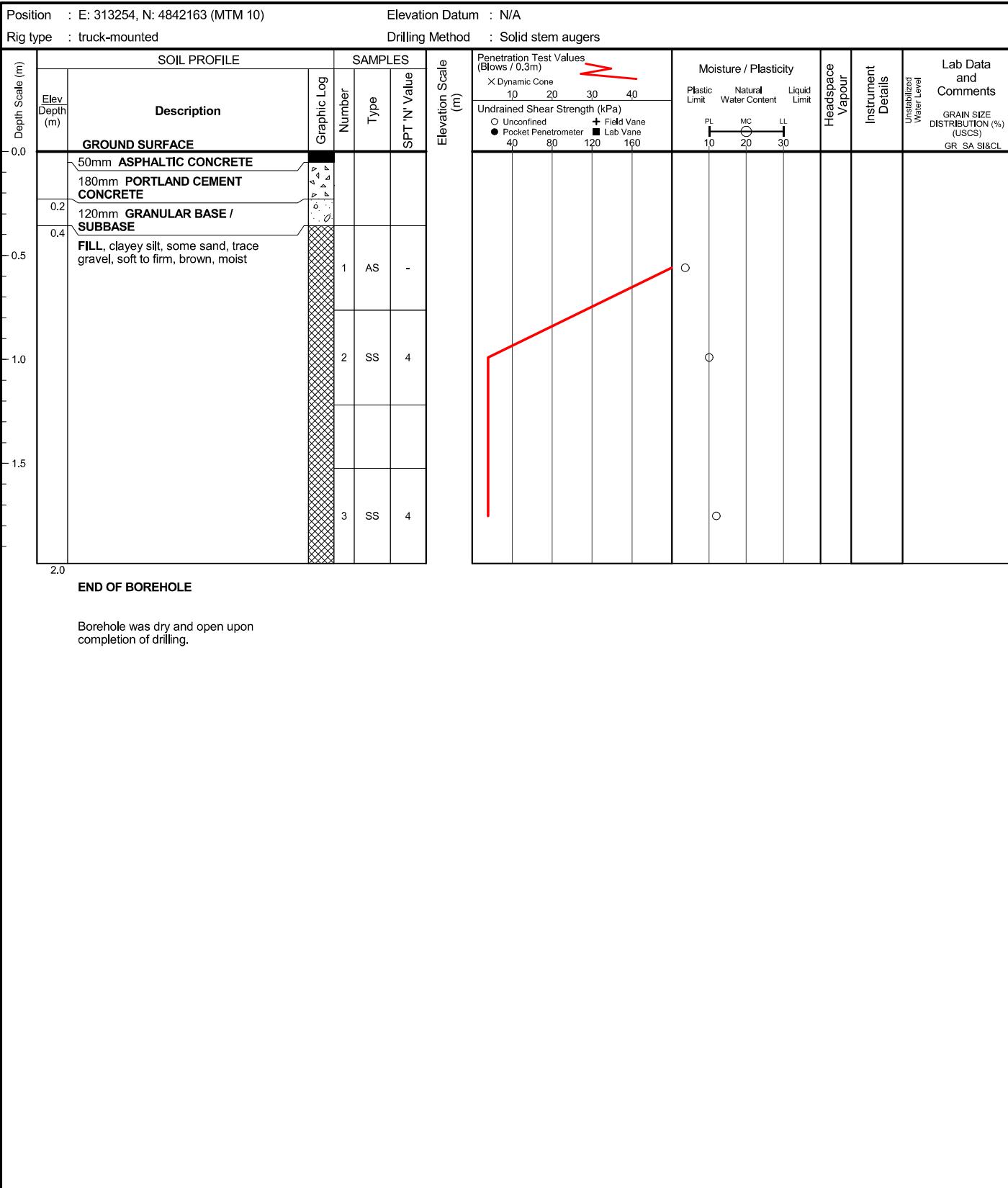
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313626, N: 4842274 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | | 115mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 265mm GRANULAR BASE / SUBBASE | | | | |
| 0.4 | | SILT, trace gravel, trace clay, brown, wet | | 1 | AS | - |
| 0.7 | | CLAYEY SILT, trace gravel, trace sand, very stiff, brown, moist | | 2 | SS | 22 |
| 1.0 | | | | 3 | SS | 28 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313754, N: 4842325 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | Number | Type |
| 0.2 | | 165mm ASPHALTIC CONCRETE | | | |
| 0.5 | | 470mm GRANULAR BASE / SUBBASE | | | |
| 0.6 | | SILTY SAND to SANDY SILT, trace gravel, trace clay, loose to compact, brown, moist | | | |
| 1.0 | | | | | |
| 1.5 | | | | | |
| 2.0 | | | | | |

Penetration Test Values (Blows / 0.3m)

| | | | | |
|-----------------------|----|----|-----|-----|
| X Dynamic Cone | 10 | 20 | 30 | 40 |
| ○ Unconfined | 40 | 80 | 120 | 160 |
| ● Pocket Penetrometer | | | | |
| ■ Lab Vane | | | | |

Undrained Shear Strength (kPa)

| | | | | |
|--------------|----|----|-----|-----|
| ○ Unconfined | 40 | 80 | 120 | 160 |
| ● Field Vane | | | | |
| ■ Lab Vane | | | | |

PL 10 MC 20 LL 30

Moisture / Plasticity

Plastic Limit Natural Water Content Liquid Limit

Headspace Vapour

Instrument Details

Unstabilized Water Level

GRAIN SIZE DISTRIBUTION (%) (USCS)

GR SA SI&CL

8 48 44

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313998, N: 4842403 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|---|-------------------------------------|---------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | | Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 |
| 0.2 | | 40mm ASPHALTIC CONCRETE | | | Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160 |
| 0.5 | | 165mm GRANULAR BASE / SUBBASE | | | Plastic Limit 10 20 30 Natural Water Content MC Liquid Limit LL |
| 0.7 | | FILL, gravelly sand, trace silt, brown, dry | | | Headspace Vapour |
| 1.0 | | SANDY SILT, some clay, trace gravel, dense, brown, moist to wet | | 2 SS 47 | Instrument Details |
| 1.2 | | | | | Unstabilized Water Level GR SA SI&CL |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313272, N: 4842296 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | | | Number | Type |
| 0.0 | | GROUND SURFACE | | | |
| | | 80mm ASPHALTIC CONCRETE | | | |
| | | 180mm PORTLAND CEMENT CONCRETE | | | |
| 0.3 | | 360mm GRANULAR BASE / SUBBASE | | 1 AS - | |
| 0.5 | | | | | |
| 0.6 | | FILL, clayey silt, some sand, trace gravel, trace organics, very stiff, brown to dark brown, moist | | 2 SS 17 | |
| 1.0 | | | | | |
| 1.5 | | | | | |
| 2.0 | | | | 3 SS 20 | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313552, N: 4842381 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|--------------------------------|---|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| | 90mm ASPHALTIC CONCRETE | | | | | |
| | 140mm PORTLAND CEMENT CONCRETE | | | | | |
| 0.2 | | 180mm GRANULAR BASE / SUBBASE | | | | |
| 0.4 | | FILL, sandy silt, trace gravel, trace clay, brown, moist | | 1 | AS | - |
| 0.8 | | SILTY SAND, trace gravel, trace clay, dense to very dense, brown, moist | | 2 | SS | 44 |
| 1.0 | | | | 3 | SS | 74 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313734, N: 4842423 (MTM 10) | | | Elevation Datum : N/A | | |
|---|--|-----------------------|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | Number | Type |
| 0.1 | 110mm ASPHALTIC CONCRETE | | | | |
| 0.1 | 150mm GRANULAR BASE / SUBBASE | | | | |
| 0.3 | FILL, clayey silt, some sand, trace gravel, firm, brown, moist | | | | |
| 0.5 | | | | | |
| 1.0 | | | | | |
| 1.2 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314001, N: 4842503 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | Number | Type |
| 0.2 | | 200mm ASPHALTIC CONCRETE | | | |
| 0.5 | | | | | |
| 1.0 | | | | | |
| 1.4 | | FILL, clayey silt, some sand, trace gravel, firm, brown, moist | | | |
| 1.5 | | | | | |
| 2.0 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 13, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314160, N: 4842563 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 150mm ASPHALTIC CONCRETE | | | | |
| 0.2 | | 150mm GRANULAR BASE / SUBBASE | | | | |
| 0.3 | | FILL, clayey silt, some sand, trace gravel, trace organics, black, moist | | 1 | AS | - |
| 0.7 | | SANDY SILT, some clay, trace gravel, compact to dense, brown, moist to wet | | 2 | SS | 12 |
| 1.0 | | | | 3 | SS | 36 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313455, N: 4842463 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | Number | Type |
| 0.1 | 100mm | ASPHALTIC CONCRETE | | | |
| 0.1 | 180mm | PORLTAND CEMENT CONCRETE | | | |
| 0.3 | | SILTY CLAY, sandy, brown, moist | | 1 | AS - |
| 0.8 | | SANDY SILT, trace gravel, compact, brown, moist to wet | | 2 | SS 28 |
| 1.2 | | | | | |

Penetration Test Values
(Blows / 0.3m)

X Dynamic Cone

10 20 30 40

Undrained Shear Strength (kPa)

○ Unconfined + Field Vane

● Pocket Penetrometer ■ Lab Vane

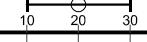
40 80 120 160

Moisture / Plasticity

Plastic Limit

Natural Water Content

Liquid Limit



10 20 30

Headspace Vapour

Instrument

Lab Data and Comments

Unstabilized Water Level

GRAIN SIZE DISTRIBUTION (%) (USCS)

GR SA SI&CL

0 36 64

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313598, N: 4842509 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 100mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 150mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | FILL, sandy silt, some clay, trace gravel, brown, wet | | 1 | AS | - |
| 0.8 | | SANDY SILT, trace gravel, trace clay, compact, brown, wet | | 2 | SS | 15 |
| 1.0 | | | | 3 | SS | 20 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 14, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313839, N: 4842587 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| | | | | Number | Type |
| 0.0 | | GROUND SURFACE | | | |
| | | 90mm ASPHALTIC CONCRETE | | | |
| 0.2 | | 60mm GRANULAR BASE / SUBBASE | | | |
| | | FILL, gravelly sand, trace silt, brown, dry | | | |
| 0.5 | | | | | |
| 0.8 | | SILTY CLAY, trace gravel, trace sand, very stiff, brown, moist | | | |
| 1.0 | | | | | |
| 1.2 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313189, N: 4842474 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | 100mm | ASPHALTIC CONCRETE | | | | |
| 0.1 | 150mm | PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | FILL, sandy silt, trace gravel, brown, moist to wet | | 1 | AS | - |
| 0.8 | | CLAYEY SILT, some sand, trace gravel, very stiff to hard, brown, moist | | 2 | SS | 46 |
| 1.0 | | | | 3 | SS | 27 |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 31338, N: 4842548 (MTM 10) | | | Elevation Datum : N/A | | | |
|--|----------------|--|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | | 100mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 150mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | FILL, silty clay, trace gravel, trace sand, soft to firm, grey to brown, moist | | | | |
| 0.5 | | | | | | |
| 1.0 | | | | | | |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313654, N: 4842637 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | | 100mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 200mm GRANULAR BASE / SUBBASE | | | | |
| 0.3 | | FILL, sand, some silt, trace gravel, trace clay, brown, moist | | 1 | AS | - |
| 0.8 | | FILL, clayey silt, trace gravel, trace sand, stiff, brown, moist | | 2 | SS | 14 |
| 1.4 | | CLAYEY SILT, some sand, trace gravel, hard, brown, moist | | 3 | SS | 49 |

Penetration Test Values
(Blows / 0.3m)

X Dynamic Cone

| | | | |
|----|----|----|----|
| 10 | 20 | 30 | 40 |
|----|----|----|----|

Undrained Shear Strength (kPa)

| | | | |
|----|----|-----|-----|
| 40 | 80 | 120 | 160 |
|----|----|-----|-----|

○ Unconfined + Field Vane
● Pocket Penetrometer ■ Lab Vane

Moisture / Plasticity

| | | |
|---------------|-----------------------|--------------|
| Plastic Limit | Natural Water Content | Liquid Limit |
|---------------|-----------------------|--------------|

| | | |
|----|----|----|
| 10 | 20 | 30 |
|----|----|----|

| | | |
|----|----|----|
| PL | MC | LL |
|----|----|----|

Headspace
Vapour

Instrument

Details

Unstabilized
Water Level

GRAIN SIZE
DISTRIBUTION (%)
(USCS)
GR SA SI&CL

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313143, N: 4842600 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | | |
| 0.0 | 0.1 | 100mm ASPHALTIC CONCRETE | | | |
| 0.1 | 0.1 | 150mm PORTLAND CEMENT CONCRETE | | | |
| 0.3 | 0.3 | SILTY CLAY, trace to some sand, trace gravel, very stiff, brown, moist | | | |
| 0.5 | | | | | |
| 1.0 | | | | | |
| 1.5 | | | | | |
| 2.0 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313312, N: 4842660 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | | |
| 0.1 | | 130mm ASPHALTIC CONCRETE | | | |
| 0.3 | | 150mm PORTLAND CEMENT CONCRETE | | | |
| 0.5 | | FILL, clayey silt, trace to some sand, trace gravel, trace organics, firm, dark brown, moist | | | |
| 1.0 | | | | | |
| 1.2 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313450, N: 4842688 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|---|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | | |
| 0.1 | 130mm | ASPHALTIC CONCRETE | | | |
| 0.1 | 150mm | PORTLAND CEMENT CONCRETE | | | |
| 0.3 | | FILL, clayey silt, trace gravel, trace sand, trace organics, brown, moist | | | |
| 0.5 | | | | | |
| 1.0 | | | | | |
| 1.4 | | SANDY SILT, trace gravel, trace clay, loose, brown, dry | | | |
| 2.0 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

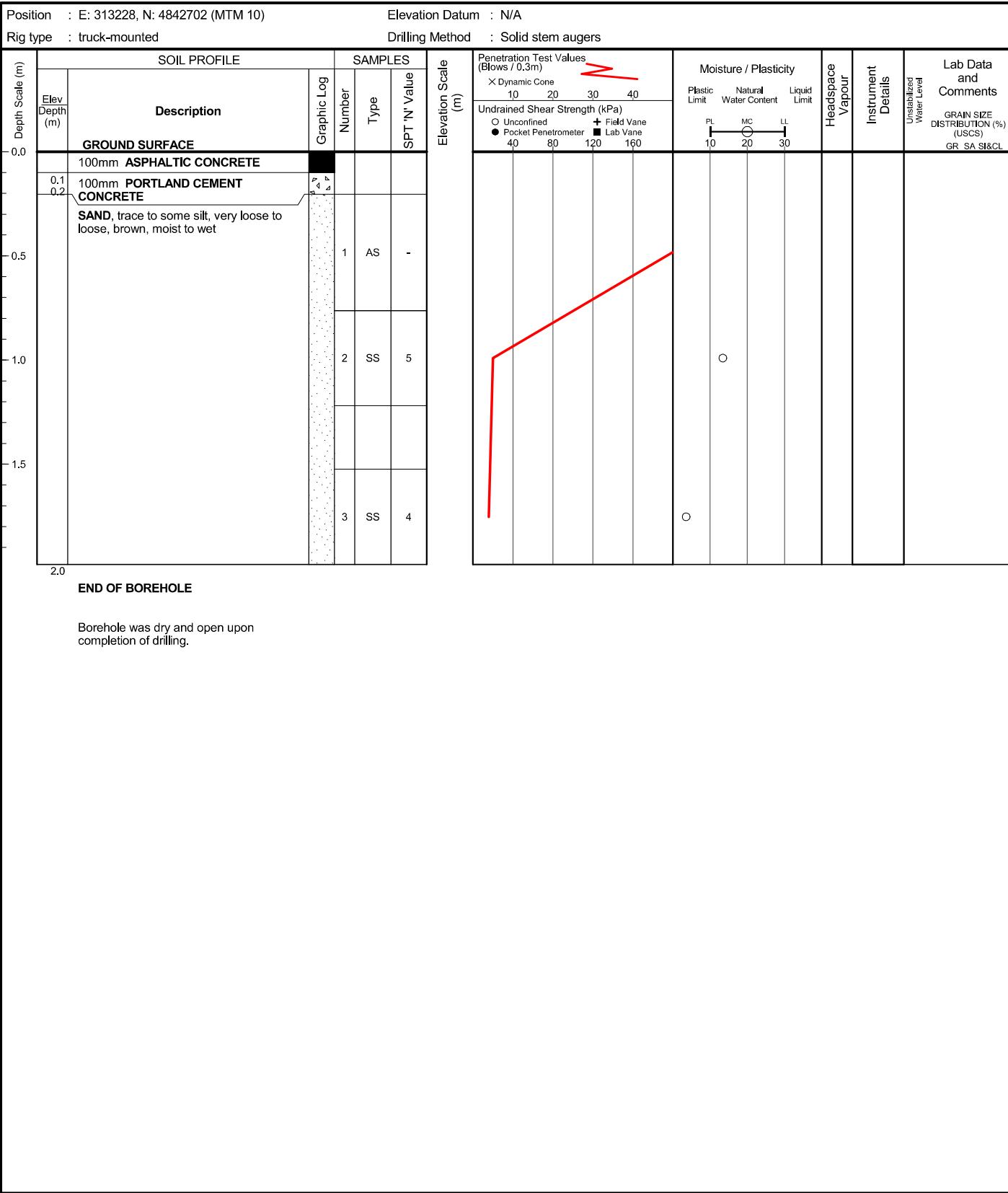
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313266, N: 4842755 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| | | 75mm ASPHALTIC CONCRETE | | | | |
| | | 150mm PORTLAND CEMENT CONCRETE | | | | |
| | | 230mm GRANULAR BASE / SUBBASE | | | | |
| 0.2 | | | | | | |
| 0.5 | | FILL, clayey silt, some sand, trace gravel, brown, moist | | 1 | AS - | |
| | | | | 2 | AS - | |
| 1.0 | | | | | | |
| 1.4 | | SANDY SILT, dense, brown, wet | | 3 | SS 31 | |
| 1.5 | | | | | | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started :

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313368, N: 4842790 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|---|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | SPT N Value | |
| 0.0 | | 100mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 200mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | 180mm GRANULAR BASE / SUBBASE | | | | |
| 0.5 | | FILL, clayey silt, trace to some sand, trace gravel, brown, moist | | 1 | AS | - |
| | | | | 2 | AS | - |
| | | | | 3 | AS | - |
| 1.5 | | | | | | |

Penetration Test Values (Blows / 0.3m)
X Dynamic Cone
10 20 30 40

Undrained Shear Strength (kPa)
○ Unconfined + Field Vane
● Pocket Penetrometer ■ Lab Vane
40 80 120 160

PL MC LL

10 20 30

Moisture / Plasticity

Plastic Limit Natural Water Content Liquid Limit

Headspace Vapour

Instrument Details

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (USCS)
GR SA SI&CL

Unstabilized Water Level

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Terraprobe

BOREHOLE LOG 45

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313604, N: 4842861 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| | | 60mm ASPHALTIC CONCRETE 280mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | 380mm GRANULAR BASE / SUBBASE | | | | |
| 0.8 | | FILL, clayey silt, some sand to sandy, trace gravel, very stiff, brown, moist | | 1 | SS 19 | |
| 1.4 | | SAND, trace silt, very dense, brown, dry | | 2 | SS 74 | |
| 2.0 | | | | | | |

Penetration Test Values (Blows / 0.3m)
X Dynamic Cone

10 20 30 40

Undrained Shear Strength (kPa)
○ Unconfined + Field Vane
● Pocket Penetrometer ■ Lab Vane

40 80 120 160

Moisture / Plasticity

Plastic Limit

Natural Water Content

Liquid Limit

PL MC LL

Headspace

Vapour

Instrument

Details

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (USCS)
GR SA SI&CL

1 35 64

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

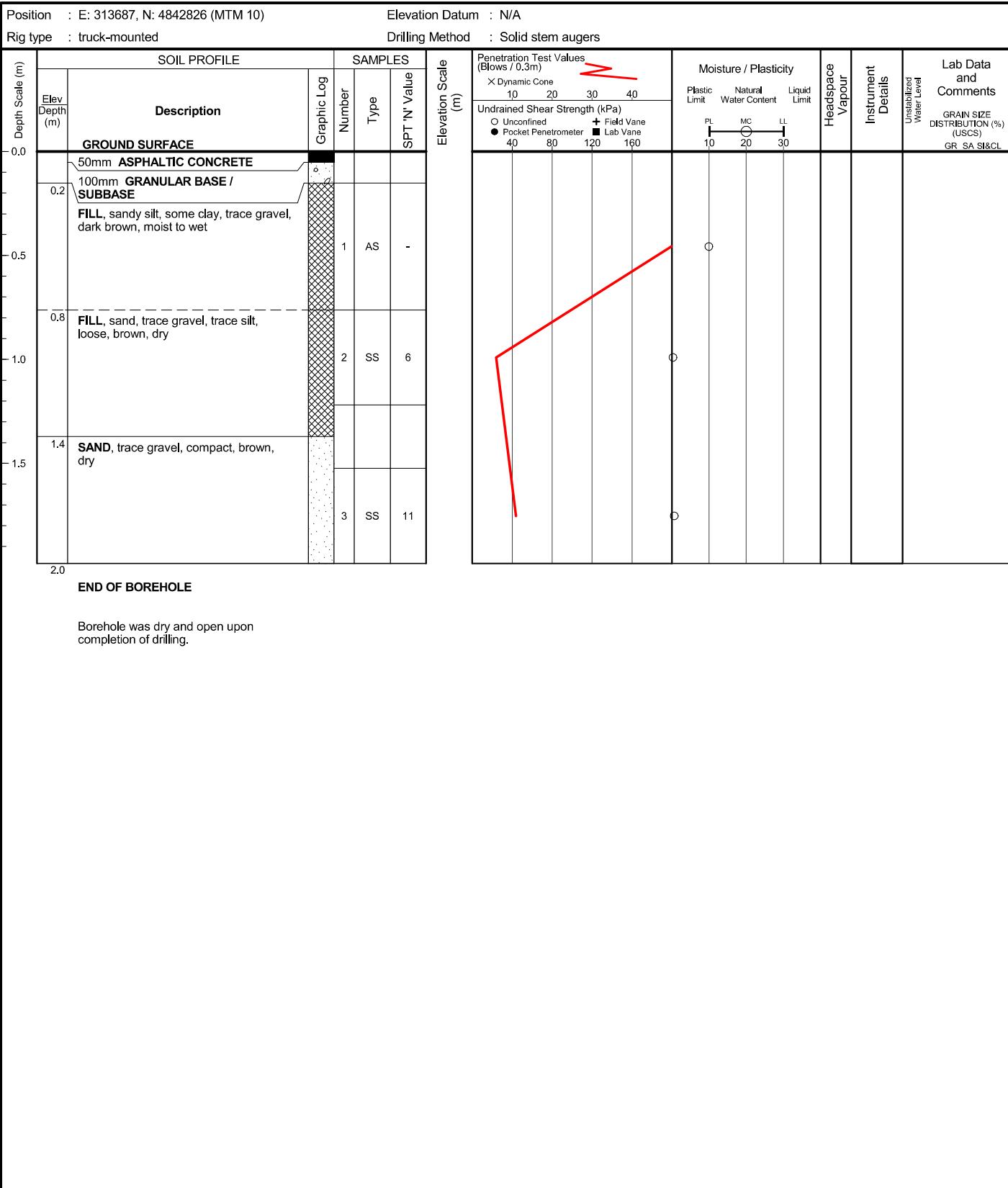
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG 47

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313751, N: 4842914 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| | | 65mm ASPHALTIC CONCRETE | | | | |
| | | 275mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | 410mm GRANULAR BASE / SUBBASE | | | | |
| 0.8 | | FILL, silty sand, trace gravel, trace clay, compact, brown, dry | | 1 | SS 30 | |
| 1.4 | | FILL, gravelly sand, trace silt, compact, brown, dry | | 2 | SS 13 | |
| 2.0 | | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Terraprobe

BOREHOLE LOG 48

Client : Aquafor Beech Ltd.

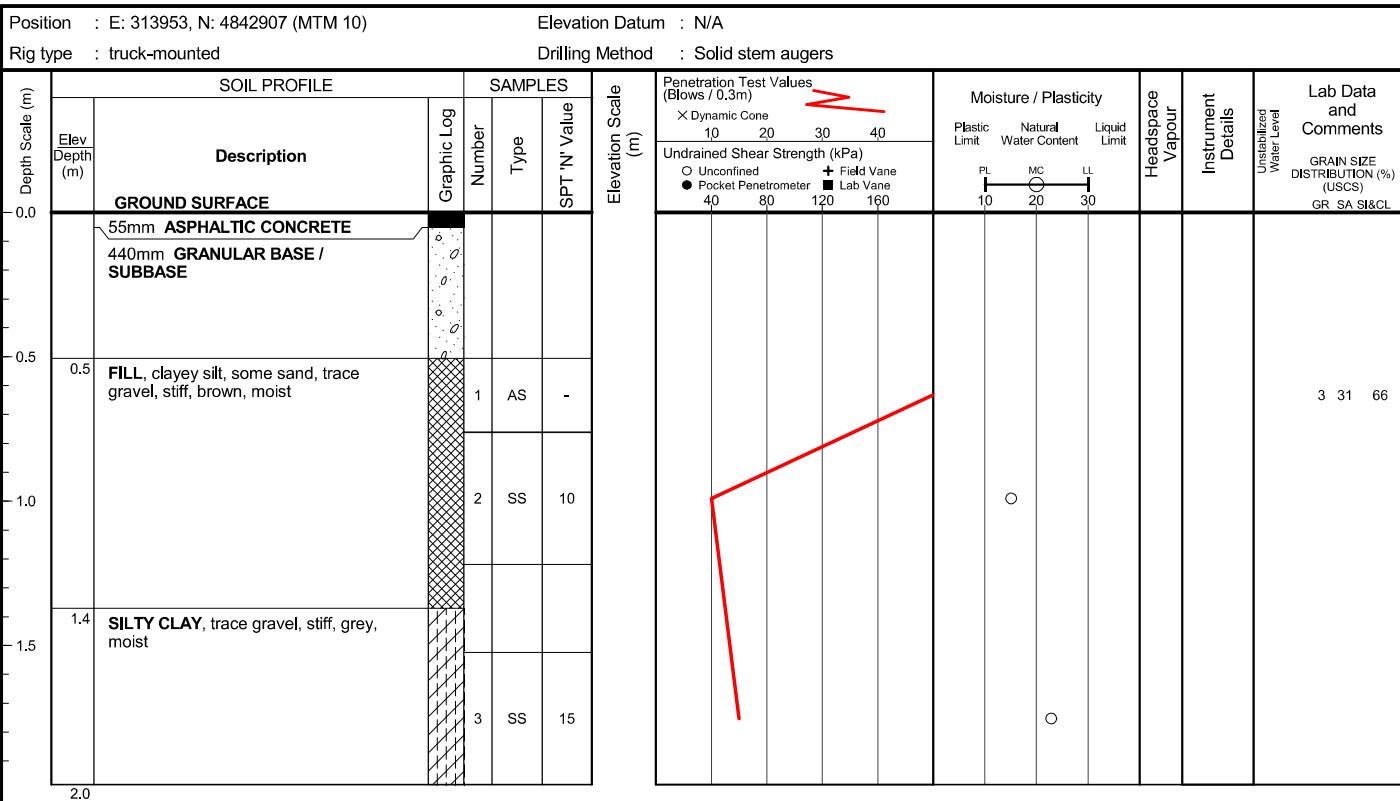
Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : March 1, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1



Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313618, N: 4843009 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|---|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 130mm ASPHALTIC CONCRETE | | | | |
| 0.1 | | 150mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | FILL, sandy silt, trace gravel, brown, wet | | 1 | AS | - |
| 0.8 | | SANDY SILT, trace gravel, trace clay, compact, brown, moist | | 2 | SS | 21 |
| 1.4 | | CLAYEY SILT, some sand, trace gravel, hard, brown, moist | | 3 | SS | 40 |

Penetration Test Values
(Blows / 0.3m)

X Dynamic Cone
10 20 30 40

Undrained Shear Strength (kPa)

○ Unconfined + Field Vane

● Pocket Penetrometer ■ Lab Vane

40 80 120 160

Moisture / Plasticity

Plastic Limit

Natural Water Content

Liquid Limit

PL MC LL

10 20 30

Headspace Vapour

Instrument Details

Unstabilized Water Level

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (USCS)

GR SA SI&CL

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313768, N: 4843103 (MTM 10) | | | Elevation Datum : N/A | | | |
|--|----------------|---|-------------------------------------|--------|---------------------|----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 50mm ASPHALTIC CONCRETE | | | | |
| 0.2 | | 150mm GRANULAR BASE / SUBBASE | | | | |
| 0.2 | | FILL, clayey silt, trace gravel, brown, moist | | | | |
| 0.5 | | | | | | |
| 0.8 | | FILL, silty sand, trace gravel, trace clay, trace rootlets, compact, brown, wet | | 1 | AS | - |
| 1.0 | | | | 2 | SS | 12 |
| 1.4 | | SILTY SAND, dense, brown, dry | | 3 | SS | 42 |
| 2.0 | | | | | | |
| END OF BOREHOLE | | | | | | |
| Borehole was dry and open upon completion of drilling. | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313597, N: 4843088 (MTM 10) | | | Elevation Datum : N/A | | | |
|---|----------------|--|-------------------------------------|--------|---------------------|------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 0.0 | | GROUND SURFACE | | | | |
| 0.0 | | 150mm ASPHALTIC CONCRETE | | | | |
| 0.2 | | 150mm PORTLAND CEMENT CONCRETE | | | | |
| 0.3 | | FILL, clayey silt, some sand, trace gravel, dark brown, moist | | 1 | AS | - |
| 0.8 | | SILTY SAND, some clay, trace gravel, dense to very dense, brown, moist | | 2 | SS | 40 |
| 1.7 | | | | 3 | SS | 50 / 150mm |

Penetration Test Values (Blows / 0.3m)
X Dynamic Cone
10 20 30 40

Undrained Shear Strength (kPa)
○ Unconfined + Field Vane
● Pocket Penetrometer ■ Lab Vane
40 80 120 160

Moisture / Plasticity
Plastic Limit Natural Water Content Liquid Limit
10 20 30

Headspace Vapour
O MC LL

Instrument Details
Unstabilized Water Level
GR SA SI&CL

Lab Data and Comments
GRAIN SIZE DISTRIBUTION (%) (USCS)
5 55 40

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Municipal Class EA Study for Lawrence Park Neighbourhood

Date started : February 19, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313503, N: 4843191 (MTM 10) | | | Elevation Datum : N/A | | |
|---|----------------|--|-------------------------------------|---------|---------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | |
| SOIL PROFILE | | | | | |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Samples | Elevation Scale (m) |
| 0.0 | | GROUND SURFACE | | | |
| 0.1 | 130mm | ASPHALTIC CONCRETE | | | |
| 0.1 | 180mm | PORTLAND CEMENT CONCRETE | | | |
| 0.3 | | FILL, clayey silt, some sand, trace gravel, dark brown, moist | | | |
| 0.8 | | CLAYEY SILT, some sand, trace gravel, very stiff to hard, brown, moist | | | |
| 1.0 | | | | | |
| 1.5 | | | | | |
| 2.0 | | | | | |

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

APPENDIX D

Sewer Borehole Logs



Terraprobe Inc



Terraprobe

BOREHOLE LOG S1

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 314161, N: 4842125 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments |
|---|-----------------------|---|-----------------|---------------------|--|-----------------------|-----------------------|--------------------|--------------------------|
| | Elev Depth (m) | Description | Graphic Log | | | | | | |
| | | | Number | Type | SPT N' Value | Plastic Limit | Natural Water Content | Liquid Limit | Unstabilized Water Level |
| 0 | GROUND SURFACE | | | | X Dynamic Cone 10 20 30 40 | | | | |
| 159.0 | 158.8 | 50mm ASPHALTIC CONCRETE | | | ○ Unconfined ● Pocket Penetrometer 40 80 120 160 | | | | |
| 0.2 | 157.8 | 130mm AGGREGATE | | | + Field Vane ■ Lab Vane | | | | |
| | 1 | SANDY SILT to SILT AND SAND, trace clay, trace gravel, compact, brown, moist (GLACIAL TILL) | | SS | 10 | PL 10 | MC 20 | LL 30 | |
| | 2 | | | SS | 22 | | | | |
| | 3 | | | SS | 87 | | | | |
| | 4 | | | SS | 86 | | | | |
| | 5 | | | SS | 80 | | | | |
| | 6 | | | SS | 50 / 150mm | | | | |
| | 7 | | | SS | 50 / 125mm | | | | |
| 152.6 | 6.4 | ...silt, some sand | | | | | | | |
| | | ...medium grained | | | | | | | |
| | | END OF BOREHOLE | | | | | | | |
| WATER LEVEL READINGS | | | | | | | | | |
| | | Date | Water Depth (m) | Elevation (m) | | | | | |
| | | Jun 4, 2013 | 6.0 | 153.0 | | | | | |
| | | Jul 12, 2013 | 6.0 | 153.0 | | | | | |
| GRAIN SIZE DISTRIBUTION (%) (MTI) GR SA SI CL 1 81 15 3 | | | | | | | | | |



Client : Aquafor Beech Ltd.

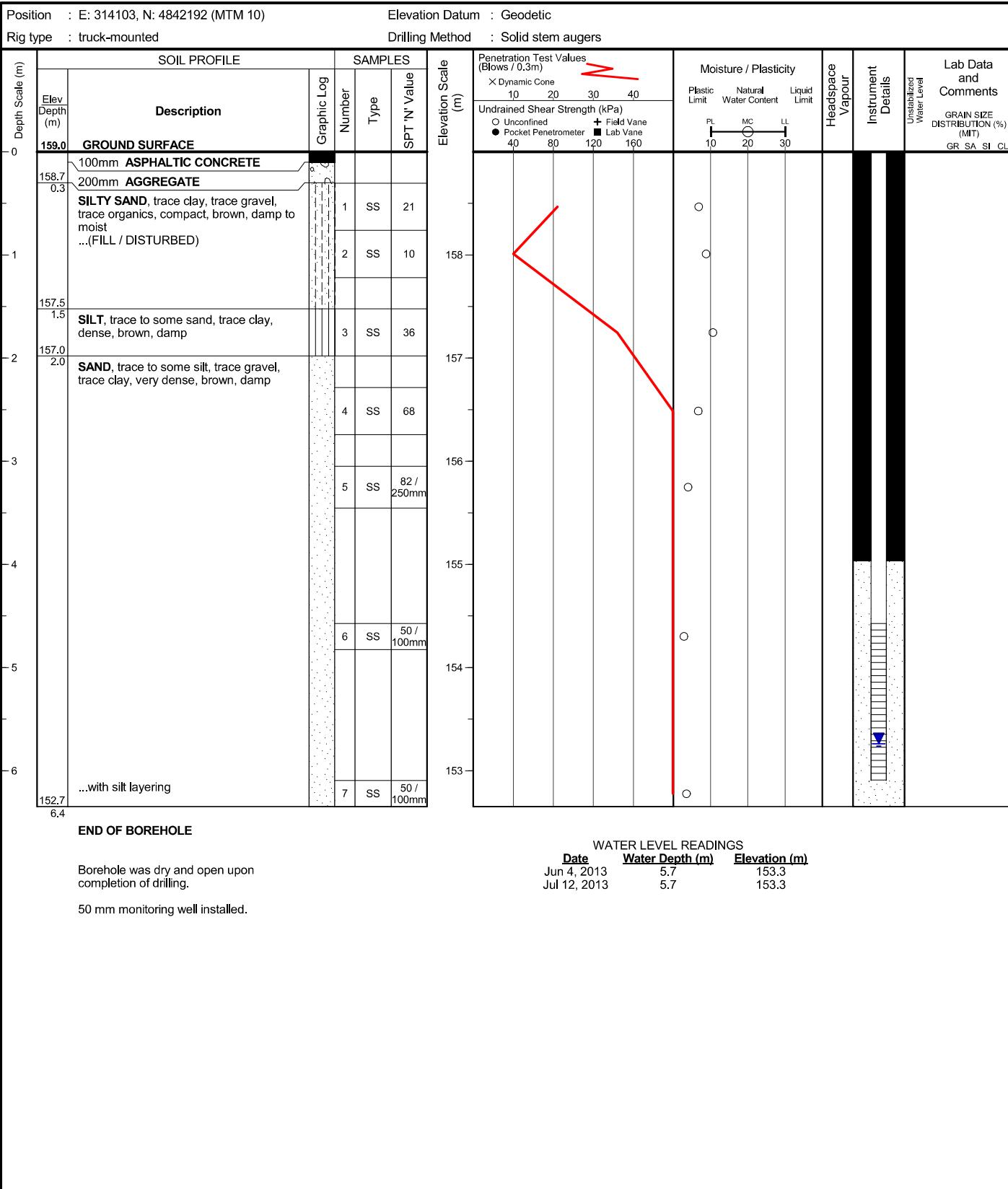
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S3

Client : Aquafor Beech Ltd.

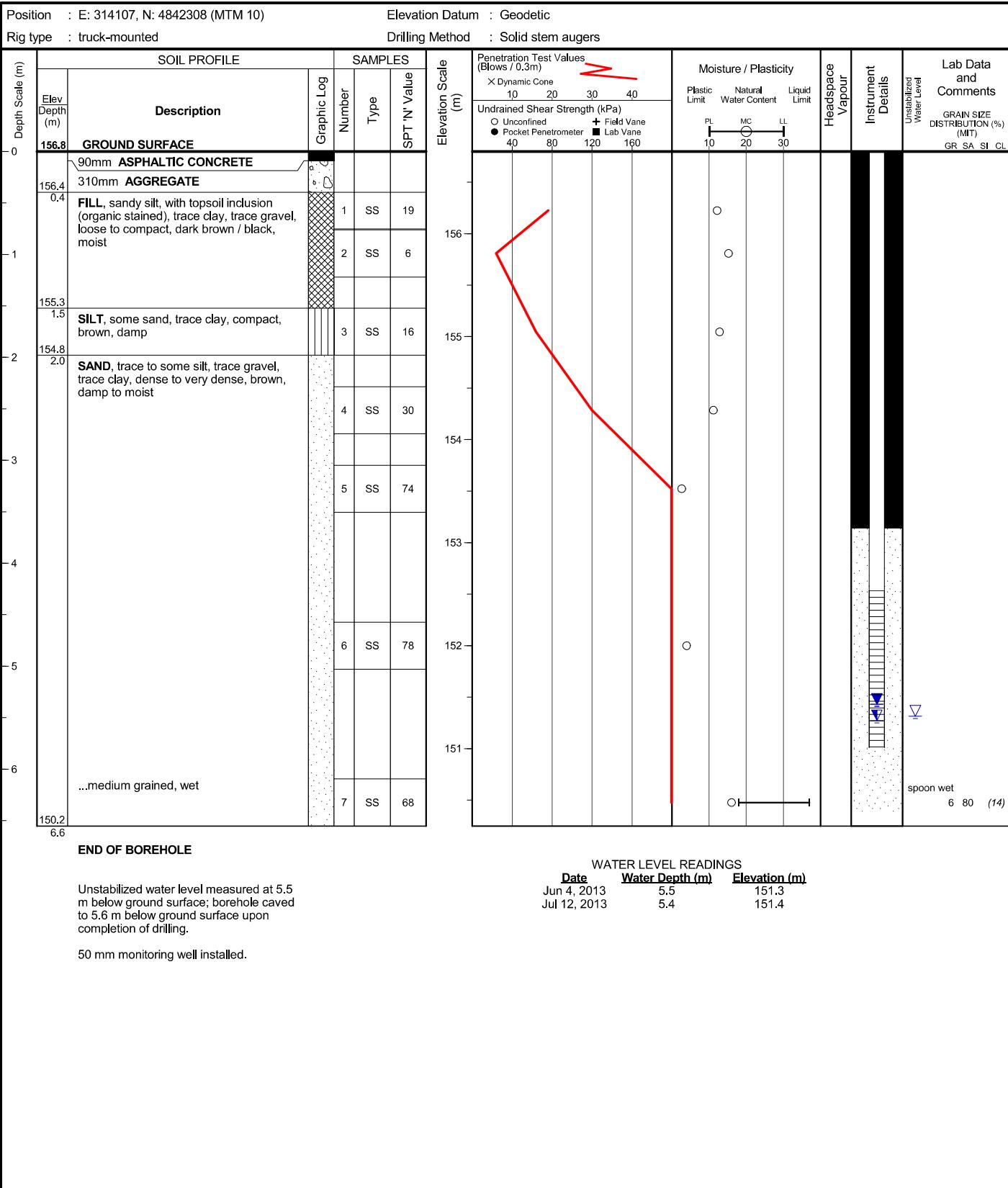
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

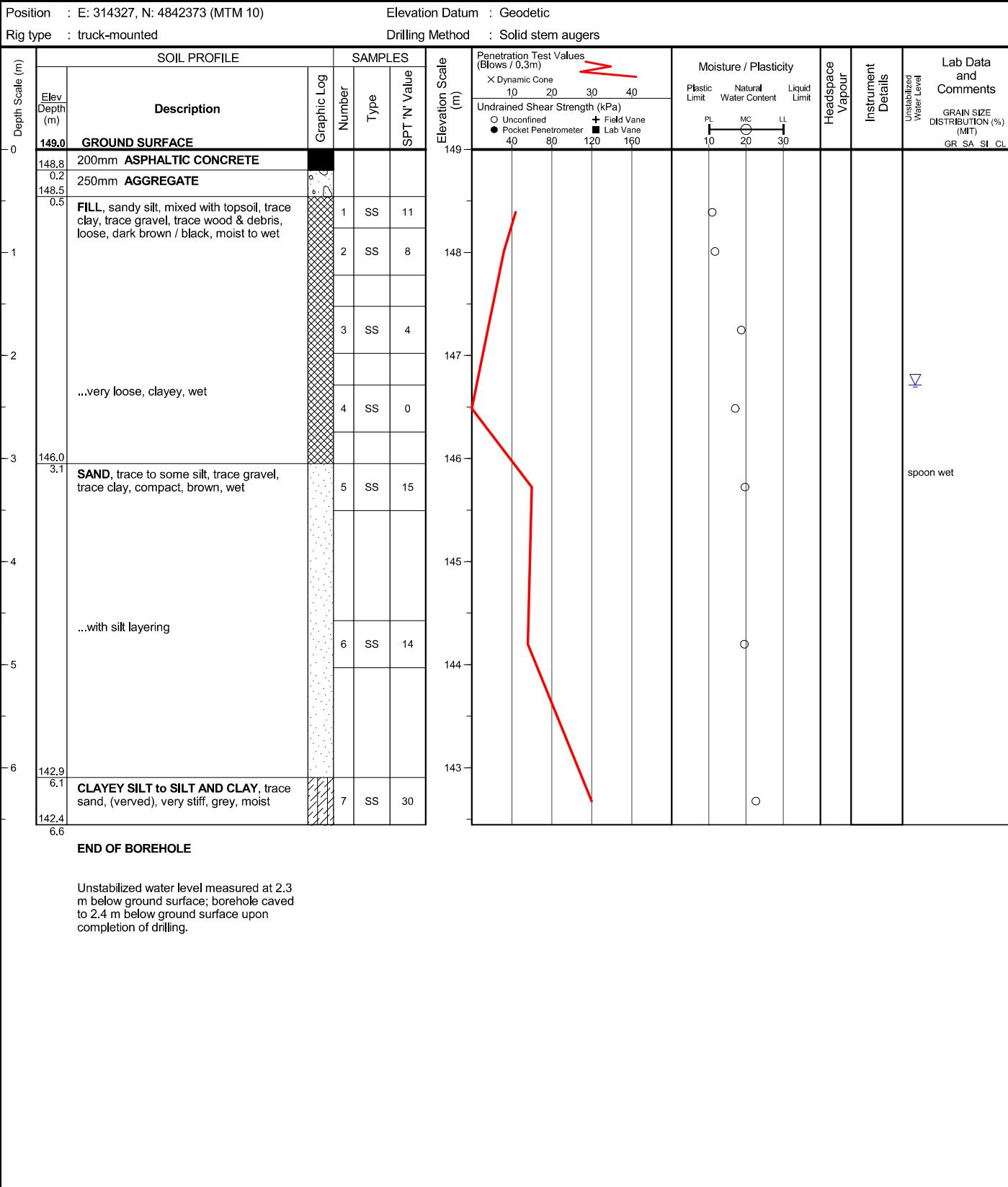
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

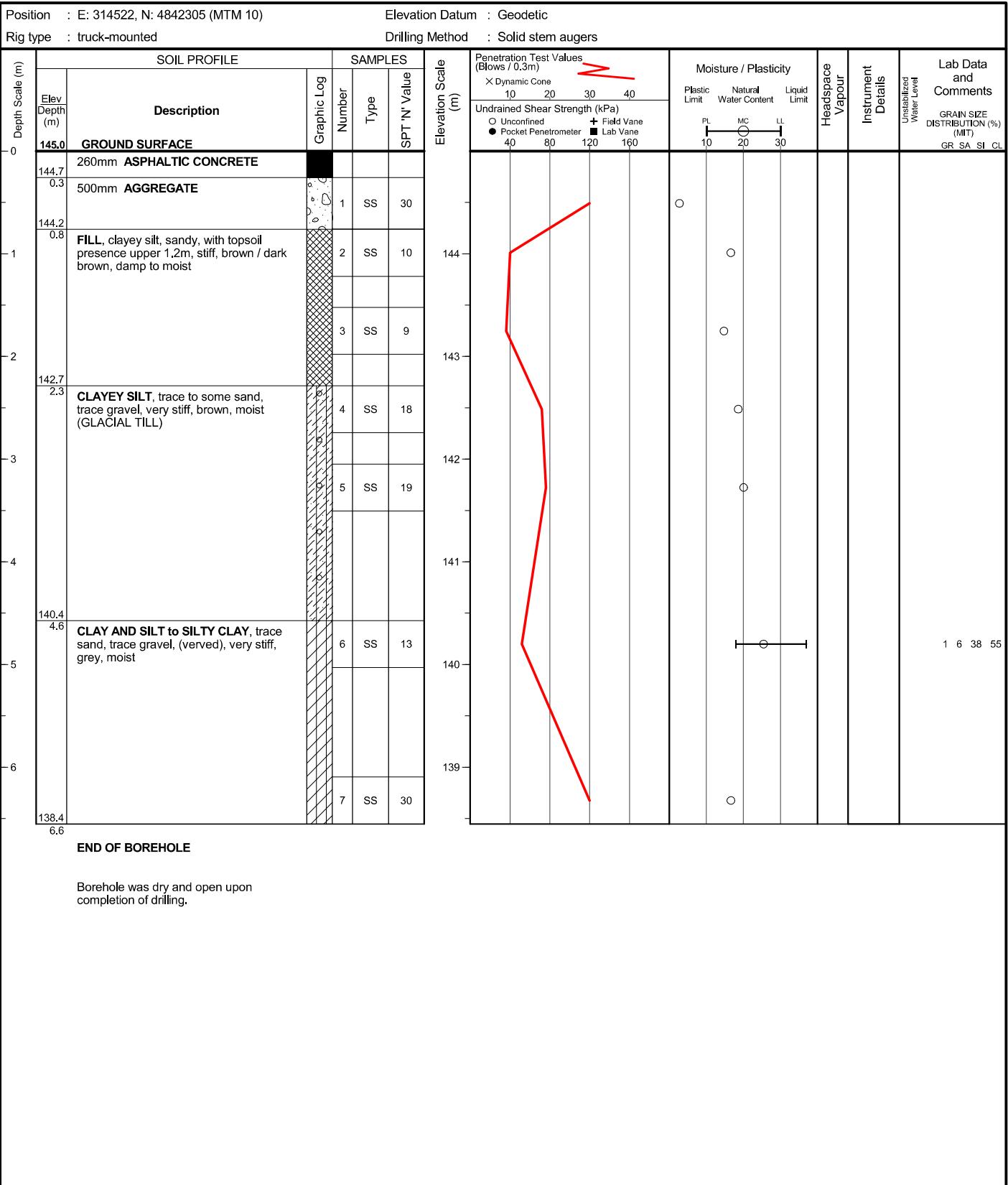
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

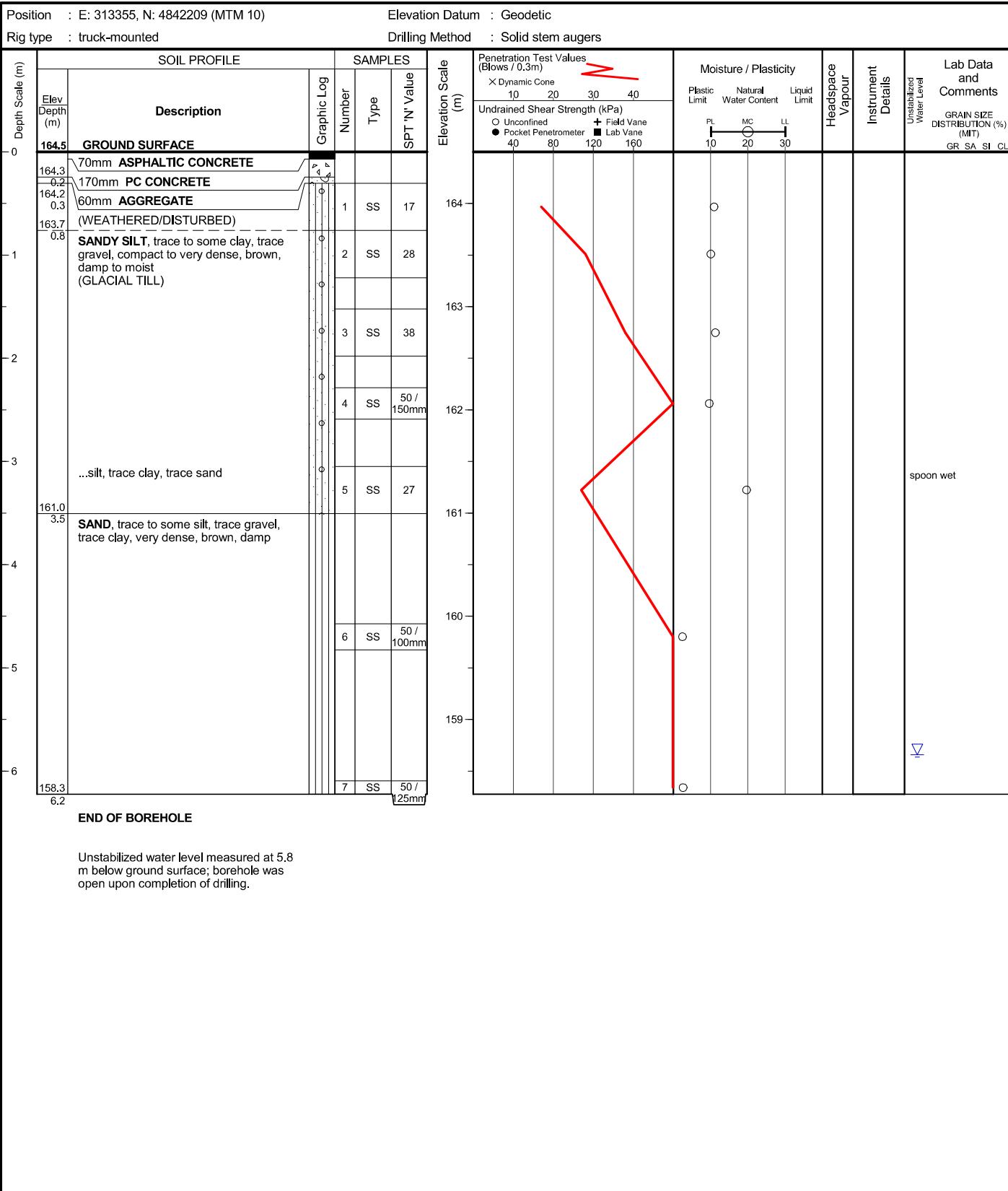
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S7

Client : Aquafor Beech Ltd.

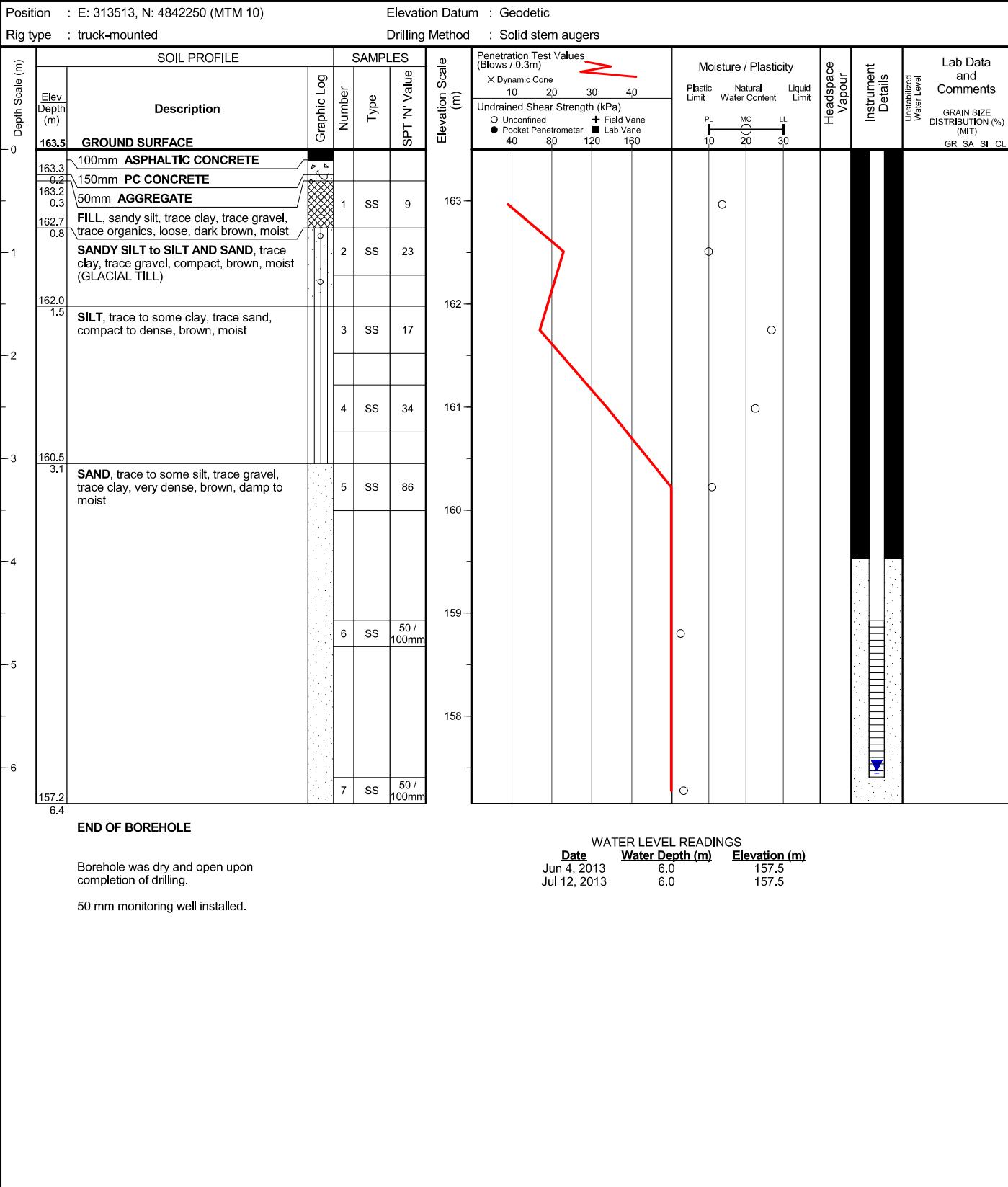
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S8

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 313874, N: 4842342 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | SAMPLES | | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | | | | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments | |
|-----------------|--|-------------|-------------|---------|------|--------------|---------------------|--|----|----|----|-----------------------|------------------|--------------------|-----------------------|----|
| | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT N' Value | | X Dynamic Cone | 10 | 20 | 30 | | | | | 40 |
| 0 | 162.5 GROUND SURFACE | | | | | | | | | | | | | | | |
| 0.2 | 162.3 50mm ASPHALTIC CONCRETE | | | | | | | | | | | | | | | |
| 0.8 | 161.7 100mm AGGREGATE (WEATHERED/DISTURBED) | | | | | | | | | | | | | | | |
| 1 | SILT AND SAND to SAND AND SILT, trace clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL) | | | 1 | SS | 12 | | | | | | | | | | |
| 2 | | | | 2 | SS | 32 | | | | | | | | | | |
| 3 | | | | 3 | SS | 47 | | | | | | | | | | |
| 3.1 | 159.5 SAND AND SILT, very dense, brown, moist | | | 4 | SS | 65 | | | | | | | | | | |
| 3.5 | 159.0 SAND, trace to some silt, trace gravel, trace clay, very dense, brown, damp | | | 5 | SS | 83 / 275mm | | | | | | | | | | |
| 4 | | | | 6 | SS | 70 | | | | | | | | | | |
| 5 | | | | 7 | SS | 80 | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | |
| 8.6 | 155.9 | | | | | | | | | | | | | | | |

Penetration Test Values (Blows / 0.3m)
X Dynamic Cone
10 20 30 40
Unconfined Shear Strength (kPa)
○ Unconfined + Field Vane
● Pocket Penetrometer ■ Lab Vane
40 80 120 160

Moisture / Plasticity
P.L. 10 20 30 MC LL

Headspace Vapour

Instrument Details

Lab Data and Comments
GRAIN SIZE DISTRIBUTION (%) (MT)
GR SA SI CL
Unstabilized Water Level

The figure is a soil profile log. The left side shows depth from 0 to 8.6 meters. The right side shows elevation from 162.5 down to 156 meters. A red line represents the penetration test values (Dynamic Cone Blows / 0.3m) across the profile. A red bracket highlights the range from 162.5 to 161.7 meters. A red arrow points to the 'Penetration Test Values' section at the top. A legend at the top right defines symbols for Unconfined, Field Vane, and Lab Vane tests. A moisture/consistency chart is shown with P.L., MC, and LL markers. A grain size distribution chart is on the far right. A red box highlights the 'Headspace Vapour' section.

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

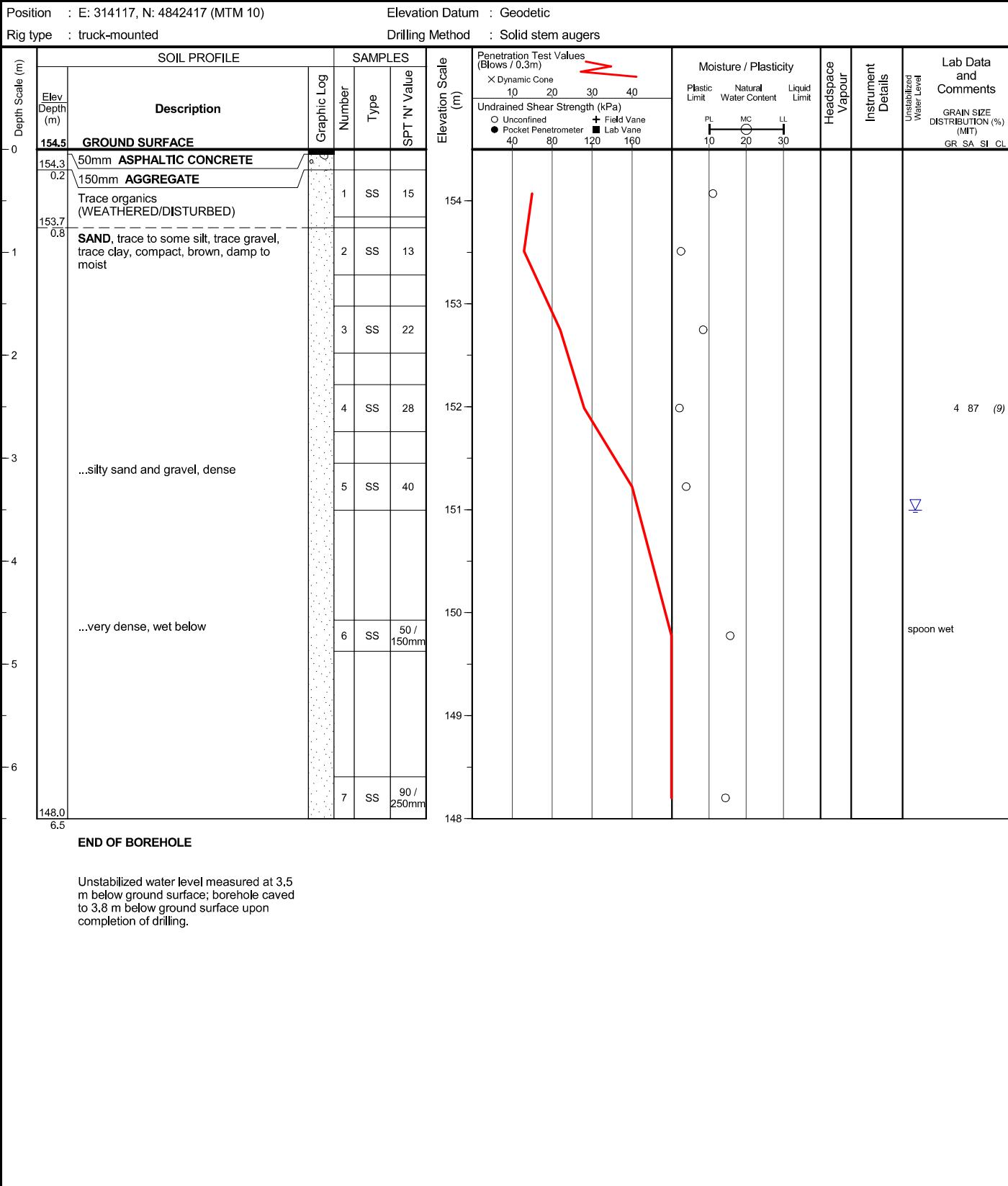
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S10

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 314292, N: 4842483 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | SAMPLES | | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | | | | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments |
|-----------------|---|-------------|-------------|---------|------|--------------|---------------------|--|----|----|----|-----------------------|------------------|--------------------|-----------------------|
| | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT N' Value | | X Dynamic Cone | 10 | 20 | 30 | | | | |
| 0 | GROUND SURFACE | | | | | | | | | | | | | | |
| 147.5 | 50mm ASPHALTIC CONCRETE | | | | | | | | | | | | | | |
| 147.1 | 50mm AGGREGATE | | | | | | | | | | | | | | |
| 146.7 | FILL, silty sand, mixed with topsoil, trace clay, trace gravel, compact, dark brown / black, damp | | | 1 | SS | 15 | | | | | | | | | |
| 146.3 | FILL, clayey silt, trace sand, trace gravel, stiff, brown, moist | | | 2 | SS | 7 | | | | | | | | | |
| 1.2 | SILT AND SAND to SAND AND SILT, trace clay, trace gravel, compact to dense, brown, moist (GLACIAL TILL) | | | 3 | SS | 29 | | | | | | | | | |
| 2 | ...brownish grey below | | | 4 | SS | 48 | | | | | | | | | |
| 3 | | | | 5 | SS | 44 | | | | | | | | | |
| 4 | ...silty sand, very dense, wet below | | | 6 | SS | 62 | | | | | | | | | |
| 5 | | | | 7 | SS | 50 / 150mm | | | | | | | | | |
| 6 | ...sandy silt till | | | | | | | | | | | | | | |
| 141.1 | | | | | | | | | | | | | | | |

Undrained Shear Strength (kPa)

| | | | |
|-----------------------|----|------------|-----|
| ○ Unconfined | + | Field Vane | |
| ● Pocket Penetrometer | ■ | Lab Vane | |
| 40 | 80 | 120 | 160 |

PL 10 MC 20 LL 30

GRAIN SIZE DISTRIBUTION (%) (MIT)
GR SA SI CL
Unstabilized Water Level

END OF BOREHOLE

Unstabilized water level measured at 4.9 m below ground surface; borehole caved to 5.2 m below ground surface upon completion of drilling.

50 mm monitoring well installed.

WATER | FVFI READINGS

| WATER LEVEL READINGS | | |
|----------------------|-----------------|---------------|
| Date | Water Depth (m) | Elevation (m) |
| Jun 4, 2013 | 2.7 | 144.8 |
| Jul 12, 2013 | 2.5 | 145.0 |



Client : Aquafor Beech Ltd.

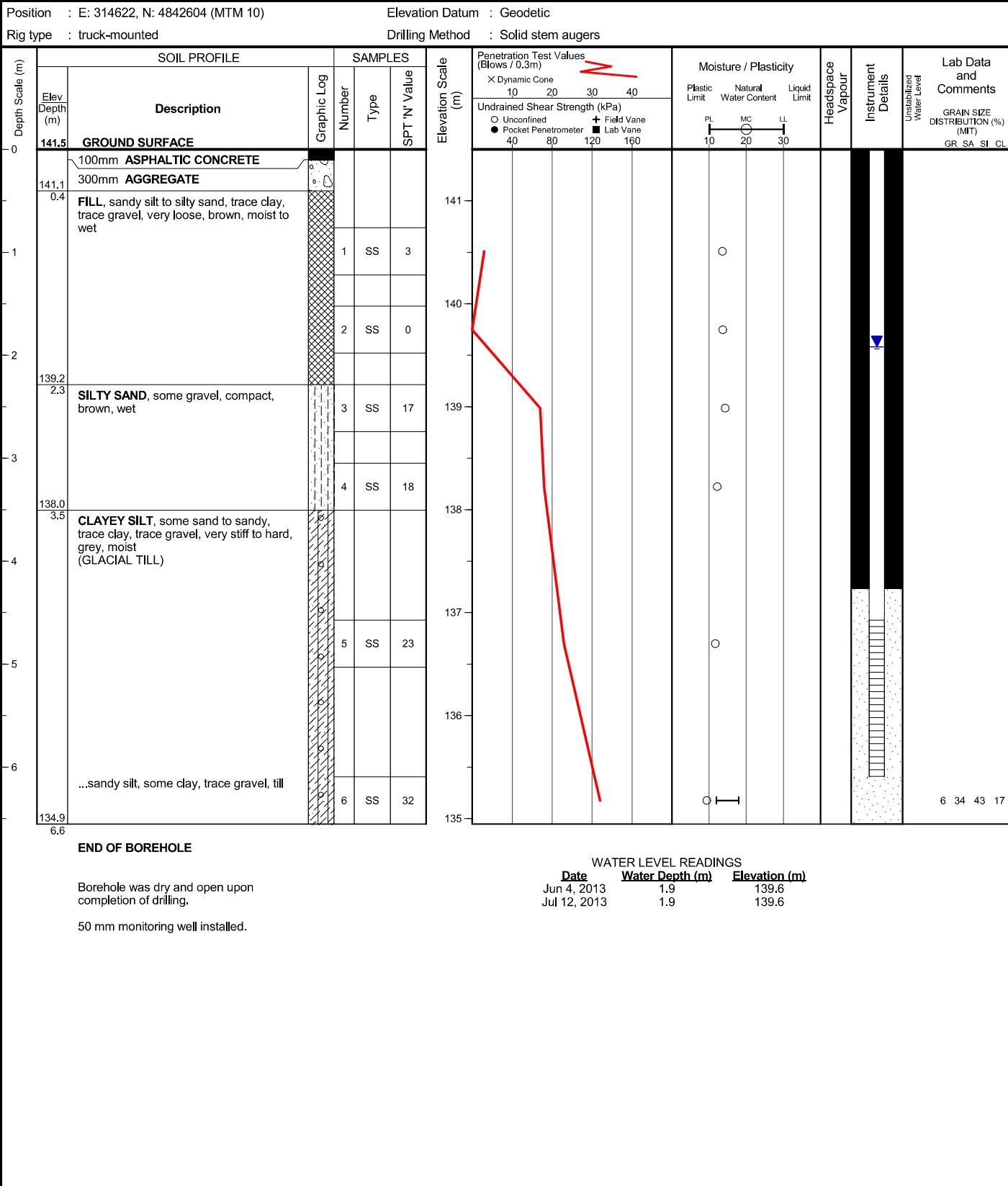
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S12

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 314785, N: 4842662 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | SAMPLES | | | Penetration Test Values (Blows / 0.3m) | Elevation Scale (m) | Moisture / Plasticity | | | Headspace Vapour | Instrument Details | Lab Data and Comments |
|-----------------|---|-------------|-------------|---------|------|-------------|--|---------------------|-------------------------------|---------------------------------|------------------------|------------------|--------------------|-----------------------|
| | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT N Value | | | X Dynamic Cone 10 20 30 40 | Un drained Shear Strength (kPa) | Plastic Limit 10 PL | | | |
| 0 | GROUND SURFACE | | | | | | | 140 | | | | | | |
| 139.8 | 170mm ASPHALTIC CONCRETE | | | | | | | 139.8 | | | | | | |
| 0.2 | 370mm AGGREGATE | | 1 | SS | 21 | | | 139.6 | O | | | | | |
| 139.5 | | | 2 | SS | 17 | | | 139.4 | O | | | | | |
| 0.5 | FILL, sandy silt, trace to some clay, trace gravel, trace organics, trace brick fragments, compact, dark brown, moist ...very loose, wet | | 3 | SS | 2 | | | 139.2 | O | | | | | |
| 1 | | | 4 | SS | 3 | | | 139.0 | O | | | | | |
| 2 | | | 5 | SS | 6 | | | 138.8 | O | | | | | |
| 137.7 | FILL, clayey silt, trace to some sand, trace gravel, stiff to firm, brown, wet | | 6 | SS | 20 | | | 138.6 | O | | | | | |
| 2.3 | | | 7 | SS | 32 | | | 138.4 | O | | | | | |
| 3 | | | | | | | | 138.2 | | | | | | |
| 4 | | | | | | | | 138.0 | | | | | | |
| 135.4 | SANDY SILT, trace to some clay, trace gravel, compact to dense, brownish grey, moist (GLACIAL TILL) | | | | | | | 137.8 | | | | | | |
| 4.6 | | | | | | | | 137.6 | | | | | | |
| 5 | | | | | | | | 137.4 | | | | | | |
| 6 | | | | | | | | 137.2 | | | | | | |
| 133.4 | | | | | | | | 137.0 | | | | | | |

END OF BOREHOLE E

Unstabilized water level measured at 5.8 m below ground surface; borehole was open upon completion of drilling.



Terraprobe

BOREHOLE LOG S13

Client : Aquafor Beech Ltd.

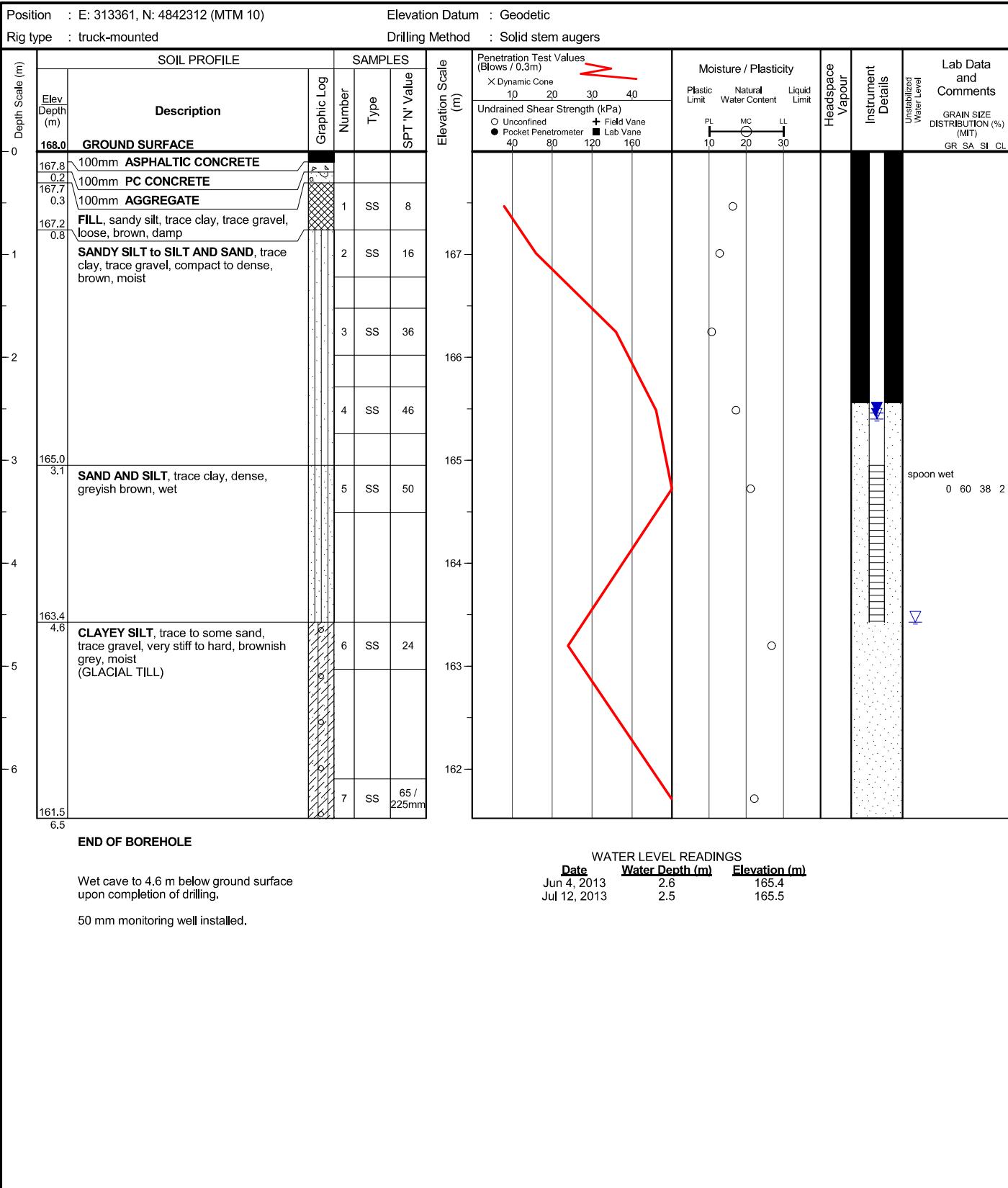
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S14

Client : Aquafor Beech Ltd.

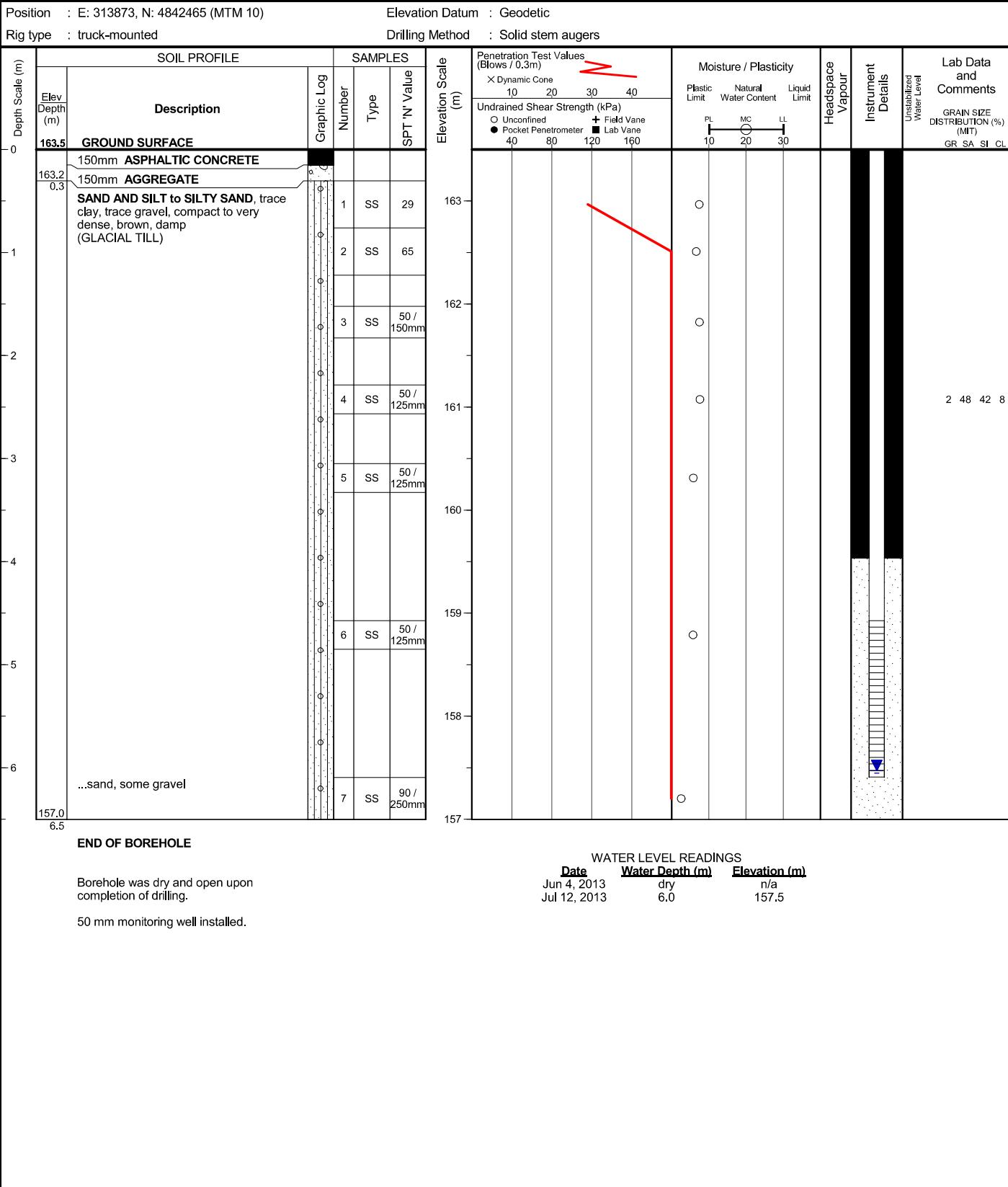
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S15

Client : Aquafor Beech Ltd.

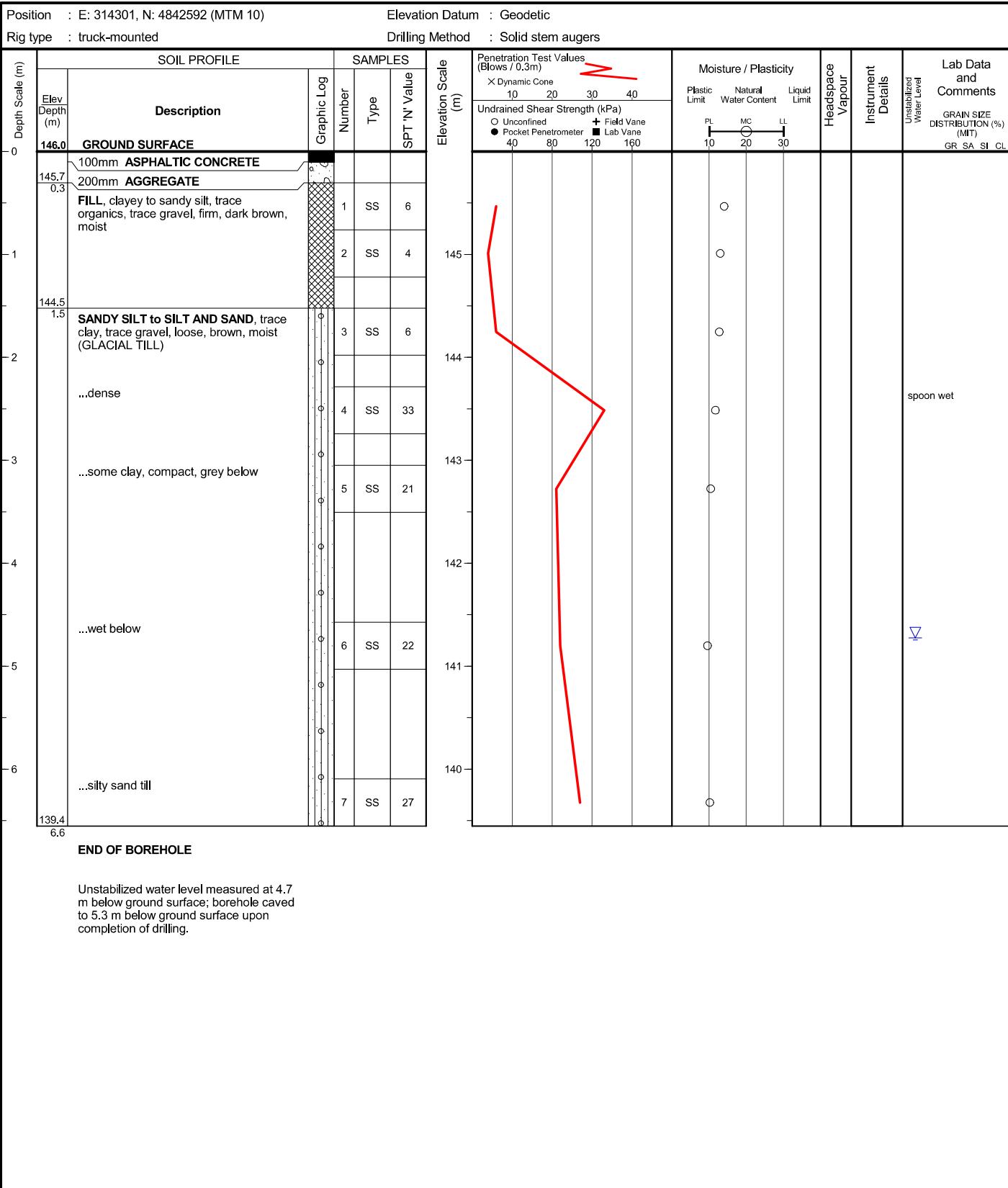
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

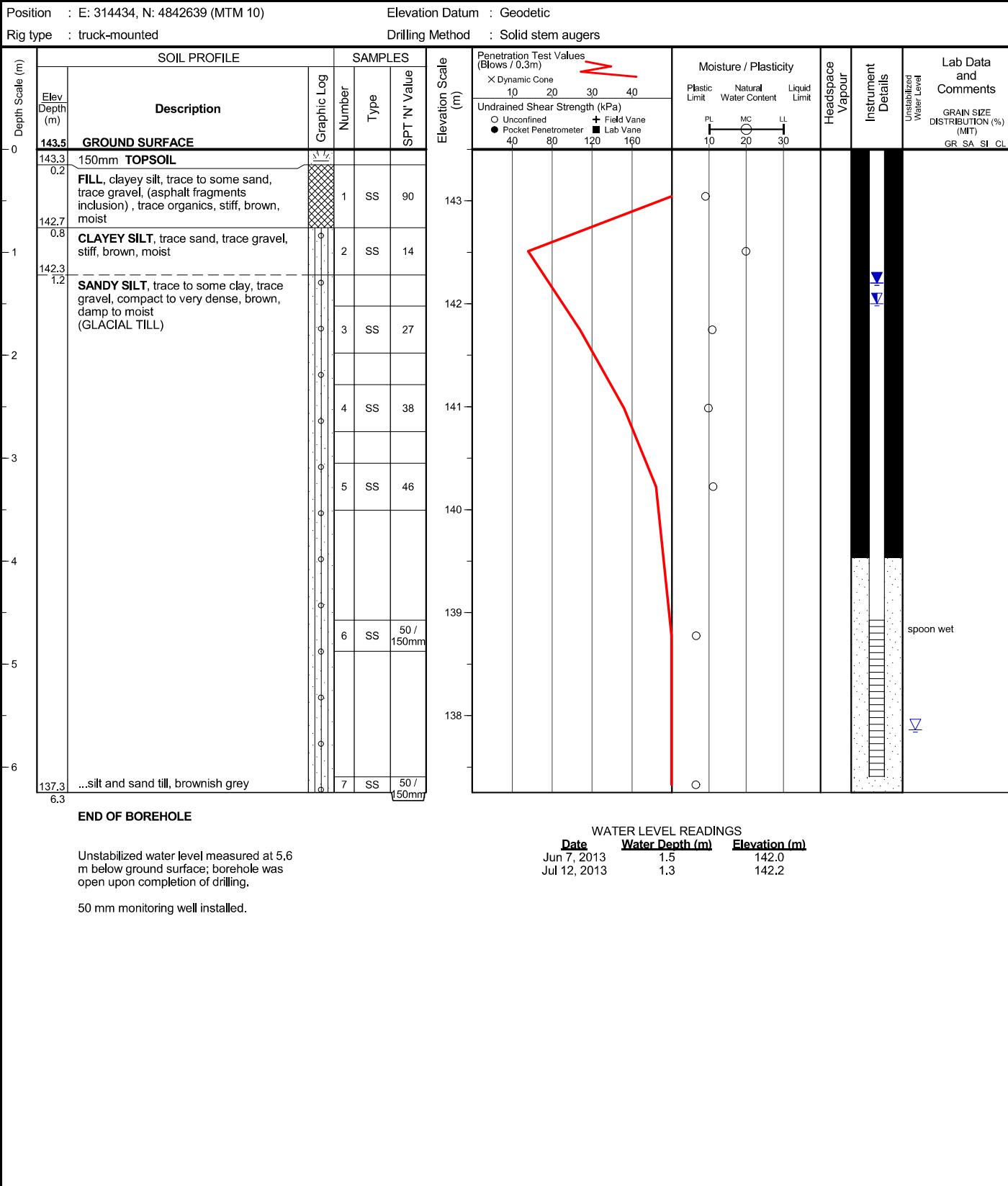
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313327, N: 4842426 (MTM 10) | | | Elevation Datum : Geodetic | | | | | | |
|--|----------------|---|-------------------------------------|--------|---|-----------------------|------------------|--------------------|-----------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | | | | |
| 0 | 171.0 | GROUND SURFACE | | | | | | | |
| 0.2 | 170.8 | 100mm ASPHALTIC CONCRETE | | | | | | | |
| 0.3 | 170.7 | 100mm AGGREGATE | | | | | | | |
| 0.4 | 170.6 | 100mm PC CONCRETE | | | | | | | |
| 0.5 | 170.5 | 50mm AGGREGATE | | | | | | | |
| 0.8 | 170.2 | FILL, sandy silt, some clay, trace gravel, trace organics, compact, brown, moist | | 1 | AS | | | | |
| 1 | | SAND, trace to some silt, trace gravel, trace clay, compact to dense, brown, damp | | 2 | SS | 29 | | | |
| 2 | | | | 3 | SS | 36 | | | |
| 2.3 | 168.7 | SAND AND SILT to SILTY SAND, trace clay, very dense, brown, moist | | 4 | SS | 47 | | | |
| 3 | | | | 5 | SS | 65 | | | |
| 4 | | ...greyish brown, wet | | 6 | SS | 53 | | | |
| 5 | | | | 7 | SS | 40 | | | |
| 6 | 164.4 | ...silt, some sand, trace clay, wet | | | | | | | |
| 6.6 | | | | | | | | | |
| END OF BOREHOLE | | | | | | | | | |
| Unstabilized water level measured at 5.5 m below ground surface; borehole caved to 5.8 m below ground surface upon completion of drilling. | | | | | | | | | |



Client : Aquafor Beech Ltd.

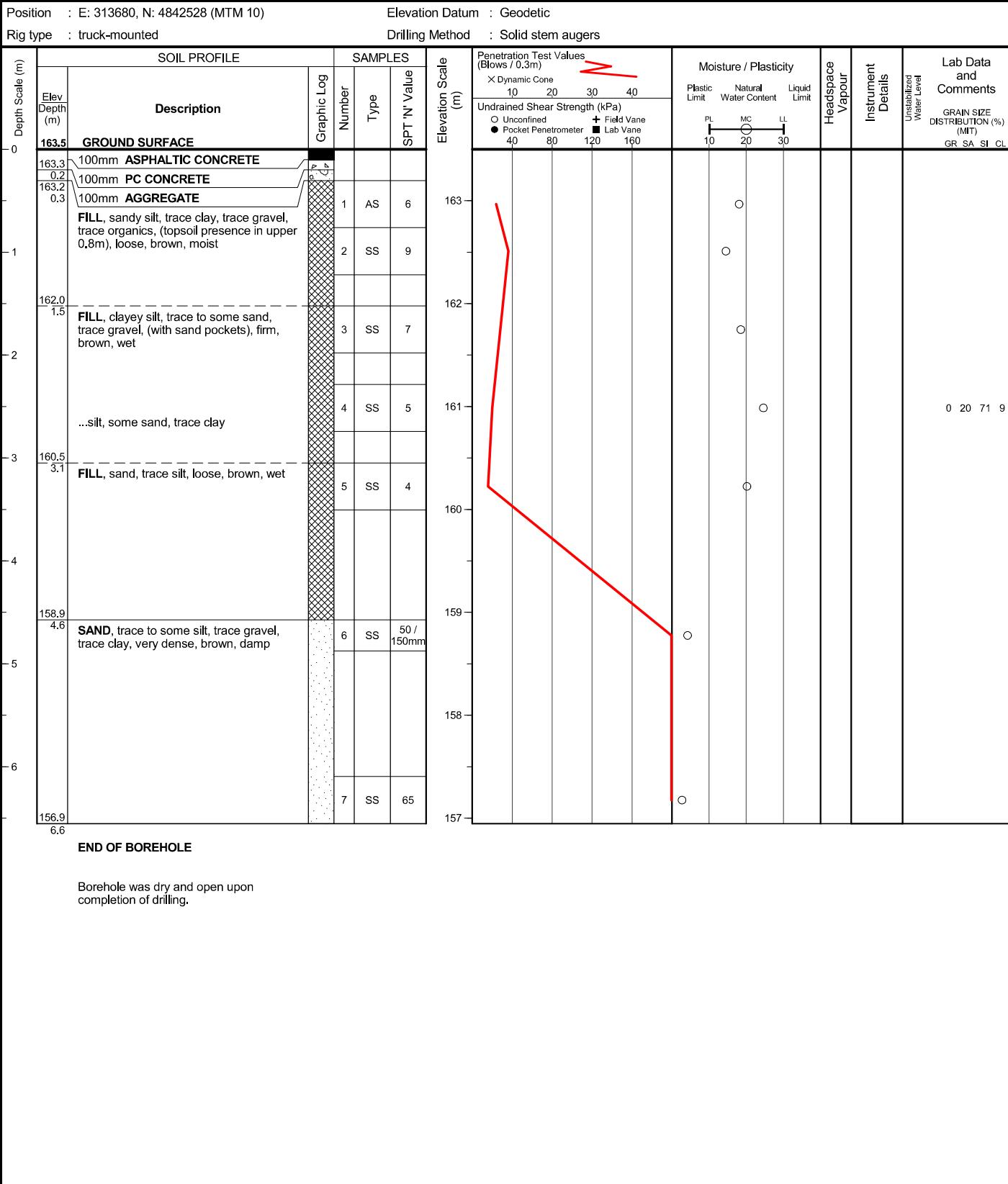
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

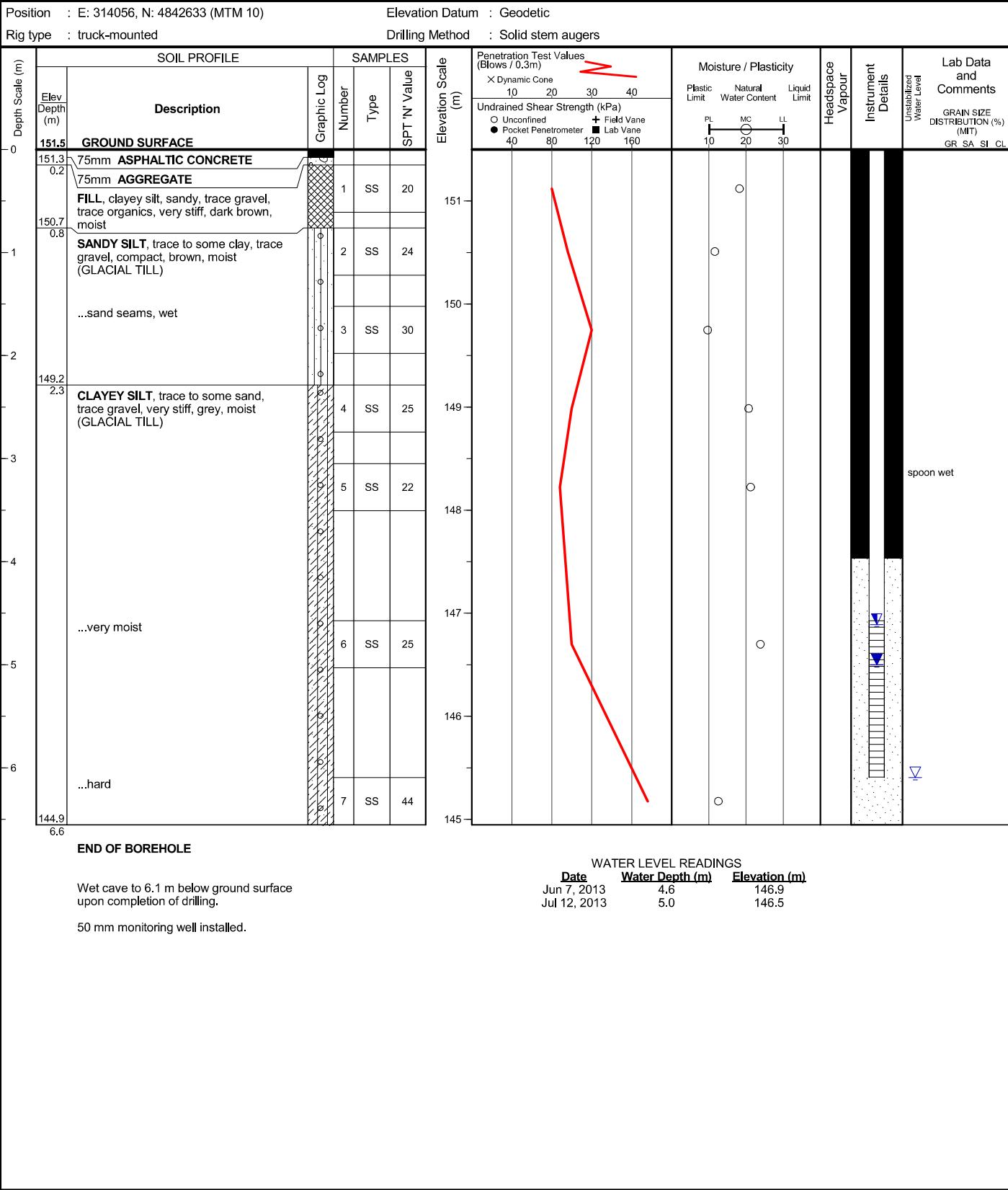
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

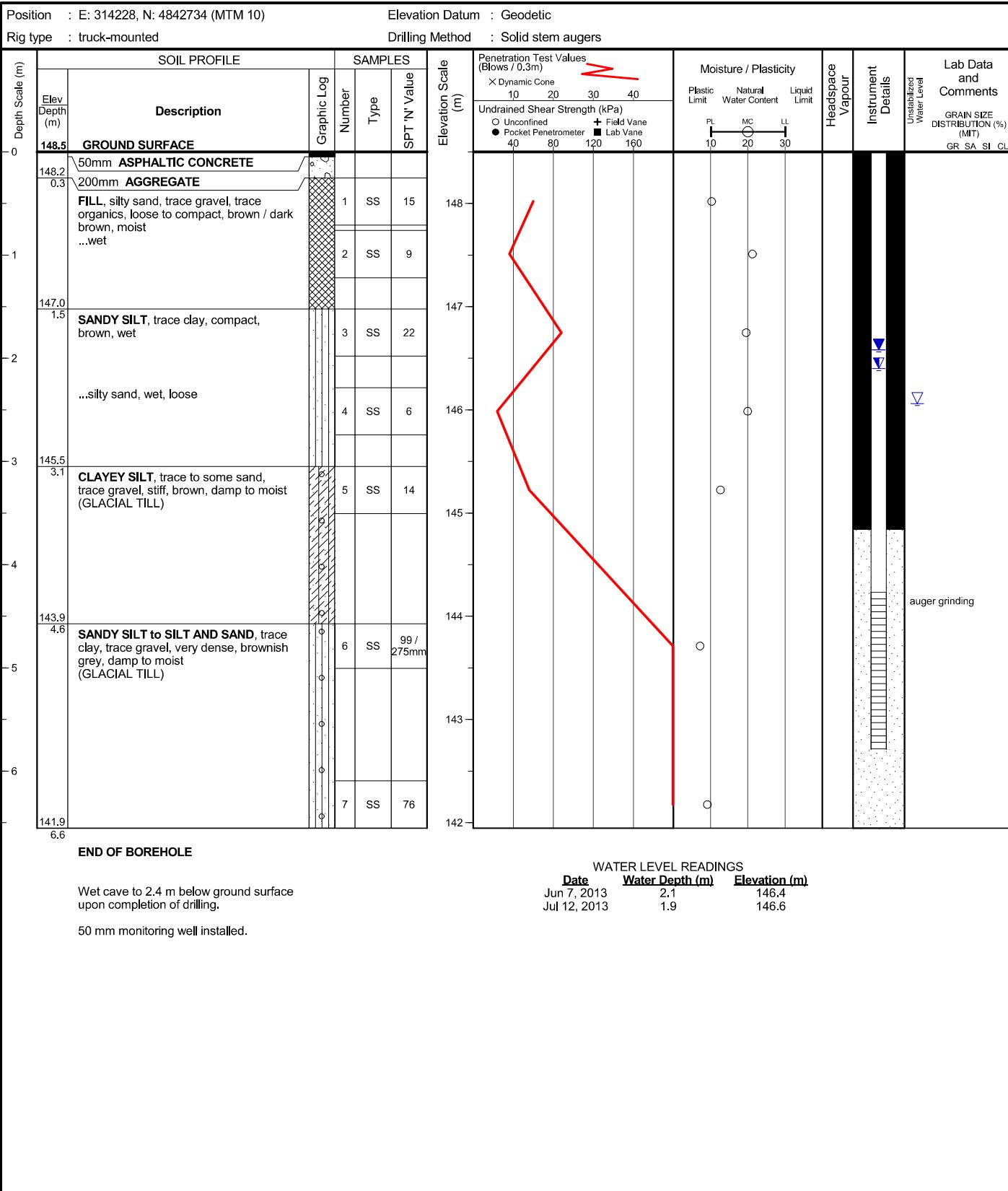
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

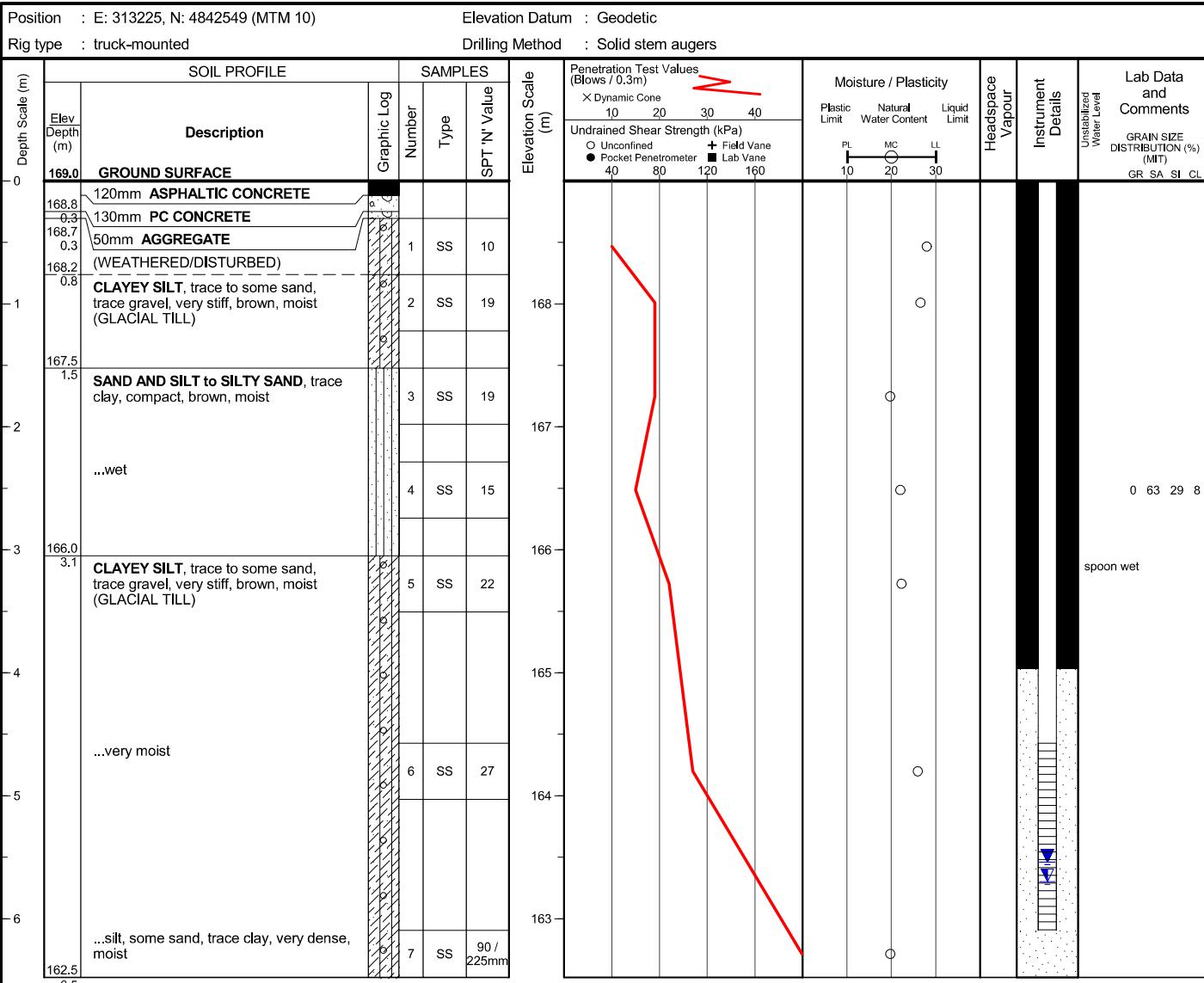
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1



| WATER LEVEL READINGS | | |
|----------------------|-----------------|---------------|
| Date | Water Depth (m) | Elevation (m) |
| Jun 7, 2013 | 5.7 | 163.3 |
| Jul 12, 2013 | 5.5 | 163.5 |



Terraprobe

BOREHOLE LOG S22

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 313511, N: 4842595 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | SAMPLES | | | Penetration Test Values (Blows / 0.3m) X Dynamic Cone | Elevation Scale (m) | Moisture / Plasticity | | | Headspace Vapour | Instrument Details | Lab Data and Comments |
|---|--|-------------|-------------|---------|------|-------------|--|---------------------|-----------------------|---|---|------------------|--------------------|-----------------------|
| | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT N Value | | | 10 20 30 40 | Unconfined ○ Unconfined ● Pocket Penetrometer | Field Vane + Field Vane ■ Lab Vane 40 80 120 160 | | | |
| 0 | GROUND SURFACE | | | | | | | 163 | | | | | | |
| 1 | 100mm ASPHALTIC CONCRETE | | | | | | | 162.8 | | | | | | |
| 1.2 | 100mm AGGREGATE | | | | | | | 162.7 | | | | | | |
| 1.3 | 100mm PC CONCRETE | | | | | | | 162.6 | | | | | | |
| 1.4 | 50mm AGGREGATE | | | | | | | 162.5 | | | | | | |
| 1.5 | FILL, clayey silt, trace to some sand, trace organics, firm to stiff, brown / dark brown, moist | | | | | | | 161.5 | | | | | | |
| 1.5 | SANDY SILT , trace to some clay, trace gravel, dense to very dense, brown, moist (GLACIAL TILL) | | | | | | | 161.5 | | | | | | |
| 2 | | | | | | | | 161.0 | | | | | | |
| 3 | | | | | | | | 160.0 | | | | | | |
| 3.1 | SAND, trace to some silt, trace clay, trace gravel, very dense, brown, damp | | | | | | | 160.0 | | | | | | |
| 4 | ...medium grained, wet below | | | | | | | 159.0 | | | | | | |
| 5 | | | | | | | | 158.0 | | | | | | |
| 6 | | | | | | | | 157.0 | | | | | | |
| 6.5 | END OF BOREHOLE | | | | | | | | | | | | | |
| Wet cave to 5.2 m below ground surface upon completion of drilling. | | | | | | | | | | | | | | |

The figure is a soil profile log. The left column shows depth from 0 to 6.5 meters. The right column shows elevation from 163.0 m down to 156.5 m. A red line connects the elevations of the top 1.5 meters. The soil profile is as follows:

- 0-1.5 m: Ground Surface, 100mm Asphaltic Concrete, 100mm Aggregate, 100mm PC Concrete, 50mm Aggregate, FILL, clayey silt, trace to some sand, trace organics, firm to stiff, brown / dark brown, moist (GLACIAL TILL).
- 1.5-3.1 m: SANDY SILT, trace to some clay, trace gravel, dense to very dense, brown, moist (GLACIAL TILL).
- 3.1-6.5 m: SAND, trace to some silt, trace clay, trace gravel, very dense, brown, damp. Description: ...medium grained, wet below.

Geotechnical data is summarized in the table:

| Sample | Type | SPT N Value | Dynamic Cone Blows | Unconfined (kPa) | Field Vane (kPa) | Lab Vane (kPa) | PL | MC | LL |
|--------|------|-------------|--------------------|------------------|------------------|----------------|----|----|----|
| 1 | SS | 6 | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |
| 2 | SS | 11 | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |
| 3 | SS | 38 | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |
| 4 | SS | 89 | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |
| 5 | SS | 82 | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |
| 6 | SS | 79 | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |
| 7 | SS | 90 / 250mm | ~30 | ~40 | ~80 | ~120 | 10 | 20 | 30 |

At the bottom right, there is a note: 1 83 (16) and a blue downward arrow symbol.



Client : Aquafor Beech Ltd.

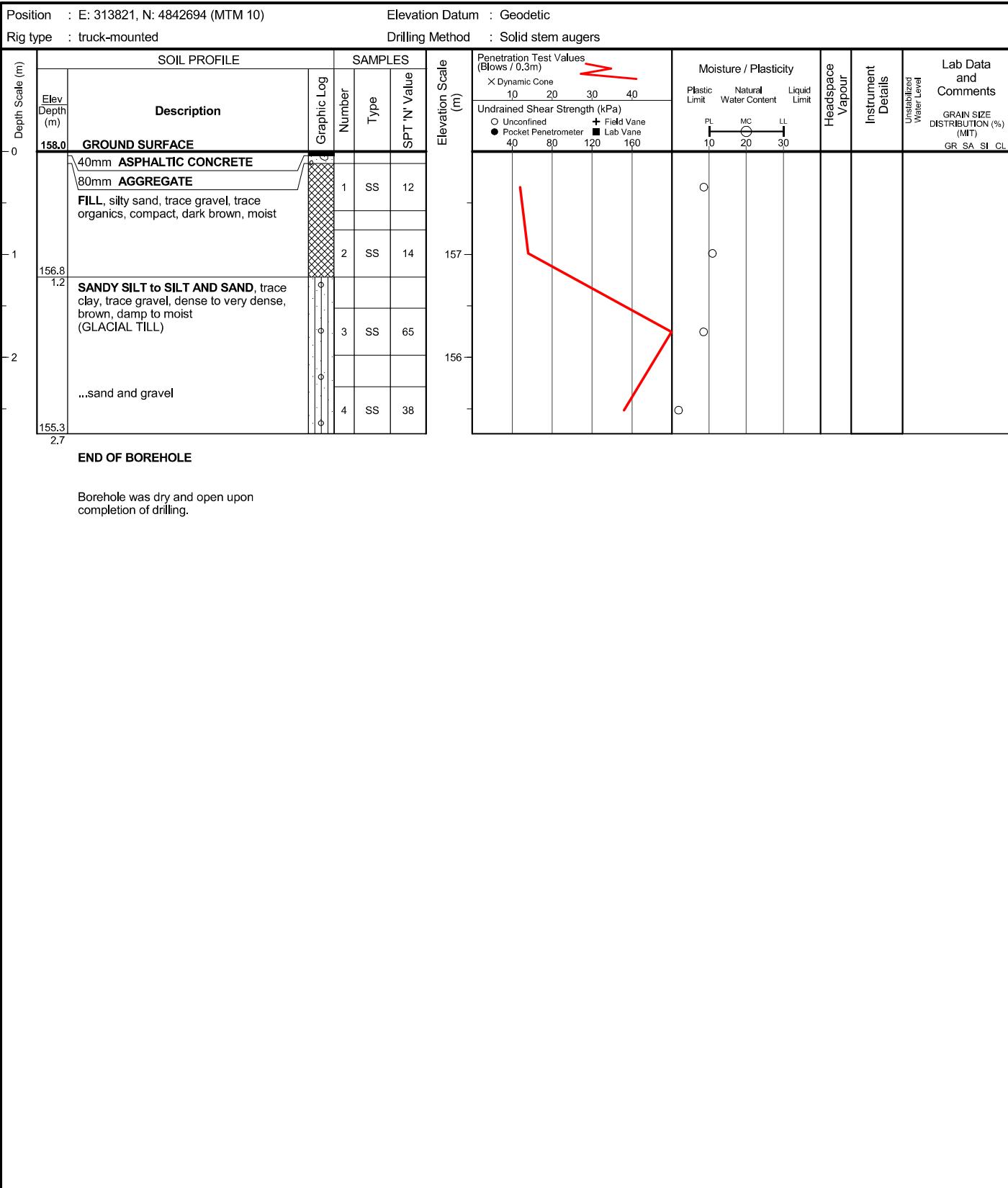
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

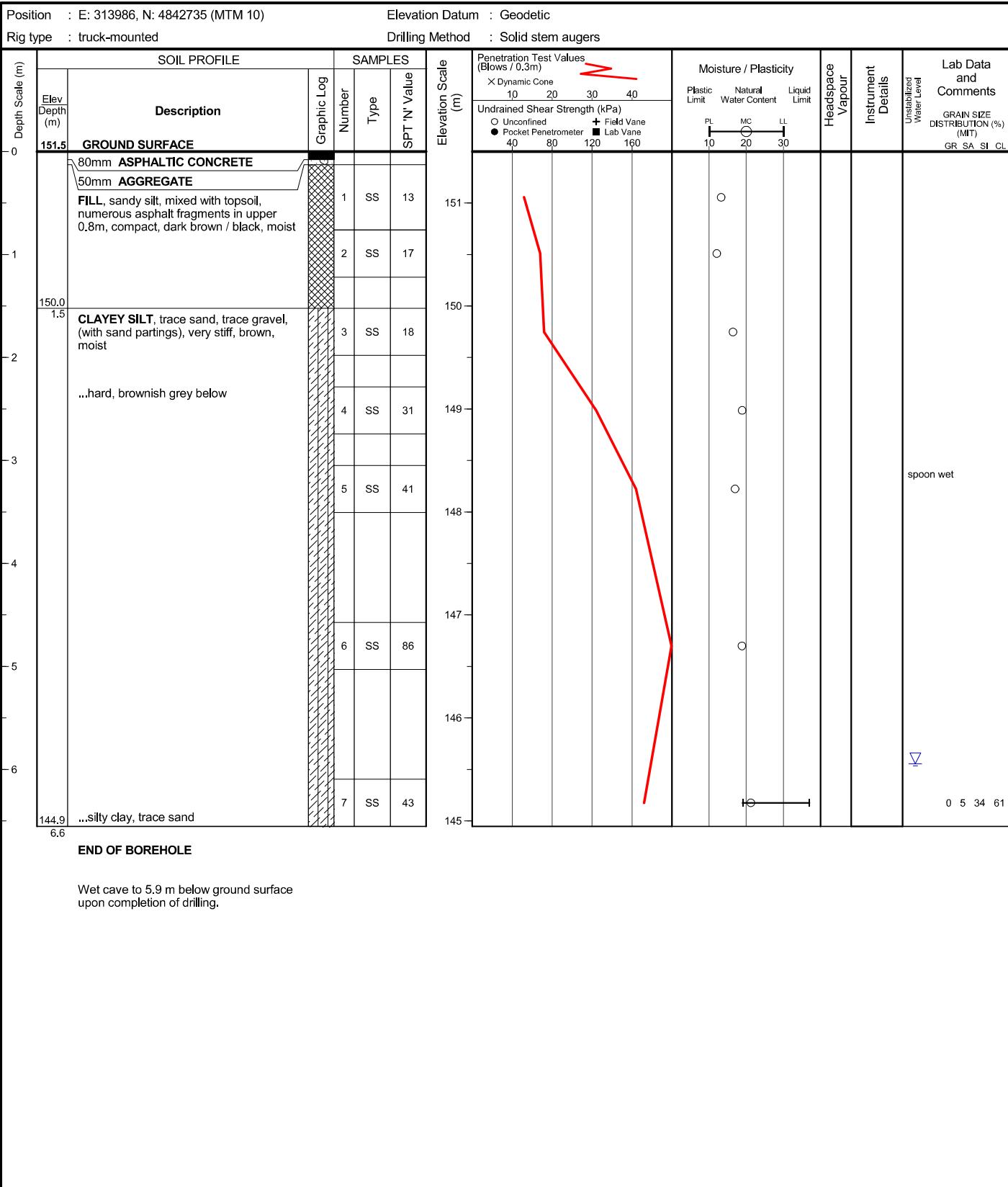
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S25

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314115, N: 4842772 (MTM 10) | | | Elevation Datum : Geodetic | | | | | | |
|---|--|-------------|-------------------------------------|--------|---|---|------------------|--------------------|--|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 | Moisture / Plasticity Plastic Limit Natural Water Content Liquid Limit | Headspace Vapour | Instrument Details | Lab Data and Comments GRAIN SIZE DISTRIBUTION (%) (MM) GR SA SI CL Unstabilized Water Level |
| | Elev Depth (m) | Description | Graphic Log | Number | | | | | |
| 0 | 149.0 GROUND SURFACE | | | | | 149 | | | |
| 0.3 | 305mm TOPSOIL | | | | | 148.7 | | | |
| 1 | FILL, sandy silt, mixed with topsoil, trace gravel, loose, black, moist ...silt and sand | | 1 | SS | 5 | 148.4 | | | O |
| 1.5 | SANDY SILT, trace to some clay, trace gravel, compact to dense, brown, damp to moist (GLACIAL TILL) | | 2 | SS | 11 | 147.9 | | | O |
| 2 | | | 3 | SS | 18 | 147.4 | | | O |
| 3 | | | 4 | SS | 39 | 146.9 | | | O |
| 4 | | | 5 | SS | 40 | 146.4 | | | O |
| 5 | | | 6 | SS | 52 | 145.9 | | | O |
| 6 | | | 7 | SS | 62 | 145.4 | | | O |
| 142.4 | | | | | | 143.9 | | | O |

END OF BOREHOLE E

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 314259, N: 4842863 (MTM 10) | | | Elevation Datum : Geodetic | | | |
|--|----------------|--|-------------------------------------|--------|---------------------|-----|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | |
| 147.0 | 0 | GROUND SURFACE | | | SPT N Value | 147 |
| 146.7 | 0.3 | 55mm ASPHALTIC CONCRETE | | | | |
| 146.2 | 0.8 | 215mm PC CONCRETE | | | | |
| | | FILL, sand, trace to some silt, trace gravel, trace organics, compact, brown, damp | | 1 | SS 28 | |
| | | SAND, trace to some silt, trace clay, trace gravel, compact, brown, moist | | 2 | SS 18 | |
| | | ...wet below | | 3 | SS 27 | |
| | | ...sand and silt, trace clay | | 4 | SS 20 | |
| | | ...dense | | 5 | SS 33 | |
| | | ...silty clay, firm, wet | | 6 | SS 6 | |
| 140.9 | 6.1 | SANDY SILT, trace clay, trace gravel, dense, greyish brown, damp (GLACIAL TILL) | φ | 7 | SS 48 | 141 |
| 140.4 | 6.6 | END OF BOREHOLE | | | | |
| Wet cave to 2.5 m below ground surface upon completion of drilling. | | | | | | |
| Penetration Test Values (Blows / 0.3m) <ul style="list-style-type: none"> × Dynamic Cone ○ Unconfined ● Pocket Penetrometer Undrained Shear Strength (kPa) <ul style="list-style-type: none"> + Field Vane ■ Lab Vane | | | | | | |
| Moisture / Plasticity <ul style="list-style-type: none"> PL Plastic Limit MC Natural Water Content LL Liquid Limit | | | | | | |
| Headspace Vapour | | | | | | |
| Instrument Details | | | | | | |
| Lab Data and Comments <ul style="list-style-type: none"> GR GRAIN SIZE DISTRIBUTION (%) (MTT) SA Silty SI Silty CL Clay | | | | | | |



Client : Aquafor Beech Ltd.

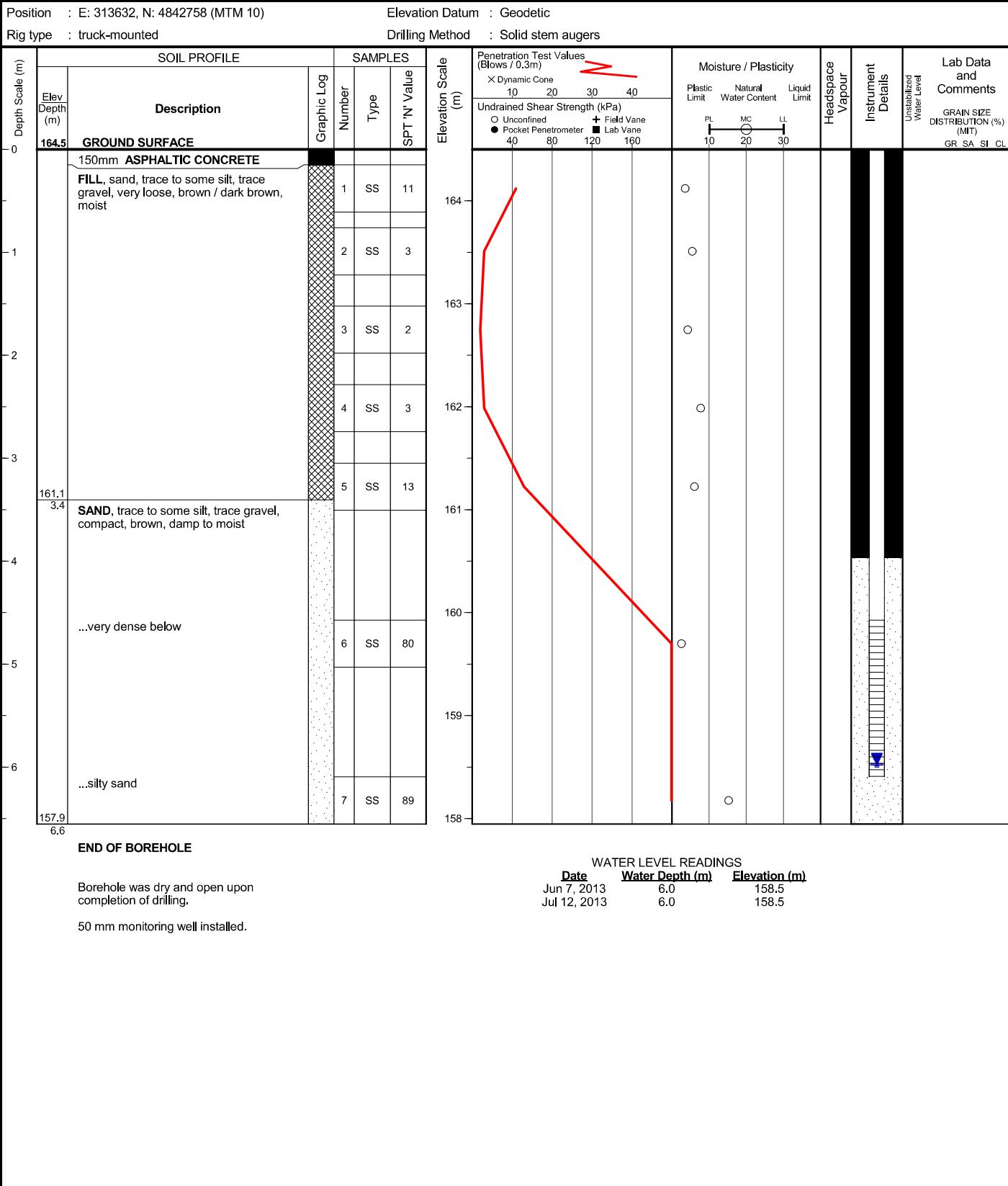
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S28

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 313814, N: 4842803 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 | Elevation Scale (m) | Moisture / Plasticity | | | Headspace Vapour | Instrument Details | Lab Data and Comments |
|-----------------|--|-------------|-------------|---------------|---|---------------------|-----------------------|-------------|-------------|------------------|--------------------|-----------------------|
| | Elev Depth (m) | Description | Graphic Log | Number | | | Type | PL 10 20 30 | MC 10 20 30 | | | |
| 0 | GROUND SURFACE | | | | | | | | | | | |
| 156.0 | | | | | | | | | | | | |
| 155.8 | 50mm ASPHALTIC CONCRETE | | | | | | | | | | | |
| 0.2 | 70mm AGGREGATE | | | | | | | | | | | |
| 155.5 | 50mm ASPHALTIC CONCRETE | | | | | | | | | | | |
| 0.5 | 280mm AGGREGATE | | | | | | | | | | | |
| -1 | FILL, sandy silt to sand and silt, trace gravel, trace clay, trace organics, loose to compact, brown, moist | | 1 | SS 9 | | | | | | | | |
| 154.5 | | | 2 | SS 12 | | | | | | | | |
| 1.5 | SAND, trace silt, trace gravel, (medium grained), compact, brown, wet | | 3 | SS 22 | | | | | | | | |
| 2 | | | 4 | SS 18 | | | | | | | | |
| 153.7 | CLAYEY SILT to CLAY AND SILT, trace to some sand, trace gravel, stiff to very stiff, brown, moist (GLACIAL TILL) | | 5 | SS 12 | | | | | | | | |
| 3 | ...brownish grey below | | 6 | SS 30 | | | | | | | | |
| 4 | ...hard | | 7 | SS 50 / 100mm | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 149.9 | SILT AND SAND, trace gravel, very dense, brown, damp (GLACIAL TILL) | | | | | | | | | | | |
| 6.1 | | | | | | | | | | | | |
| 149.7 | | | | | | | | | | | | |
| 6.4 | (GLACIAL TILL) | | | | | | | | | | | |

GRAIN SIZE DISTRIBUTION (%) (MT)
GR SA SI CL
Unstabilized Water Level

The figure displays a detailed soil profile log from a geotechnical investigation. The left column shows depth in meters, ranging from 0 to 6.4 m. The middle section contains soil descriptions and sample information (number, type, SPT N-value). The right side includes penetration test data (Dynamic Cone Penetrometer, Pocket Penetrometer, Field Vane, Lab Vane) and moisture/plasticity limits (PL, MC, LL). A red line graph overlays the profile, representing Unconfined Compressive Strength (kPa) versus depth (m), starting at approximately 155.5 kPa at 155.8 m and decreasing to about 150 kPa at 149.9 m. The rightmost column provides grain size distribution percentages for each soil type.

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

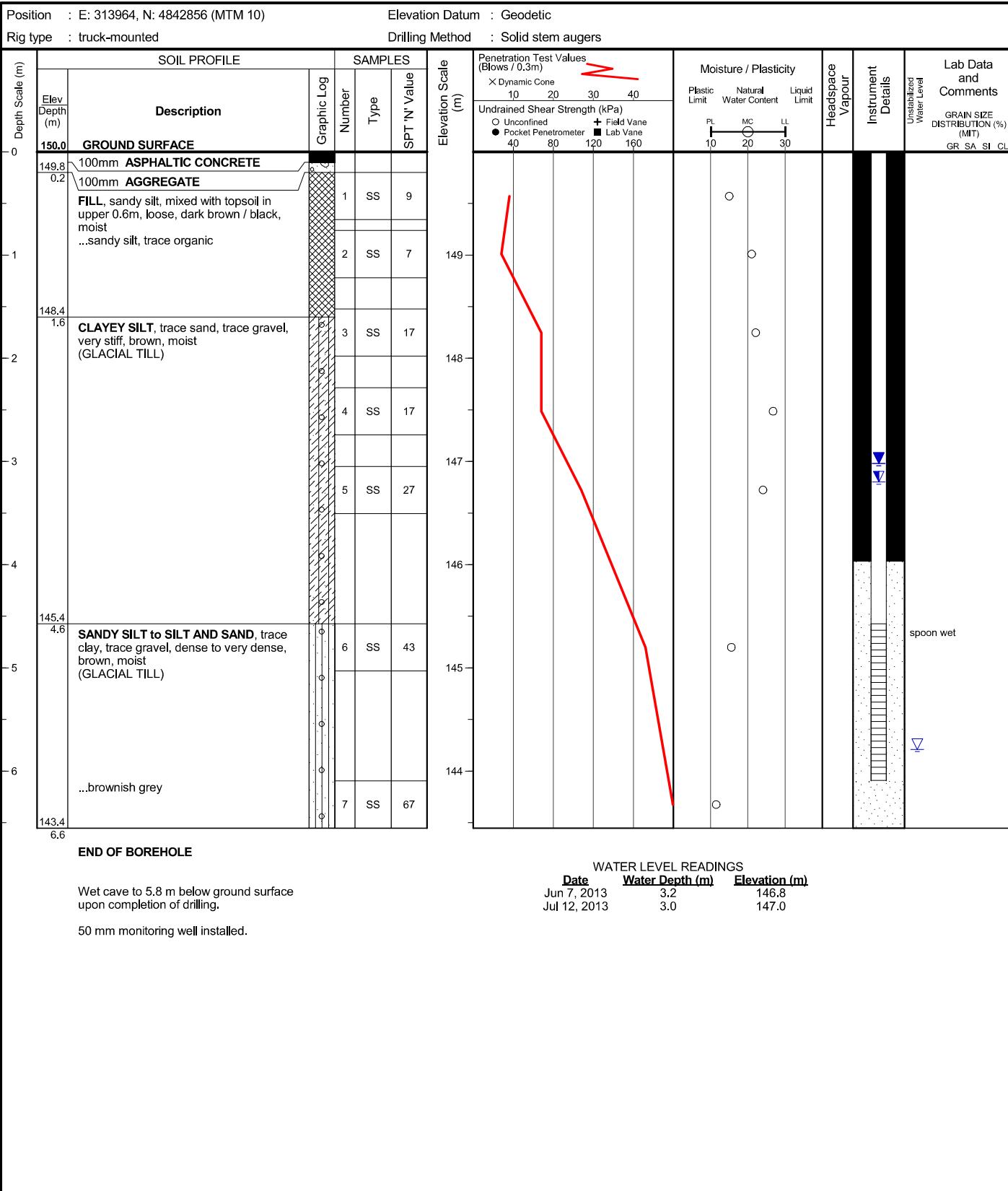
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

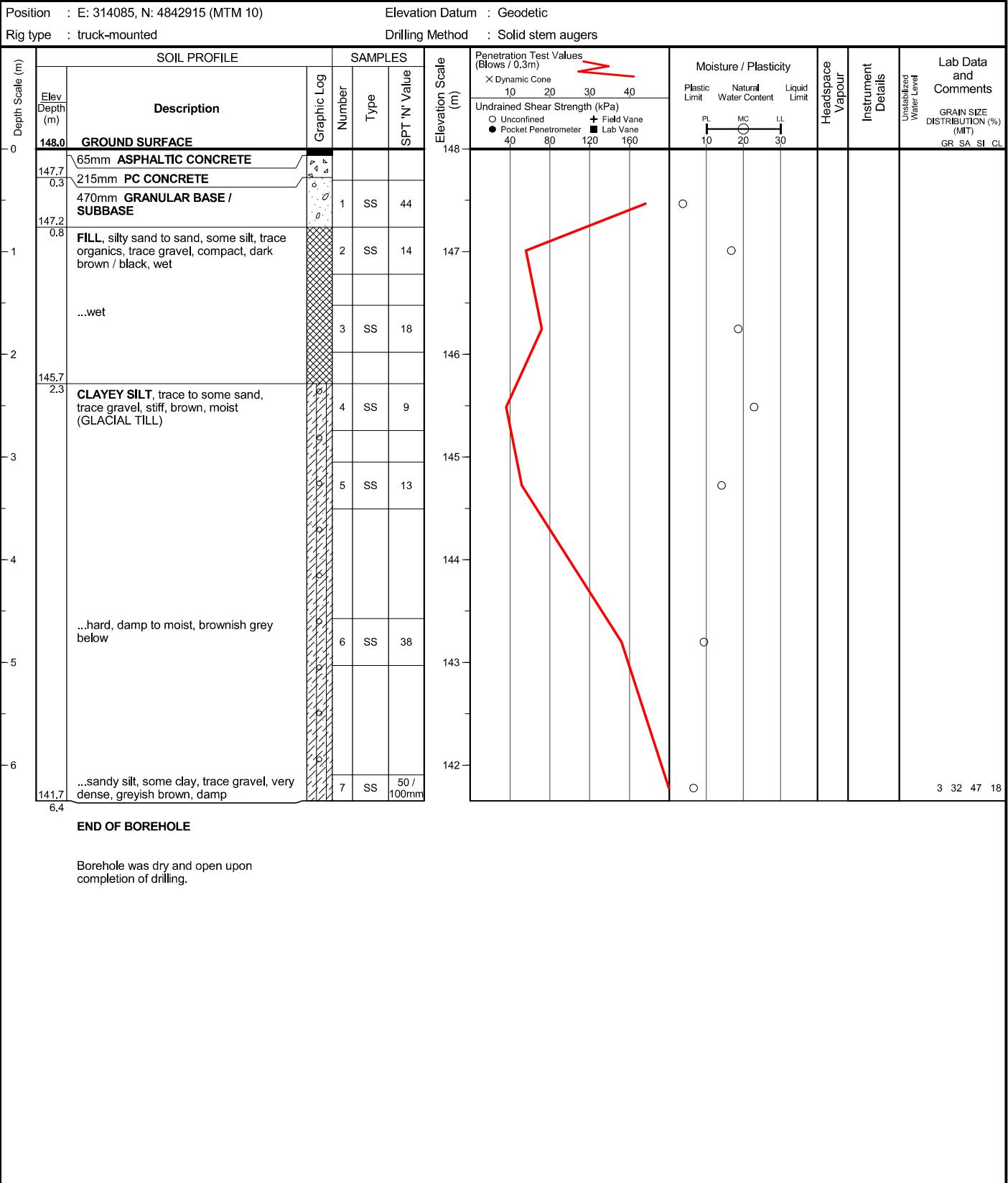
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

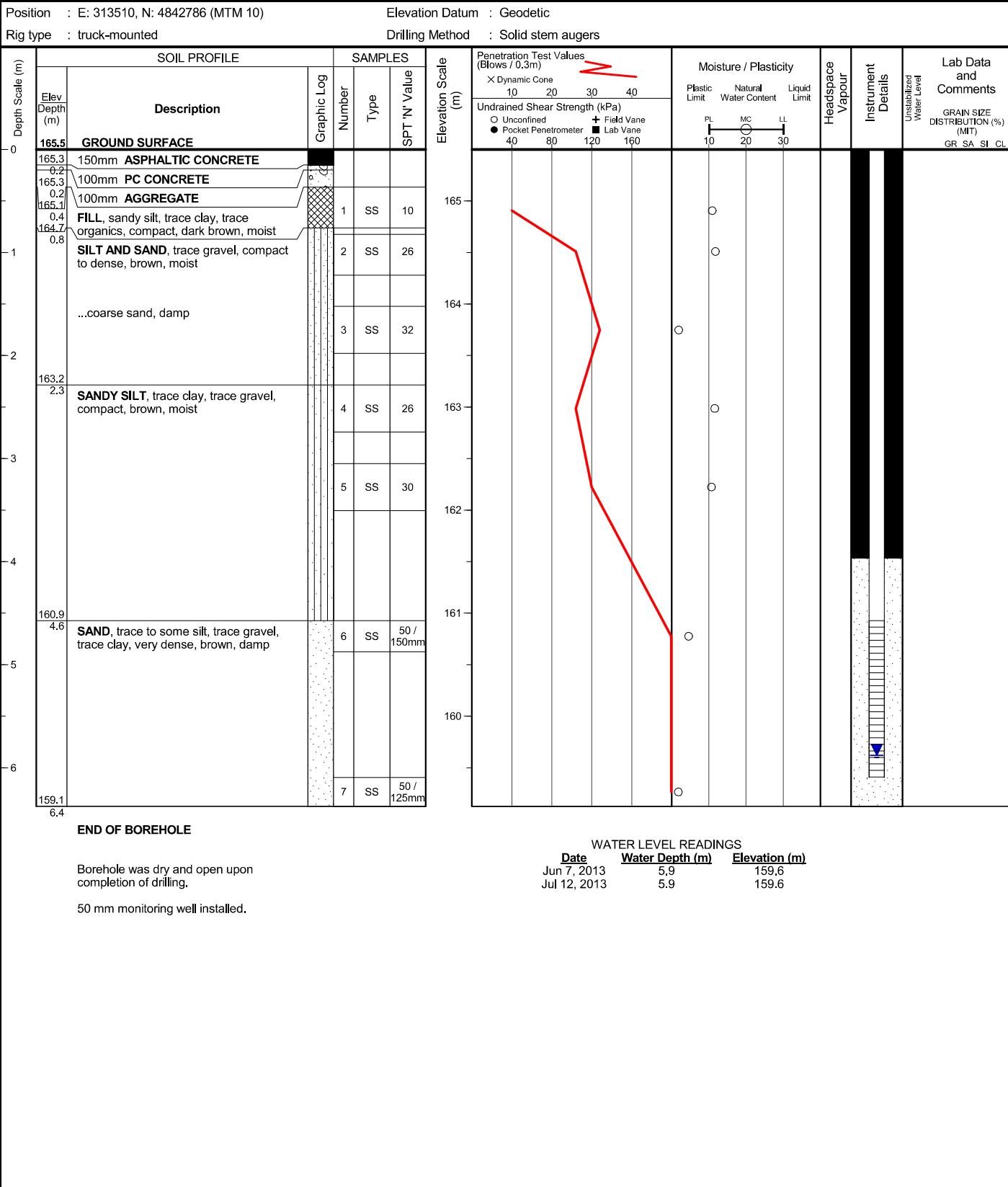
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S32

Client : Aquafor Beech Ltd.

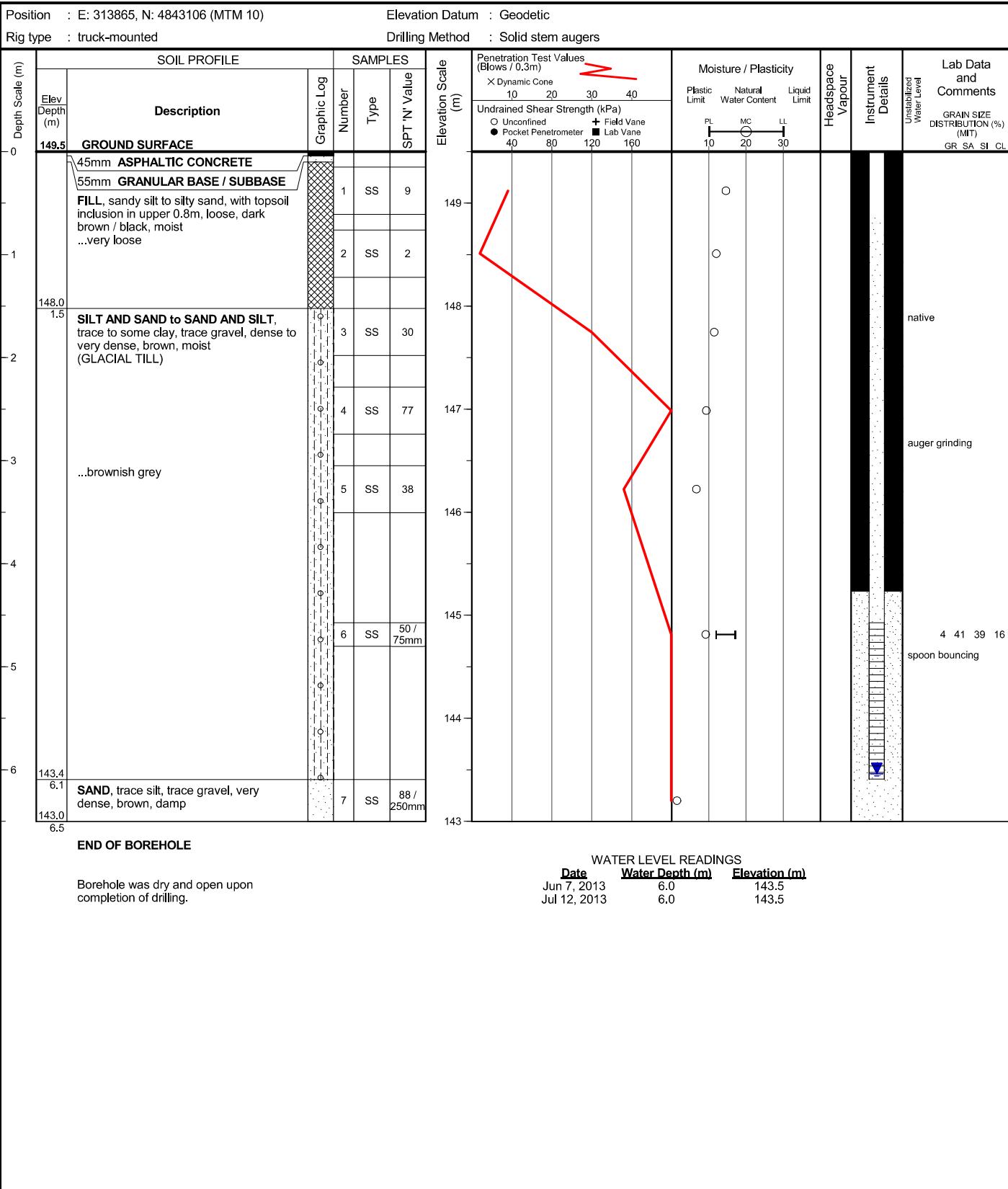
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

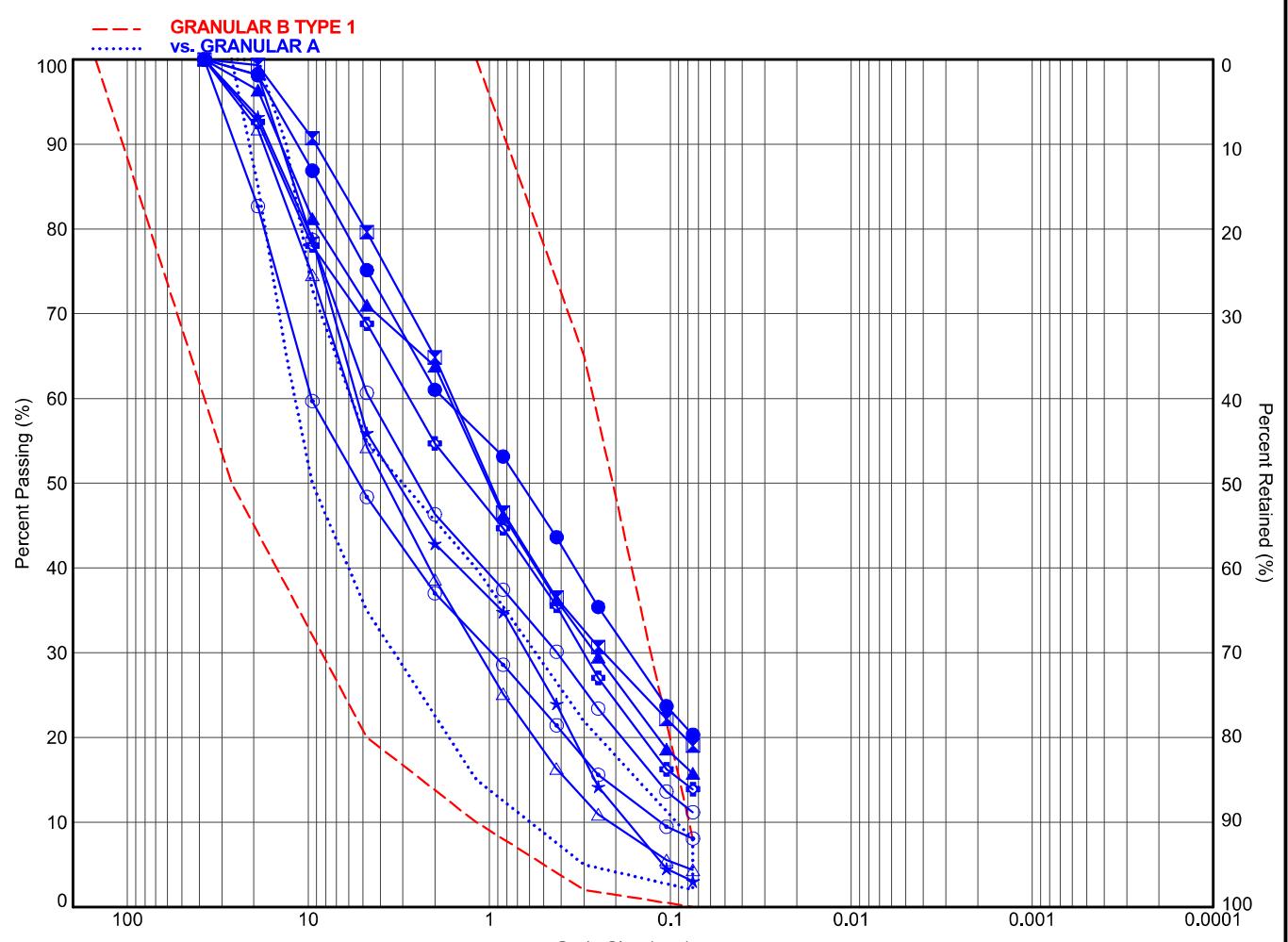


APPENDIX E

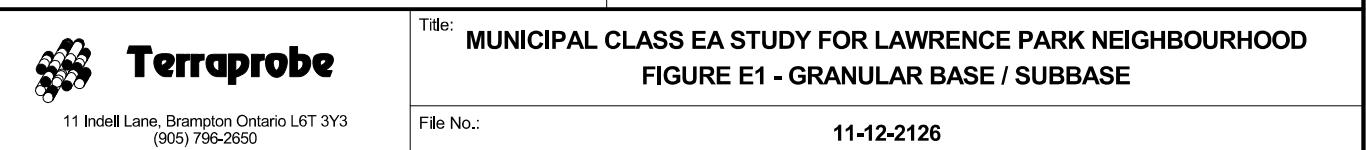
Laboratory Test Results

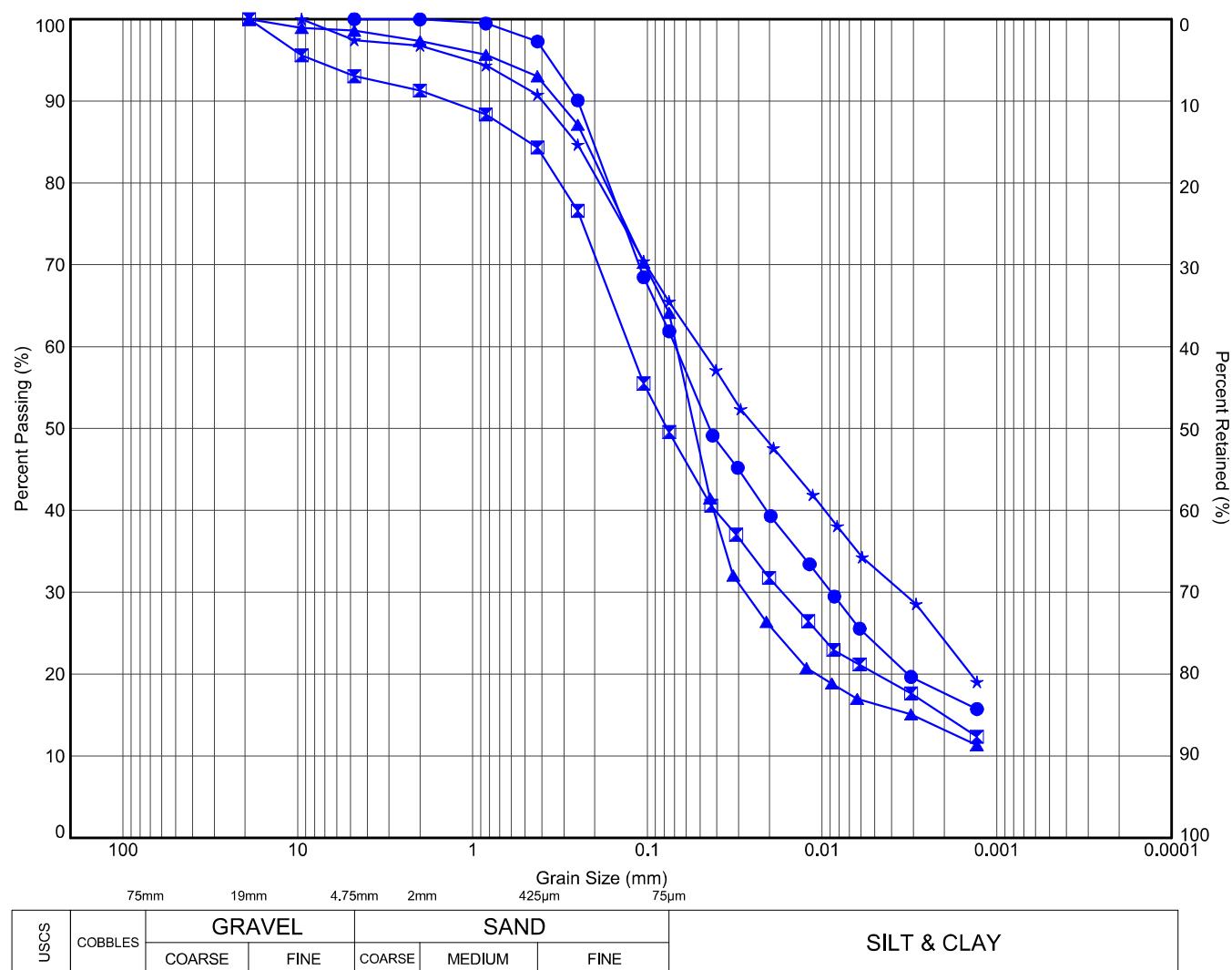


Terraprobe Inc



| UNIFIED SOIL CLASSIFICATION SYSTEM | | | | | | |
|------------------------------------|--------|-----------|-----------|------------|----------|-----------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt & Clay (%) |
| ● 11 | | | | 25 | 55 | 20 |
| ■ 26 | | | | 20 | 61 | 19 |
| ▲ S3 | | | | 29 | 55 | 16 |
| ★ S9 | | | | 44 | 53 | 3 |
| ○ S14 & S15 | | | | 52 | 40 | 8 |
| ◆ S19 & S29 | | | | 31 | 55 | 14 |
| ○ S24 | | | | 39 | 50 | 11 |
| △ S27 & S28 | | | | 46 | 50 | 4 |





UNIFIED SOIL CLASSIFICATION SYSTEM

| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt & Clay (%) | Sample Description |
|---------|--------|-----------|-----------|------------|----------|-----------------|--------------------|
| ● 19 | SS2 | 1.0 | | 0 | 38 | 62 | |
| ✖ 23 | SS2 | 1.0 | | 7 | 43 | 50 | |
| ▲ 45 | SS1 | 1.0 | | 1 | 35 | 64 | |
| ★ 48 | AS1 | 0.6 | | 3 | 31 | 66 | |



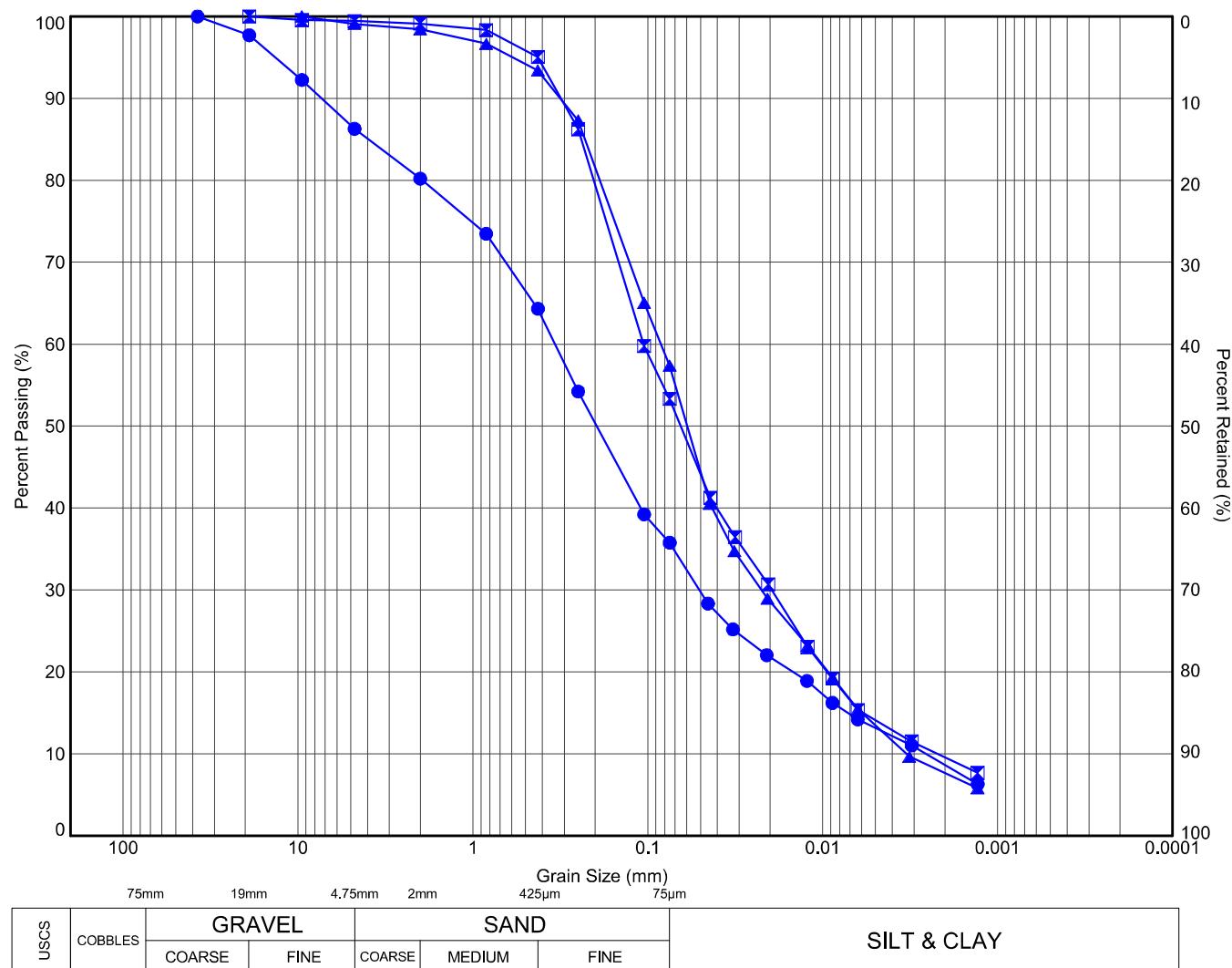
Terraprobe

11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title: **MUNICIPAL CLASS EA STUDY FOR LAWRENCE PARK NEIGHBOURHOOD**
FIGURE E2 - FILL: CLAYEY SILT TO SILTY CLAY

File No.:

11-12-2126



| UNIFIED SOIL CLASSIFICATION SYSTEM | | | | | | | |
|------------------------------------|--------|-----------|-----------|------------|----------|-----------------|--------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt & Clay (%) | Sample Description |
| ● 6 | SS2 | 1.0 | | 14 | 50 | 36 | |
| ✖ 11 | SS1 | 1.0 | | 1 | 46 | 53 | |
| ▲ S8 | SS3 | 1.8 | | 1 | 42 | 57 | |

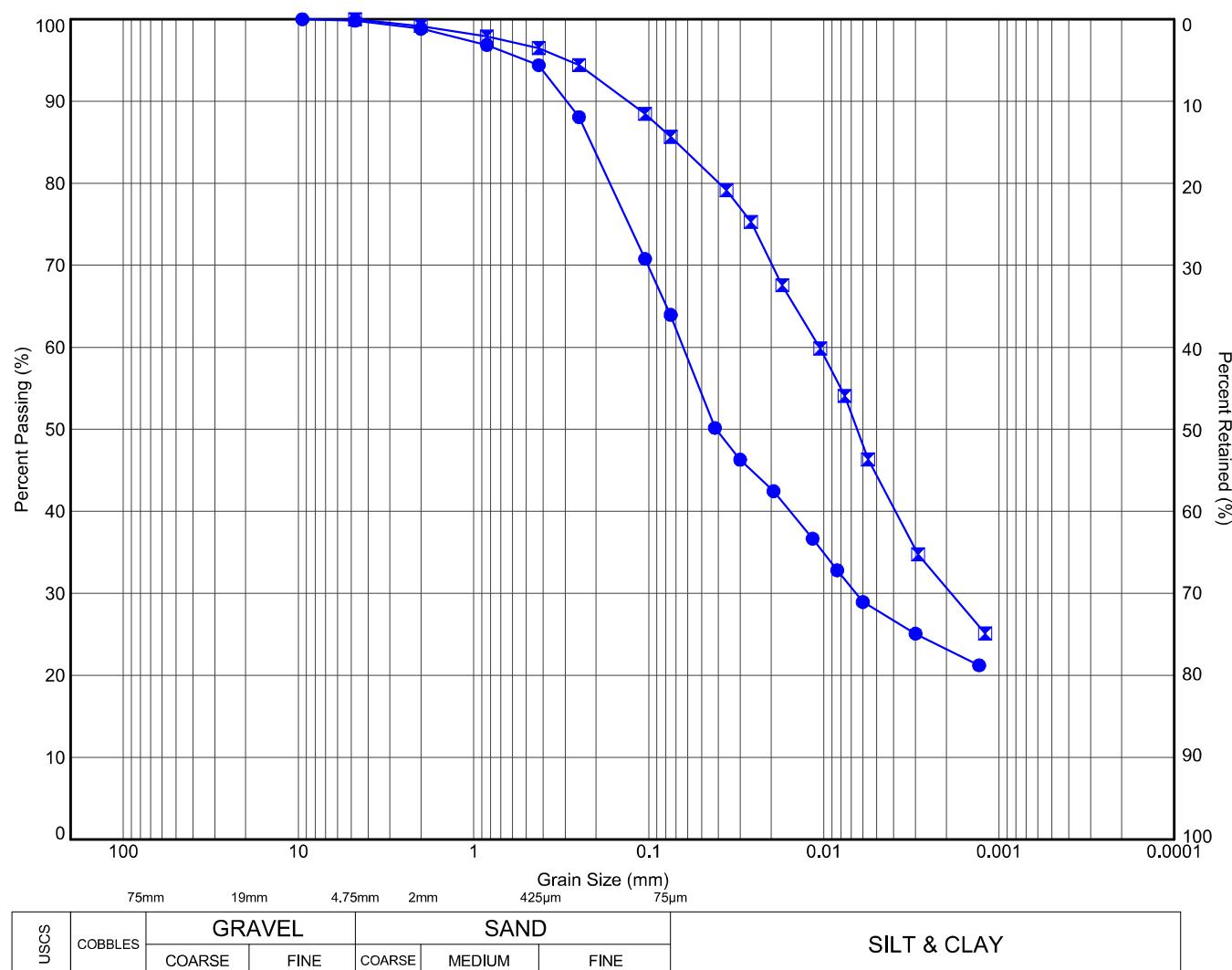


11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

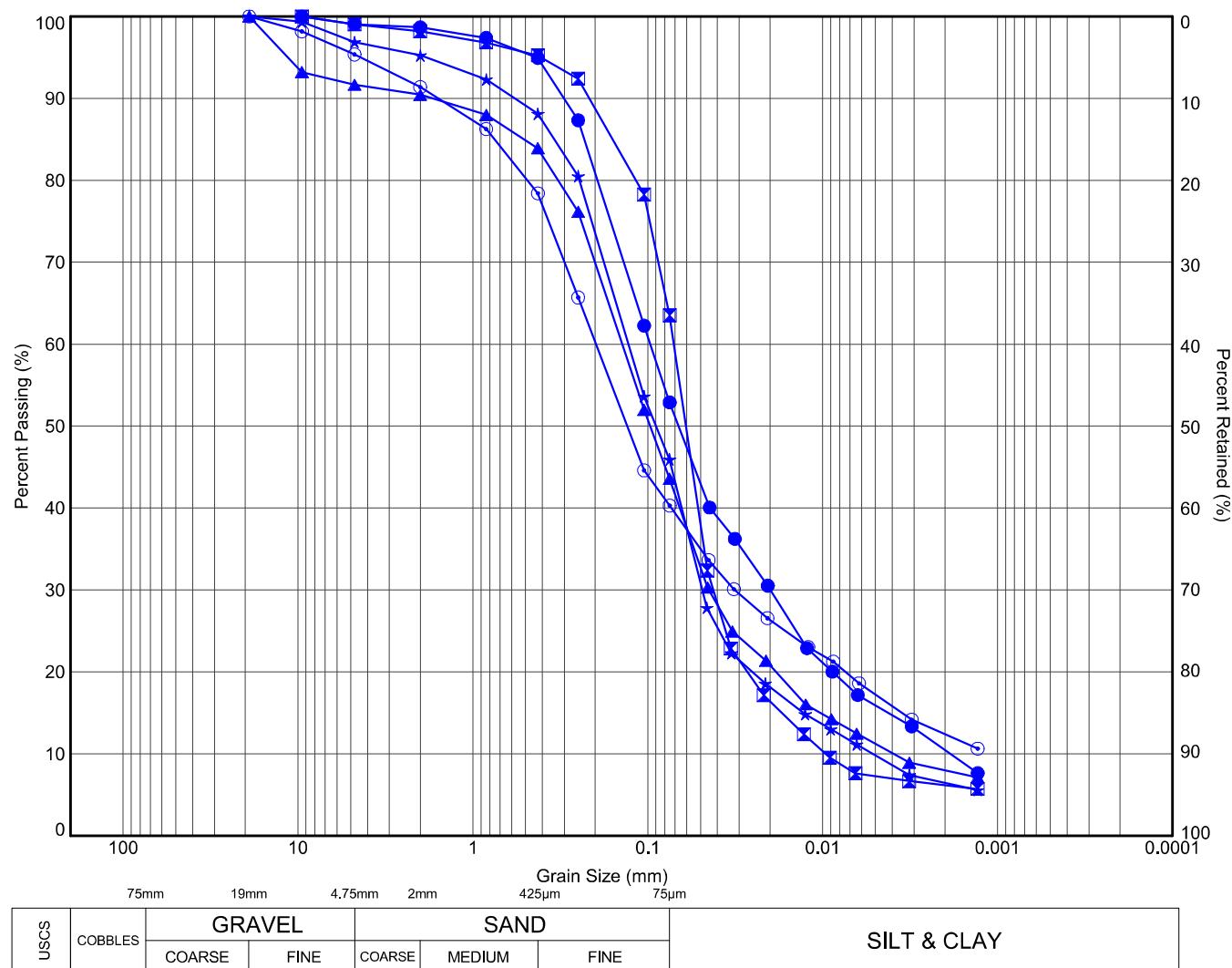
Title: **MUNICIPAL CLASS EA STUDY FOR LAWRENCE PARK NEIGHBOURHOOD**
FIGURE E3 - FILL: SILTY SAND TO SANDY SILT

File No.:

11-12-2126



| UNIFIED SOIL CLASSIFICATION SYSTEM | | | | | | | |
|------------------------------------|--------|-----------|-----------|------------|----------|-----------------|--------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt & Clay (%) | Sample Description |
| ● 33 | AS1 | 0.5 | | 0 | 36 | 64 | |
| ■ 39 | AS1 | 0.5 | | 0 | 14 | 86 | |



| UNIFIED SOIL CLASSIFICATION SYSTEM | | | | | | | |
|------------------------------------|--------|-----------|-----------|------------|----------|-----------------|--------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt & Clay (%) | Sample Description |
| ● 2 | SS1 | 1.0 | | 1 | 46 | 53 | |
| □ 14 | SS1 | 1.0 | | 1 | 35 | 64 | |
| ▲ 26 | SS2 | 1.0 | | 8 | 48 | 44 | |
| ★ 29 | SS2 | 1.0 | | 3 | 51 | 46 | |
| ○ 51 | SS2 | 1.0 | | 5 | 55 | 40 | |

ESTIMATED PERMEABILITY – PAVEMENT BOREHOLES

| Borehole No. Sample No. | Sampling Depth below Grade | Percentage | | | | Estimated Permeability (on the order of) |
|-------------------------------|-------------------------------------|------------|------|------|------|---|
| | | Gravel | Sand | Silt | Clay | |
| BH 19 SS 2 | 1.0 m | 0 | 38 | 62 | | 10^{-7} cm/sec |
| BH 23 SS 2 | 1.0 m | 7 | 43 | 50 | | 10^{-7} cm/sec |
| BH 45 SS 1 | 1.0 m | 1 | 35 | 64 | | 10^{-6} cm/sec |
| BH 48 SS 1 | 0.6 m | 3 | 31 | 66 | | 10^{-7} cm/sec |
| BH 6 SS 2 | 1.0 m | 14 | 50 | 36 | | 10^{-5} cm/sec |
| BH 11 SS 1 | 1.0 m | 1 | 46 | 53 | | 10^{-5} cm/sec |
| S 8 SS 3 | 1.8 m | 1 | 42 | 57 | | 10^{-5} cm/sec |
| BH 33 AS 1 | 0.5 m | 0 | 36 | 64 | | 10^{-8} cm/sec |
| BH 39 AS 1 | 0.5 m | 0 | 14 | 86 | | 10^{-8} cm/sec |
| BH 2 SS 1 | 1.0 m | 1 | 46 | 53 | | 10^{-6} cm/sec |
| S 14 SS 1 | 1.0 m | 1 | 35 | 64 | | 10^{-4} cm/sec |
| BH 26 SS 2 | 1.0 m | 8 | 48 | 44 | | 10^{-5} cm/sec |
| BH 29 SS 2 | 1.0 m | 3 | 51 | 46 | | 10^{-5} cm/sec |
| BH 51 SS 2 | 1.0 m | 5 | 55 | 40 | | 10^{-6} cm/sec |



ESTIMATED PERMEABILITY – SEWER BOREHOLES

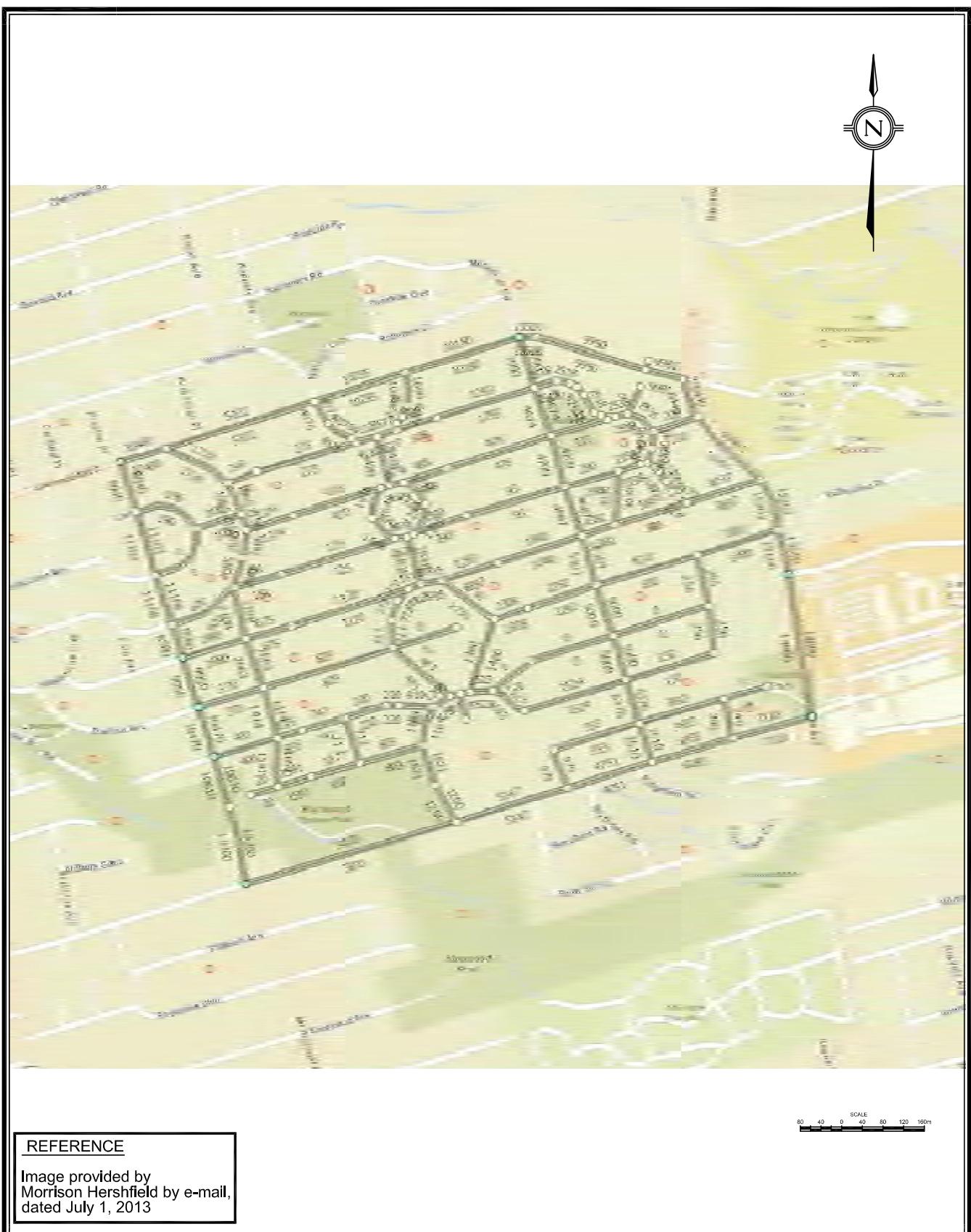
| Borehole No. Sample No. | Sampling Depth below Grade | Percentage | | | | Estimated Permeability (on the order of) |
|-------------------------------|-------------------------------------|------------|------|------|------|---|
| | | Gravel | Sand | Silt | Clay | |
| S 1 SS 6 | 4.7 m | 1 | 81 | 15 | 3 | 10-3 cm/sec |
| S 3 SS 7 | 6.3 m | 6 | 80 | 14 | | 10-3 cm/sec |
| S 5 SS 6 | 4.8 m | 1 | 6 | 38 | 55 | 10-7 cm/sec |
| S 8 SS 3 | 1.8 m | 2 | 47 | 43 | 8 | 10-5 cm/sec |
| S 9 SS 4 | 2.5 m | 4 | 87 | 9 | | 10-2 cm/sec |
| S 11 SS 6 | 6.3 m | 6 | 34 | 43 | 17 | 10-6 cm/sec |
| S 13 SS 5 | 3.3 m | 0 | 60 | 38 | 2 | 10-3 cm/sec |
| S 14 SS 4 | 2.4 m | 2 | 48 | 42 | 8 | 10-5 cm/sec |
| S 18 SS 4 | 2.5 m | 0 | 20 | 71 | 9 | 10-5 cm/sec |
| S 21 SS 4 | 2.5 m | 0 | 63 | 29 | 8 | 10-5 cm/sec |
| S 22 SS 6 | 4.8 m | 1 | 83 | 16 | | 10-3 cm/sec |
| S 24 SS 7 | 6.3 m | 0 | 5 | 34 | 61 | 10-8 cm/sec |
| S 26 SS 4 | 2.5 m | 0 | 56 | 39 | 5 | 10-4 cm/sec |
| S 28 SS 4 | 2.5 m | 0 | 5 | 35 | 60 | 10-7 cm/sec |
| S 30 SS 7 | 6.2 m | 3 | 32 | 47 | 18 | 10-7 cm/sec |
| S 32 SS 6 | 4.7 m | 4 | 41 | 39 | 16 | 10-7 cm/sec |



APPENDIX F
AADT Network Map and
Equivalent Single Axle Load Calculations



Terraprobe Inc



REFERENCE

Image provided by
Morrison Hershfield by e-mail,
dated July 1, 2013

SCALE
80 40 0 40 80 120 160m



Terraprobe

11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title:
**Municipal Class EA Study for Lawrence Park Neighbourhood
AADT NETWORK MAP**

File No.

11-12-2126

FIGURE :
F1

Table F1
Municipal Class EA Study for Lawrence Park Neighbourhood
Lawrence Avenue East
Bayview Avenue to Wanless Crescent
City of Toronto
Equivalent Single Axle Load Calculations (AADT DATA)

| Description - Lawrence Avenue East | 2013 | 2014 | 2033 |
|---|---------------|-----------------------------|------------------|
| Traffic Data Year | | | |
| Design Year | | 2014 | |
| Analysis Period | | 20 | |
| 1a) Average Annual Daily Traffic (AADT) | 27,040 | 27,040 | 27,040 |
| Annual Growth Rate (%) | | 0 | |
| 1b) Truck fraction of total traffic | | 0.04 | |
| Number of lanes in one direction | | 2 | |
| 1c) Directional Factor | | 0.5 | |
| 1d) Lane distribution Factor | | 0.8 | |
| Daily Truck Volume | | 433 | |
| Road Classification | | Urban Major Arterial | |
| 2) Breakdown of Truck Proportions | | | |
| Class 1 | | 0.30 | |
| Class 2 | | 0.10 | |
| Class 3 | | 0.45 | |
| Class 4 | | 0.15 | |
| 3) Daily Truck Volumes (4 Classes) | | 2014 to 2033 | |
| Class 1 | | 130 | |
| Class 2 | | 43 | |
| Class 3 | | 195 | |
| Class 4 | | 65 | |
| 4) Truck Factors (4 Classes) | | | |
| Class 1 | | 0.5 | |
| Class 2 | | 2.3 | |
| Class 3 | | 1.6 | |
| Class 4 | | 5.5 | |
| 5) Daily ESALs per Truck Class (4 Classes) | | | |
| Class 1 | | 65 | |
| Class 2 | | 100 | |
| Class 3 | | 312 | |
| Class 4 | | 357 | |
| 6) Total Daily ESALs in Design Lane | | | 833 |
| 7) Total Base Year ESALs | | 2014 | |
| Number of Days of Truck Traffic | | 300 | |
| Total Base Year ESALs | | | 249,850 |
| 8) Cumulative ESALs for Design Period | | | |
| Design Period | | 20 | |
| Annual Growth Rate (%) | | 0 | |
| Geometric Growth Factor | | 1.0 | |
| Cumulative ESALs for the Design Period | | | 4,996,992 |
| | | | 4,997,000 |

Note: ESAL Calculations are based on "Procedures for Estimating Traffic Loads for Pavement Design", Hajek, J., 1995, and "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" (MI-83), 2008.

Table F2
Municipal Class EA Study for Lawrence Park Neighbourhood
Blythwood Road
Blyth Hill Road to Bayview Avenue
City of Toronto
Equivalent Single Axle Load Calculations (AADT DATA)

| Description -Blythwood Road | Year |
|---|-----------------------------|
| Traffic Data Year | 2013 |
| Design Year | 2014 |
| Analysis Period | 20 |
| 1a) Average Annual Daily Traffic (AADT) | 14,220 |
| Annual Growth Rate (%) | 0 |
| 1b) Truck fraction of total traffic | 0.04 |
| Number of lanes in one direction | 1 |
| 1c) Directional Factor | 0.5 |
| 1d) Lane distribution Factor | 1 |
| Daily Truck Volume | 284 |
| Road Classification | Urban Major Arterial |
| 2) Breakdown of Truck Proportions | |
| Class 1 | 0.90 |
| Class 2 | 0.02 |
| Class 3 | 0.05 |
| Class 4 | 0.03 |
| 3) Daily Truck Volumes (4 Classes) | 2014 to 2033 |
| Class 1 | 256 |
| Class 2 | 6 |
| Class 3 | 14 |
| Class 4 | 9 |
| 4) Truck Factors (4 Classes) | |
| Class 1 | 0.5 |
| Class 2 | 2.3 |
| Class 3 | 1.6 |
| Class 4 | 5.5 |
| 5) Daily ESALs per Truck Class (4 Classes) | |
| Class 1 | 128 |
| Class 2 | 13 |
| Class 3 | 23 |
| Class 4 | 47 |
| 6) Total Daily ESALs in Design Lane | 211 |
| 7) Total Base Year ESALs | 2014 |
| Number of Days of Truck Traffic | 300 |
| Total Base Year ESALs | 63,222 |
| 8) Cumulative ESALs for Design Period | |
| Design Period | 20 |
| Annual Growth Rate (%) | 0 |
| Geometric Growth Factor | 0.0 |
| Cumulative ESALs for the Design Period | 1,264,442 |
| | 1,264,400 |

Note: ESAL Calculations are based on "Procedures for Estimating Traffic Loads for Pavement Design", Hajek, J., 1995, and "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" (MI-83), 2008.

Table F3
Municipal Class EA Study for Lawrence Park Neighbourhood
Mildenhall Road
Blythwood Road to Lawrence Avenue East
City of Toronto
Equivalent Single Axle Load Calculations (AADT DATA)

| Description - Mildenhall Road | Year | 2013 | 2014 | 2033 |
|---|--|--------|-----------|----------------------|
| Traffic Data Year | | | | |
| Design Year | | | 2014 | 2014 |
| Analysis Period | | | 20 | 20 |
| 1a) Average Annual Daily Traffic (AADT) | | 12,752 | 12,752 | 12,752 |
| Annual Growth Rate (%) | | | 0 | 0 |
| 1b) Truck fraction of total traffic | | | 0.02 | 0.02 |
| Number of lanes in one direction | | | 1 | 1 |
| 1c) Directional Factor | | | 1 | 1 |
| 1d) Lane distribution Factor | | | 1 | 1 |
| | Daily Truck Volume | | 255 | |
| Road Classification | | | | Urban Major Arterial |
| 2) Breakdown of Truck Proportions | | | | |
| | Class 1 | | 0.90 | |
| | Class 2 | | 0.02 | |
| | Class 3 | | 0.05 | |
| | Class 4 | | 0.03 | |
| 3) Daily Truck Volumes (4 Classes) | | | | 2014 to 2033 |
| | Class 1 | | 230 | |
| | Class 2 | | 5 | |
| | Class 3 | | 13 | |
| | Class 4 | | 8 | |
| 4) Truck Factors (4 Classes) | | | | |
| | Class 1 | | 0.5 | |
| | Class 2 | | 2.3 | |
| | Class 3 | | 1.6 | |
| | Class 4 | | 5.5 | |
| 5) Daily ESALs per Truck Class (4 Classes) | | | | |
| | Class 1 | | 115 | |
| | Class 2 | | 12 | |
| | Class 3 | | 20 | |
| | Class 4 | | 42 | |
| 6) Total Daily ESALs in Design Lane | | | 189 | |
| 7) Total Base Year ESALs | | | | 2014 |
| Number of Days of Truck Traffic | | | 300 | |
| | Total Base Year ESALs | | 56,695 | |
| 8) Cumulative ESALs for Design Period | | | | |
| Design Period | | | 20 | |
| Annual Growth Rate (%) | | | 0 | |
| Geometric Growth Factor | | | 0.0 | |
| | Cumulative ESALs for the Design Period | | 1,133,908 | |
| | | | 1,133,900 | |

Note: ESAL Calculations are based on "Procedures for Estimating Traffic Loads for Pavement Design", Hajek, J., 1995, and "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" (MI-83), 2008.

Table F4
Municipal Class EA Study for Lawrence Park Neighbourhood
Local Residential Roads
Lawrence Park Neighbourhood
City of Toronto
Equivalent Single Axle Load Calculations (MINIMUM AADT VALUE)

| Description - Various Local Residential Road | 2013 | Year 2014 | 2033 |
|---|---|-----------------------------|----------------|
| Traffic Data Year | | | |
| Design Year | | 2014 | |
| Analysis Period | | 20 | |
| 1a) Average Annual Daily Traffic (AADT) | 2,500 | 2,500 | 2,500 |
| Annual Growth Rate (%) | | 0 | |
| 1b) Truck fraction of total traffic | | 0.01 | |
| Number of lanes in one direction | | 1 | |
| 1c) Directional Factor | | 1 | |
| 1d) Lane distribution Factor | | 1 | |
| | Daily Truck Volume | 25 | |
| Road Classification | | Urban Major Arterial | |
| 2) Breakdown of Truck Proportions | | | |
| | Class 1 | 0.90 | |
| | Class 2 | 0.02 | |
| | Class 3 | 0.05 | |
| | Class 4 | 0.03 | |
| 3) Daily Truck Volumes (4 Classes) | | 2014 to 2033 | |
| | Class 1 | 23 | |
| | Class 2 | 1 | |
| | Class 3 | 1 | |
| | Class 4 | 1 | |
| 4) Truck Factors (4 Classes) | | | |
| | Class 1 | 0.5 | |
| | Class 2 | 2.3 | |
| | Class 3 | 1.6 | |
| | Class 4 | 5.5 | |
| 5) Daily ESALs per Truck Class (4 Classes) | | | |
| | Class 1 | 11 | |
| | Class 2 | 1 | |
| | Class 3 | 2 | |
| | Class 4 | 4 | |
| 6) Total Daily ESALs in Design Lane | | | 19 |
| 7) Total Base Year ESALs | | 2014 | |
| Number of Days of Truck Traffic | | 300 | |
| | Total Base Year ESALs | | 5,558 |
| 8) Cumulative ESALs for Design Period | | | |
| Design Period | | 20 | |
| Annual Growth Rate (%) | | 0 | |
| Geometric Growth Factor | | 0.0 | |
| | | 111,150 | |
| | Cumulative ESALs for the Design Period | | 111,200 |

Note: ESAL Calculations are based on "Procedures for Estimating Traffic Loads for Pavement Design", Hajek, J., 1995, and "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" (MI-83), 2008.

Table F5
Municipal Class EA Study for Lawrence Park Neighbourhood
Local Residential Roads
Lawrence Park Neighbourhood
City of Toronto
Equivalent Single Axle Load Calculations (MAXIMUM AADT VALUE)

| Description - Various Local Residential Road | 2013 | 2014 | 2033 |
|---|---|-----------------------------|--------------|
| Traffic Data Year | | | |
| Design Year | | 2014 | 2014 |
| Analysis Period | | 20 | 20 |
| 1a) Average Annual Daily Traffic (AADT) | 8,764 | 8,764 | 8,764 |
| Annual Growth Rate (%) | | 0 | 0 |
| 1b) Truck fraction of total traffic | | 0.02 | 0.02 |
| Number of lanes in one direction | | 1 | 1 |
| 1c) Directional Factor | | 1 | 1 |
| 1d) Lane distribution Factor | | 1 | 1 |
| | Daily Truck Volume | 175 | |
| Road Classification | | Urban Major Arterial | |
| 2) Breakdown of Truck Proportions | | | |
| | Class 1 | 0.90 | |
| | Class 2 | 0.02 | |
| | Class 3 | 0.05 | |
| | Class 4 | 0.03 | |
| 3) Daily Truck Volumes (4 Classes) | | 2014 to 2033 | |
| | Class 1 | 158 | |
| | Class 2 | 4 | |
| | Class 3 | 9 | |
| | Class 4 | 5 | |
| 4) Truck Factors (4 Classes) | | | |
| | Class 1 | 0.5 | |
| | Class 2 | 2.3 | |
| | Class 3 | 1.6 | |
| | Class 4 | 5.5 | |
| 5) Daily ESALs per Truck Class (4 Classes) | | | |
| | Class 1 | 79 | |
| | Class 2 | 8 | |
| | Class 3 | 14 | |
| | Class 4 | 29 | |
| 6) Total Daily ESALs in Design Lane | | 130 | |
| 7) Total Base Year ESALs | | 2014 | |
| Number of Days of Truck Traffic | | 300 | |
| | Total Base Year ESALs | 38,965 | |
| 8) Cumulative ESALs for Design Period | | | |
| Design Period | | 20 | |
| Annual Growth Rate (%) | | 0 | |
| Geometric Growth Factor | | 0.0 | |
| | | 779,295 | |
| | Cumulative ESALs for the Design Period | 779,300 | |

Note: ESAL Calculations are based on "Procedures for Estimating Traffic Loads for Pavement Design", Hajek, J., 1995, and "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" (MI-83), 2008.

Appendix F-2 – Geotechnical Investigation Report



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

**GEOTECHNICAL INVESTIGATION
MUNICIPAL CLASS EA STUDY FOR
LAWRENCE PARK NEIGHBOURHOOD
CITY OF TORONTO, ONTARIO
(Storm Sewer Improvements Report)**

Prepared for: Aquafor Beech Limited
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File No. 11-12-2126
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1 INTRODUCTION

Terraprobe Inc. was retained by Aquafor Beech Limited to conduct a geotechnical investigation for the storm sewer improvements and to provide geotechnical engineering recommendations to support the preliminary design Class EA Study for Lawrence Park Neighbourhood (LPN), Basement Flooding (BF) Area 20, located in the City of Toronto, Ontario.

The scope of work for the storm sewer improvements and geotechnical engineering services of this project are outlined in Terraprobe's proposal titled "*P12-0282 Lawrence Park Neighbourhood*" dated May 10, 2012, revised dated December 10, 2012.

This report encompass the geotechnical investigation to determine the prevailing subsurface soil and ground water condition within the study area, and to provide geotechnical engineering recommendation for storm sewer improvements. General comments are also included on excavation, backfilling, ground water control and earthworks, pipe bedding, earth pressure design parameter and soil chemical analysis as they relate to site specific geotechnical conditions.

The RFP for the project consisted of two separate tasks (Task 'A' and Task 'B'). The results of the geotechnical investigation carried out for the site for Lawrence Park Neighbour Road Reconstruction, Traffic Flow and Pedestrian Infrastructure Improvements (Task 'A') has been reported under a separate cover. This report pertains to the geotechnical engineering component (Task 'B', storm and sanitary sewer systems) of the proposed works.

2 SITE AND PROJECT DESCRIPTION

The Lawrence Park Neighbourhood study area is in Ward 25 and generally bounded by Blythwood Road, Blyth Hill Road and Sunnydene Crescent to the south, Lawrence Avenue East, Braeside Road and Mildenhall Road to the north, Bayview Avenue to the east and Mount Pleasant Road to the west. A site location plan is provided on Figure 1.

The Lawrence Park Neighbourhood study area is approximately 16.3 kilometres in total length. Currently, the existing road drainage systems to convey storm water runoff are poor to non-existent. Even some of the streets are not designed to convey the overland storm water flows via the road (major) systems and there are no sidewalks for pedestrian use in some areas. We understand that the City intends to identify the deficiencies in the existing sewer systems and improve/install new sewer system as required.

It should be noted that the design details of the proposed sewer system was not available at the time of preparation of this report, therefore, geotechnical comments and recommendations noted in this report are preliminary and should be reviewed and re-assessed based on the final sewer design.



3 INVESTIGATION PROCEDURE

The geotechnical investigation for the sewer system component of the work consisted of advancing thirty two (32) boreholes with field testing, conducting geotechnical and analytical laboratory testing, interpreting field and laboratory test results, analysis and report preparation. Refer to our other report submitted under a separate cover (Task ‘A’) for pavement boreholes, work programme, analysis and recommendations.

The field investigation was conducted on May 15, 16, 17, 21 and 22, 2013, and consisted of drilling and sampling a total of thirty two (32) boreholes, extending to depths varying from about 2.7 to 6.6 m below existing ground surface. The boreholes were staked in the field by Terraprobe’s field staff based on borehole location provided by Aquafor Beech Limited (approved by the City staff). Various utility locate agencies were contacted to clear the borehole locations of underground public utilities prior to drilling. The borehole locations are shown on the enclosed Borehole Location Plan in Figure 2.

The ground surface elevations at the borehole locations were estimated from the topographical information provided by Aquafor Beech Limited. The elevations noted on the borehole logs are approximate, and provided only for the purpose of relating borehole soil stratigraphy, and should not be used or relied on for other purposes.

The borings were advanced using a continuous flight power auger machine (truck-mounted) with solid stem augers, and were sampled at regular interval of depth with a conventional 50 mm diameter split barrel samplers driven into the soil in accordance with the Standard Penetration Test (SPT) procedure described in *ASTM D1586 - 08a Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*. The field work (drilling, sampling and testing) was observed and recorded by a member of our field engineering staff, who logged the borings and examined the samples as they were obtained. All samples obtained during the investigation were sealed into plastic jars, and transported to our geotechnical testing laboratory for detailed inspection and testing.

Water level and borehole caving observations were made in all boreholes during the course of the field work. Monitoring wells comprising 50 mm diameter PVC tubing were installed in sixteen (16) selected boreholes (S1, S2, S3, S7, S10, S11, S13, S14, S16, S19, S20, S21, S27, S29, S31 and S32) to monitor the ground water levels. The PVC tubing was fitted with a bentonite clay seal as shown on the accompanying borehole logs. Water levels in the monitoring wells were measured on June 4/7 and July 12, 2013. The results of shallow ground water monitoring are presented in Section 4.4 of this report.



3.1 Laboratory Testing

Recovered soil samples were examined as to its visual and textural characteristics by the geotechnical engineer. The geotechnical laboratory testing consisted of moisture content determination on all soil samples; and a sieve and hydrometer analysis on selected sixteen (16) soil samples as well as Atterberg Limits testing on selected five (5) soil samples. The results of the moisture content of individual samples, results of the sieve and hydrometer analysis and Atterberg Limits are plotted on the borehole logs, and appended.

The permeability of the soil samples was estimated based on the results of the grain size analysis. The results of the grain size analysis and estimated soil permeability are summarized and appended.

Twenty (20) soil samples were selected by Terraprobe and submitted to AGAT Laboratories for soil chemistry analysis for selected metals and inorganic parameters included in the *Soil, Ground Water and Sediment Standards for Use Under Part XV. I of the Environmental Protection Act of Ontario* (April 15, 2011). The soil chemistry test results (Certificate of Analysis) are appended.

4 SUBSURFACE CONDITIONS

The results of the individual boreholes are summarized below and recorded on the accompanying Borehole Logs. This summary is intended to correlate this data to assist in the interpretation of the subsurface conditions at the site. Please refer to enclosed borehole logs for detailed borehole and stratigraphic results.

It should be noted that the soil conditions are confirmed at the borehole locations only and may vary between and beyond the boreholes. The stratigraphic boundaries as shown on the logs are based on a non-continuous sampling. These boundaries represent an inferred transition between the various strata, rather than a precise plane of geologic change.

In summary, the subsurface conditions encountered in the boreholes were generally consistent. The boreholes encountered a surficial pavement structures/topsoil layer underlain by a zone of earth fill and or weathered/disturbed soil which was in turn underlain by undisturbed native soils, extending to the full depth of investigation (about 6.6 m below grade).

4.1 Surficial Layers

An asphaltic concrete layer was encountered in all boreholes (except in Boreholes 16 and 25) at the ground surface, varying in thickness from about 40 mm (Borehole 23) to 260 mm (Borehole 5) underlain by a layer of portland concrete, varying in thickness from about 100 mm (Boreholes 13, 18, 22 and 31) to 215 mm (Boreholes 26 and 30) and/or of aggregate, varying in thickness about 50mm (Boreholes 7, 10, 17, 21, 22, 24) and 500 mm (Borehole 5) thick.



Topsoil layer about 150 and 305 mm thick was encountered in Boreholes 16 and 25, respectively. The topsoil was dark brown in colour and predominantly consisted of a silt/sand matrix intermixed with organics.

It must be noted that the topsoil and pavement component thicknesses were measured from the borings at the borehole locations and are approximate only. The reported thickness data may vary between and beyond the borehole locations. This information is not sufficient for estimating topsoil/pavement component quantities and/or associated costs. Consideration should be given to conduct pavement coring (for pavement structure) and a shallow test pit investigation (for topsoil measurements) to obtain accurate component thickness information for topsoil/pavement structure.

4.2 Earth Fill

A zone of earth fill and/or weathered/disturbed material was encountered in all boreholes (except in Boreholes 1 and 14) beneath the topsoil/pavement structure and extended to depths varying from about 0.8 m (Boreholes 6, 7, 8, 9, 13, 16, 17, 19, 21, 26 and 31) to 4.6 m (Boreholes 12 and 18) below existing grade. The earth fill and or weathered/disturbed material consisted of mixed composition comprising sandy silt to silty sand/clayey silt, with trace to some amounts of gravel particles. Topsoil and organic presence and sporadic debris inclusion were also noted within this zone at varying depths.

The Standard Penetration Test results (N-value) obtained from the earth fill and/or weathered/disturbed materials varied from about 0 to 28 blows per 300 mm of penetration, indicating a typically very loose to compact relative density (cohesionless soils) and soft to stiff consistency (cohesive soils).

Measured moisture contents of the earth fill soil samples ranged from about 2 to 32 percent by weight, indicating a damp to wet condition.

4.3 Native Soils

Undisturbed native soil deposit was encountered in all boreholes beneath the earth fill and/or weathered/disturbed soil zone or pavement structure and extended to the full depth of investigation (up to 6.6 m below existing grade). The composition of undisturbed native soil deposit encountered in boreholes varied across the site.

A layer of sand with trace to some silt and trace amounts of gravel and clay was encountered in Boreholes 1 to 4, 6, 7, 8, 9, 17, 18, 22, 26, 27, 28, 31 and 32 at depths varying from about 0.8 m (Boreholes 9, 17 and 26) to 6.1 m (Borehole 32) and extended to depths varying from about 2.3 m (Boreholes 17 and 28) to 6.6 m (Boreholes 8, 18 and 27) below existing grade. A thin layer of silt with trace to some sand and trace amounts of clay was encountered in Boreholes 2, 3 and 7 at a depth of about 1.5 m below grade and extended to depths varying from about 2.0 m (Boreholes 2 and 3) to



3.1 m (Borehole 7) below existing grade. The Standard Penetration Test results (N-values) obtained from this deposit varied from about 13 to 89 blows per 300 mm of penetration and 50 blows per 100 to 150 mm of penetration, indicating a compact to very dense relative density. Measured moisture content of these soil samples ranged from about 1 to 27 percent by weight, indicating a damp to wet condition.

A layer of sandy silt to silt and sand/silt and sand to sand and silt till with trace amounts of gravel and clay was encountered in Boreholes 1, 6, 7, 8, 10, 12, 14, 15, 16, 19, 20, 22, 23, 25, 26, 28, 29 and 32 at depths varying from about 0.2 m (Borehole 1) to 6.1 m (Borehole 26) and extended to depths varying from about 1.2 m (Borehole 1) to 6.6 m (Boreholes 12, 15, 20, 25, 26 and 29) below existing grade. The Standard Penetration Test results (N-values) obtained from this deposit varied from about 6 to 89 blows per 300 mm of penetration and 50 blows per 75 to 150 mm of penetration, indicating a loose to very dense (typically compact to very dense) relative density. Measured moisture content of these soil samples ranged from 2 to 20 percent by weight, indicating a damp to moist condition.

A layer of clayey silt/silty clay to clay and silt till with some sand to sandy and trace amounts of gravel was encountered in Boreholes 5, 11, 13, 19, 20, 21, 28, 29 and 30 at depths varying from about 0.8 m (Boreholes 21) to 4.6 m (Borehole 13) and extended to depths varying from about 4.6 m (Boreholes 5, 20 and 29) to 6.6 m (Boreholes 11 and 19) below existing grade. The Standard Penetration Test results (N-values) obtained from this deposit varied from 9 to 44 blows per 300 mm of penetration and 50 blows per 100 to 150 mm of penetration, indicating a stiff to hard (typically very stiff to hard) consistency. Measured moisture content of these soil samples ranged from 7 to 27 percent by weight, indicating a damp to very moist condition.

A layer of clayey silt/silt and clay with trace amounts of sand and gravel was encountered in Boreholes 4, 5 and 24 at depths varying from about 1.5 m (Borehole 24) to 6.1 m (Borehole 4) and extended to the full depths of investigation (up to 6.6 m below grade). The Standard Penetration Test results (N-values) obtained from this deposit varied from 13 to 86 blows per 300 mm of penetration, indicating a stiff to hard consistency. Measured moisture content of these soil samples ranged from 17 to 25 percent by weight, indicating a moist to very moist condition.

A layer of sand and silt to silty sand with trace to some gravel and trace clay was encountered in Boreholes 11, 13, 17 and 21 at depths varying from about 1.5 m (Borehole 21) to 3.1 m (Borehole 13) and extended to depths varying from about 3.1 m (Borehole 21) to 6.6 m (Borehole 17) below existing grade. A layer of sandy silt to silt and sand with trace amounts gravel and clay was encountered in Boreholes 13, 20 and 31 at depths varying from about 0.8 m (Boreholes 13 and 31) to 1.5 m (Borehole 20) and extended to depths varying from about 3.1 m (Boreholes 13 and 20) to 4.6 m (Borehole 31) below existing grade. The Standard Penetration Test results (N-values) obtained from this deposit varied from 6 to 65 blows per 300 mm of penetration, indicating a loose to very dense



relative density. Measured moisture content of these soil samples ranged from 12 to 22 percent by weight, indicating a moist to wet condition.

It should be noted that the native till deposit may contain larger size particles (cobbles and boulders) that are not specifically identified in the boreholes. The size and distribution of such obstructions cannot be predicted with borings, because the borehole sampler size is insufficient to secure representative samples for the particles of this size.

4.4 Ground Water

Observations pertaining to the depth of water level and caving were made in the open boreholes at the time of drilling and after, and are noted on the enclosed borehole logs. Monitoring wells were installed in selected sixteen (16) boreholes (S1, S2, S3, S7, S10, S11, S13, S14, S16, S19, S20, S21, S27, S29, S31 and S32). Details of the monitoring well installations are shown on the enclosed borehole logs. Ground water levels measurements in the Monitoring wells were taken on June 4/7 and July 12, 2013 and are noted on the enclosed borehole logs. A summary of measured ground water levels is provided below:

| BH# | Depth of Boring | Depth to Cave | Water Level at the Time of Drilling | Water Level on June 4/7, 2013 | Water Level on July 12, 2013 |
|-----|-----------------|---------------|-------------------------------------|-------------------------------|------------------------------|
| 1 | 6.4 m BG | open | dry | 6.0 m BG | 6.0 m BG |
| 2 | 6.4 m BG | open | dry | 5.7 m BG | 5.7 m BG |
| 3 | 6.6 m BG | 5.6 m BG | 5.5 m BG | 5.5 m BG | 5.4 m BG |
| 4 | 6.6 m BG | 2.4 m BG | 2.3 m BG | NP | NP |
| 5 | 6.6 m BG | open | dry | NP | NP |
| 6 | 6.2 m BG | open | 5.8 m BG | NP | NP |
| 7 | 6.4 m BG | open | dry | 6.0 m BG | 6.0 m BG |
| 8 | 6.6 m BG | open | dry | NP | NP |



| BH# | Depth of Boring | Depth to Cave | Water Level at the Time of Drilling | Water Level on June 4/7, 2013 | Water Level on July 12, 2013 |
|------------|------------------------|----------------------|--|--------------------------------------|-------------------------------------|
| 9 | 6.5 m BG | 3.8 m BG | 3.5 m BG | NP | NP |
| 10 | 6.4 m BG | 5.2 m BG | 4.9 m BG | 2.7 m BG | 2.5 m BG |
| 11 | 6.6 m BG | open | dry | 1.9 m BG | 1.9 m BG |
| 12 | 6.6 m BG | open | 5.8 m BG | NP | NP |
| 13 | 6.5 m BG | 4.6 m BG | 4.6 m BG | 2.6 m BG | 2.5 m BG |
| 14 | 6.5 m BG | open | dry | dry | 6.0 m BG |
| 15 | 6.6 m BG | 5.3 m BG | 4.7 m BG | NP | NP |
| 16 | 6.3 m BG | open | 5.6 m BG | 1.5 m BG | 1.3 m BG |
| 17 | 6.6 m BG | 5.8 m BG | 5.5 m BG | NP | NP |
| 18 | 6.6 m BG | open | dry | NP | NP |
| 19 | 6.6 m BG | 6.1 m BG | 6.1 m BG | 4.6 m BG | 5.0 m BG |
| 20 | 6.6 m BG | 2.4 m BG | 2.4 m BG | 2.1 m BG | 1.9 m BG |
| 21 | 6.5 m BG | open | dry | 5.7 m BG | 5.5 m BG |
| 22 | 6.5 m BG | 5.2 m BG | 5.2 m BG | NP | NP |
| 23 | 2.7 m BG | open | dry | NP | NP |
| 24 | 6.6 m BG | 5.9 m BG | 5.9 m BG | NP | NP |
| 25 | 6.6 m BG | open | dry | NP | NP |
| 26 | 6.6 m BG | 2.5 m BG | 2.5 m BG | NP | NP |
| 27 | 6.6 m BG | open | dry | 6.0 m BG | 6.0 m BG |
| 28 | 6.4 m BG | open | dry | NP | NP |
| 29 | 6.6 m BG | 5.8 m BG | 5.8 m BG | 3.2 m BG | 3.0 m BG |
| 30 | 6.4 m BG | open | dry | NP | NP |



| BH# | Depth of Boring | Depth to Cave | Water Level at the Time of Drilling | Water Level on June 4/7, 2013 | Water Level on July 12, 2013 |
|-----|-----------------|---------------|-------------------------------------|-------------------------------|------------------------------|
| 31 | 6.4 m BG | open | dry | 5.9 m BG | 5.9 m BG |
| 32 | 6.5 m BG | open | dry | 6.0 m BG | 6.0 m BG |

BG = Below Grade

NP = Piezometers not Installed

It should be noted that the ground water conditions reported here may not necessarily represent stabilized conditions. The ground water levels will fluctuate seasonally and with precipitation conditions. Wet soils may be found as much as 600 mm above the noted ground water levels where there is capillary rise in fine, cohesionless soils.



5.0 DISCUSSION AND RECOMMENDATIONS

The following preliminary discussion and recommendations are based on the factual data obtained from this investigation and are intended for use by the owner and the design engineer for preliminary design purposes only. It should be noted that the sewer system details including its alignment and invert levels were not available at the time of preparation of this report, therefore, the recommendations provided below are general and preliminary. Further investigations (including additional deeper boreholes) may be required for detailed design as necessary, based on the final sewer alignments and invert levels. The geotechnical comments and recommendations provided in this report should be reviewed and re-assessed with respect to the sewer and system design and details. Contractors bidding or providing services on this project should review the factual data and determine their own conclusions regarding construction methods and scheduling.

This report is provided based on the terms of reference and on the assumption that the design features relevant to the geotechnical analyses will be in accordance with applicable codes, standards and guidelines of practice. If there are any changes to the site development features, or there is any additional information relevant to the interpretations made of the subsurface information with respect to the geotechnical analyses or other recommendations, then Terraprobe should be retained to review the implications of these changes with respect to the contents of this report.

5.1 Sewer Installation

It is understood that storm sewers will be installed using conventional open-cut techniques. Specific detailed design information of the underground services (including alignment and invert levels) was not available at the time of preparation of this report. The following subsections provide general and preliminary geotechnical engineering recommendations and comments for the installation of underground utilities. Trench excavation should be carried out in accordance with the Occupational Health and Safety Act (OHSA) and Regulations for Construction Projects (O.Reg. 213/91 as amended), while trench backfilling and compaction should be carried out in accordance with the OPSS 402.

5.2 Excavation and Ground Water Control

All topsoil should be stripped from areas where underground services are to be located. Asphaltic concrete should be saw cut and removed from any existing pavements where underground servicing installation is required. Based on the results of the boreholes, it is expected that excavations for relatively shallow services will generally penetrate topsoil/asphalt pavement/granular shoulders, earth fill materials and undisturbed native soils. OHSA designates four broad classifications of soils to stipulate appropriate measures for excavation safety.



TYPE 1 SOIL

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

TYPE 2 SOIL

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

TYPE 3 SOIL

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

TYPE 4 SOIL

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

The existing aggregate and earth fill/weathered/disturbed materials as well as native cohesionless soils (sandy silt/silt and sand/sand and silt/sand) are classified as Type 3 Soil above and Type 4 Soil below the prevailing ground water level, while the cohesive glacial till soils (clayey silt to silty clay) are classified as Type 2 Soil, under these regulations. The soils encountered at this site are considered to be suitable for excavation using normal trenching and excavating equipment. Excavations should be conducted in accordance with OPSS 401.

Where workmen must enter excavations advanced deeper than 1.2 m, the trench walls should be suitably sloped and/or braced in accordance with the OHSA. The regulation stipulates slopes of excavation by soil type as follows:



| Soil Types | Base of Slope | Steepest Slope Inclination |
|-------------------|---------------------------------------|-----------------------------------|
| 1 | within 1.2 metres of bottom of trench | 1 horizontal to 1 vertical |
| 1 | within 1.2 metres of bottom of trench | 1 horizontal to 1 vertical |
| 3 | from bottom of trench | 1 horizontal to 1 vertical |
| 4 | from bottom of trench | 3 horizontal to 1 vertical |

Minimum support system requirements for steeper excavations are stipulated in the Occupational Health and Safety Act and Regulations for Construction Projects, and include provisions for timbering, shoring and moveable trench boxes.

The native soil deposit (particularly till soils) inherently contains cobbles and boulders that are not specifically identified in the boreholes. The size and distribution of such obstructions cannot be predicted with borings, because the borehole sampler size is insufficient to secure representative samples for particles of this size. Provision should be made in excavation contracts to allocate risks associated with time spent and equipment utilized to remove or penetrate such obstructions when encountered.

Water seepage was encountered in Boreholes 3, 4, 6, 9, 10, 12, 13, 15, 16, 17, 19, 20, 22, 24, 26 and 29 upon completion of drilling, while other boreholes remained dry. Water level in these boreholes varied from about 2.3 m (Borehole 4) to 6.1 m (Borehole 19) depth below existing grade. Borehole caving was noted in Boreholes 3, 4, 9, 10, 13, 15, 17, 19, 20, 22, 24, 26 and 29 upon completion of drilling, while other boreholes remained open. Water levels measured in the monitoring wells on June 4/7, 2013 varied from about 1.5 m (Borehole 16) to 6.0 m (Boreholes 1, 7, 27 and 32), while Borehole 14 remained dry. Water levels measured in the monitoring wells on July 12, 2013 varied from about 1.3 m (Borehole 16) to 6.0 m (Boreholes 1, 7, 14, 27 and 32). The ground water levels noted in the boreholes may fluctuate seasonally and wet soil may be found as much as 600 mm above the noted ground water levels where there is capillary rise in fine, cohesionless silt/sand soils.

Based on the borehole information, ground water seepage is anticipated in the excavation in some areas (refer to borehole logs for measured water level information). This seepage will likely emanate from the perched ground water and/or from the ground water seepage from very moist to wet cohesionless silt/sand deposit.

The perched ground water seepage emanating from above the static ground water table should diminish slowly and can be controlled by continuous pumping from filtered sumps at the base of the excavation. The amount of water seepage is expected to increase with the depth of excavation. For excavations extending into the very moist and wet silt/sand deposit, and/or below the prevailing ground water level, it will be necessary to lower the ground water level and maintain it below the



excavation base (at least about 1.2 m) prior to and during the subsurface construction. Without lowering the water level, the subgrade in wet permeable soil zones will become weak and lose its integrity to support. Consideration should be given to install a skim coat of lean concrete to preserve subgrade integrity and to provide a working platform.

It should be noted that excavations carried through and below the water bearing cohesionless soil deposit (sand, silt) will experience loosening and sloughing of the base and sides, unless the ground water level is lowered first.

It is recommended to consult a professional dewatering contractor to review the borehole information to assess the site dewatering requirements and system (as needed). The design of a suitable dewatering system is the contractor's responsibility. Dewatering of more than 50,000 liters/day would require a permit from the Ministry of Environment.

Stability against potential excavation base heave should also be assessed once the design details are complete. Excavations in such cases should only be carried out if the ground water table is lowered and maintained approximately 1.2 m below the base of the excavation. It is recommended that the bottom of the trenches be carefully observed during construction and necessary precautions should be taken and required measures be implemented to rectify the situation if bottom heave occurs.

We understand that in addition to sewer system re-design/installation, other provisions such as surface drainage and ground water infiltration improvement techniques/considerations maybe contemplated and included in the overall design approach. A summary of the estimated soil permeability (derived from the grain size analysis of the soil samples analyzed) is included in the appendix section of this report to help design/implement such approach/techniques.

5.3 Pipe Bedding

The undisturbed native materials will be suitable for support of buried services on conventional well graded granular base material (class "B" bedding well graded Granular "A" or 19 mm Crusher Run Limestone). Where disturbance of the trench base has occurred, such as due to ground water seepage, or construction traffic, the disturbed soils should be sub-excavated and replaced with suitably compacted granular material. Any accumulation of water at the base of the excavation and any soft/loose soils should be removed prior to placing and compacting the pipe bedding. Placement of the pipe bedding must be done in the dry.

The embedment, bedding and cover materials should be placed in layers not exceeding 200 mm in thickness and compacted to a minimum of 95 percent Standard Proctor Maximum Dry Density (SPMDD) or vibrated to a dense state in the case of clear stone type bedding.



The sewers should be installed in conformance with the City Specifications (or OPSD 802.030 requirements should be followed for rigid pipes and OPSD 802.010 for flexible pipe as applicable). Where the subgrade consists of cohesionless silt/sand soils or where wet conditions are encountered, clearstone type bedding (including HL8 stone bedding) should be fully enclosed in a Class II non-woven geotextile with a filtration opening size of 120 microns or less to avoid the potential for loss of “fines”. Alternatively Granular “A” material may be used as bedding material. Otherwise without proper filtering, there may be entry of fines from the native soils into the bedding. This loss of ground could result in a loss of support to the pipes and possible future settlements. Where the trench base consists of clayey soils, a geotextile filter is not required. Additional bedding placement requirements that may be specified by the supplier must also be followed. The cover material should be placed on the bedding for the sewers in accordance with City/Region requirement and specifications. The cover material should consist of OPSS 1010 Granular B type I, II or III, with 100 percent passing 26.5 mm sieve.

City/Region’s bedding, cover as well as backfill materials specification (including type if materials and placement) must be referred and followed.

5.4 Backfill

The topsoil and earth fill and/or weathered/disturbed materials containing excessive amounts of organic inclusion should not be reused as trench backfill. However, these materials may be stockpiled and reused for landscaping purposes. The earth fill and/or weathered/disturbed materials with only trace amounts of organic inclusion may be utilized as backfill. The selection and sorting of earth fill and/or weathered/disturbed soils should be conducted under the supervision of a geotechnical engineer.

The native soils and clean earth fill materials are considered suitable for backfilling purposes provided the water content of these soils is close to the optimum moisture content (within 3 percent). It should be noted that soils excavated below the ground water level will be too wet to compact effectively. Any soil materials with in-situ moisture content higher than 3 percent of its optimum moisture content could be put aside to dry, or be tilled to reduce the moisture content so that they can be effectively compacted. Alternatively, materials of higher moisture content could be wasted and be replaced with imported material which can be readily compacted.

Backfill material should be placed in uniform layers not exceeding 300 mm in thickness for the full width of the trench and each layer should be compacted to a minimum of 100 percent SPMDD where utilities are located under the pavement structure, curb or within 1.5 m of edge of the pavement, and a minimum of 95 percent of SPMDD at other areas (as per City/Provincial Standard Specifications). The backfill materials should be placed and compacted under the supervision of a geotechnical engineer.



It should be noted that the native soils encountered on the site are generally not free draining, and will be difficult to handle and compact should they become wetter as a result of inclement weather or seepage. Hence, it can be expected that earthworks will be difficult during wet periods (i.e. spring and fall) of the year and may result in extra costs.

Post construction settlements on the order of about 1 to 3 percent of the backfill depth is expected to occur over several months and may have an effect on the overlying pavement structures if present. Provisions should therefore be included in the contract for remedial work such as padding and resurfacing where required.

It should be noted that there may be special requirements for the type, selection and placement of the backfill materials depending upon the area of backfill (under pavement, road right-of-way, sidewalks, curbs and/or boulevards) City/Region specifications therefore be referred and followed, as applicable.

5.5 Trench Clay Plugs & Cutoff Collars

Clay plugs or cut off collars are usually installed in trenches to prevent migration of the ground water along the relatively free draining bedding/embedment material and/or backfill material due to the “French Drain” effect. If the invert of the trench is below the water table and local drawdown of the groundwater level cannot be tolerated then clay plugs should be installed within the granular embedment/embedding and the granular zones of backfill material.

Clay plugs are placed in the trenches at 50 m intervals (or less) along the full length of the trench, where the invert of the trench is below the water table. The plug should be at least 1.0 m thick measured along the pipe, and should completely replace the granular embedment/embedding and relatively pervious (sand, granular) backfill. The clay plugs must be compacted to a minimum of 95 percent SPMDD.

The clay plug material should have a coefficient of bulk permeability less than 10^{-6} cm/s and must include a minimum of 15 percent clay (finer than 0.002 mm) and 30 percent silt sized (finer than 0.075 mm, i.e., passing No. 200 sieve) particles. The backfill material must not include particles greater than 100 mm dimension, greater than 15 percent of the material larger than 4.75 mm size (No. 4 sieve), and greater than 5 percent organic content by weight, as well as visible roots or topsoil.

Alternatively, cutoff collars can be installed around the pipe barrel to achieve the same effect. Collars should not be placed closer than 1.0 m to a pipe joint and precautions should be taken to ensure that a minimum of 95 percent soil compaction is achieved around the collars. Watertight connections are required between the collar and the pipe wall.



5.6 Uplift Pressure

As noted before, detailed design of the proposed storm sewer information (including alignment and invert elevations) was not available at the time of preparation of this report. However, measured ground water readings in the instrumented boreholes indicate that the ground water table will likely exists above the underground utility invert at various locations. Therefore utility structures such as catch basins, sewer, manholes and utility chambers will be subjected to uplift pressure. The underground structures must be designed for uplift/floatation pressure originating from an assumed high water level located within 1 m of the finished ground surface elevation. Although a temporary and short-term occurrence, this water level can be achieved during wet seasons such as spring and fall.

Further updated recommendations will be provided once the sewer system design details (including alignment and invert levels) are available.

5.7 Earth Pressure Design Parameters

Walls or bracings subject to unbalanced earth pressures must be designed to resist a pressure that can be calculated based on the following equation:

$$P = K [y (h-h_w) + y' h_w + q] + y_w h_w$$

- where: P = the horizontal pressure at depth, h (m)
 K = the earth pressure coefficient,
 h_w = the depth below the ground water level (m)
 y = the bulk unit weight of soil, (kN/m^3)
 y_w = the unit weight of water, (kN/m^3)
 y' = the submerged unit weight of soil, ($y - 9.8 \text{ kN/m}^3$)
 q = the complete surcharge loading (kPa)

Earth pressure computations must take into account the ground water level. Above the ground water level, earth pressure is computed using the bulk unit weight of the retained soil. Below the ground water level, the earth pressures are computed using the submerged unit weight of the soil. A hydrostatic pressure is also applied if the retained soil is not fully drained. Where the wall backfill can be drained effectively to eliminate hydrostatic pressures on the wall, this equation can be simplified to:

$$P = K[yh + q]$$



This equation assumes that free-draining granular backfill is used and positive drainage is provided to ensure that there is no hydrostatic pressure acting in conjunction with the earth pressure.

Resistance to sliding of earth retaining structures is developed by friction between the base of the footing and the soil. This friction (**R**) depends on the normal load on the soil contact (**N**) and the frictional resistance of the soil (**tan φ**) expressed as $R = N \tan \phi$. This is an ultimate resistance value and does not contain a factor of safety.

Passive earth pressure resistance is generally not considered as a resisting force against sliding for conventional retaining structure design because a structure must deflect significantly to develop the full passive resistance.

The appropriate values for use in the design structures subject to unbalanced earth pressures at this site are presented below:

| Stratum/Parameter | Internal Angle of Friction, Φ (°) | Bulk Unit Weight, γ (kN/m³) | Active Earth Pressure Coefficient, K_a | At-rest Earth Pressure Coefficient, K_o | Passive Earth Pressure Coefficient, K_p |
|----------------------------|--|------------------------------------|--|---|---|
| Native Soils | 32 | 21.0 | 0.30 | 0.47 | 3.25 |
| Earth Fill/Disturbed Soils | 30 | 20.0 | 0.35 | 0.50 | 3.00 |
| Aggregate Materials | 32 | 21.0 | 0.30 | 0.47 | 3.25 |

5.8 Soil Chemistry Analysis

Selected twenty (20) soil samples (BH-S1 SS2, BH-S3 SS5, BH-S4 SS3, BH-S7 SS4, BH-S9 SS3, BH-S11 SS6, BH-S12 SS6, BH-S15 SS2, BH-S17 SS6, BH-S18 SS7, BH-S19 SS2, BH-S21 SS5, BH-S22 SS5, BH-S24 SS4, BH-S26 SS2, BH-S28 SS3, BH-S29 SS4, BH-S30 SS5, BH-S31 SS3 and BH-S32 SS4) were submitted to AGAT Laboratories for chemical analysis (for metal and other inorganic parameters included in amended O. Regulation 153/04 Table 1 site condition standards). Results of the chemical analysis were compared with standards for assessing soil quality found in Table 1 Standards of the *Soil, Ground Water and Sediment Standards for Use Under Part XV. I of the Environmental Protection Act* of Ontario (April 15, 2011) for Residential/Parkland/Institutional (RPI) and Industrial/Commercial/Community (ICC) property.

The results of chemical analysis indicate that all soil samples submitted for analytical testing meet the Table 1 Standards found in the *Soil, Ground Water and Sediment Standards for Use Under Part XV. I of the Environmental Protection Act* of Ontario (April 15, 2011) for Residential/Parkland/Institutional (RPI) and Industrial/Commercial/Community (ICC) property with the exception of soil samples (BH-S1 SS2, BH-S3 SS5, BH-S4 SS3, BH-S7 SS4, BH-S9 SS3, BH-S15 SS2, BH-S17 SS6, BH-S18 SS7, BH-S19 SS2, BH-S24 SS4, BH-S26 SS2, BH-S28 SS3, BH-S29 SS4, BH-S30 SS5, BH-S31 SS4,



BH-S32 SS4) which exceeds Electrical Conductivity (EC) and/or Sodium Absorption Ratio (SAR). The elevated EC and SAR are likely associated with the use of road salts below and around the roadway pavement structure, and are similar to those encountered on a number of other roadways within the City of Toronto. A copy of laboratory Certificate of Analysis is appended.

It should be noted that the results of the chemical analyses refer only to the soil samples tested which were obtained from the borehole locations. The soil chemistry may vary between and beyond the locations of the samples tested. The type of analyses and number of samples tested may not fulfil the current regulatory requirements to transport soil off-site, and further testing will likely be required. Therefore, soil materials to be transported to other sites accepting fill must be monitored for any indication of variance or other chemical/environmental concerns. If conditions indicate, further chemical testing should be carried out if deemed necessary. The sites accepting fill usually have aesthetic and/or engineering property requirements, in addition to the chemical requirements for soil acceptance. The responsibility for finding a site to accept excess material should be clearly allocated to the excavation contractor in the contract documents.

The analytical results contained in this report should not be considered a warranty with respect to the soil quality or the use of the soil for any specific purpose. This section provides the factual results of the chemical analysis only. No opinion is presented regarding the environmental suitability of the soil for any purpose.

6 LIMITATIONS AND RISK

6.1 Procedures

This investigation has been carried out using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by Terraprobe and other engineering practitioners, working under similar conditions and subject to the time, financial and physical constraints applicable to this project. The discussions and recommendations that have been presented are based on the factual data obtained by Terraprobe.

It must be recognized that there are special risks whenever engineering or related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing programme implemented in accordance with the most stringent level of care may fail to detect certain conditions. Terraprobe has assumed for the purposes of providing the preliminary design parameters and advice, that the conditions that exist between sampling points are similar to those found at the sample locations. The conditions that Terraprobe has interpreted to exist between sampling points can differ from those that actually exist.

It may not be possible to drill a sufficient number of boreholes or sample and report them in a way that would provide all the subsurface information that could affect construction costs, techniques,



equipment and scheduling. Contractors bidding on or undertaking work on the project should be directed to draw their own conclusions as to how the subsurface conditions may affect them, based on their own investigations and their own interpretations of the factual investigation results, cognizant of the risks implicit in the subsurface investigation activities so that they may draw their own conclusions as to how the subsurface conditions may affect them.

6.2 Changes in Site and Scope

It must also be recognized that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site have the potential to alter subsurface conditions. Groundwater levels are particularly susceptible to seasonal fluctuations.

The preliminary discussion and recommendations are based on the factual data obtained from this investigation made at the site by Terraprobe and are intended for use by the owner and its retained designers in the design phase of the project. If there are changes to the project scope and development features, the interpretations made of the subsurface information, the geotechnical design parameters and comments relating to constructability issues and quality control may not be relevant or complete for the revised project. Terraprobe should be retained to review the implications of such changes with respect to the contents of this report.

This report was prepared for the express use of Aquafor Beech Limited and their retained design consultants and is not for use by others. This report is copyright of Terraprobe Inc. and no part of this report may be reproduced by any means, in any form, without the prior written permission of Terraprobe Inc. and Aquafor Beech Limited, who are the authorized users.

It is recognized that the regulatory agencies in their capacities as the planning and building authorities under Provincial statutes, will make use of and rely upon this report, cognizant of the limitations thereof, both expressed and implied.



Aquafor Beech Limited
EA Study, Lawrence Park Neighborhood, Toronto

February 3, 2014
File No. 11-12-2126

We trust the foregoing information is sufficient for your present requirements. If you have any questions, or if we can be of further assistance, please do not hesitate to contact us.

Yours truly,

Terraprobe Inc.



Abdus Sobahan, M. Eng, P. Eng.
Geotechnical Engineer

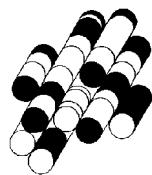
B. Singh, M.A.Sc., P. Eng.
Principal



Terraprobe Inc.

APPENDIX

TERRAPROBE INC.





| SAMPLING METHODS | | PENETRATION RESISTANCE |
|---|--|--|
| AS auger sample CORE cored sample DP direct push FV field vane GS grab sample SS split spoon ST shelby tube WS wash sample | | Standard Penetration Test (SPT) resistance ('N' values) is defined as the number of blows by a hammer weighing 63.6 kg (140 lb.) falling freely for a distance of 0.76 m (30 in.) required to advance a standard 50 mm (2 in.) diameter split spoon sampler for a distance of 0.3 m (12 in.). Dynamic Cone Test (DCT) resistance is defined as the number of blows by a hammer weighing 63.6 kg (140 lb.) falling freely for a distance of 0.76 m (30 in.) required to advance a conical steel point of 50 mm (2 in.) diameter and with 60° sides on 'A' size drill rods for a distance of 0.3 m (12 in.)." |

| COHESIONLESS SOILS | | COHESIVE SOILS | | | COMPOSITION | |
|--------------------|-----------|----------------|-----------|--------------------------------|---------------|-------------|
| Compactness | 'N' value | Consistency | 'N' value | Undrained Shear Strength (kPa) | Term (e.g) | % by weight |
| very loose | < 4 | very soft | < 2 | < 12 | trace silt | < 10 |
| loose | 4 – 10 | soft | 2 – 4 | 12 – 25 | some silt | 10 – 20 |
| compact | 10 – 30 | firm | 4 – 8 | 25 – 50 | silty | 20 – 35 |
| dense | 30 – 50 | stiff | 8 – 15 | 50 – 100 | sand and silt | > 35 |
| very dense | > 50 | very stiff | 15 – 30 | 100 – 200 | | |
| | | hard | > 30 | > 200 | | |

TESTS AND SYMBOLS

| | | | |
|---------------------|--|----------------|---|
| MH | mechanical sieve and hydrometer analysis | | Unstabilized water level |
| w, w _c | water content | | 1 st water level measurement |
| w _L , LL | liquid limit | | 2 nd water level measurement |
| w _P , PL | plastic limit | | Most recent water level measurement |
| I _P , PI | plasticity index | | Undrained shear strength from field vane (with sensitivity) |
| k | coefficient of permeability | C _c | compression index |
| γ | soil unit weight, bulk | C _v | coefficient of consolidation |
| G _s | specific gravity | m _v | coefficient of compressibility |
| φ' | internal friction angle | e | void ratio |
| c' | effective cohesion | | |
| c _u | undrained shear strength | | |

FIELD MOISTURE DESCRIPTIONS

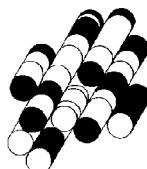
Damp refers to a soil sample that does not exhibit any observable pore water from field/hand inspection.

Moist refers to a soil sample that exhibits evidence of existing pore water (e.g. sample feels cool, cohesive soil is at plastic limit) but does not have visible pore water

Wet refers to a soil sample that has visible pore water

BOREHOLE LOGS

TERRAPROBE INC.





Client : Aquafor Beech Ltd.

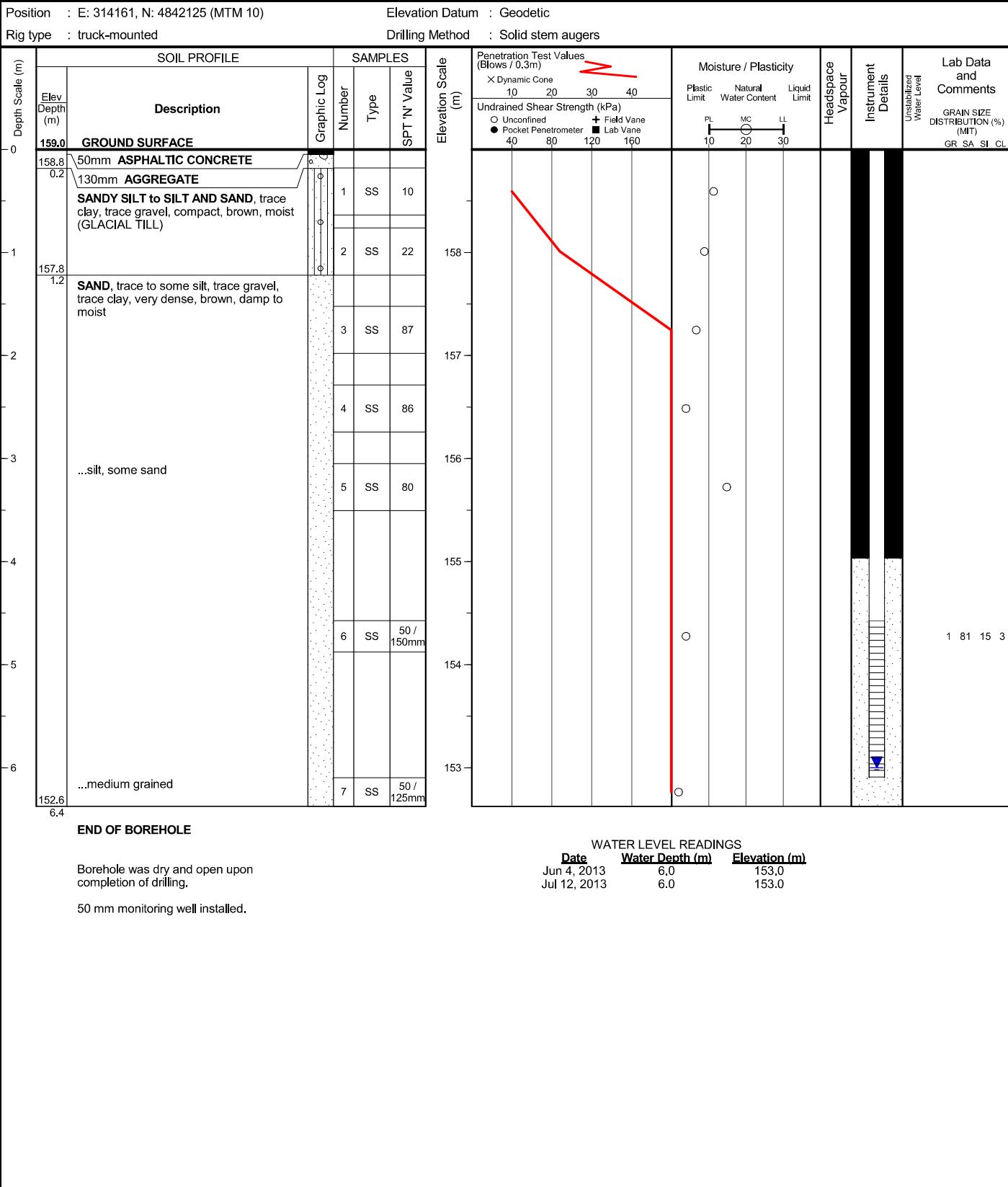
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

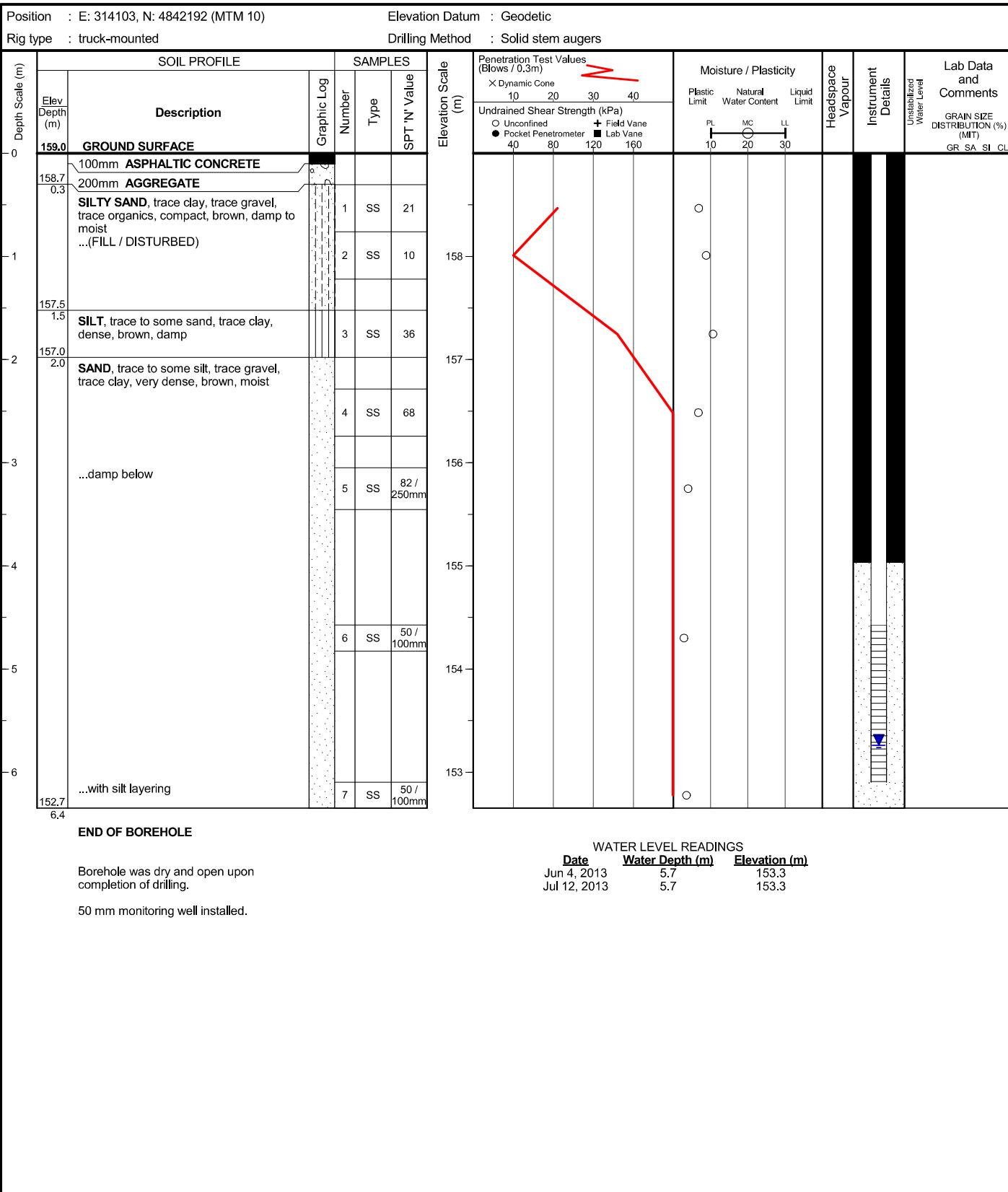
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S3

Client : Aquafor Beech Ltd.

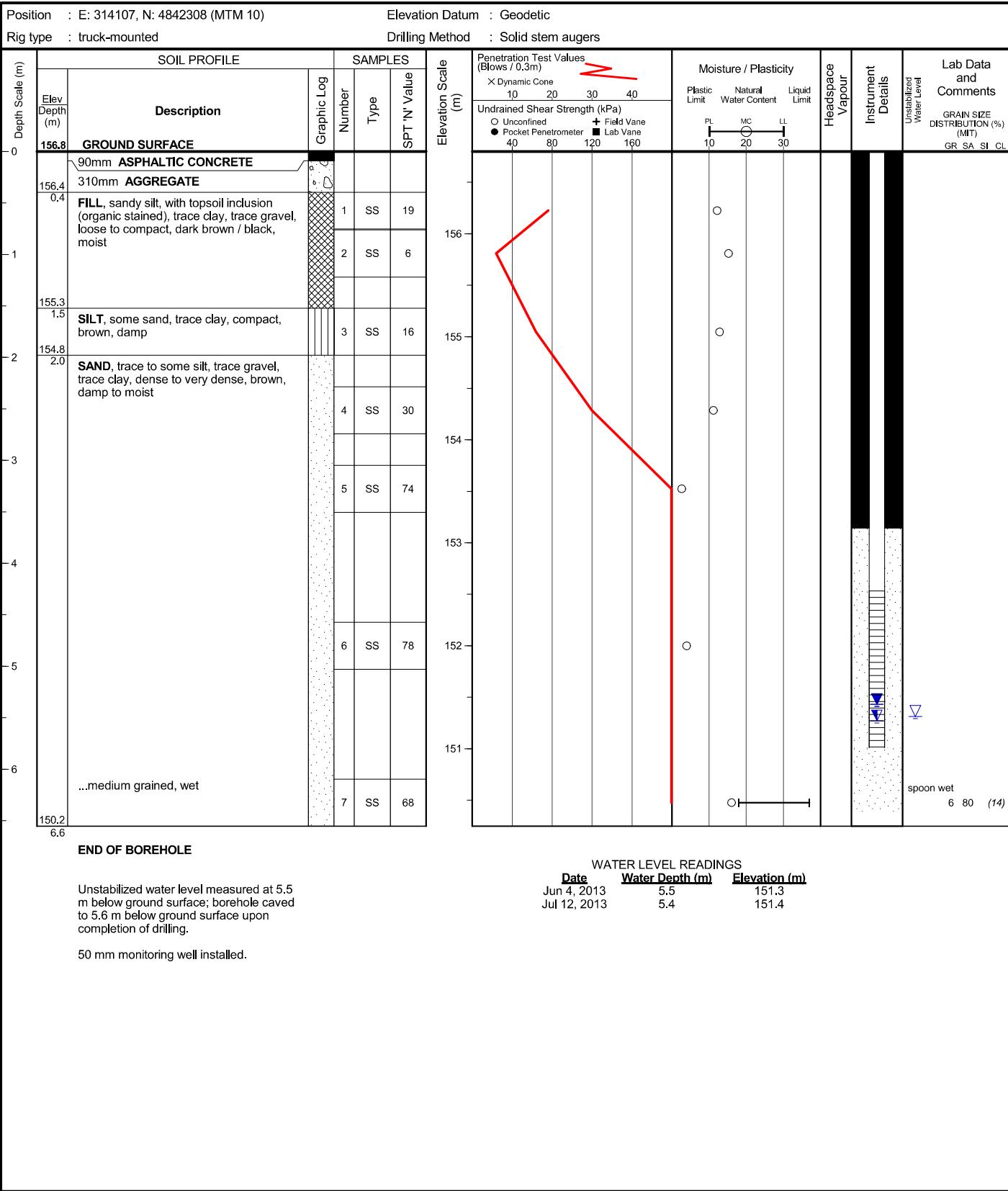
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

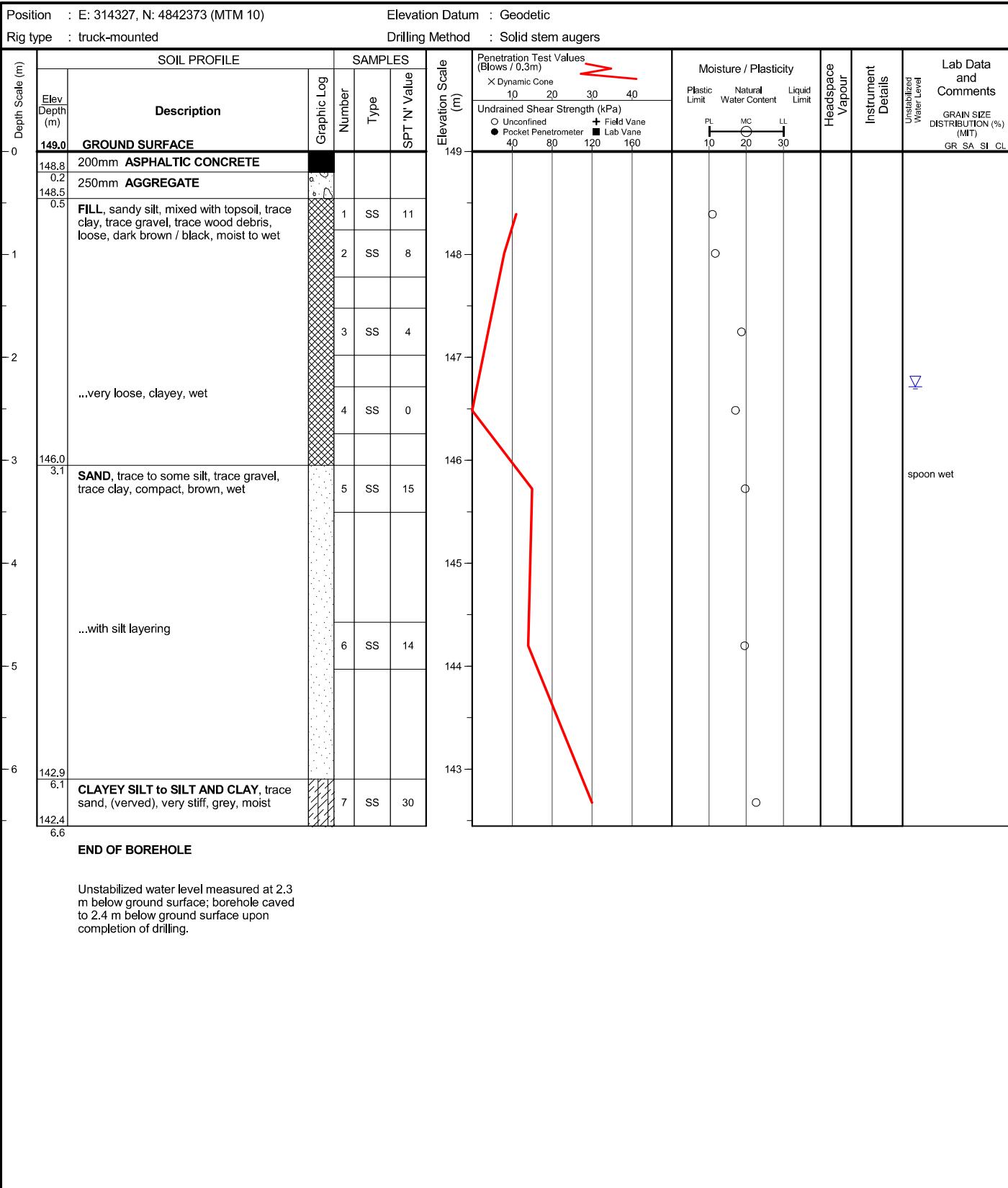
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

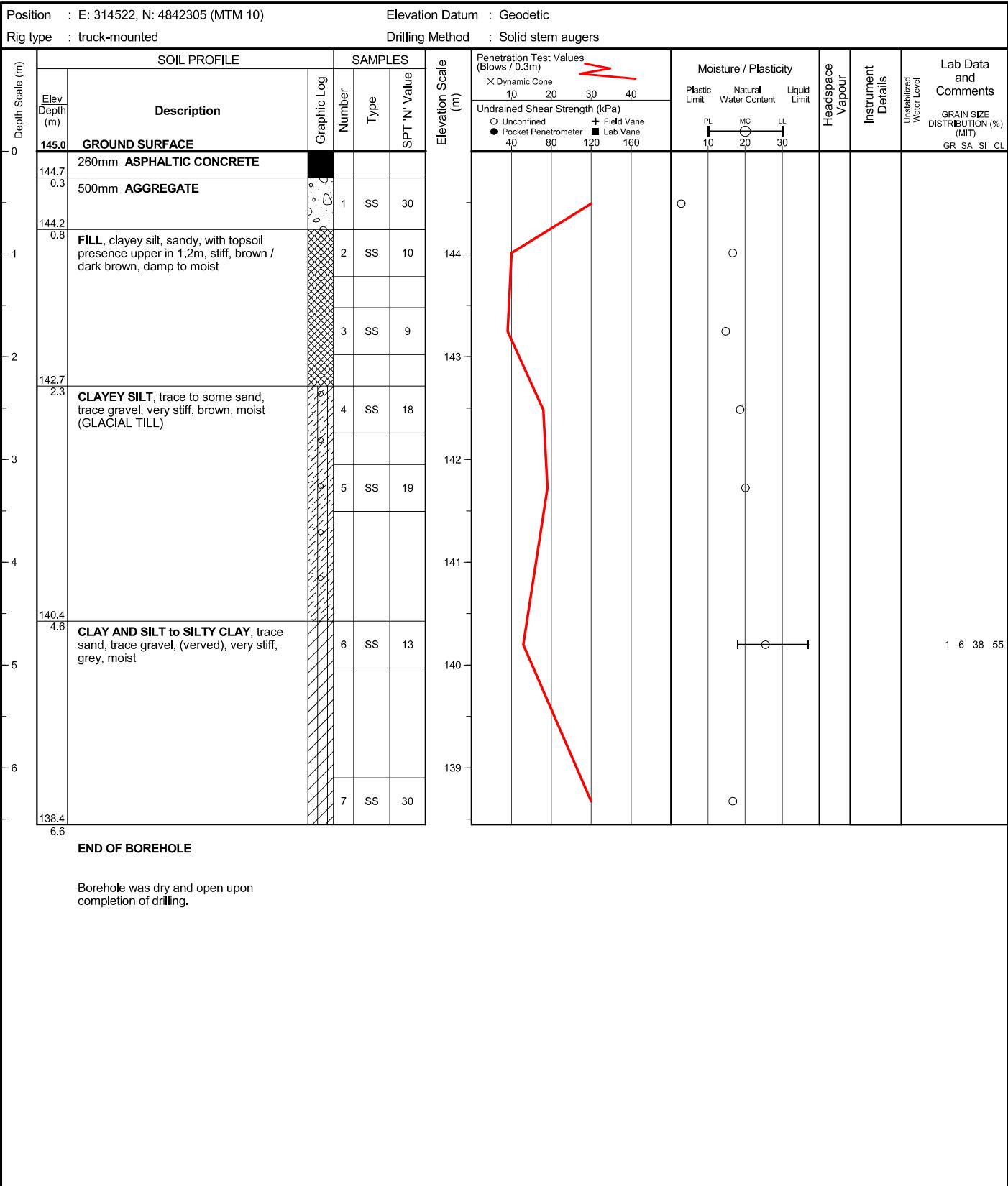
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

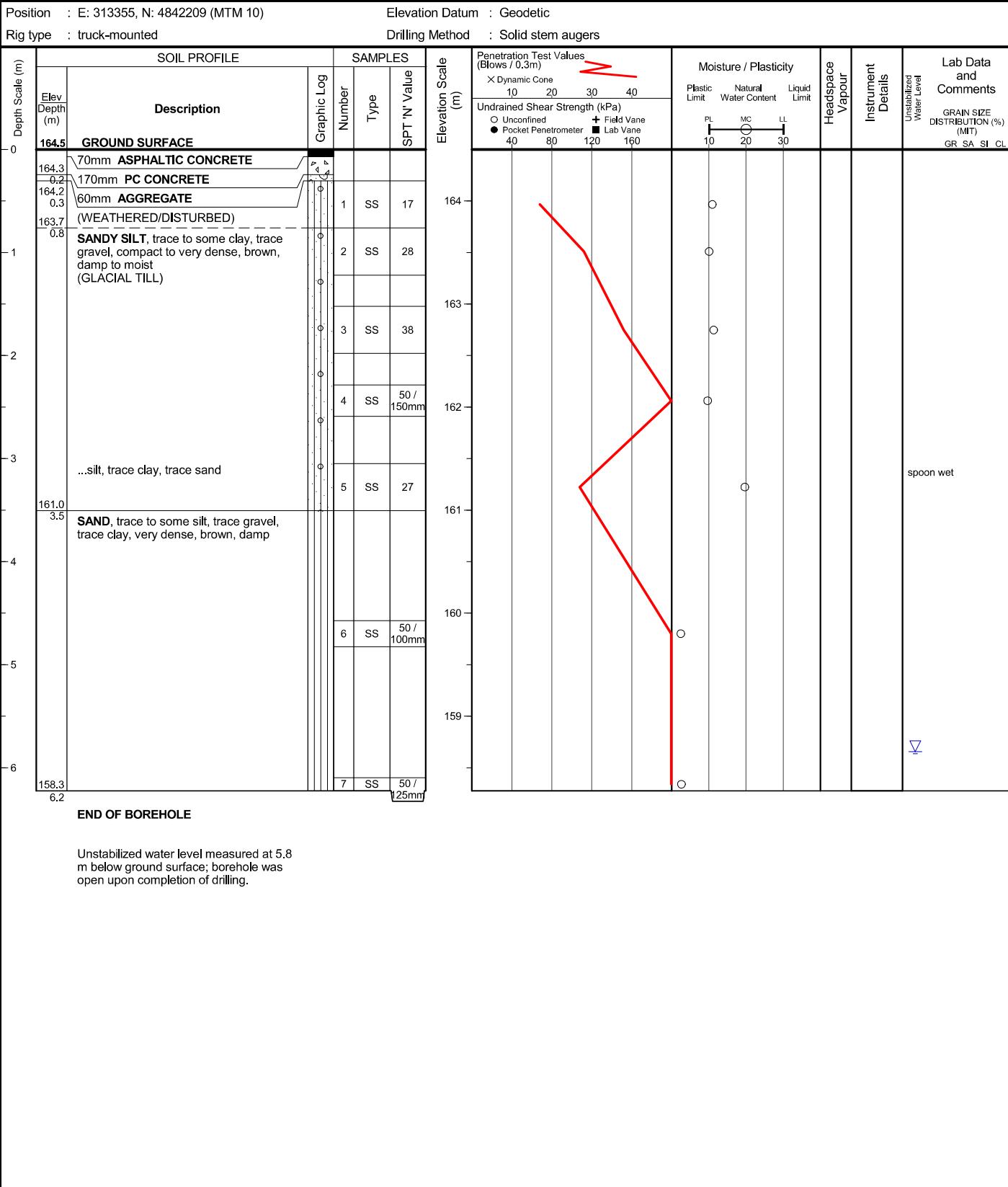
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S7

Client : Aquafor Beech Ltd.

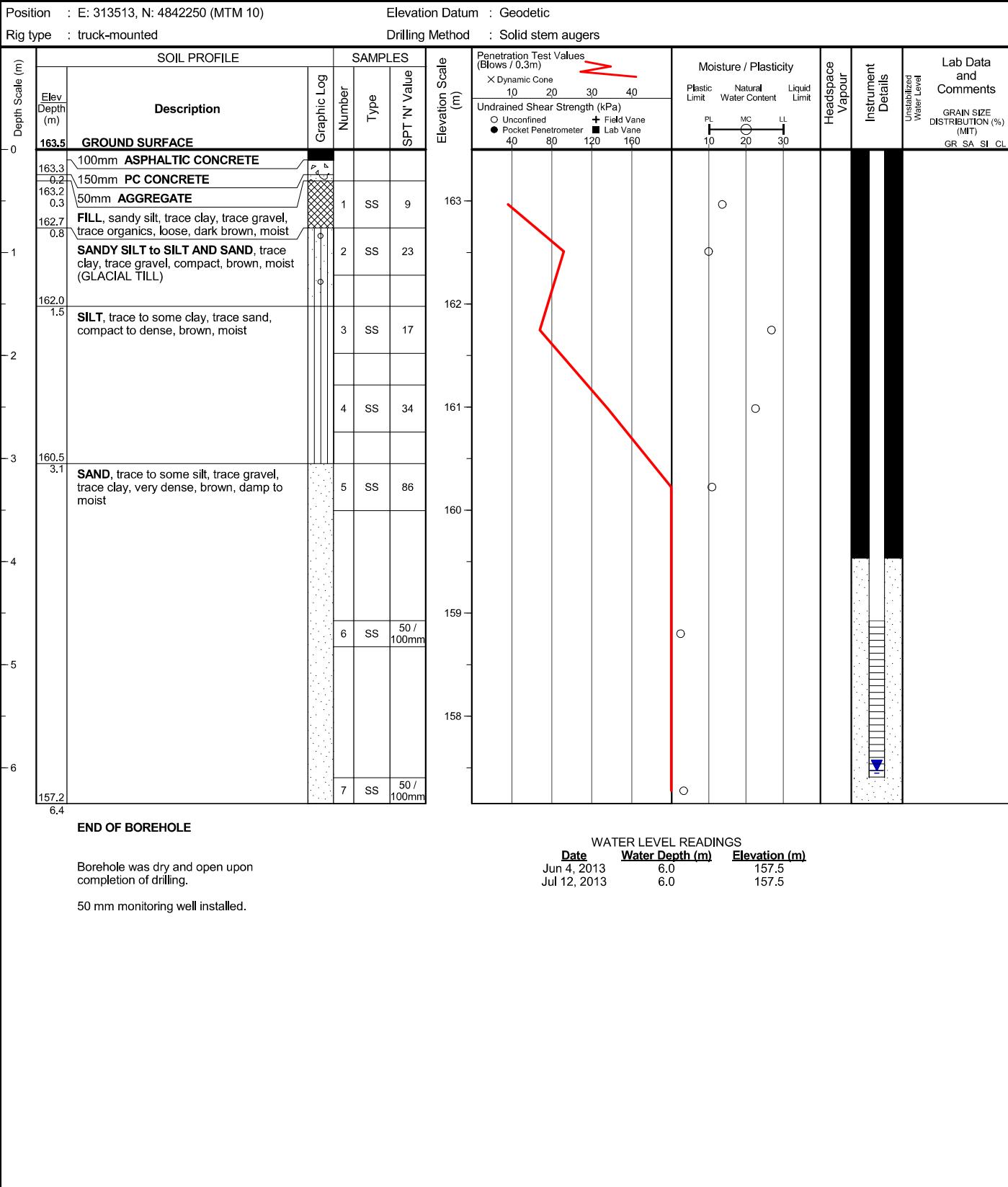
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





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BOREHOLE LOG S8

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 313874, N: 4842342 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | SAMPLES | | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | | | | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments | | | |
|-----------------|--|-------------|-------------|---------|------|--------------|---------------------|--|----|----|----|----------------------------------|------------------|--------------------|-----------------------|----|------------|------------|
| | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT N' Value | | X Dynamic Cone | 10 | 20 | 30 | | | | | 40 | Unconfined | Field Vane |
| 0 | 162.5 GROUND SURFACE | | | | | | | | | | | | | | | | | |
| 0.2 | 162.3 50mm ASPHALTIC CONCRETE | | | 1 | SS | 12 | | | | | | | | | | | | |
| 0.8 | 161.7 100mm AGGREGATE (WEATHERED/DISTURBED) | | | 2 | SS | 32 | | | | | | | | | | | | |
| 1 | 161.0 SILT AND SAND to SAND AND SILT, trace clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL) | | | 3 | SS | 47 | | | | | | | | | | | | |
| 2 | 159.5 3.1 SAND AND SILT, very dense, brown, moist | | | 4 | SS | 65 | | | | | | | | | | | | |
| 3 | 159.0 3.5 SAND, trace to some silt, trace gravel, trace clay, very dense, brown, damp | | | 5 | SS | 83 / 275mm | | | | | | | | | | | | |
| 4 | | | | 6 | SS | 70 | | | | | | | | | | | | |
| 5 | | | | 7 | SS | 80 | | | | | | | | | | | | |
| 6.6 | END OF BOREHOLE | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 2 47 43 8 | | | | | | |
| | | | | | | | | | | | | GR SA SI CL | | | | | | |
| | | | | | | | | | | | | GRAIN SIZE DISTRIBUTION (%) (MT) | | | | | | |
| | | | | | | | | | | | | Unstabilized Water Level | | | | | | |

Borehole was dry and open upon completion of drilling.



Client : Aquafor Beech Ltd.

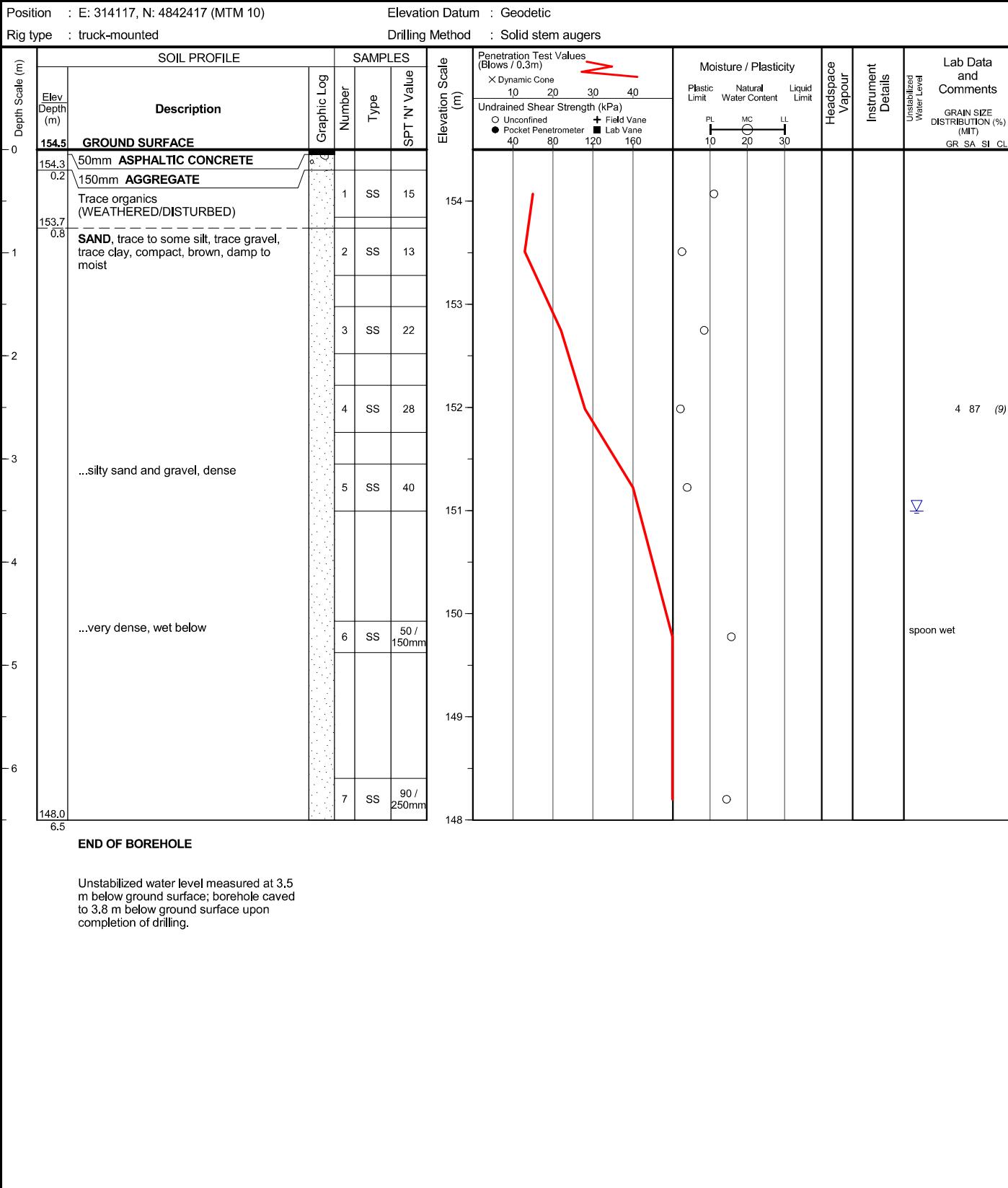
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S10

Client : Aquafor Beech Ltd.

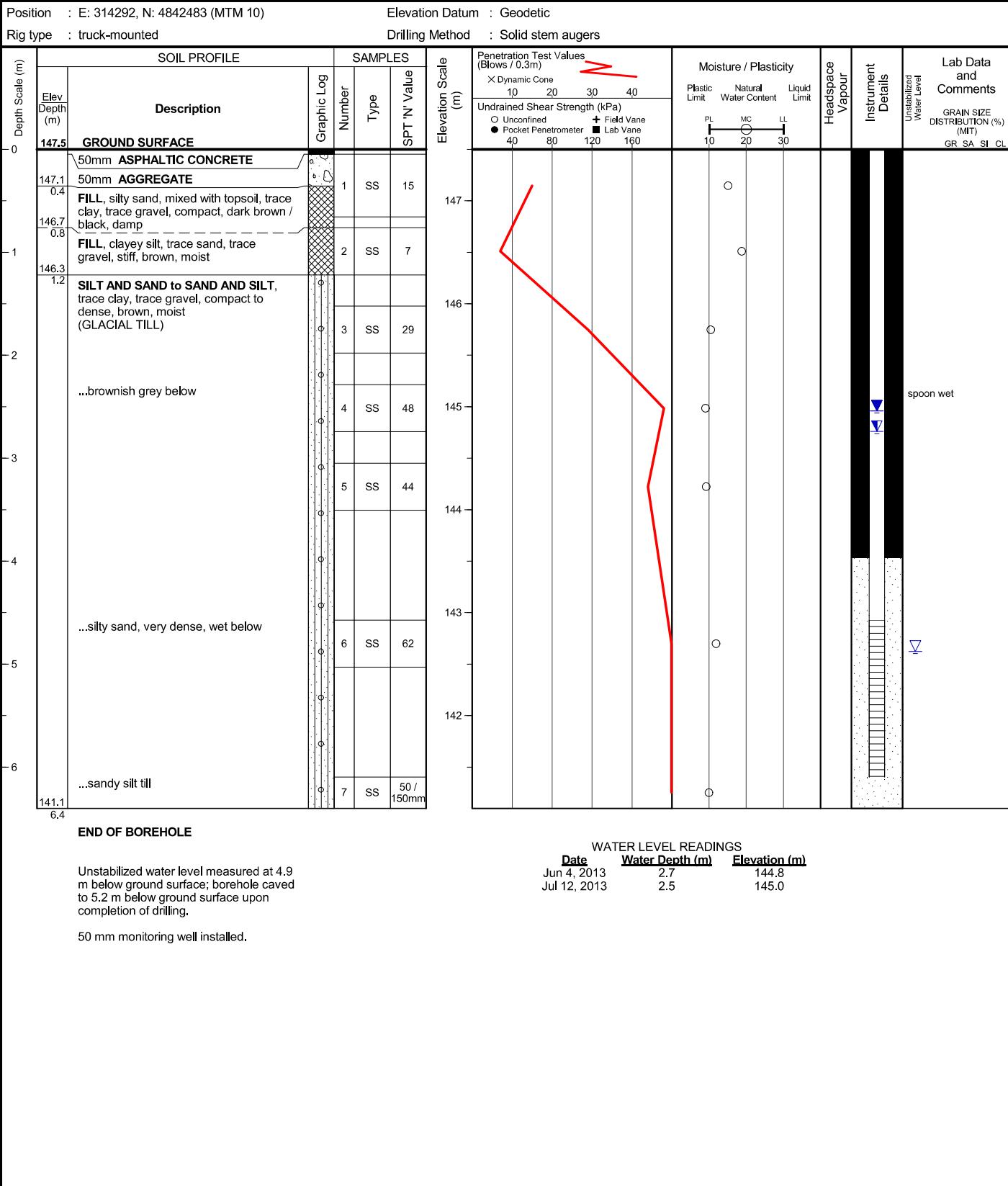
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 15, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

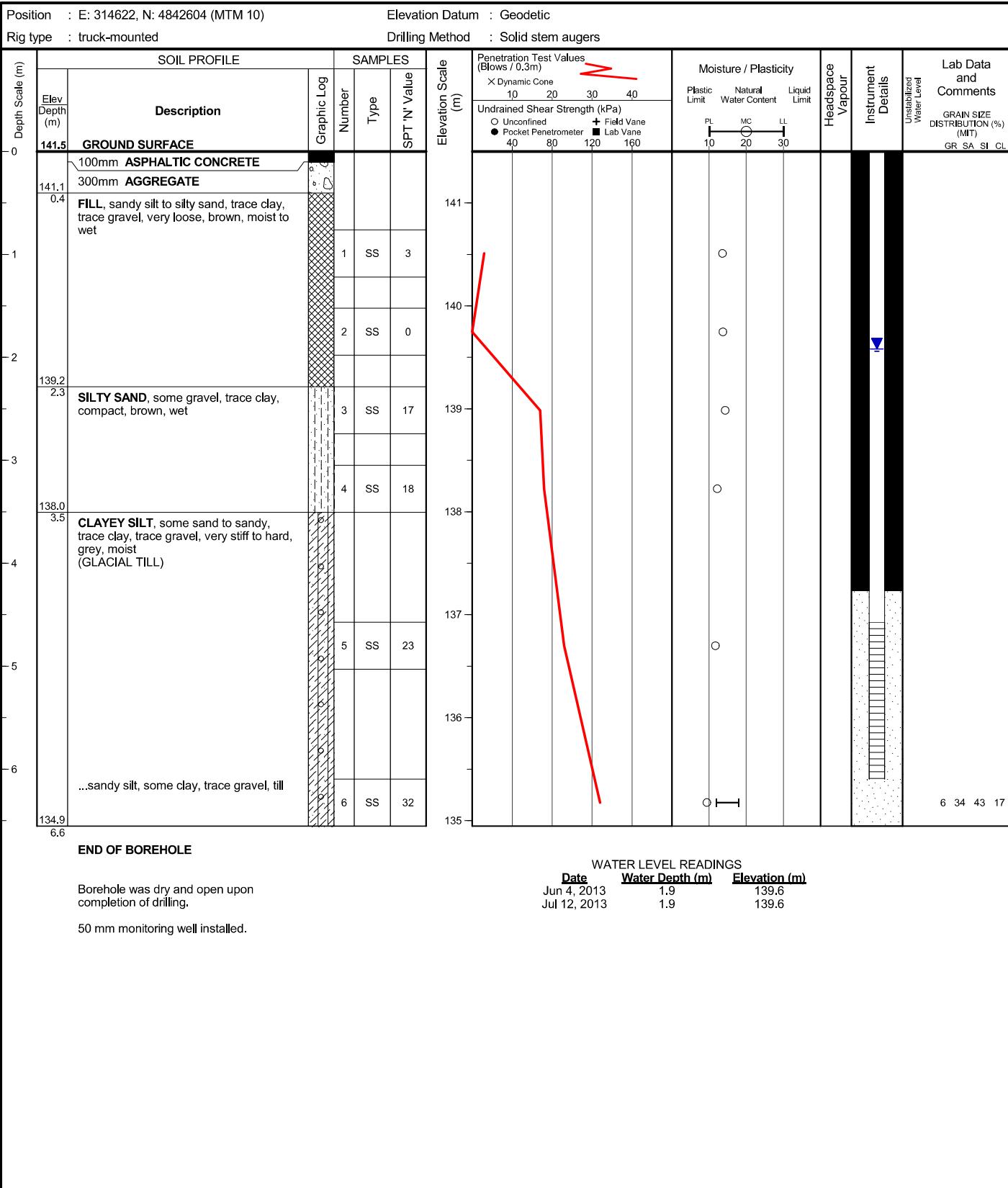
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

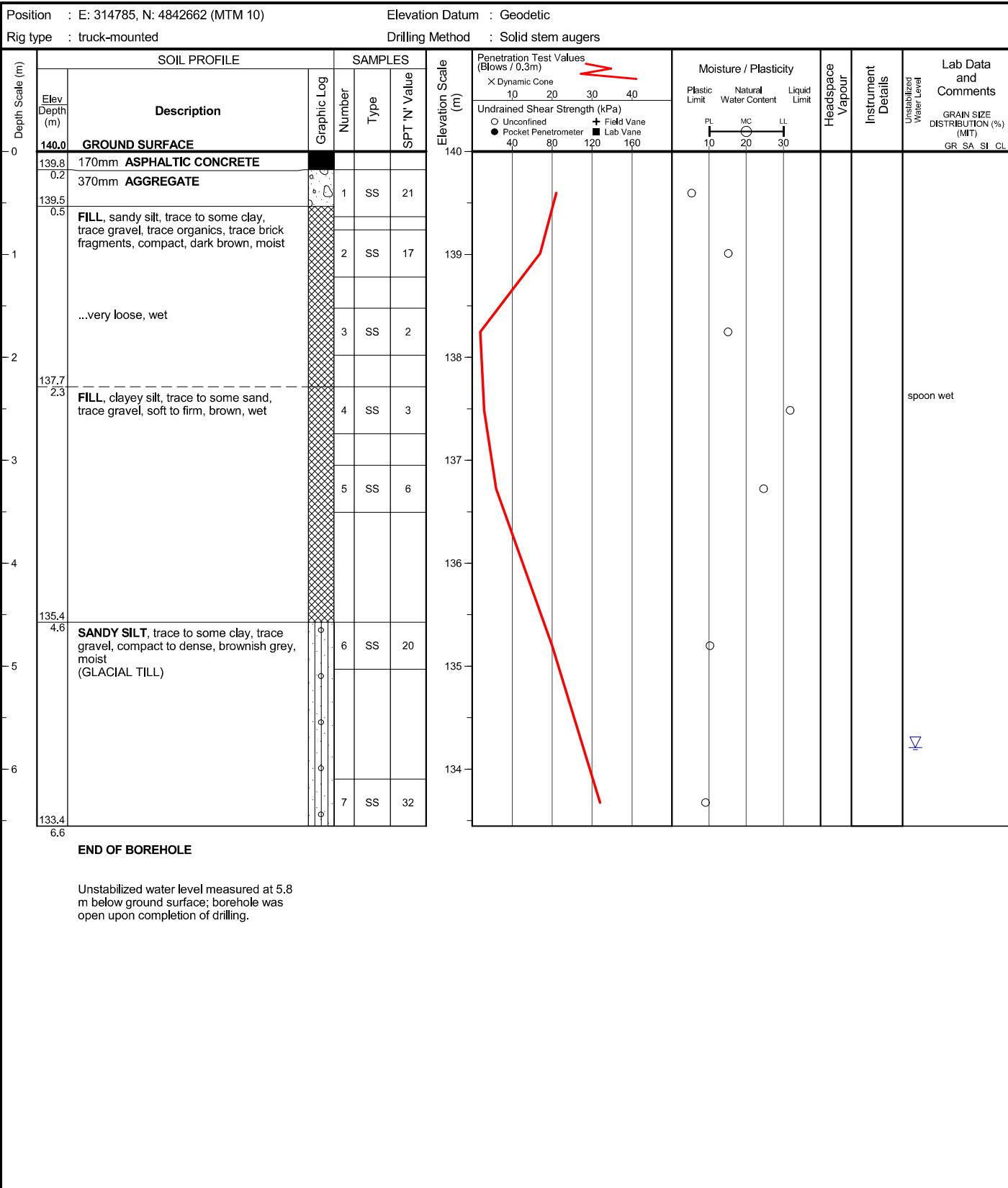
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S13

Client : Aquafor Beech Ltd.

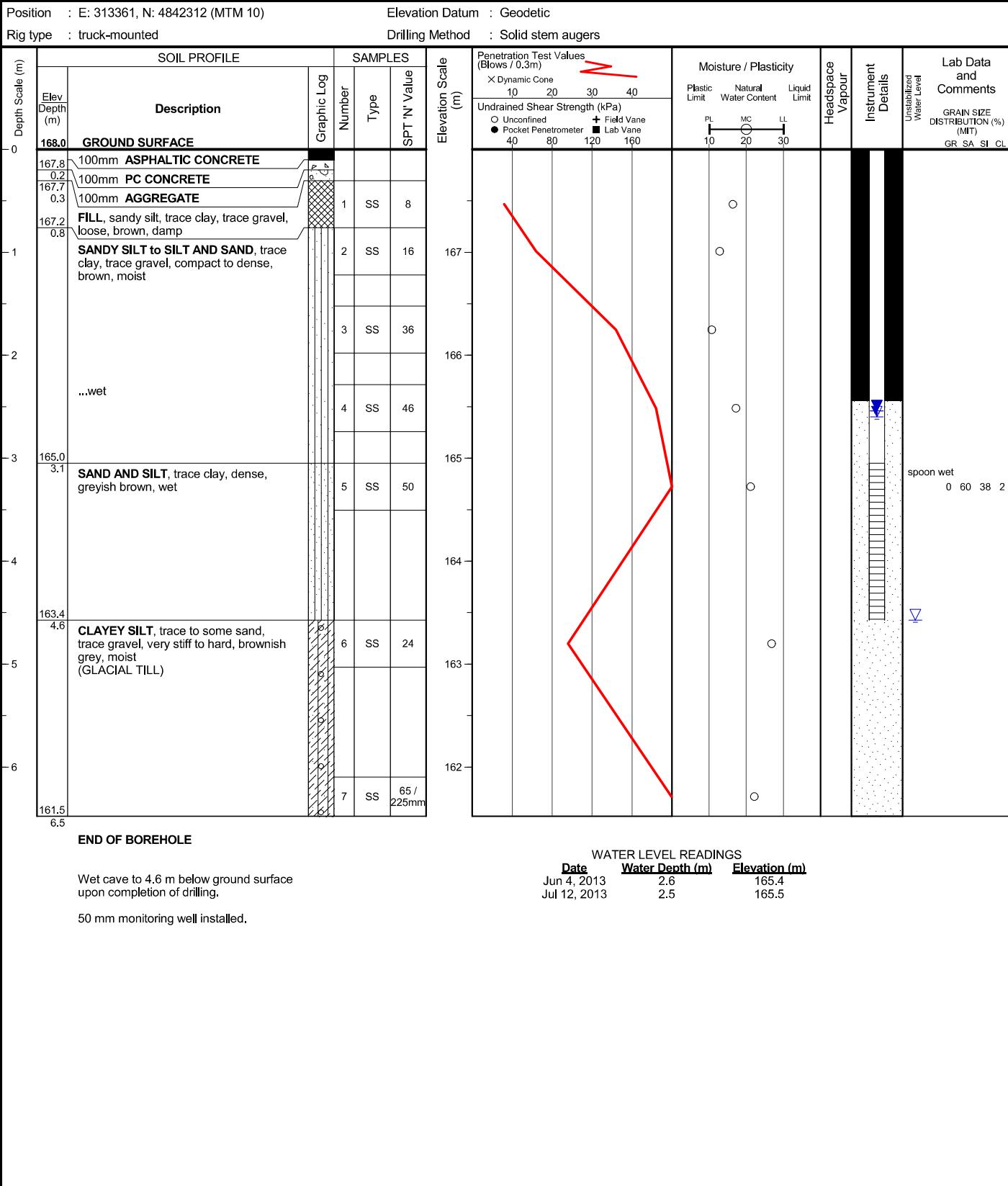
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S14

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

50 mm monitoring well installed.

WATER LEVEL READINGS

| <u>Date</u> | <u>Water Depth (m)</u> | <u>Elevation (m)</u> |
|--------------|------------------------|----------------------|
| Jun 4, 2013 | dry | n/a |
| Jul 12, 2013 | 6.0 | 157.5 |



Client : Aquafor Beech Ltd.

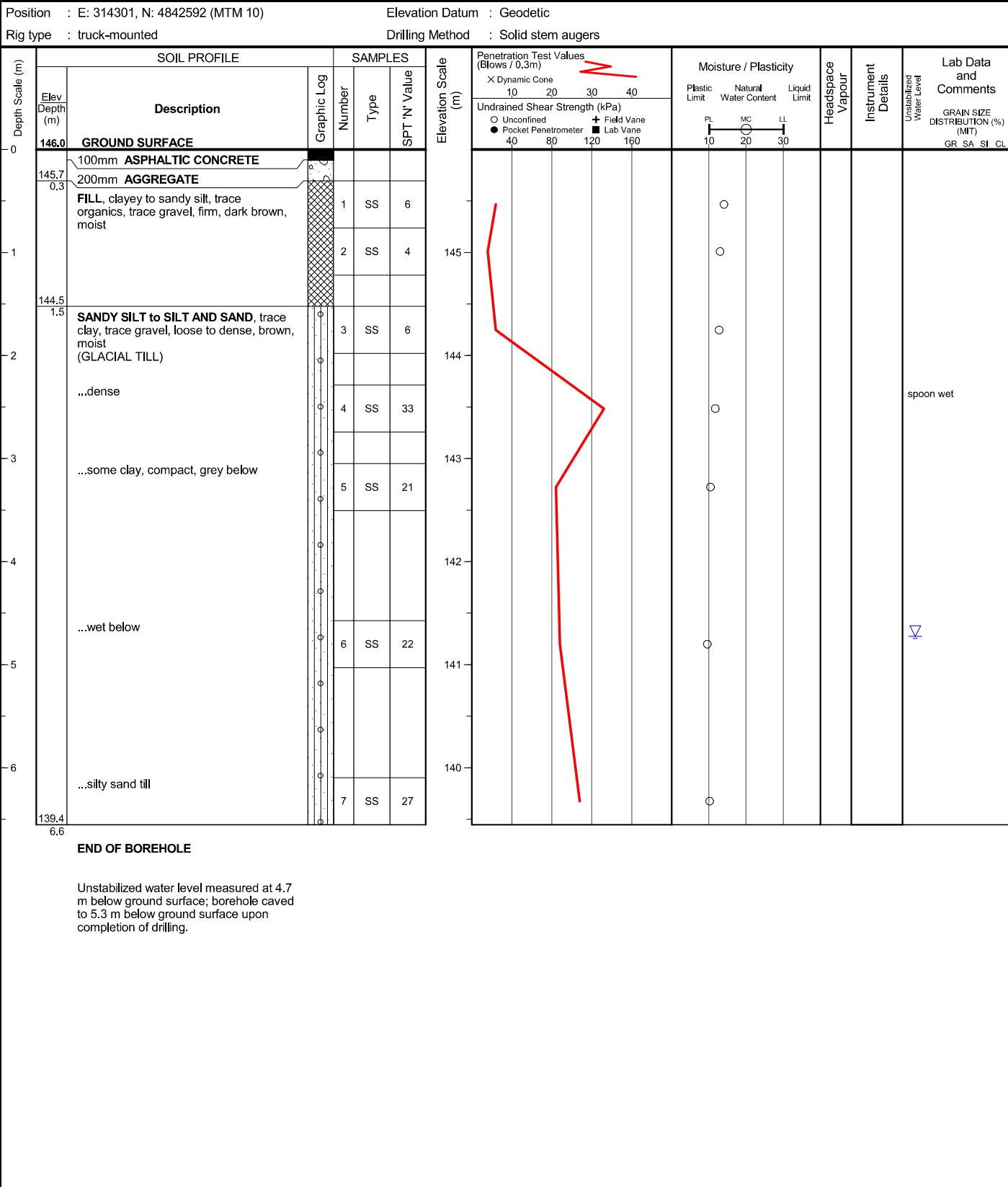
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S16

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

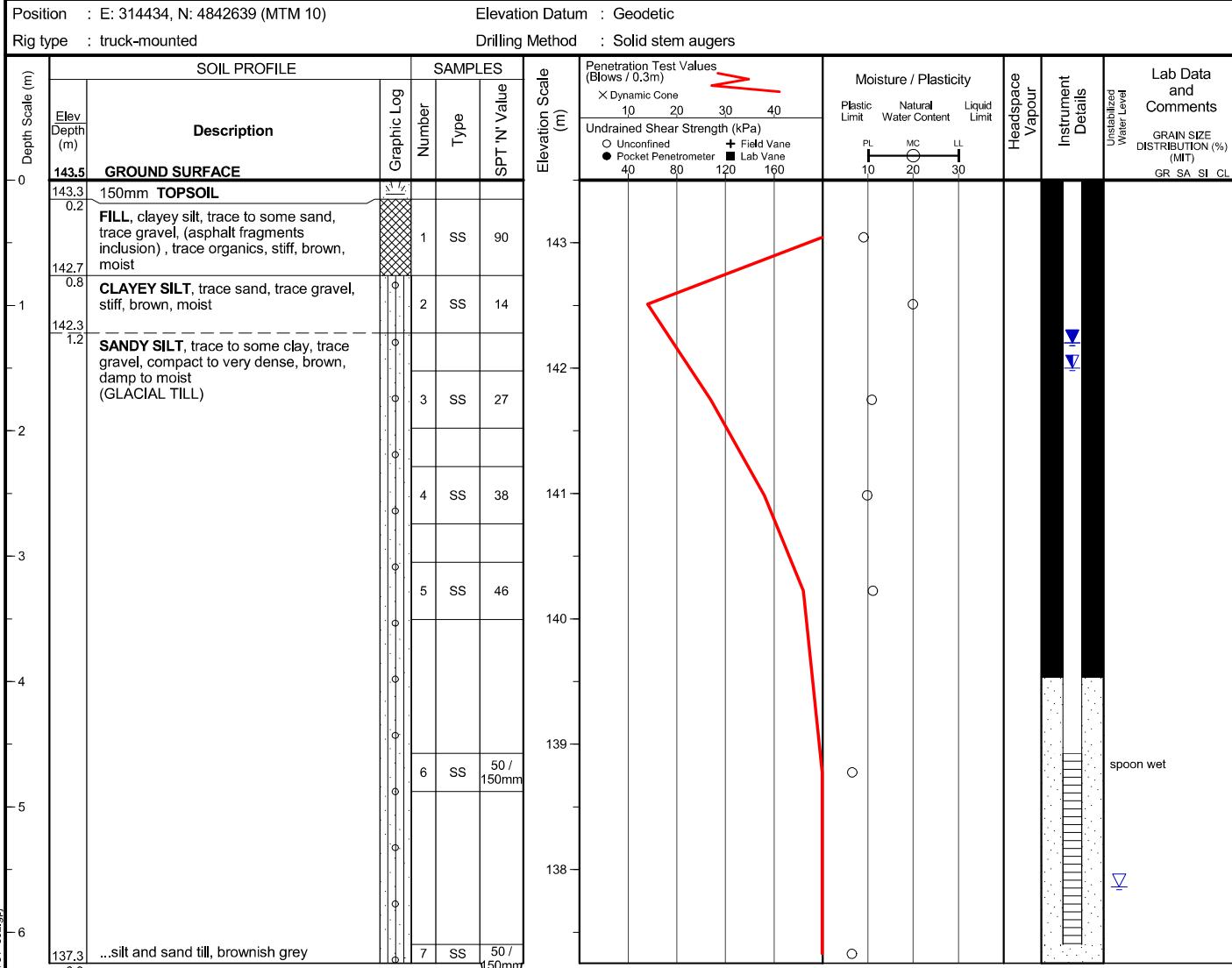
Sheet No. : 1 of 1

Position : E: 314434, N: 4842639 (MTM 10)

Elevation Datum : Geodetic

Rig type : truck-mounted

Drilling Method : Solid stem augers



END OF BOREHOLE

Unstabilized water level measured at 5.6 m below ground surface; borehole was open upon completion of drilling.

50 mm monitoring well installed.

| WATER LEVEL READINGS | | |
|----------------------|-----------------|---------------|
| Date | Water Depth (m) | Elevation (m) |
| Jun 7, 2013 | 1.5 | 142.0 |
| Jul 12, 2013 | 1.3 | 142.2 |



Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313327, N: 4842426 (MTM 10) | | | Elevation Datum : Geodetic | | | | | | |
|--|----------------|---|-------------------------------------|--------|---|-----------------------|------------------|--------------------|-----------------------|
| Rig type : truck-mounted | | | Drilling Method : Solid stem augers | | | | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | | | | |
| 0 | 171.0 | GROUND SURFACE | | | | | | | |
| 0.2 | 170.8 | 100mm ASPHALTIC CONCRETE | | | | | | | |
| 0.3 | 170.7 | 100mm AGGREGATE | | | | | | | |
| 0.4 | 170.6 | 100mm PC CONCRETE | | | | | | | |
| 0.4 | 170.5 | 50mm AGGREGATE | | | | | | | |
| 0.8 | 170.2 | FILL, sandy silt, some clay, trace gravel, trace organics, compact, brown, moist | | 1 | AS | | | | |
| 1 | 170.0 | SAND, trace to some silt, trace gravel, trace clay, compact to dense, brown, damp | | 2 | SS | 29 | | | |
| 2 | 168.7 | | | 3 | SS | 36 | | | |
| 2.3 | 168.7 | SAND AND SILT to SILTY SAND, trace clay, dense to very dense, brown, moist | | 4 | SS | 47 | | | |
| 3 | 168.4 | | | 5 | SS | 65 | | | |
| 4 | 168.1 | ...greyish brown, wet | | 6 | SS | 53 | | | |
| 5 | 167.8 | | | 7 | SS | 40 | | | |
| 6 | 167.5 | ...silt, some sand, trace clay, wet | | | | | | | |
| 6.6 | 164.4 | | | | | | | | |
| END OF BOREHOLE | | | | | | | | | |
| Unstabilized water level measured at 5.5 m below ground surface; borehole caved to 5.8 m below ground surface upon completion of drilling. | | | | | | | | | |



Client : Aquafor Beech Ltd.

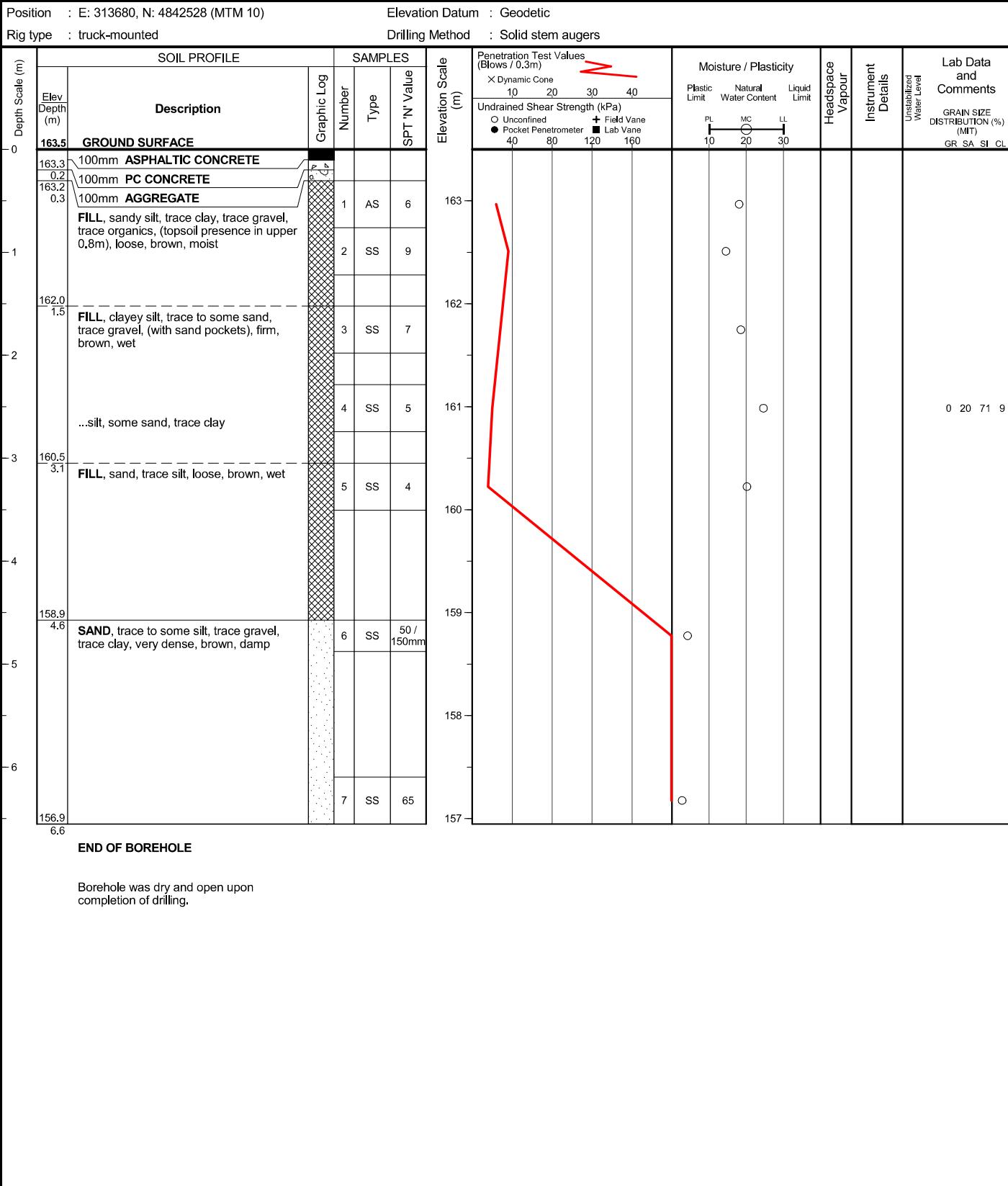
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

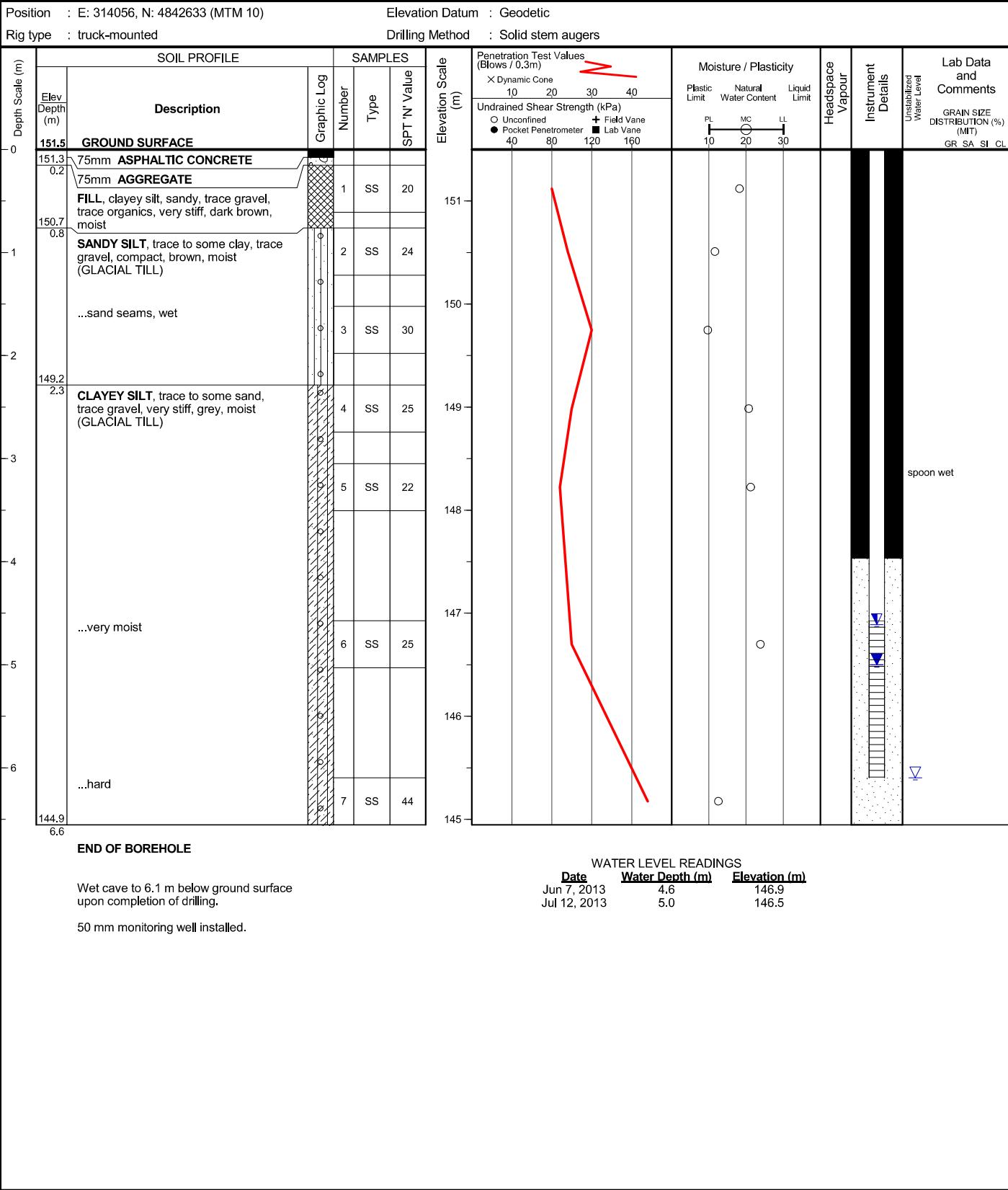
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

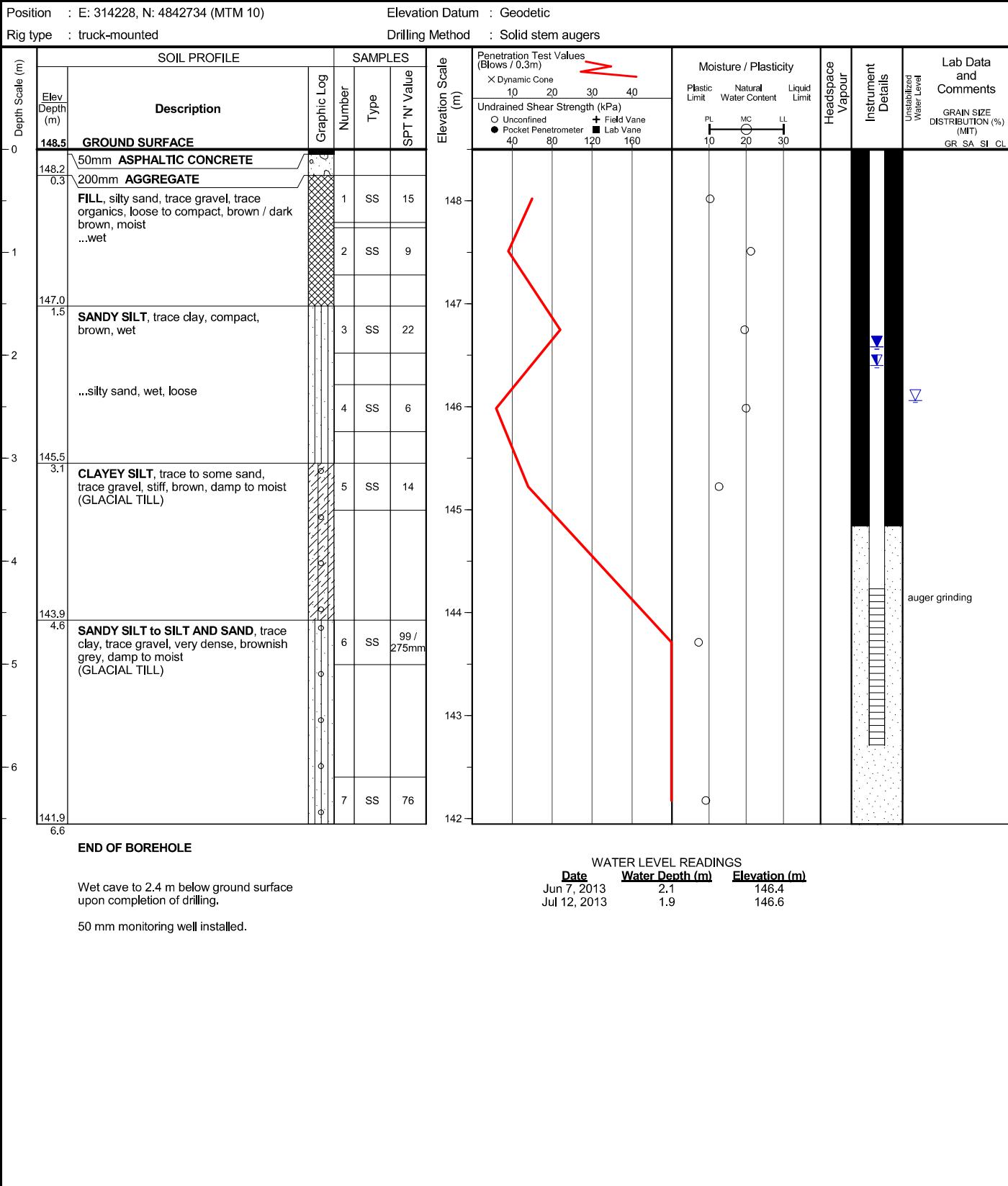
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

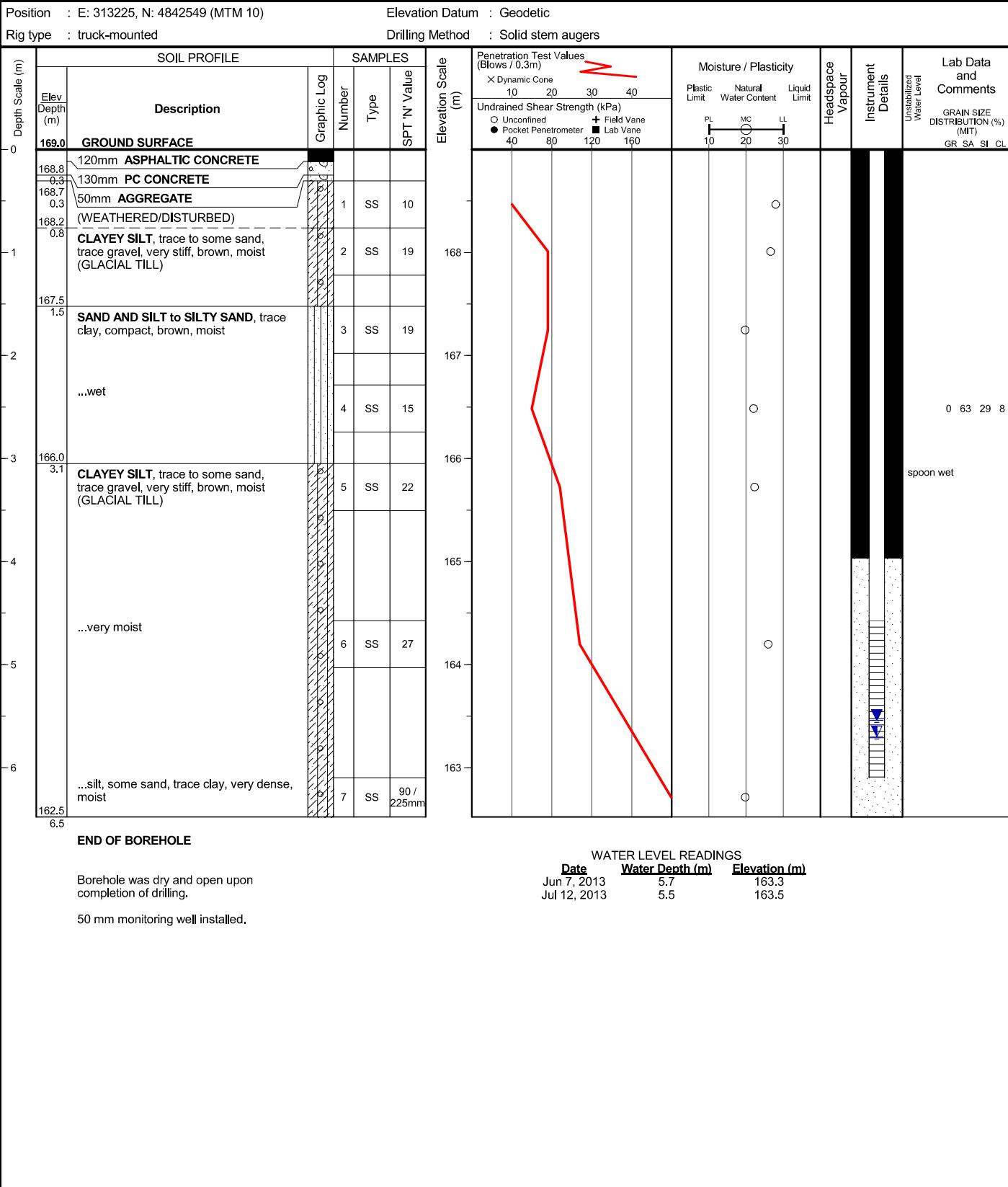
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

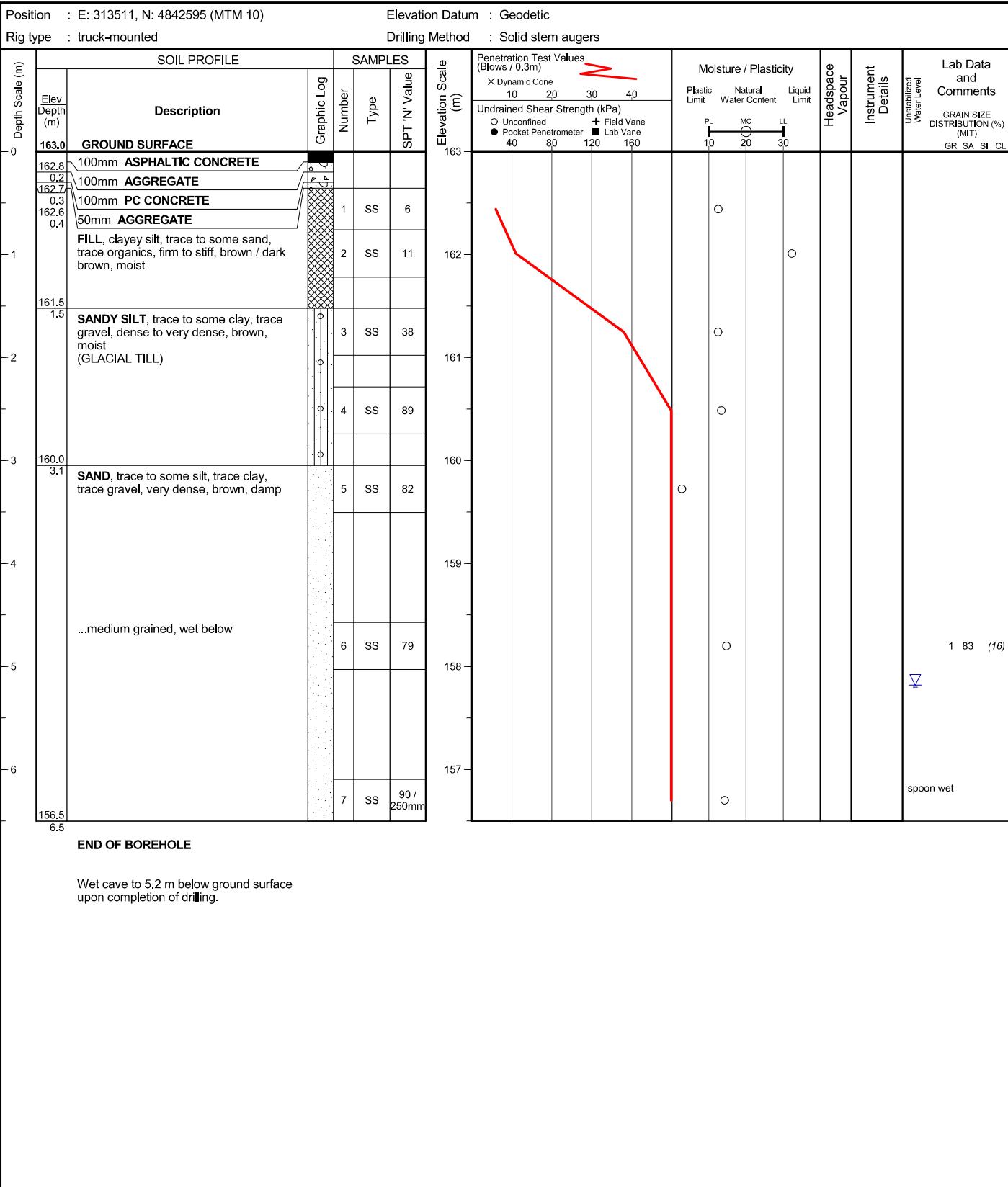
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

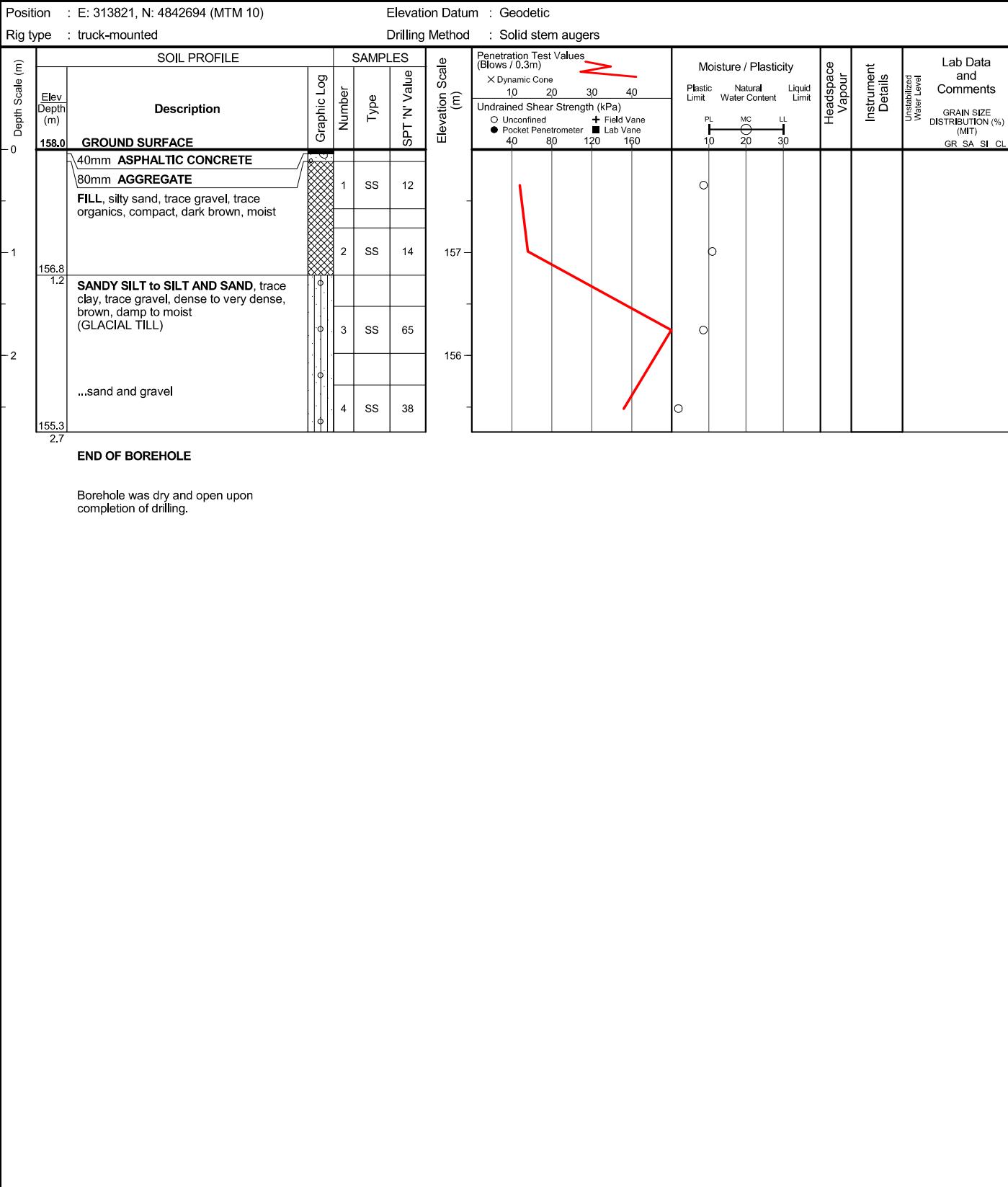
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

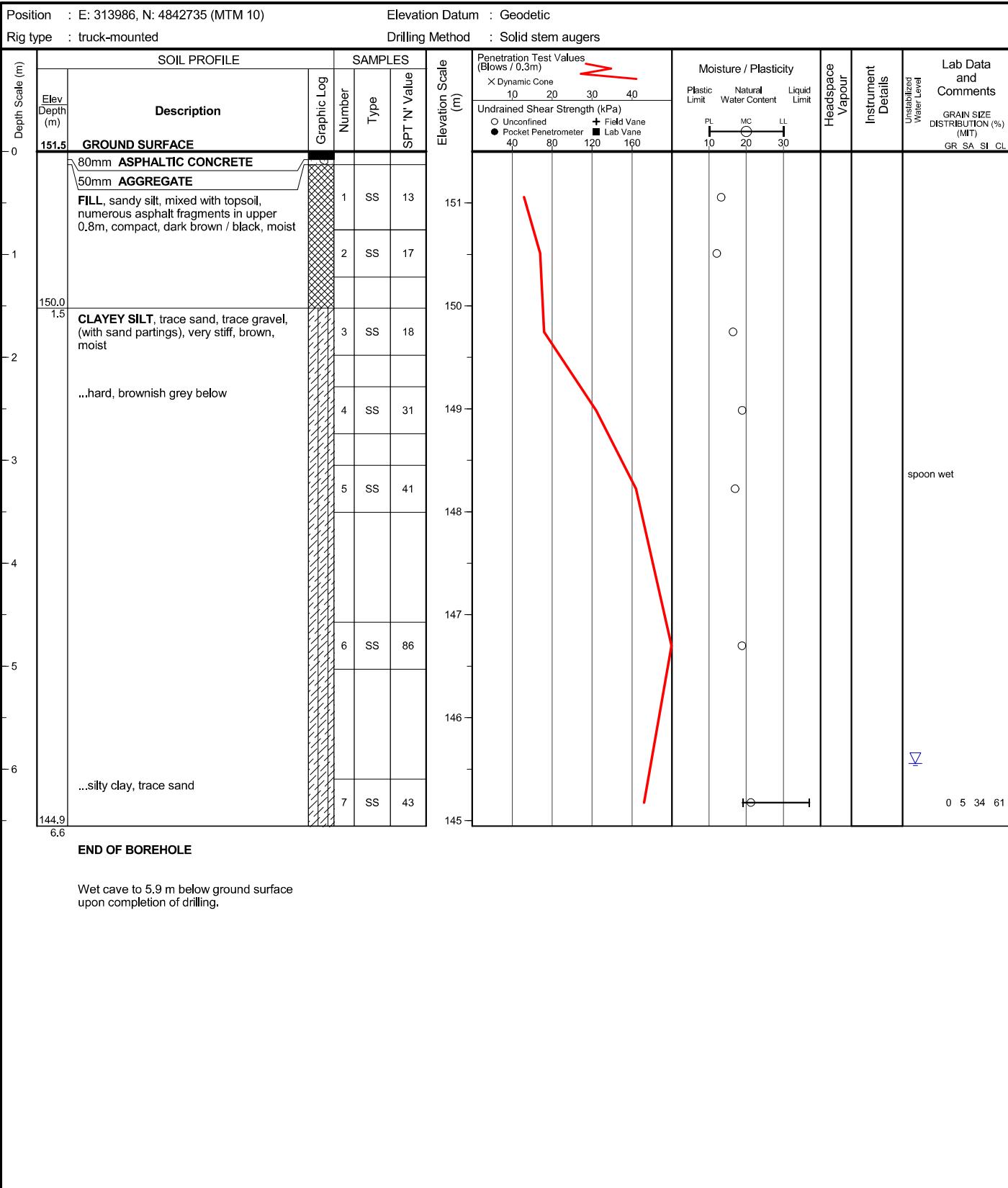
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S25

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 314115, N: 4842772 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments | |
|-----------------|--|-------------|-------------|---------------------|--|-----------------------|-----------------------|--------------------|--------------------------|---------|
| | Elev Depth (m) | Description | Graphic Log | | | | | | | SAMPLES |
| | | | Number | Type | SPT N Value | Plastic Limit | Natural Water Content | Liquid Limit | Unstabilized Water Level | |
| 0 | 149.0 GROUND SURFACE | | | | X Dynamic Cone 10 20 30 40 | | | | | |
| 0.3 | 305mm TOPSOIL | | | 1 | SS | 5 | PL | MC | LL | |
| 1 | FILL, sandy silt, mixed with topsoil, trace gravel, loose, black, moist ...silt and sand, compact | | | 2 | SS | 11 | | | | |
| 1.5 | SANDY SILT, trace to some clay, trace gravel, compact to dense, brown, damp to moist (GLACIAL TILL) | | | 3 | SS | 18 | | | | |
| 2 | | | | 4 | SS | 39 | | | | |
| 3 | | | | 5 | SS | 40 | | | | |
| 4 | | | | 6 | SS | 52 | | | | |
| 5 | | | | 7 | SS | 62 | | | | |
| 6.6 | END OF BOREHOLE | | | | | | | | | |
| | Borehole was dry and open upon completion of drilling. | | | | | | | | | |

The figure is a soil profile log. The left column shows depth in meters from 0 to 6.6. The middle column describes the soil layers. The right column contains data tables for samples and penetration tests. A red line graph overlays the profile, plotting SPT N values (5, 11, 18, 39, 40, 52, 62) against depth. A legend at the top right defines symbols for dynamic cone, pocket penetrometer, field vane, and lab vane tests. A moisture/consistency chart shows plastic limit (PL), liquid limit (LL), and natural water content (MC) for each layer. The bottom note states the borehole was dry and open upon completion.



Client : Aquafor Beech Ltd.

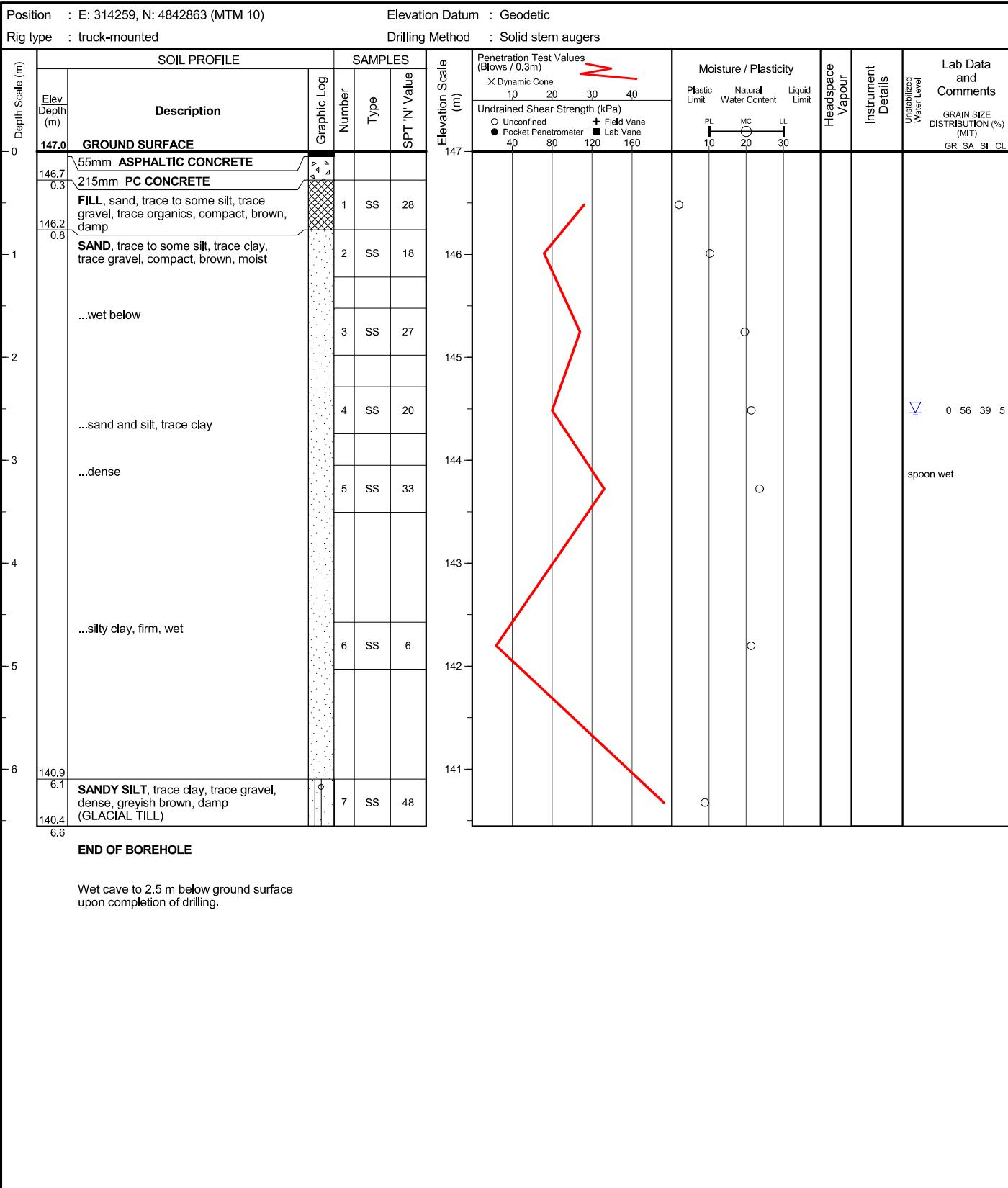
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

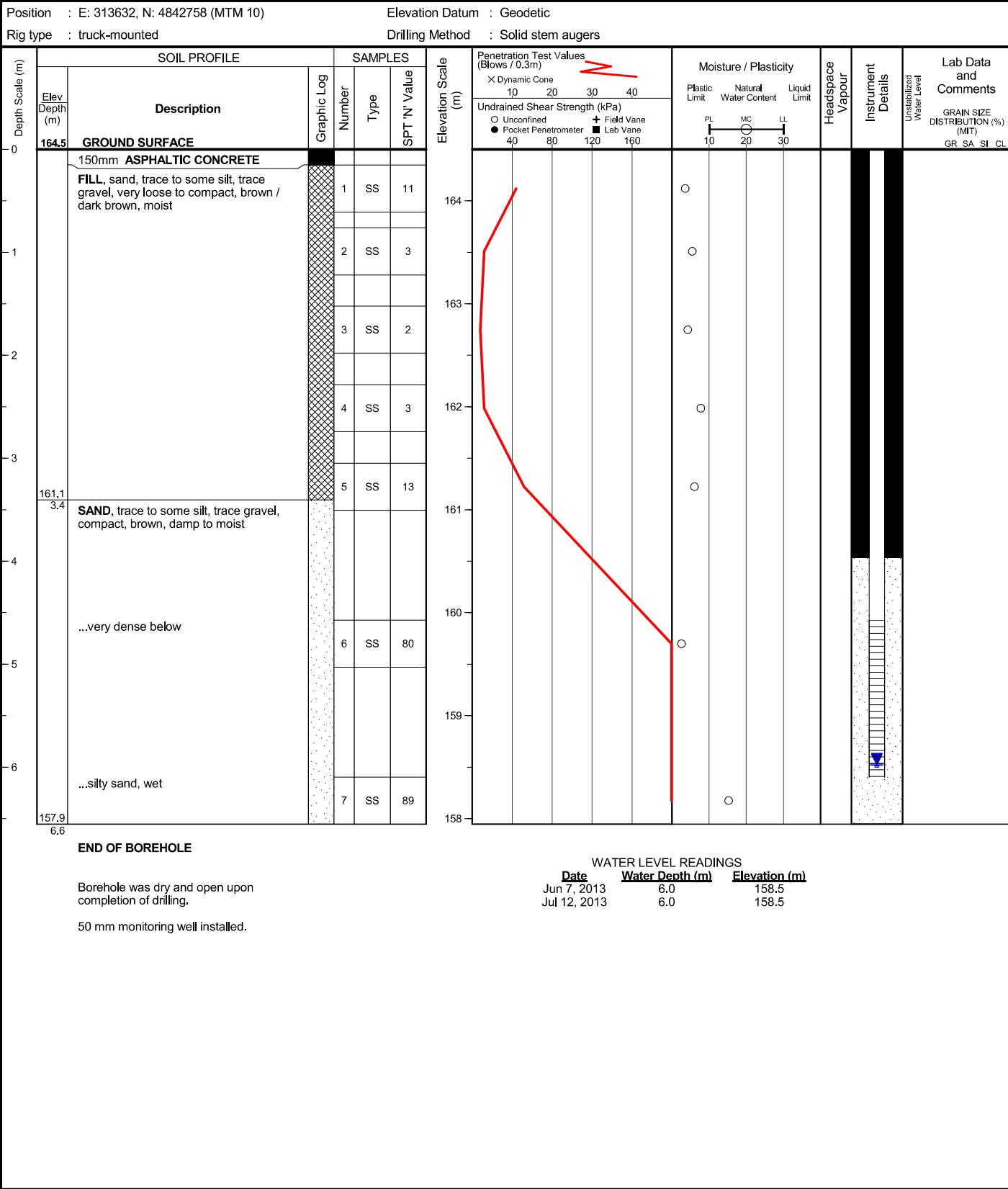
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

| Position : E: 313814, N: 4842803 (MTM 10) | | | | Elevation Datum : Geodetic | | | | | | | |
|--|----------------|--|-------------|-------------------------------------|---------------------|--|----------------|-----------------------|-----------------------|--------------------|--------------------------|
| Rig type : truck-mounted | | | | Drilling Method : Solid stem augers | | | | | | | |
| Depth Scale (m) | SOIL PROFILE | | SAMPLES | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments |
| | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT N Value | X Dynamic Cone | Plastic Limit | Natural Water Content | Liquid Limit | Unstabilized Water Level |
| 0 | 156.0 | GROUND SURFACE | | | | | 10 20 30 40 | PL | MC | LL | GR SA SI CL |
| 0.2 | 155.8 | 50mm ASPHALTIC CONCRETE | | | | | | | | | |
| 0.5 | 155.5 | 70mm AGGREGATE | | | | | | | | | |
| 0.5 | 155.5 | 50mm ASPHALTIC CONCRETE | | | | | | | | | |
| 1 | 155.0 | 280mm AGGREGATE | | 1 | SS | 9 | | | | | |
| 1 | 154.5 | FILL, sandy silt to sand and silt, trace gravel, trace clay, trace organics, loose to compact, brown, moist | | 2 | SS | 12 | | | | | |
| 1.5 | 154.5 | | | 3 | SS | 22 | | | | | |
| 2 | 153.7 | SAND, trace silt, trace gravel, (medium grained), compact, brown, wet | | 4 | SS | 18 | | | | | |
| 2.3 | 153.7 | CLAYEY SILT to CLAY AND SILT, trace to some sand, trace gravel, stiff to very stiff, brown, moist (GLACIAL TILL) | | 5 | SS | 12 | | | | | 0 5 35 60 |
| 3 | 153.7 | ...brownish grey below | | | | | | | | | |
| 4 | 153.7 | ...hard | | 6 | SS | 30 | | | | | |
| 5 | 153.7 | | | 7 | SS | 50 / 100mm | | | | | |
| 6 | 149.9 | SILT AND SAND, trace gravel, very dense, brown, damp (GLACIAL TILL) | | | | | | | | | |
| 6.1 | 149.7 | | | | | | | | | | |
| 6.4 | 149.7 | | | | | | | | | | |
| END OF BOREHOLE | | | | | | | | | | | |
| Borehole was dry and open upon completion of drilling. | | | | | | | | | | | |



Terraprobe

BOREHOLE LOG S29

Client : Aquafor Beech Ltd.

Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 21, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1

Position : E: 313964, N: 4842856 (MTM 10) Elevation Datum : Geodetic
Rig type : truck-mounted Drilling Method : Solid stem augers

| Depth Scale (m) | SOIL PROFILE | | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | Headspace Vapour | Instrument Details | Lab Data and Comments |
|---|--|-------------|-------------|---------------------|--|-----------------------|-----------------------|--------------------|--------------------------|
| | Elev Depth (m) | Description | Graphic Log | | | | | | |
| | | | Number | Type | SPT N-Value | Plastic Limit | Natural Water Content | Liquid Limit | Unstabilized Water Level |
| 150.0 | GROUND SURFACE | | | | X Dynamic Cone 10 20 30 40 | | | | |
| 149.8 | 100mm ASPHALTIC CONCRETE | | | | O Unconfined ● Pocket Penetrometer 40 80 120 160 | | | | |
| 0.2 | 100mm AGGREGATE | | | | + Field Vane ■ Lab Vane | | | | |
| | FILL, sandy silt, mixed with topsoil in upper 0.6m, loose, dark brown / black, moist ...sandy silt, trace organic | | 1 SS 9 | | | PL 10 | MC 20 | LL 30 | |
| 148.4 | 1.6 CLAYEY SILT, trace sand, trace gravel, very stiff, brown, moist (GLACIAL TILL) | | 2 SS 7 | | | | | | |
| 2 | | | 3 SS 17 | | | | | | |
| 3 | | | 4 SS 17 | | | | | | |
| 4 | | | 5 SS 27 | | | | | | |
| 5 | | | 6 SS 43 | | | | | | |
| 6 | | | 7 SS 67 | | | | | | |
| 6.6 | END OF BOREHOLE | | | | | | | | |
| Wet cave to 5.8 m below ground surface upon completion of drilling. | | | | | | | | | |
| 50 mm monitoring well installed. | | | | | | | | | |
| WATER LEVEL READINGS | | | | | | | | | |
| Date Water Depth (m) Elevation (m) | | | | | | | | | |
| Jun 7, 2013 3.2 146.8 | | | | | | | | | |
| Jul 12, 2013 3.0 147.0 | | | | | | | | | |
| GRAIN SIZE DISTRIBUTION (%) (MTI) GR SA SI CL | | | | | | | | | |

The figure is a detailed soil profile log. The left column shows depth in meters from 0 to 6.6. The middle section contains a 'Graphic Log' where soil horizons are represented by different patterns. To the right of the graphic log are columns for 'Description', 'Number', 'Type', and 'SPT N-Value'. Further right are sections for 'Penetration Test Values (Blows / 0.3m)' (Dynamic Cone, Unconfined, Pocket Penetrometer), 'Undrained Shear Strength (kPa)' (Field Vane, Lab Vane), and 'Moisture / Plasticity' (Plastic Limit, Natural Water Content, Liquid Limit). A red line graph plots SPT N-values against depth, showing a sharp increase from 0m to 1.6m and then a gradual decline. The rightmost section includes 'Headspace Vapour' (indicated by a black box with blue symbols), 'Instrument Details' (black box with blue symbols), and 'Lab Data and Comments' (including grain size distribution percentages and an 'Unstabilized Water Level' indicator).



Client : Aquafor Beech Ltd.

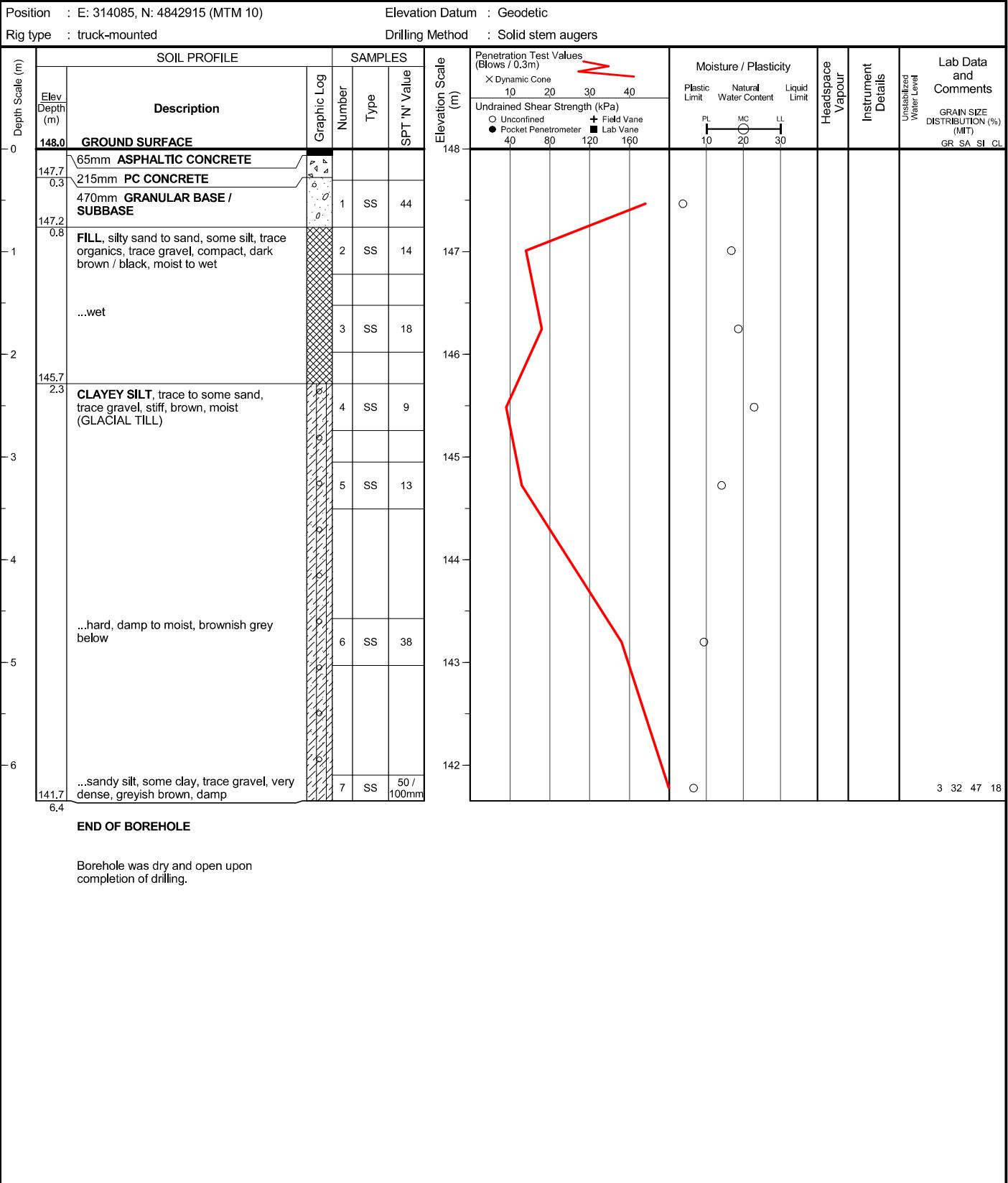
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 16, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Client : Aquafor Beech Ltd.

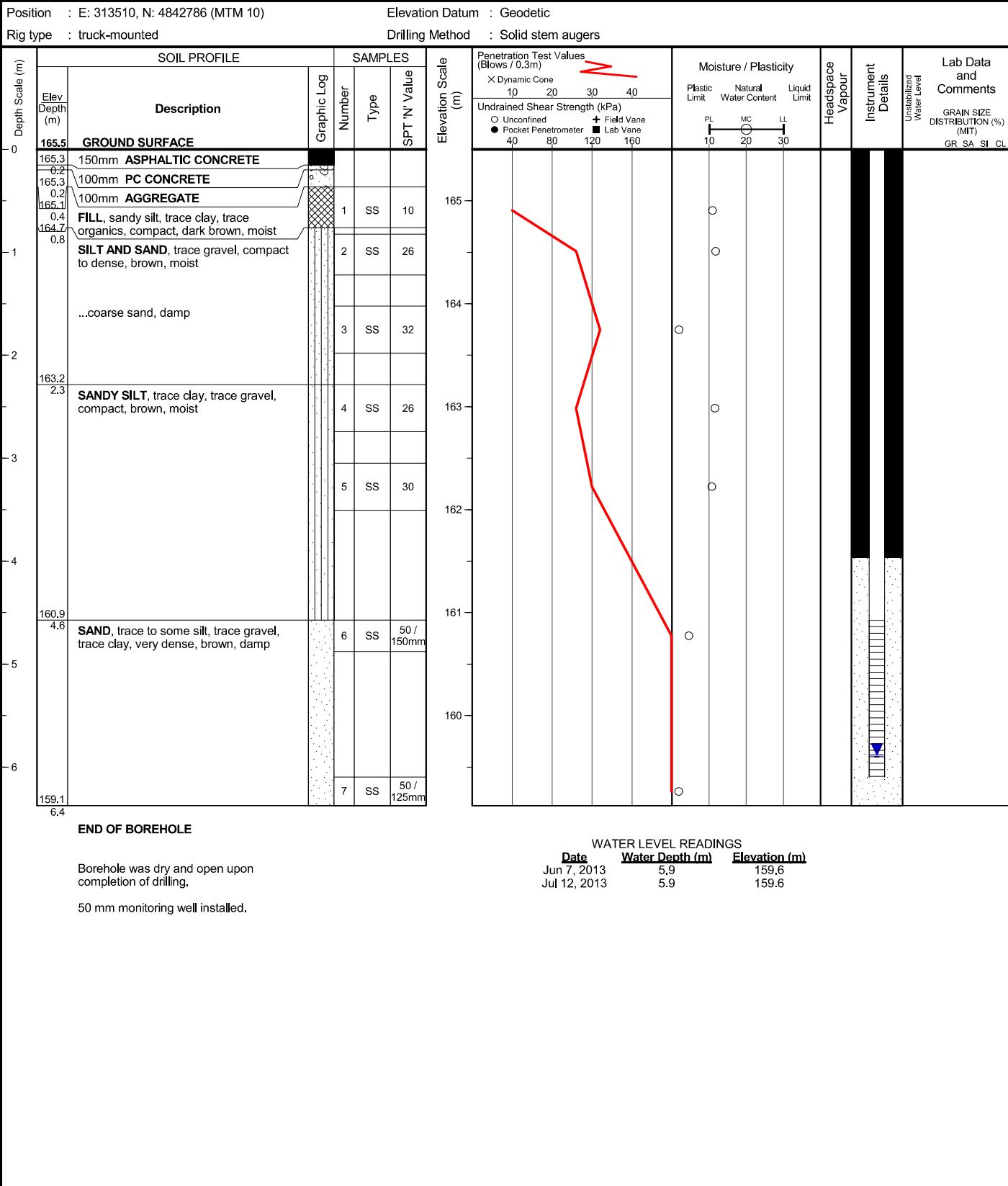
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 22, 2013

Location : Toronto, Ontario

Sheet No. : 1 of 1





Terraprobe

BOREHOLE LOG S32

Client : Aquafor Beech Ltd.

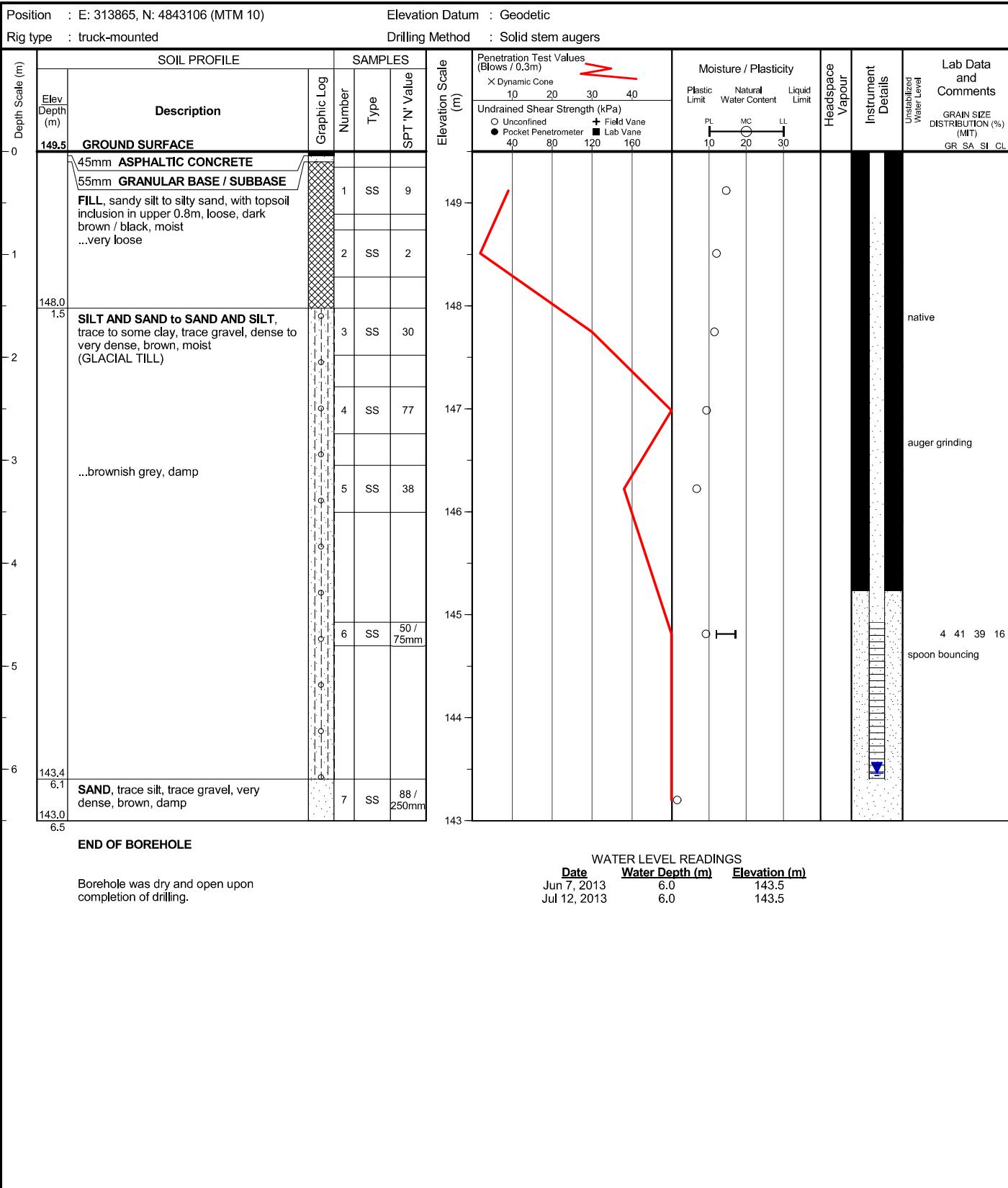
Project No.: 11-12-2126

Project : Lawrence Park Neighbourhood

Date started : May 17, 2013

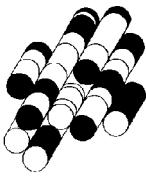
Location : Toronto, Ontario

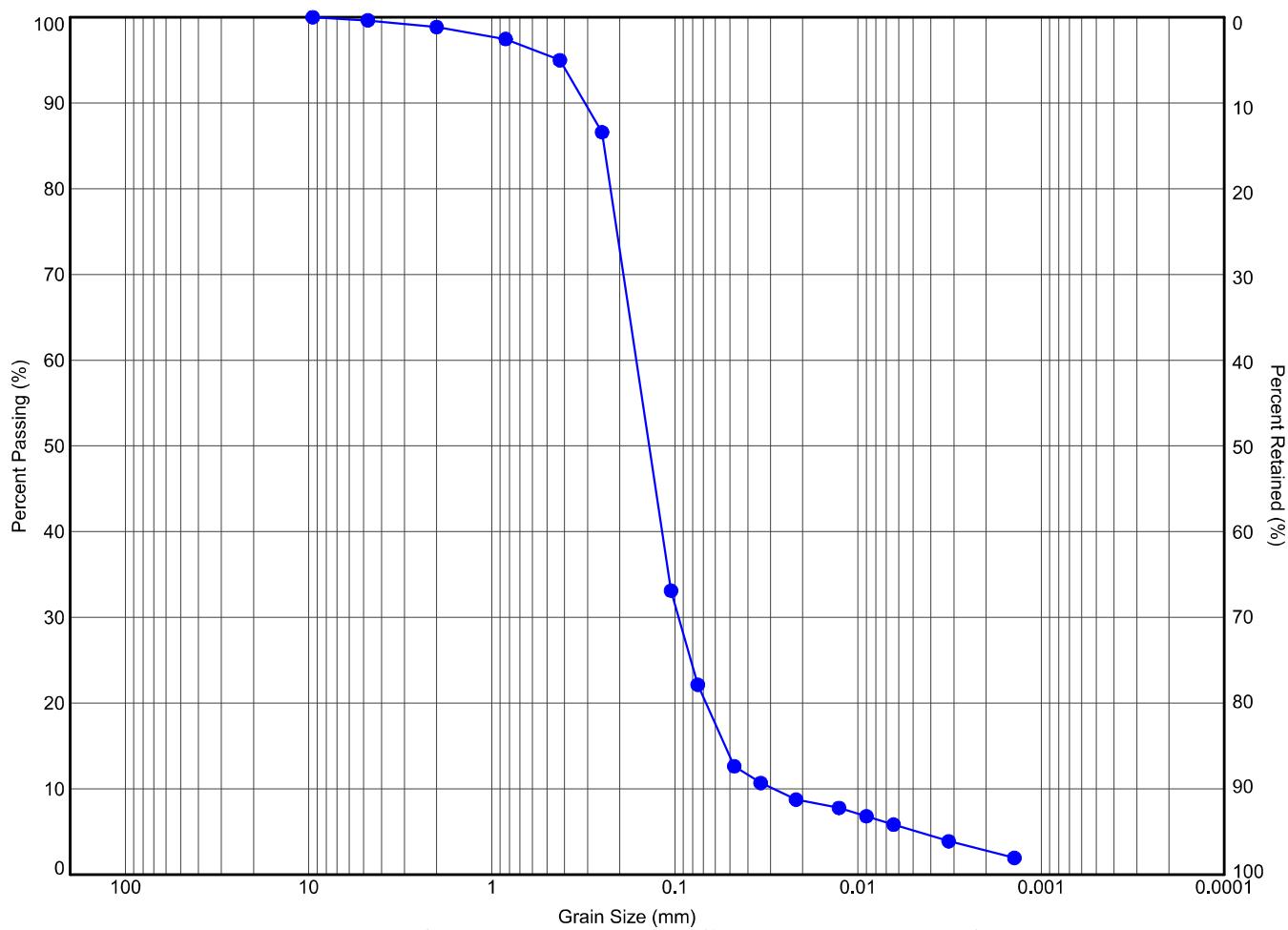
Sheet No. : 1 of 1



SIEVE AND HYDROMETER ANALYSIS

TERRAPROBE INC.





| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S1 | SS6 | 4.7 | 154.3 | 1 | 81 | 15 | 3 |



Terraprobe

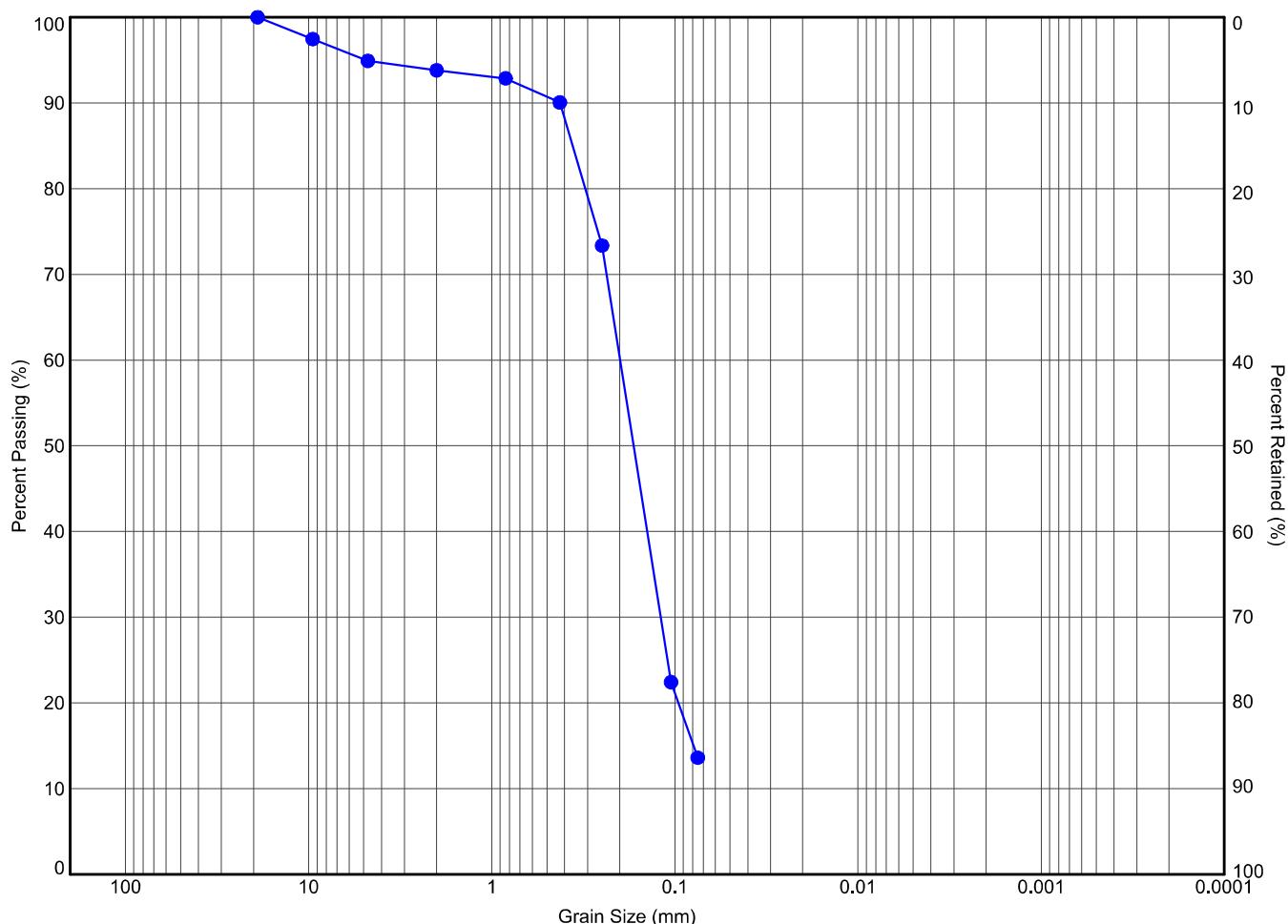
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

**GRAIN SIZE DISTRIBUTION
SAND, SOME SILT, TRACE CLAY, TRACE GRAVEL**

File No.:

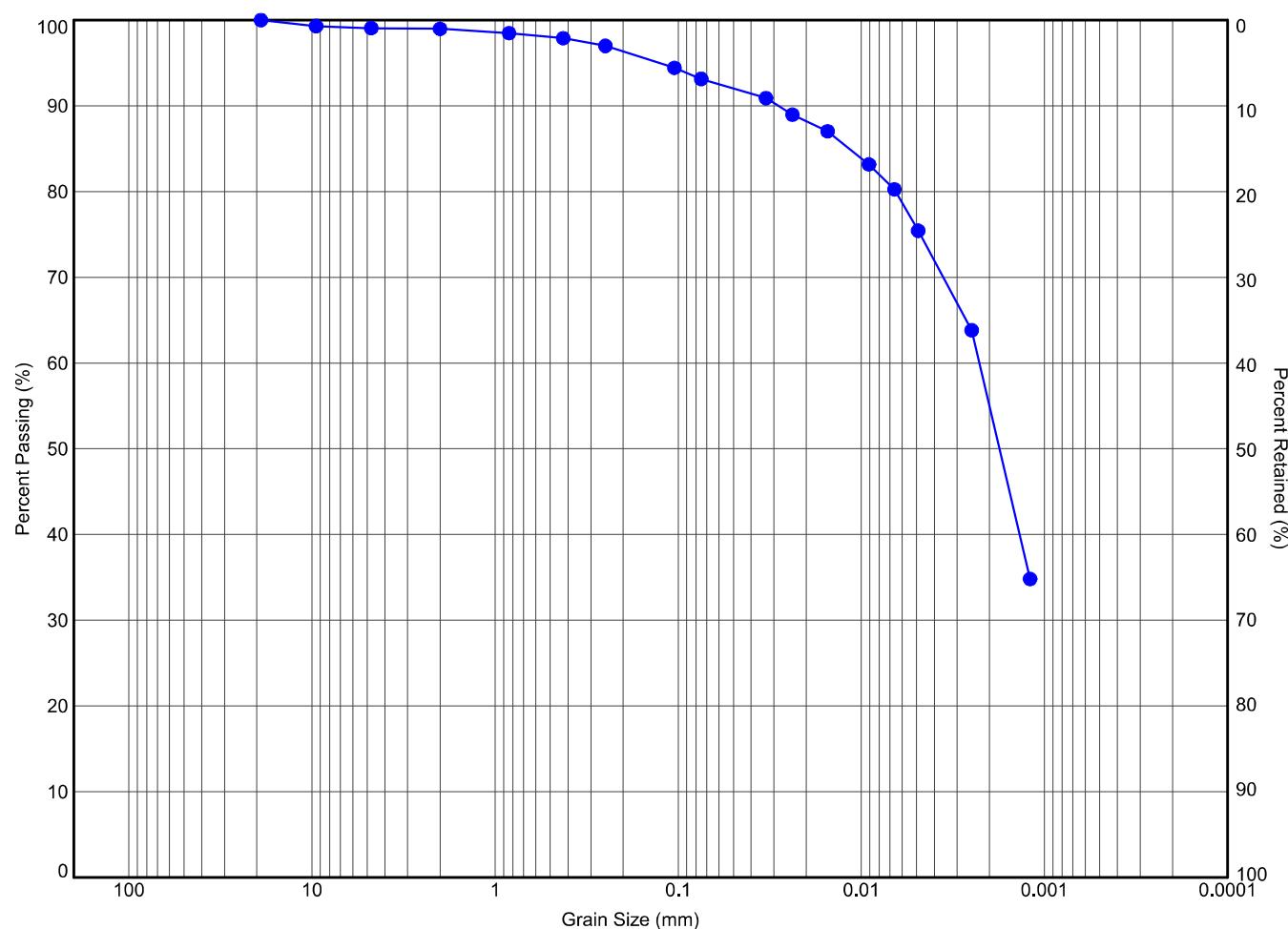
11-12-2126



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |
| | | | | | | | | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S3 | SS7 | 6.3 | 150.5 | 6 | 80 | | (14) |

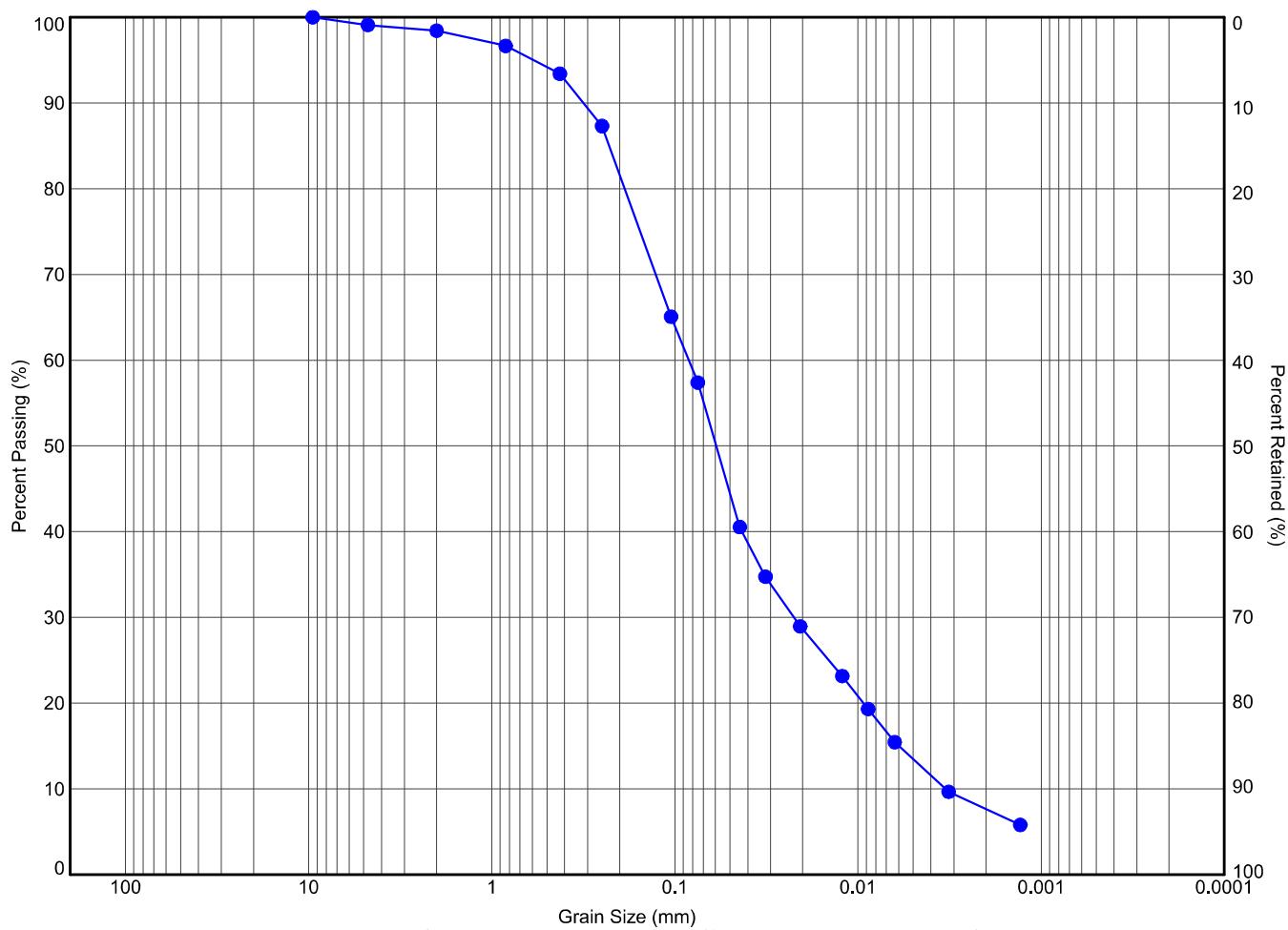
| | | | |
|--|--|-----------|------------|
|  Terraprobe 11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650 | Title: GRAIN SIZE DISTRIBUTION SAND, SOME SILT, TRACE GRAVEL | File No.: | 11-12-2126 |
| | | | |



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S5 | SS6 | 4.8 | 140.2 | 1 | 6 | 38 | 55 |

| | | |
|--|--|------------|
|  Terraprobe 11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650 | Title: GRAIN SIZE DISTRIBUTION CLAY AND SILT, TRACE SAND, TRACE GRAVEL | File No.: |
| | | 11-12-2126 |



| MIT SYSTEM | | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|----------|------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | (Fines, %) |
| ● S8 | SS3 | 1.8 | 160.7 | 2 | 47 | 43 | 8 | |



Terraprobe

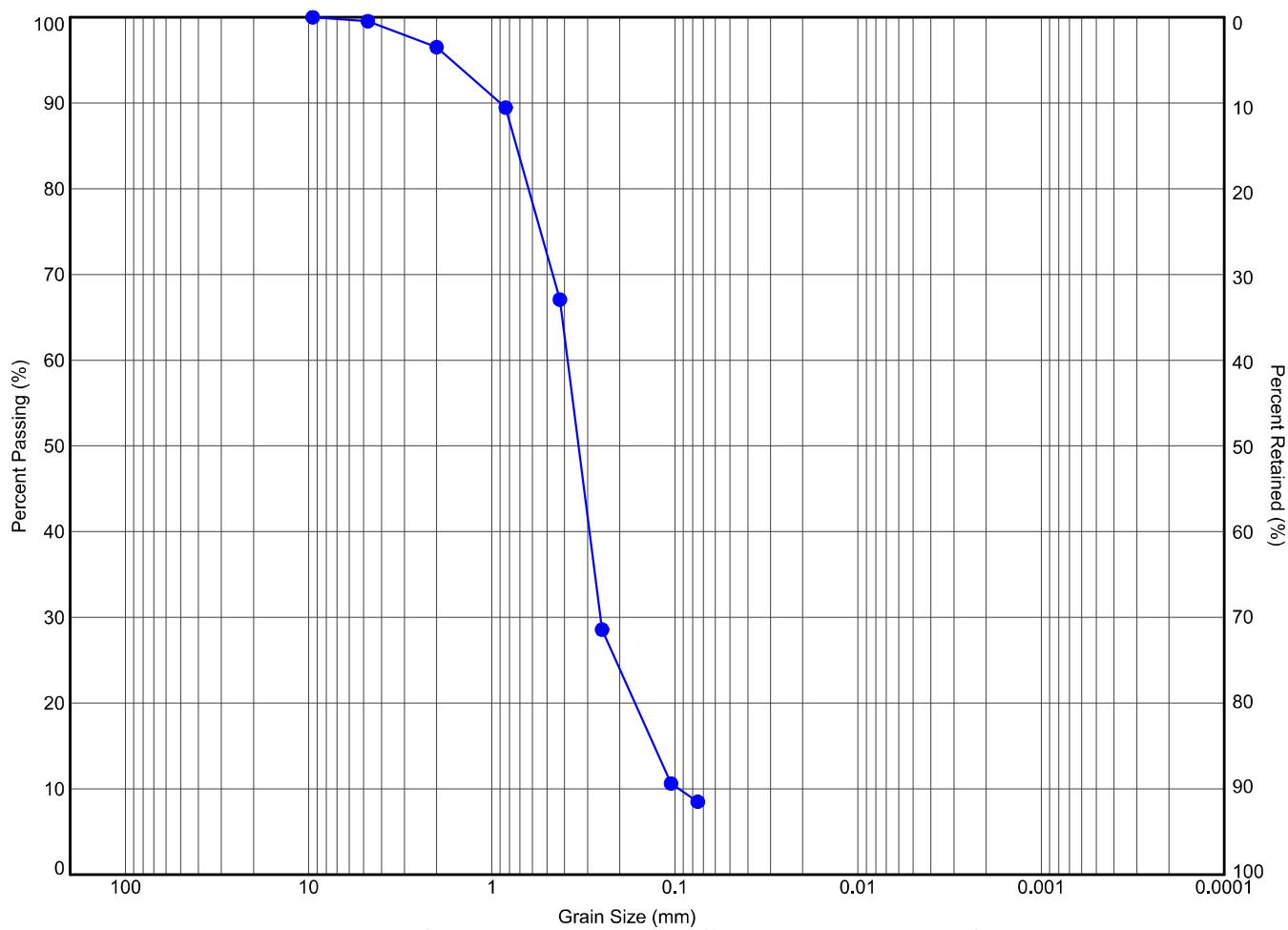
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

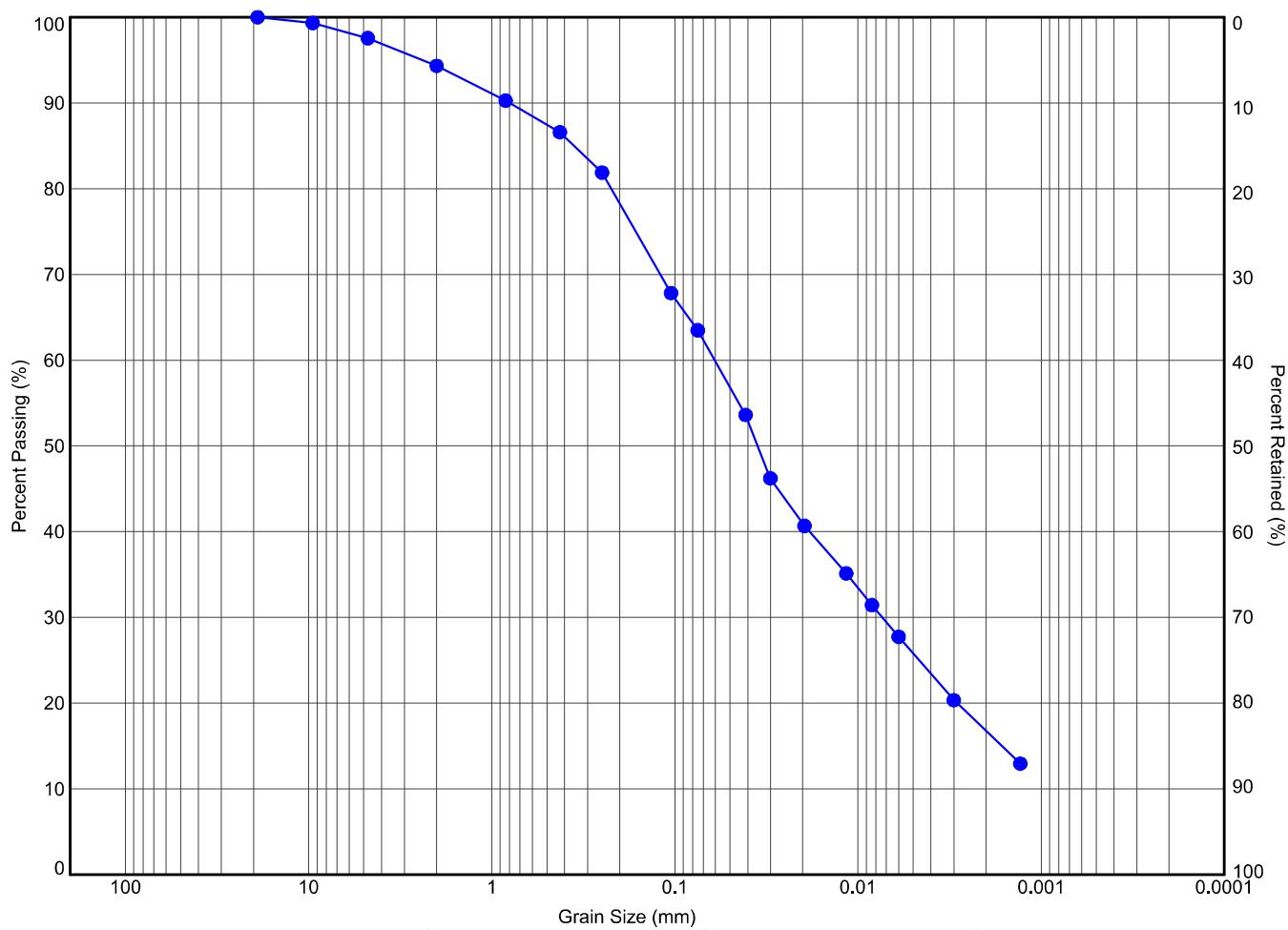
**GRAIN SIZE DISTRIBUTION
SAND AND SILT, TRACE CLAY, TRACE GRAVEL (GLACIAL TILL)**

File No.:

11-12-2126



| MIT SYSTEM | | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|----------|------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | (Fines, %) |
| ● S9 | SS4 | 2.5 | 152.0 | 4 | 87 | | | (9) |



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S11 | SS6 | 6.3 | 135.2 | 6 | 34 | 43 | 17 |



Terraprobe

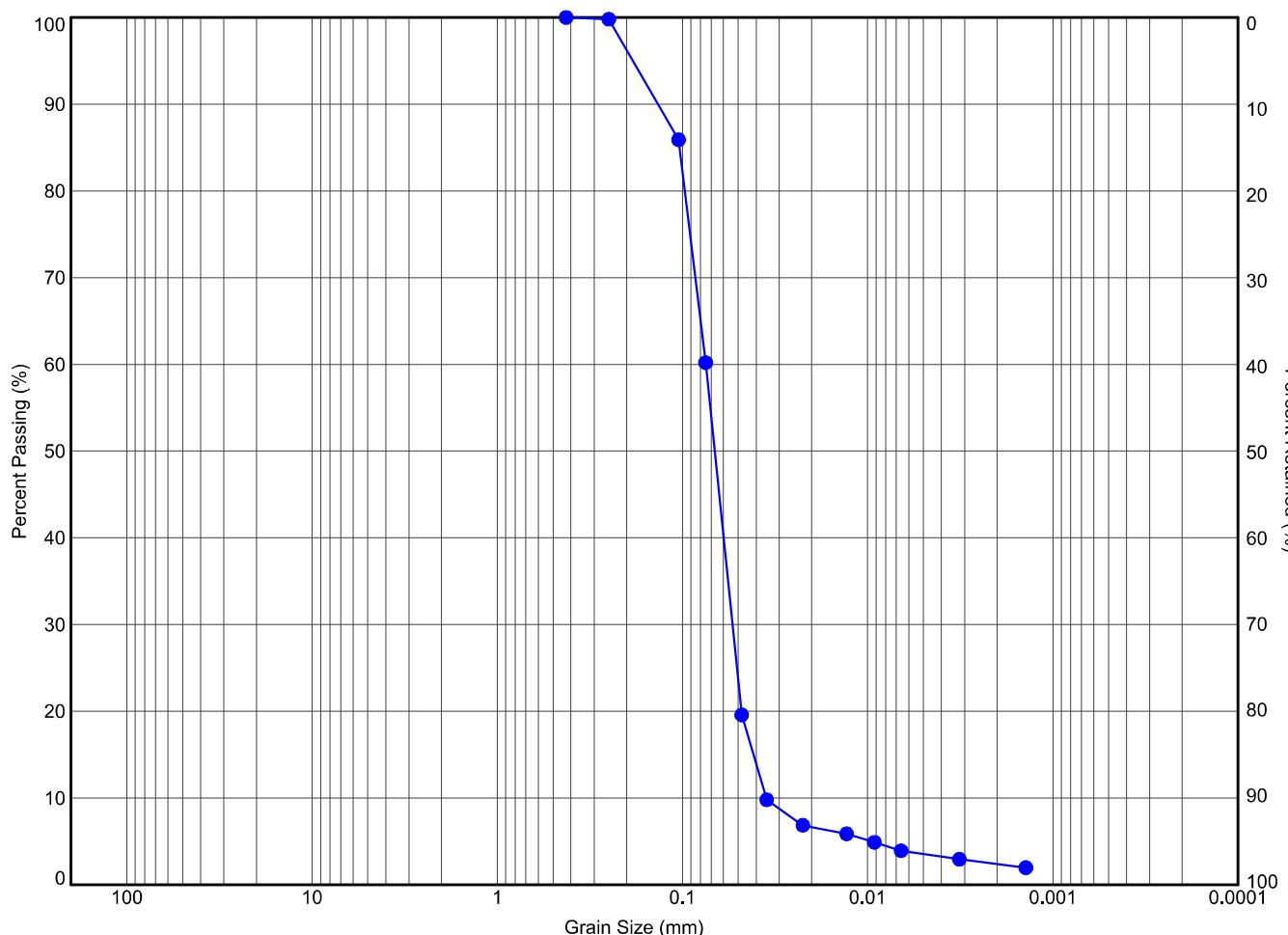
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

**GRAIN SIZE DISTRIBUTION
SANDY SILT, SOME CLAY, TRACE GRAVEL (GLACIAL TILL)**

File No.:

11-12-2126



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S13 | SS5 | 3.3 | 164.7 | 0 | 60 | 38 | 2 |



Terraprobe

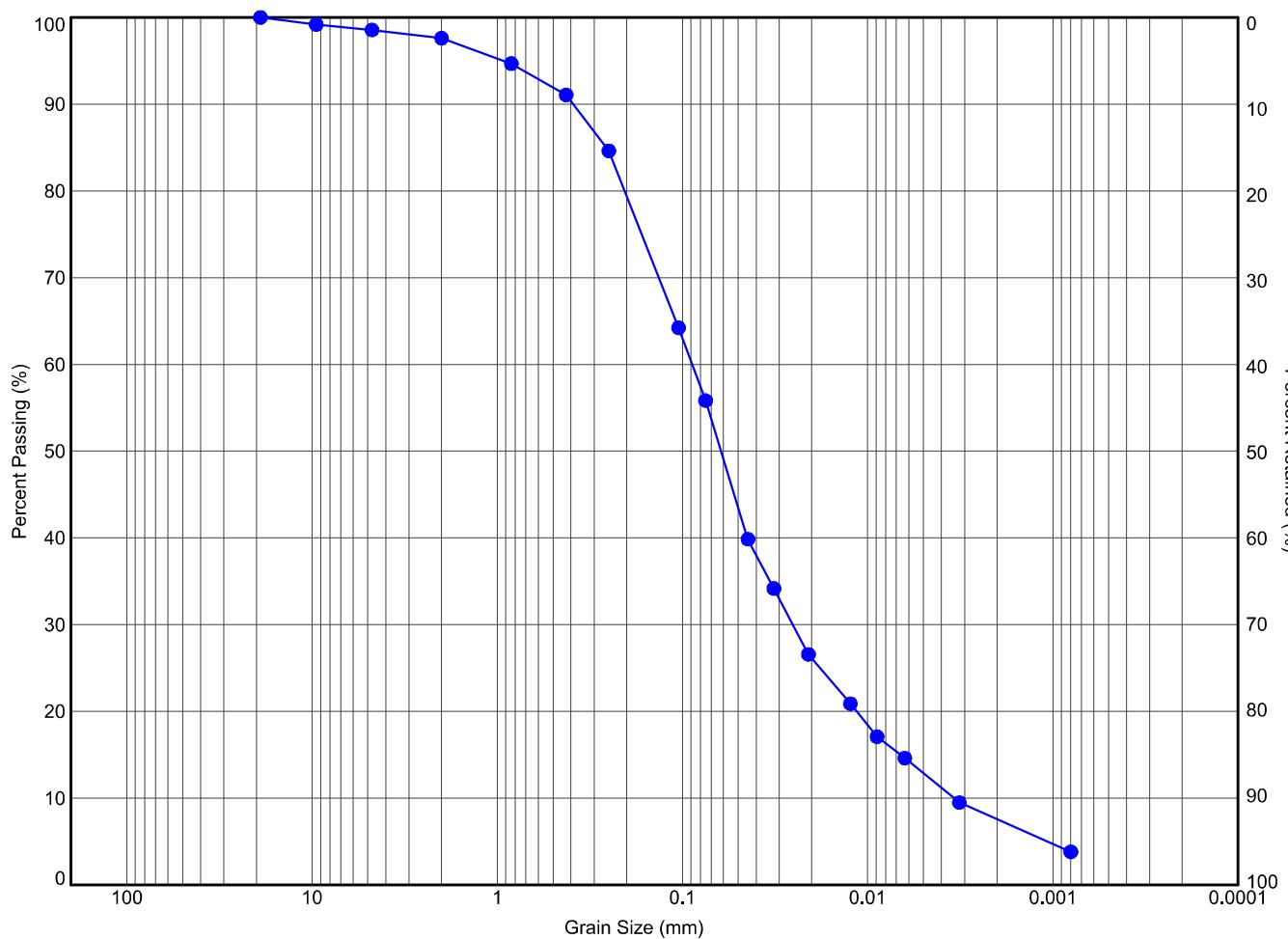
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

**GRAIN SIZE DISTRIBUTION
SAND AND SILT, TRACE CLAY**

File No.:

11-12-2126



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S14 | SS4 | 2.4 | 161.1 | 2 | 48 | 42 | 8 |

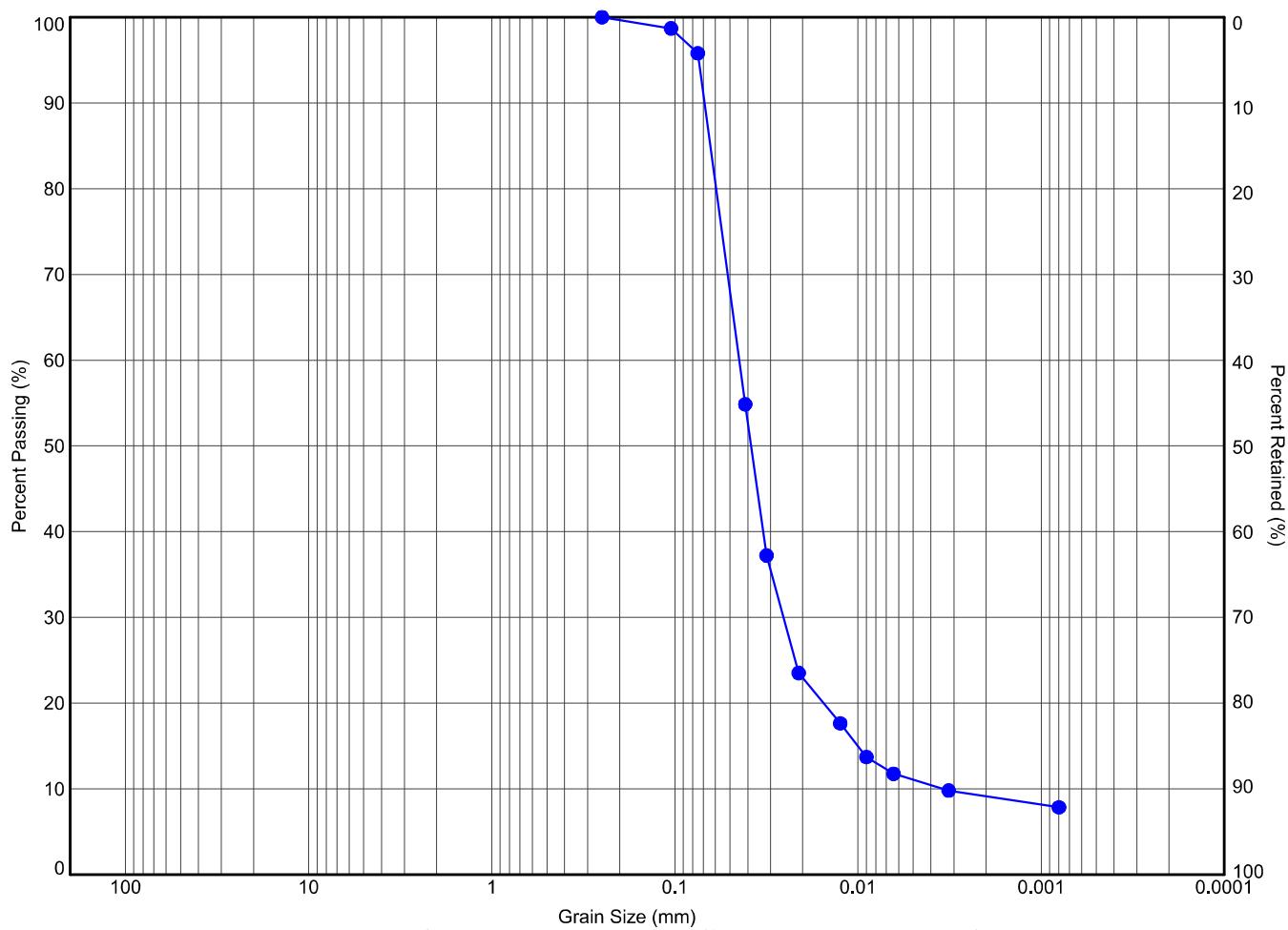


Terraprobe

11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

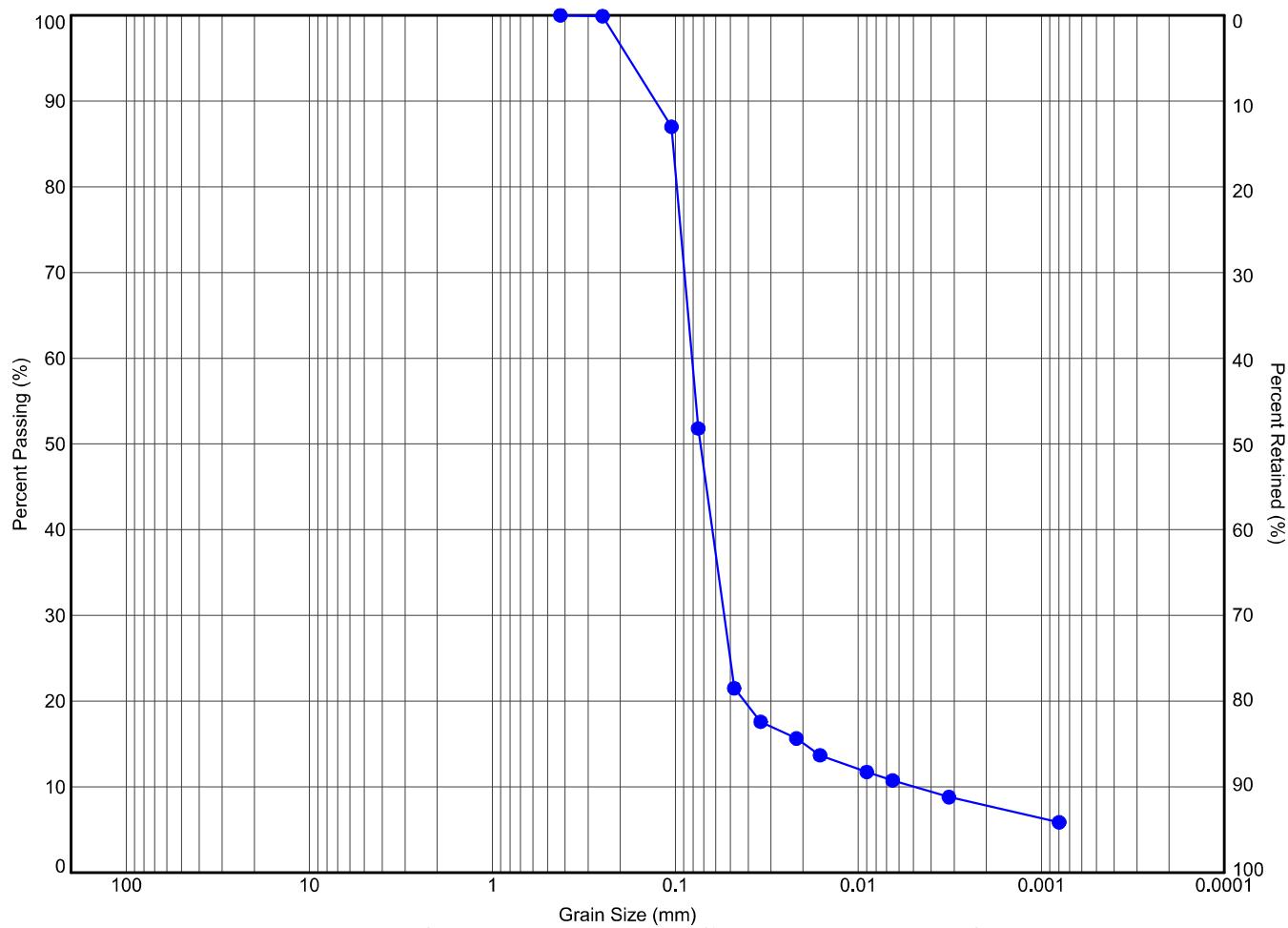
Title: **GRAIN SIZE DISTRIBUTION
SAND AND SILT, TRACE CLAY, TRACE GRAVEL (GLACIAL TILL)**

File No.: **11-12-2126**



| MIT SYSTEM | | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|----------|------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | (Fines, %) |
| ● S18 | SS4 | 2.5 | 161.0 | 0 | 20 | 71 | 9 | |

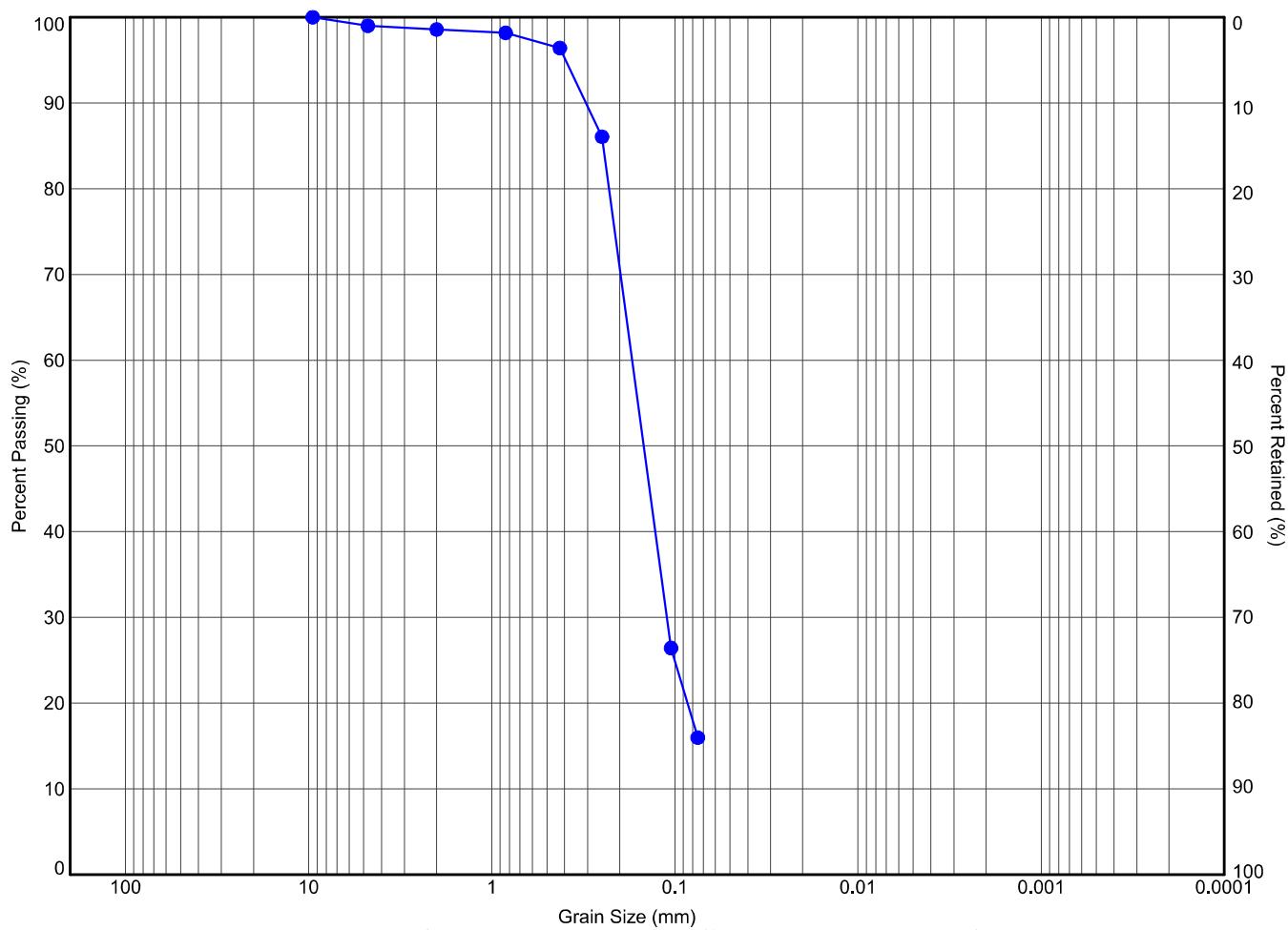
| | | |
|---|-------------------------|-----------------------------|
|  Terraprobe 11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650 | Title: File No.: | GRAIN SIZE DISTRIBUTION |
| | | SILT, SOME SAND, TRACE CLAY |



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

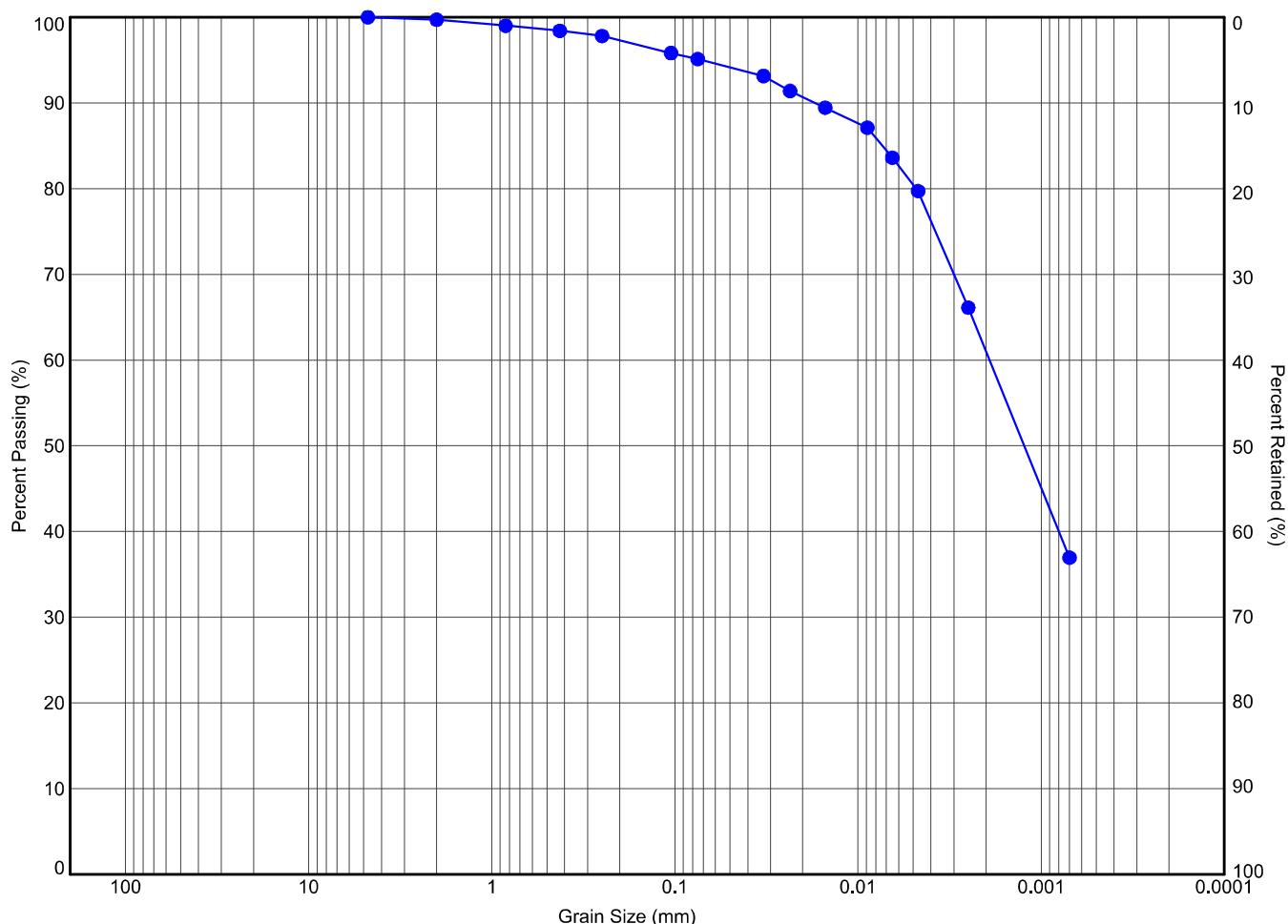
| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S21 | SS4 | 2.5 | 166.5 | 0 | 63 | 29 | 8 |

| | | |
|--|-------------------------|--------------------------------|
|  Terraprobe <small>11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650</small> | Title: File No.: | GRAIN SIZE DISTRIBUTION |
| | | SILTY SAND, TRACE CLAY |



| MIT SYSTEM | | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|----------|------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | (Fines, %) |
| ● S22 | SS6 | 4.8 | 158.2 | 1 | 83 | | | (16) |

| | | |
|---|--|------------|
|  Terraprobe 11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650 | Title: GRAIN SIZE DISTRIBUTION SAND, SOME SILT, TRACE GRAVEL | File No.: |
| | | 11-12-2126 |



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S24 | SS7 | 6.3 | 145.2 | 0 | 5 | 34 | 61 |



Terraprobe

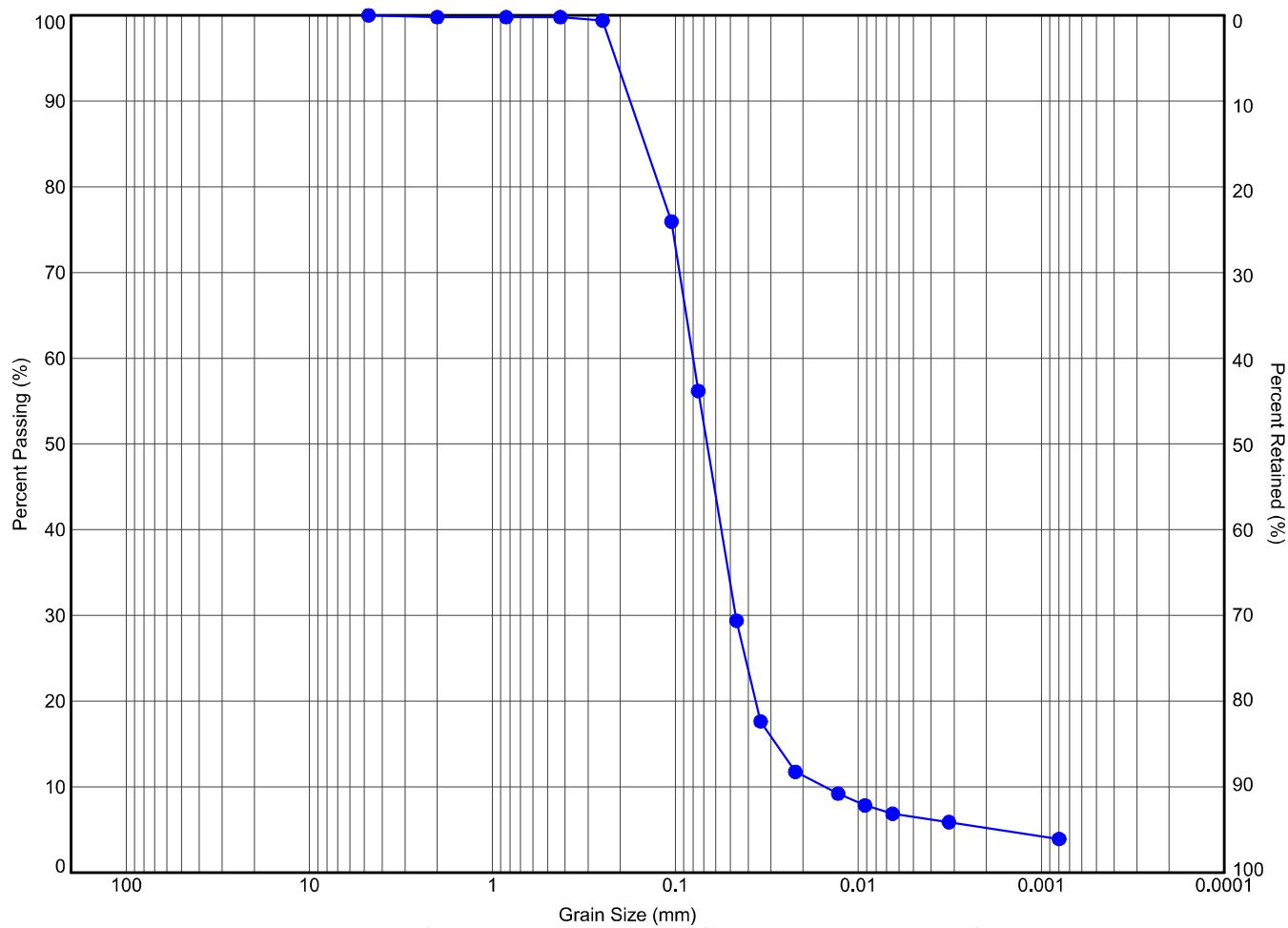
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

**GRAIN SIZE DISTRIBUTION
SILTY CLAY, TRACE SAND**

File No.:

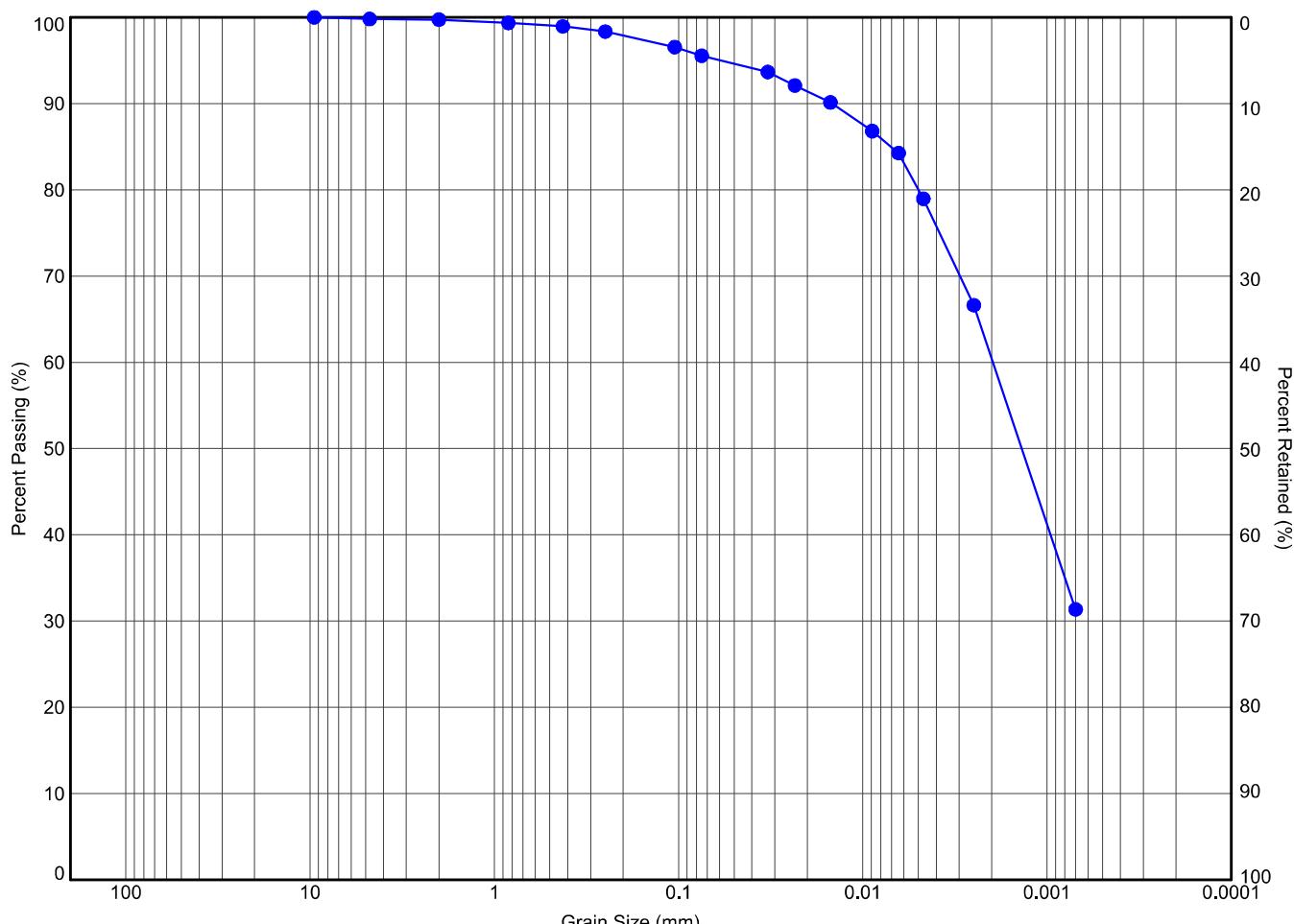
11-12-2126



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

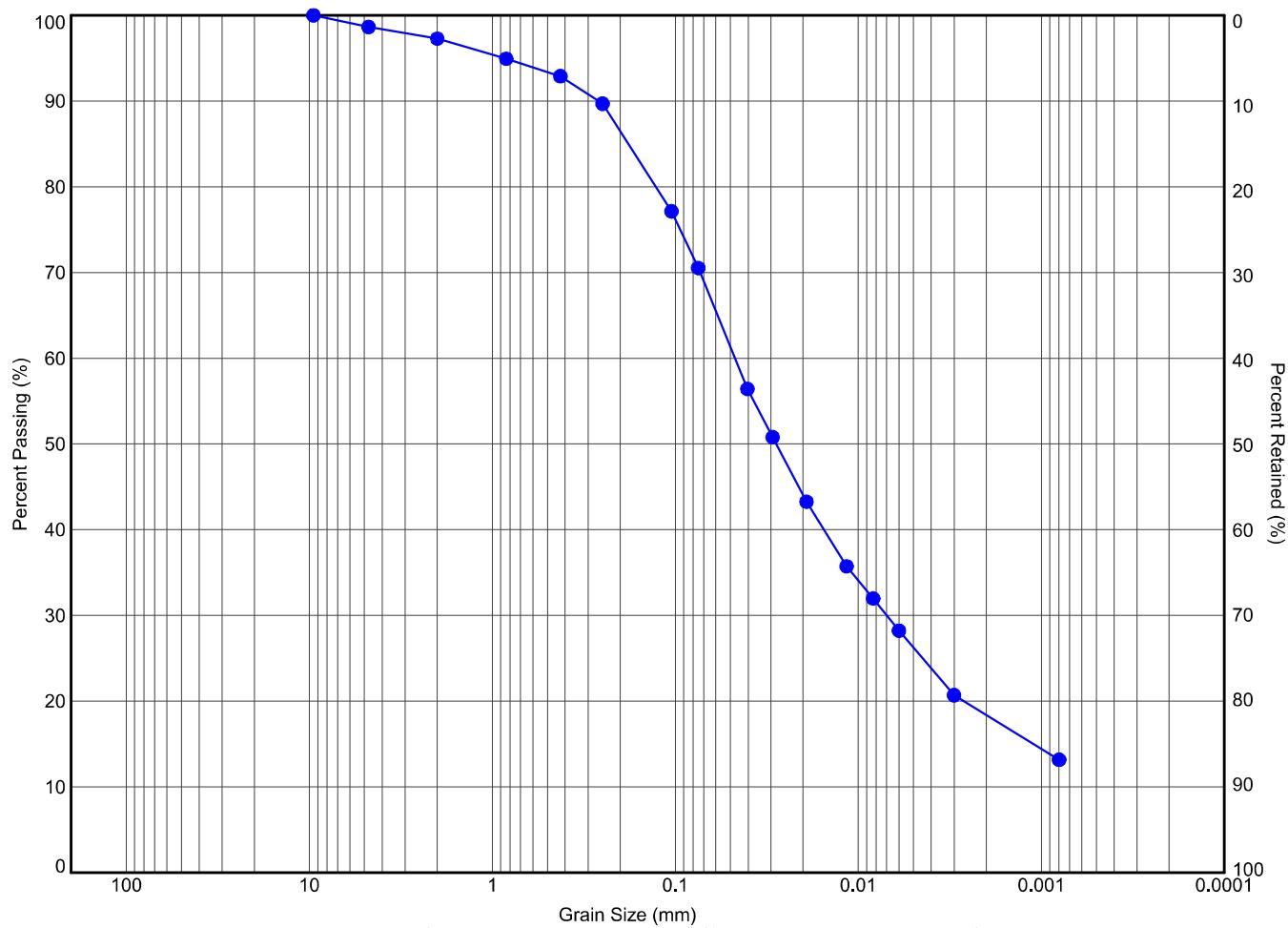
| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S26 | SS4 | 2.5 | 144.5 | 0 | 56 | 39 | 5 |

| | | |
|--|--|------------|
|  Terraprobe <small>11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650</small> | Title: GRAIN SIZE DISTRIBUTION SAND AND SILT, TRACE CLAY | File No.: |
| | | 11-12-2126 |



| MIT SYSTEM | | | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|----------|------------|--|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | (Fines, %) | |
| ● S28 | SS4 | 2.5 | 153.5 | 0 | 5 | 35 | 60 | | |

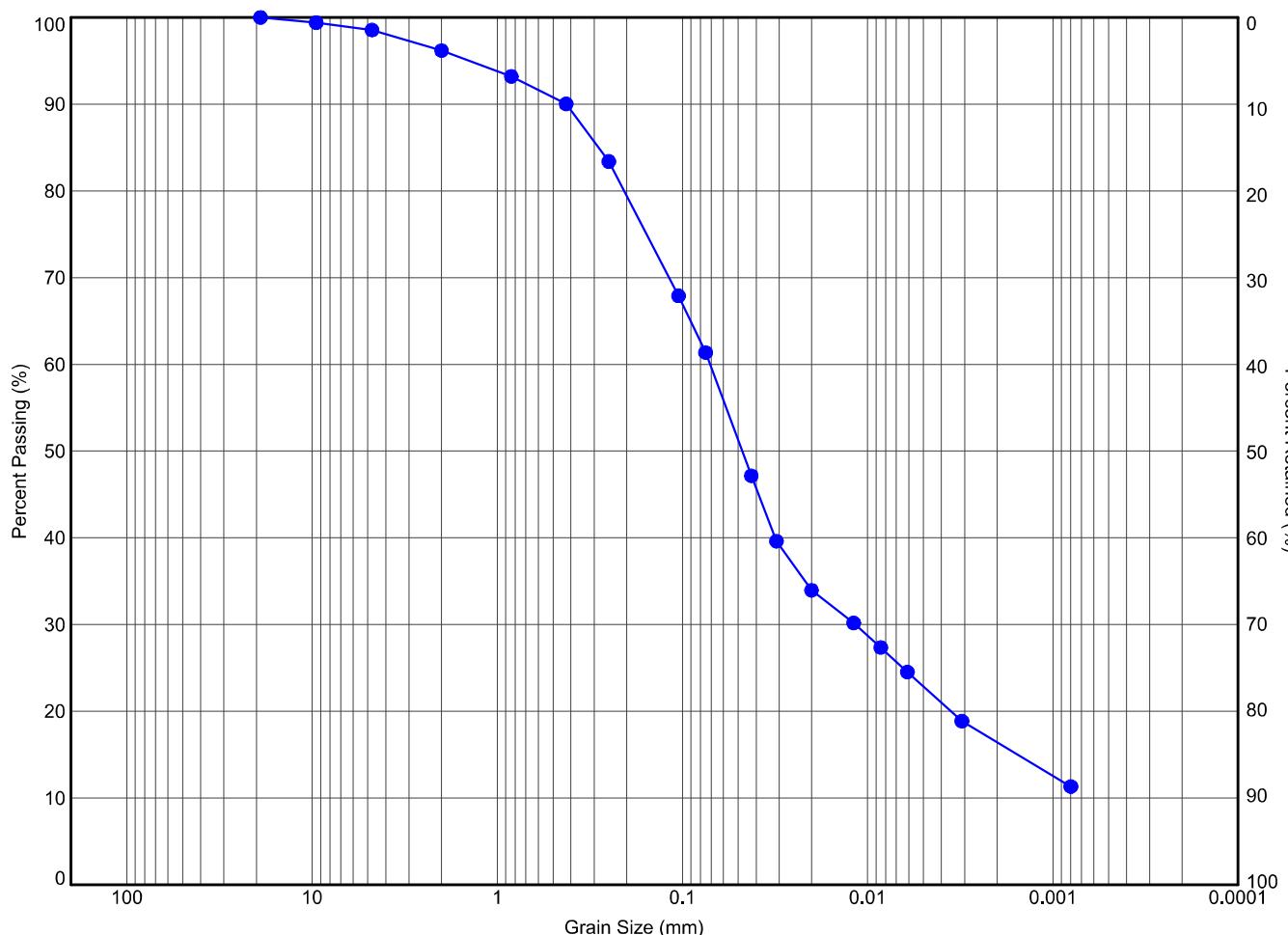
| | | |
|---|-------------------------|----------------------------------|
|  Terraprobe 11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650 | Title: File No.: | GRAIN SIZE DISTRIBUTION |
| | | CLAY AND SILT, TRACE SAND |



| MIT SYSTEM | COBBLES | GRAVEL | | | SAND | | | SILT | CLAY |
|------------|---------|--------|--------|------|--------|--------|------|------|------|
| | | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE | | |

| MIT SYSTEM | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|------------------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) (Fines, %) |
| ● S30 | SS7 | 6.2 | 141.8 | 3 | 32 | 47 | 18 |

| | |
|--|---|
|  Terraprobe <small>11 Indell Lane, Brampton Ontario L6T 3Y3 (905) 796-2650</small> | Title: GRAIN SIZE DISTRIBUTION SANDY SILT, SOME CLAY, TRACE GRAVEL (GLACIAL TILL) |
| | |



| MIT SYSTEM | | | | | | | | |
|------------|--------|-----------|-----------|------------|----------|----------|----------|------------|
| Hole ID | Sample | Depth (m) | Elev. (m) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | (Fines, %) |
| ● S32 | SS6 | 4.7 | 144.8 | 4 | 41 | 39 | 16 | |



Terraprobe

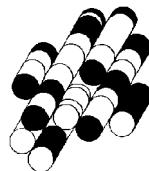
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

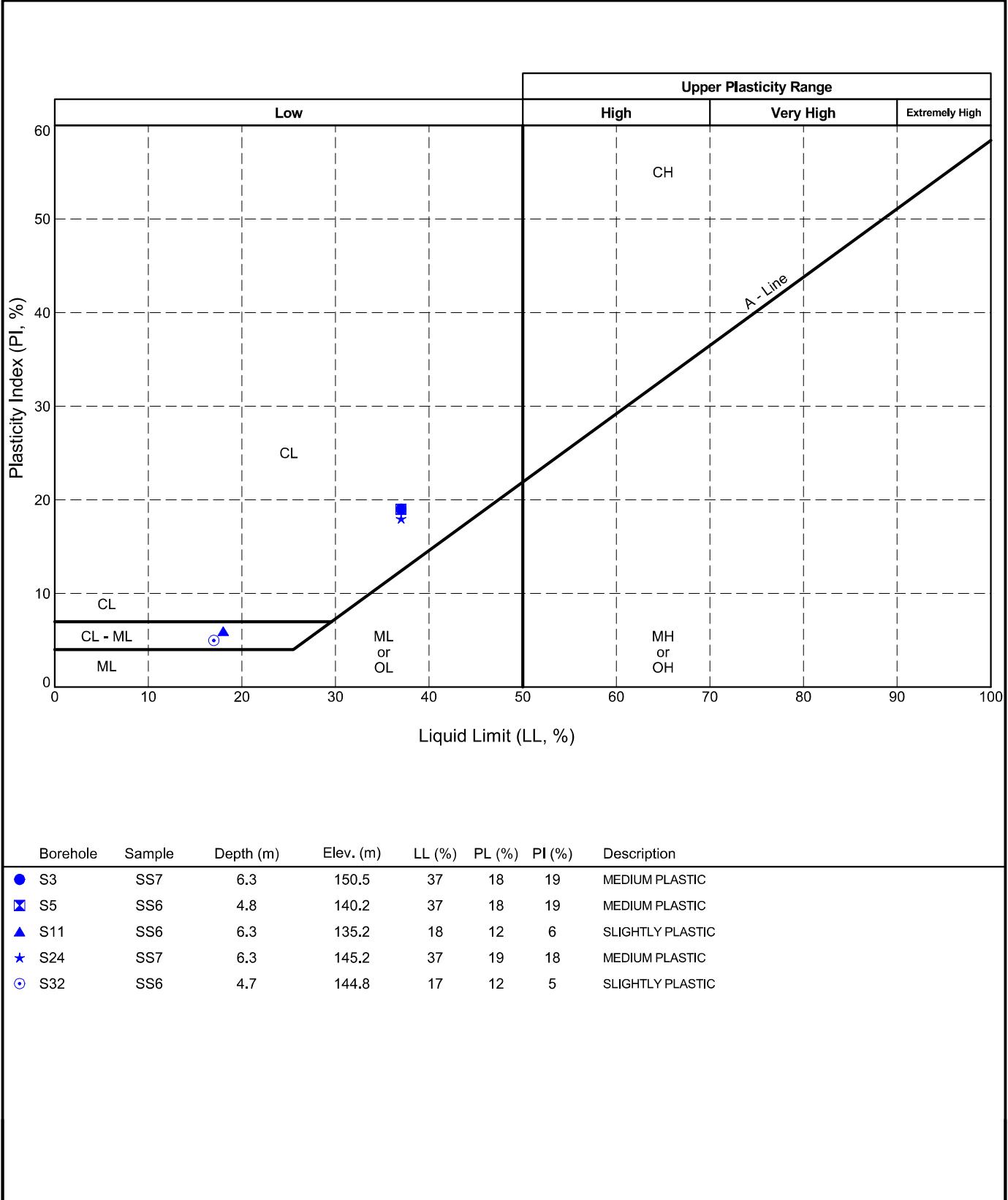
Title: **GRAIN SIZE DISTRIBUTION**
SAND AND SILT, SOME CLAY, TRACE GRAVEL (GLACIAL TILL)

File No.: **11-12-2126**

ATTERBERG LIMITS TEST RESULTS

TERRAPROBE INC.





Terraprobe

11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

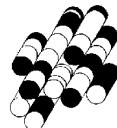
Title:

ATTERBERG LIMITS CHART

File No.:

11-12-2126

ESTIMATED PERMEABILITY OF SOIL SAMPLES



TERRAPROBE INC.

ESTIMATED PERMEABILITY – PAVEMENT BOREHOLES

| Borehole No. Sample No. | Sampling Depth below Grade | Percentage | | | | Estimated Permeability (on the order of) |
|-------------------------------|-------------------------------------|------------|------|------|------|---|
| | | Gravel | Sand | Silt | Clay | |
| BH 19 SS 2 | 1.0 m | 0 | 38 | 62 | | 10^{-7} cm/sec |
| BH 23 SS 2 | 1.0 m | 7 | 43 | 50 | | 10^{-7} cm/sec |
| BH 45 SS 1 | 1.0 m | 1 | 35 | 64 | | 10^{-6} cm/sec |
| BH 48 SS 1 | 0.6 m | 3 | 31 | 66 | | 10^{-7} cm/sec |
| BH 6 SS 2 | 1.0 m | 14 | 50 | 36 | | 10^{-5} cm/sec |
| BH 11 SS 1 | 1.0 m | 1 | 46 | 53 | | 10^{-5} cm/sec |
| S 8 SS 3 | 1.8 m | 1 | 42 | 57 | | 10^{-5} cm/sec |
| BH 33 AS 1 | 0.5 m | 0 | 36 | 64 | | 10^{-8} cm/sec |
| BH 39 AS 1 | 0.5 m | 0 | 14 | 86 | | 10^{-8} cm/sec |
| BH 2 SS 1 | 1.0 m | 1 | 46 | 53 | | 10^{-6} cm/sec |
| S 14 SS 1 | 1.0 m | 1 | 35 | 64 | | 10^{-4} cm/sec |
| BH 26 SS 2 | 1.0 m | 8 | 48 | 44 | | 10^{-5} cm/sec |
| BH 29 SS 2 | 1.0 m | 3 | 51 | 46 | | 10^{-5} cm/sec |
| BH 51 SS 2 | 1.0 m | 5 | 55 | 40 | | 10^{-6} cm/sec |



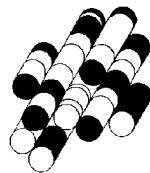
ESTIMATED PERMEABILITY – SEWER BOREHOLES

| Borehole No. Sample No. | Sampling Depth below Grade | Percentage | | | | Estimated Permeability (on the order of) |
|-------------------------------|-------------------------------------|------------|------|------|------|---|
| | | Gravel | Sand | Silt | Clay | |
| S 1 SS 6 | 4.7 m | 1 | 81 | 15 | 3 | 10-3 cm/sec |
| S 3 SS 7 | 6.3 m | 6 | 80 | 14 | | 10-3 cm/sec |
| S 5 SS 6 | 4.8 m | 1 | 6 | 38 | 55 | 10-7 cm/sec |
| S 8 SS 3 | 1.8 m | 2 | 47 | 43 | 8 | 10-5 cm/sec |
| S 9 SS 4 | 2.5 m | 4 | 87 | 9 | | 10-2 cm/sec |
| S 11 SS 6 | 6.3 m | 6 | 34 | 43 | 17 | 10-6 cm/sec |
| S 13 SS 5 | 3.3 m | 0 | 60 | 38 | 2 | 10-3 cm/sec |
| S 14 SS 4 | 2.4 m | 2 | 48 | 42 | 8 | 10-5 cm/sec |
| S 18 SS 4 | 2.5 m | 0 | 20 | 71 | 9 | 10-5 cm/sec |
| S 21 SS 4 | 2.5 m | 0 | 63 | 29 | 8 | 10-5 cm/sec |
| S 22 SS 6 | 4.8 m | 1 | 83 | 16 | | 10-3 cm/sec |
| S 24 SS 7 | 6.3 m | 0 | 5 | 34 | 61 | 10-8 cm/sec |
| S 26 SS 4 | 2.5 m | 0 | 56 | 39 | 5 | 10-4 cm/sec |
| S 28 SS 4 | 2.5 m | 0 | 5 | 35 | 60 | 10-7 cm/sec |
| S 30 SS 7 | 6.2 m | 3 | 32 | 47 | 18 | 10-7 cm/sec |
| S 32 SS 6 | 4.7 m | 4 | 41 | 39 | 16 | 10-7 cm/sec |



CERTIFICATES OF ANALYSIS

TERRAPROBE INC.



CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Abdus Sobahan

PROJECT NO: 11-12-21-26

AGAT WORK ORDER: 13T732688

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

DATE REPORTED: Jul 09, 2013

PAGES (INCLUDING COVER): 7

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



CertIFICATE OF ANALYSIS
AGAT WORK ORDER: 13T732688
PROJECT NO: 11-12-21-26

CLIENT NAME: TERRAPROBE INC.

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

ATTENTION TO: Abdus Sobahan

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2013-07-04

| Parameter | Unit | SAMPLE DESCRIPTION: | | BH1, SS#2 | BH3, SS#5 | BH4, SS#3 | BH7, SS#4 | BH9, SS#3 | BH11, SS#6 | BH12, SS#6 | BH15, SS#2 |
|--------------------------------------|----------|---------------------|-------|--------------|-------------|-------------|--------------|--------------|------------|------------|--------------|
| | | DATE SAMPLED: | | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 |
| Antimony | µg/g | 1.3 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Arsenic | µg/g | 18 | 1 | 2 | 1 | 1 | 4 | 1 | 3 | 2 | 3 |
| Barium | µg/g | 220 | 2 | 32 | 7 | 33 | 191 | 7 | 66 | 58 | 58 |
| Beryllium | µg/g | 2.5 | 0.5 | <0.5 | <0.5 | <0.5 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 |
| Boron | µg/g | 36 | 5 | <5 | <5 | <5 | 8 | <5 | <5 | <5 | <5 |
| Boron (Hot Water Soluble) | µg/g | NA | 0.10 | <0.10 | 0.12 | 0.12 | <0.10 | 0.14 | 0.23 | 0.17 | 0.21 |
| Cadmium | µg/g | 1.2 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chromium | µg/g | 70 | 2 | 10 | 3 | 9 | 31 | 4 | 16 | 16 | 18 |
| Cobalt | µg/g | 21 | 0.5 | 4.3 | 1.2 | 3.2 | 12.5 | 1.0 | 6.4 | 6.2 | 7.8 |
| Copper | µg/g | 92 | 1 | 9 | 3 | 9 | 30 | 4 | 17 | 17 | 18 |
| Lead | µg/g | 120 | 1 | 5 | 2 | 5 | 12 | 2 | 8 | 8 | 12 |
| Molybdenum | µg/g | 2 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Nickel | µg/g | 82 | 1 | 9 | 3 | 7 | 25 | 2 | 14 | 14 | 17 |
| Selenium | µg/g | 1.5 | 0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Silver | µg/g | 0.5 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Thallium | µg/g | 1 | 0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Uranium | µg/g | 2.5 | 0.5 | <0.5 | <0.5 | <0.5 | 0.5 | <0.5 | 0.6 | 0.5 | <0.5 |
| Vanadium | µg/g | 86 | 1 | 16 | 8 | 14 | 42 | 6 | 21 | 20 | 24 |
| Zinc | µg/g | 290 | 5 | 20 | 7 | 20 | 64 | 6 | 34 | 35 | 38 |
| Chromium VI | µg/g | 0.66 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Cyanide | µg/g | 0.051 | 0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 |
| Mercury | µg/g | 0.27 | 0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Electrical Conductivity (2:1) | mScm | 0.57 | 0.005 | 0.849 | 0.157 | 0.418 | 0.749 | 0.704 | 0.342 | 0.244 | 0.732 |
| Sodium Adsorption Ratio | NA | 2.4 | NA | 14.4 | 3.08 | 4.80 | 8.99 | 11.8 | 0.610 | 0.227 | 8.98 |
| pH, 2:1 CaCl ₂ Extraction | pH Units | NA | 8.15 | 8.23 | 7.81 | 8.06 | 8.16 | 7.95 | 7.96 | 8.29 | |

Abdus Sobahan
Agat Laboratories Inc.

Certified By:



CertIFICATE OF ANALYSIS
AGAT WORK ORDER: 13T732688
PROJECT NO: 11-12-21-26

CLIENT NAME: TERRAPROBE INC.

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

ATTENTION TO: Abdus Sobahan

O. Reg. 153(511) - Metals & Inorganics (Soil)

| DATE RECEIVED: 2013-07-04 | | DATE REPORTED: 2013-07-09 | | | | | | | | | |
|--------------------------------------|----------|---------------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|
| Parameter | Unit | SAMPLE DESCRIPTION: | | BH17, SS#6 | BH18, SS#7 | BH19, SS#2 | BH21, SS#5 | BH22, SS#5 | BH24, SS#4 | BH26, SS#2 | BH28, SS#3 |
| | | DATE SAMPLED: | G / S | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 | 7/3/2013 |
| | | | RDL | 4517170 | 4517171 | 4517172 | 4517173 | 4517174 | 4517175 | 4517176 | 4517177 |
| Antimony | µg/g | 1.3 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Arsenic | µg/g | 18 | 1 | 3 | <1 | 3 | 3 | 1 | 2 | 1 | 1 |
| Barium | µg/g | 220 | 2 | 10 | 5 | 68 | 182 | 9 | 67 | 10 | 8 |
| Beryllium | µg/g | 2.5 | 0.5 | <0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 | <0.5 | <0.5 |
| Boron | µg/g | 36 | 5 | <5 | <5 | <5 | 8 | <5 | <5 | <5 | <5 |
| Boron (Hot Water Soluble) | µg/g | NA | 0.10 | <0.10 | <0.10 | <0.10 | 0.12 | <0.10 | <0.10 | <0.10 | <0.10 |
| Cadmium | µg/g | 1.2 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chromium | µg/g | 70 | 2 | 4 | 2 | 19 | 27 | 3 | 12 | 5 | 3 |
| Cobalt | µg/g | 21 | 0.5 | 1.6 | 0.8 | 7.8 | 11.4 | 1.1 | 4.4 | 2.6 | 1.4 |
| Copper | µg/g | 92 | 1 | 4 | 3 | 18 | 23 | 3 | 10 | 6 | 4 |
| Lead | µg/g | 120 | 1 | 2 | 2 | 9 | 10 | 2 | 5 | 3 | 3 |
| Molybdenum | µg/g | 2 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Nickel | µg/g | 82 | 1 | 3 | 2 | 18 | 24 | 2 | 9 | 5 | 3 |
| Selenium | µg/g | 1.5 | 0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Silver | µg/g | 0.5 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Thallium | µg/g | 1 | 0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Uranium | µg/g | 2.5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Vanadium | µg/g | 86 | 1 | 10 | 4 | 23 | 38 | 7 | 19 | 11 | 7 |
| Zinc | µg/g | 290 | 5 | 8 | 5 | 38 | 59 | 6 | 26 | 12 | 8 |
| Chromium VI | µg/g | 0.66 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Cyanide | µg/g | 0.051 | 0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 |
| Mercury | µg/g | 0.27 | 0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Electrical Conductivity (2:1) | mScm | 0.57 | 0.005 | 0.512 | 0.144 | 0.603 | 0.229 | 0.139 | 0.379 | 1.52 | 0.165 |
| Sodium Adsorption Ratio | NA | 2.4 | NA | 4.88 | 2.60 | 9.06 | 0.843 | 1.86 | 3.00 | 42.0 | 2.51 |
| pH, 2:1 CaCl ₂ Extraction | pH Units | | NA | 8.30 | 8.35 | 8.06 | 7.93 | 8.26 | 8.06 | 8.29 | 8.16 |

Abdus Sobahan
Agat Laboratories Inc.

Certified By:



CLIENT NAME: TERRAPROBE INC.

Certificate of Analysis
AGAT WORK ORDER: 13T732688
PROJECT NO: 11-12-21-26

ATTENTION TO: Abdus Sobahan

O. Reg. 153(5)(1) - Metals & Inorganics (Soil)

DATE RECEIVED: 2013-07-04

| Parameter | Unit | SAMPLE DESCRIPTION: | | BH30, SS#5 | BH31, SS#3 | BH32, SS#4 | BH29, SS#4 | DATE REPORTED: 2013-07-09 |
|--------------------------------------|----------|---------------------|-------|--------------|-------------|-------------|-------------|---------------------------|
| | | G / S | RDL | Soil | Soil | Soil | Soil | |
| Antimony | µg/g | 1.3 | 0.8 | <0.8 | <0.8 | <0.8 | <0.8 | <0.8 |
| Arsenic | µg/g | 18 | 1 | 3 | 1 | 3 | 2 | 2 |
| Barium | µg/g | 220 | 2 | 71 | 8 | 59 | 184 | 184 |
| Beryllium | µg/g | 2.5 | 0.5 | <0.5 | <0.5 | <0.5 | 0.5 | 0.5 |
| Boron | µg/g | 36 | 5 | <5 | <5 | <5 | 6 | 6 |
| Boron (Hot Water Soluble) | µg/g | NA | 0.10 | 0.13 | <0.10 | <0.10 | <0.10 | <0.10 |
| Cadmium | µg/g | 1.2 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chromium | µg/g | 70 | 2 | 19 | 3 | 18 | 25 | 25 |
| Cobalt | µg/g | 21 | 0.5 | 7.2 | 1.6 | 7.8 | 9.6 | 9.6 |
| Copper | µg/g | 92 | 1 | 21 | 5 | 41 | 22 | 22 |
| Lead | µg/g | 120 | 1 | 9 | 3 | 8 | 9 | 9 |
| Molybdenum | µg/g | 2 | 0.5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Nickel | µg/g | 82 | 1 | 16 | 4 | 17 | 20 | 20 |
| Selenium | µg/g | 1.5 | 0.4 | <0.4 | 0.4 | <0.4 | <0.4 | <0.4 |
| Silver | µg/g | 0.5 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Thallium | µg/g | 1 | 0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Uranium | µg/g | 2.5 | 0.5 | 0.6 | <0.5 | <0.5 | 0.5 | 0.5 |
| Vanadium | µg/g | 86 | 1 | 23 | 6 | 23 | 33 | 33 |
| Zinc | µg/g | 290 | 5 | 41 | 10 | 38 | 52 | 52 |
| Chromium VI | µg/g | 0.66 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Cyanide | µg/g | 0.051 | 0.040 | <0.040 | <0.040 | <0.040 | <0.040 | <0.040 |
| Mercury | µg/g | 0.27 | 0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Electrical Conductivity (2:1) | mS/cm | 0.57 | 0.005 | 0.571 | 0.143 | 0.385 | 2.02 | 2.02 |
| Sodium Adsorption Ratio | NA | 2.4 | NA | 6.64 | 3.38 | 4.88 | 22.2 | 22.2 |
| pH, 2:1 CaCl ₂ Extraction | pH Units | NA | 7.90 | 8.20 | 7.87 | 8.07 | | |

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(ALL) - Current
4517161-4517361 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water: 1 part soil). pH was determined on the 0.01M CaCl₂ extract prepared at 2:1 ratio.

Certified By:*Abdus Sobahan*



CLIENT NAME: TERRAPROBE INC.

Guideline Violation
AGAT WORK ORDER: 13T732688
PROJECT NO: 11-12-21-26

ATTENTION TO: Abdus Sobahan

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

| SAMPLEID | SAMPLE TITLE | GUIDELINE | ANALYSIS PACKAGE | PARAMETER | GUIDEVALUE | RESULT |
|----------|--------------|-------------------|---|-------------------------------|------------|--------|
| 4517161 | BH1, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 0.849 |
| 4517161 | BH1, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 14.4 |
| 4517163 | BH3, SS#5 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 3.08 |
| 4517164 | BH4, SS#3 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 4.80 |
| 4517165 | BH7, SS#4 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 0.749 |
| 4517165 | BH7, SS#4 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 8.99 |
| 4517166 | BH9, SS#3 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 0.704 |
| 4517166 | BH9, SS#3 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 11.8 |
| 4517166 | BH15, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 0.732 |
| 4517169 | BH15, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 8.98 |
| 4517170 | BH17, SS#6 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 4.88 |
| 4517171 | BH18, SS#7 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 2.60 |
| 4517172 | BH19, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 0.603 |
| 4517172 | BH19, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 9.06 |
| 4517175 | BH24, SS#4 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 3.00 |
| 4517176 | BH26, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 1.52 |
| 4517176 | BH26, SS#2 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 42.0 |
| 4517177 | BH28, SS#3 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 2.51 |
| 4517178 | BH30, SS#5 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 0.571 |
| 4517178 | BH30, SS#5 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 6.64 |
| 4517179 | BH31, SS#3 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 3.38 |
| 4517181 | BH32, SS#4 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 4.88 |
| 4517361 | BH29, SS#4 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Electrical Conductivity (2:1) | 0.57 | 2.02 |
| 4517361 | BH29, SS#4 | T1(ALL) - Current | O. Reg. 153(511) - Metals & Inorganics (Soil) | Sodium Adsorption Ratio | 2.4 | 22.2 |

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

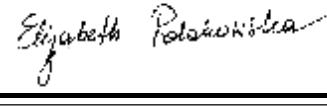
PROJECT NO: 11-12-21-26

AGAT WORK ORDER: 13T732688

ATTENTION TO: Abdus Sobahan

| Soil Analysis | | | | | | | | | | | | | | | | |
|--|-------|-----------|-----------|---------|-------|--------------|--------------------|-------------------|--------------------|----------|-------------------|--------------|----------|-------------------|------|--|
| RPT Date: Jul 09, 2013 | | | DUPLICATE | | | Method Blank | REFERENCE MATERIAL | | METHOD BLANK SPIKE | | | MATRIX SPIKE | | | | |
| PARAMETER | Batch | Sample Id | Dup #1 | Dup #2 | RPD | | Measured Value | Acceptable Limits | | Recovery | Acceptable Limits | | Recovery | Acceptable Limits | | |
| | | | | | | | Lower | Upper | Lower | Upper | Lower | Upper | | | | |
| O. Reg. 153(511) - Metals & Inorganics (Soil) | | | | | | | | | | | | | | | | |
| Antimony | 1 | 4517161 | < 0.8 | < 0.8 | 0.0% | < 0.8 | 99% | 70% | 130% | 84% | 80% | 120% | 79% | 70% | 130% | |
| Arsenic | 1 | 4517161 | 2 | 2 | 0.0% | < 1 | 98% | 70% | 130% | 100% | 80% | 120% | 93% | 70% | 130% | |
| Barium | 1 | 4517161 | 32 | 28 | 13.3% | < 2 | 99% | 70% | 130% | 109% | 80% | 120% | 100% | 70% | 130% | |
| Beryllium | 1 | 4517161 | < 0.5 | < 0.5 | 0.0% | < 0.5 | 90% | 70% | 130% | 95% | 80% | 120% | 80% | 70% | 130% | |
| Boron | 1 | 4517161 | < 5 | < 5 | 0.0% | < 5 | 90% | 70% | 130% | 90% | 80% | 120% | 76% | 70% | 130% | |
| Boron (Hot Water Soluble) | 1 | 4517161 | <0.10 | <0.10 | 0.0% | < 0.10 | 102% | 60% | 140% | 107% | 70% | 130% | 106% | 60% | 140% | |
| Cadmium | 1 | 4517161 | < 0.5 | < 0.5 | 0.0% | < 0.5 | 96% | 70% | 130% | 109% | 80% | 120% | 99% | 70% | 130% | |
| Chromium | 1 | 4517161 | 10 | 9 | 10.5% | < 2 | 95% | 70% | 130% | 111% | 80% | 120% | 97% | 70% | 130% | |
| Cobalt | 1 | 4517161 | 4.3 | 3.9 | 9.8% | < 0.5 | 94% | 70% | 130% | 110% | 80% | 120% | 100% | 70% | 130% | |
| Copper | 1 | 4517161 | 9 | 9 | 0.0% | < 1 | 98% | 70% | 130% | 119% | 80% | 120% | 99% | 70% | 130% | |
| Lead | 1 | 4517161 | 5 | 5 | 0.0% | < 1 | 109% | 70% | 130% | 119% | 80% | 120% | 106% | 70% | 130% | |
| Molybdenum | 1 | 4517161 | < 0.5 | < 0.5 | 0.0% | < 0.5 | 99% | 70% | 130% | 107% | 80% | 120% | 100% | 70% | 130% | |
| Nickel | 1 | 4517161 | 9 | 8 | 11.8% | < 1 | 99% | 70% | 130% | 109% | 80% | 120% | 96% | 70% | 130% | |
| Selenium | 1 | 4517161 | < 0.4 | < 0.4 | 0.0% | < 0.4 | 98% | 70% | 130% | 102% | 80% | 120% | 95% | 70% | 130% | |
| Silver | 1 | 4517161 | < 0.2 | < 0.2 | 0.0% | < 0.2 | 106% | 70% | 130% | 118% | 80% | 120% | 108% | 70% | 130% | |
| Thallium | 1 | 4517161 | < 0.4 | < 0.4 | 0.0% | < 0.4 | 96% | 70% | 130% | 106% | 80% | 120% | 97% | 70% | 130% | |
| Uranium | 1 | 4517161 | < 0.5 | < 0.5 | 0.0% | < 0.5 | 98% | 70% | 130% | 107% | 80% | 120% | 95% | 70% | 130% | |
| Vanadium | 1 | 4517161 | 16 | 15 | 6.5% | < 1 | 95% | 70% | 130% | 107% | 80% | 120% | 95% | 70% | 130% | |
| Zinc | 1 | 4517161 | 20 | 19 | 5.1% | < 5 | 104% | 70% | 130% | 113% | 80% | 120% | 105% | 70% | 130% | |
| Chromium VI | 1 | 4517164 | < 0.2 | < 0.2 | 0.0% | < 0.2 | 97% | 70% | 130% | 102% | 80% | 120% | 107% | 70% | 130% | |
| Cyanide | 1 | 4517161 | < 0.040 | < 0.040 | 0.0% | < 0.040 | 100% | 70% | 130% | 104% | 80% | 120% | 111% | 70% | 130% | |
| Mercury | 1 | 4517161 | < 0.10 | < 0.10 | 0.0% | < 0.10 | 106% | 70% | 130% | 109% | 80% | 120% | 98% | 70% | 130% | |
| Electrical Conductivity (2:1) | 1 | 4517161 | 0.849 | 0.839 | 1.2% | < 0.005 | 99% | 90% | 110% | NA | | | NA | | | |
| Sodium Adsorption Ratio | 1 | 4517161 | 14.4 | 14.7 | 1.9% | NA | NA | | | NA | | | NA | | | |
| pH, 2:1 CaCl ₂ Extraction | 1 | 4517168 | 7.96 | 7.96 | 0.0% | NA | 99% | 90% | 110% | NA | | | NA | | | |

Certified By:



Method Summary

CLIENT NAME: TERRAPROBE INC.

PROJECT NO: 11-12-21-26

AGAT WORK ORDER: 13T732688

ATTENTION TO: Abdus Sobahan

| PARAMETER | AGAT S.O.P | LITERATURE REFERENCE | ANALYTICAL TECHNIQUE |
|--------------------------------------|--------------|---|-------------------------|
| Soil Analysis | | | |
| Antimony | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Arsenic | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Barium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Beryllium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Boron | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Boron (Hot Water Soluble) | MET-93-6104 | EPA SW 846 6010C; MSA, Part 3, Ch.21 | ICP/OES |
| Cadmium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Chromium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Cobalt | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Copper | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Lead | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Molybdenum | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Nickel | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Selenium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Silver | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Thallium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Uranium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Vanadium | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Zinc | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Chromium VI | INOR-93-6029 | SM 3500 B; MSA Part 3, Ch. 25 | SPECTROPHOTOMETER |
| Cyanide | INOR-93-6052 | MOE CN-3015 & E 3009 A;SM 4500 CN | TECHNICON AUTO ANALYZER |
| Mercury | MET-93-6103 | EPA SW-846 3050B & 6020A | ICP-MS |
| Electrical Conductivity (2:1) | INOR-93-6036 | McKeague 4.12, SM 2510 B | EC METER |
| Sodium Adsorption Ratio | INOR-93-6007 | McKeague 4.12 & 3.26 & EPA SW-846 6010C | ICP/OES |
| pH, 2:1 CaCl ₂ Extraction | INOR-93-6031 | MSA part 3 & SM 4500-H+ B | PH METER |



CHAIN OF CUSTODY RECORD

Labs

LABORATORY USE ONLY

5835 Coopers Avenue
Mississauga, Ontario, L4Z 1Y2
Phone: 905-712-5100; Fax: 905-712-5122
Toll free: 800-856-6261
[www.aquatabs.com](http://webeath.aquatabs.com)
<http://webeath.aquatabs.com>

| | |
|---|-----------------------|
| Client Information | |
| <u>TEERAPROBE</u> | |
| Company: | <u>ABDUS SOBHAAN</u> |
| Contact: | <u>11 INDELL LANE</u> |
| Address: | <u>BANGKOK</u> |
| Phone: | <u>905-796-2650</u> |
| Fax: | <u>905-796-2252</u> |
| Project: | <u>H-12-21-26</u> |
| PO: | |
| AGAT Quotation #: | <u></u> |
| Please note, if quotation number is not provided, client will be billed full price for analysis. | |
| Invoice To Same as Above? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (circle) | |
| Company: | |
| Contact: | |
| Address: | |
| Phone: | |
| Fax: | |

| Sample Identification | Date Sampled | Time Sampled | Sample Matrix |
|---|--------------|--------------|---------------|
| BH1, SS # 2 | | | Soil |
| BH3, SS # 5 | | | Soil |
| BH4, SS # 3 | | | Soil |
| BH7, SS # 4 | | | Soil |
| BH9, SS # 3 | | | Soil |
| BH11, SS # 6 | | | Soil |
| BH12, SS # 6 | | | Soil |
| BH15, SS # 2 | | | Soil |
| BH17, SS # 6 | | | Soil |
| BH18, SS # 7 | | | Soil |
| BH19, SS # 2 | | | Soil |
| BH21, SS # 5 | | | Soil |
| BH22, SS # 5 | | | Soil |
| BH24, SS # 4 | | | Soil |
| Samples Relinquished By (print name & sign) | | | Dar |
| <i>Alecia Sobeck</i> | | | Dar |
| Samples Relinquished By (print name & sign) | | | Dar |
| <i>Alecia Sobeck</i> | | | Dar |

Date Issued: September 22, 2009

Document 1



CHAIN OF CUSTODY RECORD

Client Information

Company: TERAPROBEContact: ANDREW SOBOLIANAddress: 11 INDELL LANEPhone: BramptonFax: (905) 457-2252PO: AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Invoice To Same as Above? No (circle)Company: Contact: Address: Phone:

Report Information - reports to be sent to:

Report Format:

 Single Sample per page Multiple Samples per page Results by fax

Regulatory Requirements

1. Name: ASPROBE Environmental Testing Services Inc.
Email: bangh@probenet.ca

2. Name:
Email:

Regulation 155 Table (Indicate one)
 Regulation 155 Table (Ind/Com)

Sanitary
 Storm

Res/Park
 Agriculture (check one)

Coarse
 Ned/Fine

Prov Water Quality Objectives (PWQO)
 Nutrient Management Act (NMA)

Is this a drinking water sample (potable water intended for human consumption)?
 Yes No (If "Yes" please use the Drinking Water Chain of Custody Record)

LABORATORY USE ONLY

Arrival Condition: GoodArrival Temperature: AGAT WO #: Notes:

http://webearth.agatlabs.com

Turnaround Time (TAT) Required*

Regular TAT:

 5 to 7 Working Days

Rush TAT: (please provide prior notification)

 3 to 5 Working Days 2 Working Days 1 Working Day**OR**DATE REQUIRED (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

LABORATORY USE ONLY

| |
|-------------------------------|
| Sanitary Sewer Use |
| Storm Sewer Use |
| TCLP |
| TCLP Metals/Inorganics |
| PCBs |
| PAHs |
| VOCs |
| CMEM Fractions 1 to 4 |
| Metal Scan (exclu Hg, Bi, Cd) |
| Metals and Inorganics |

LAB SAMPLE ID

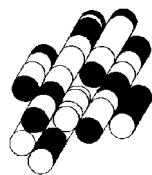
Date/Time 11/05 Pink Copy - Client
Yellow + Golden Copy - AGAT Date/Time 1/15 White Copy - AGAT

NO: 142285

Samples Relinquished By (print name & sign) Andy Sobolian Date/Time 11/05
Samples Received By (print name & sign) Andy Sobolian Date/Time 1/15
Samples Relinquished By (print name & sign) Date/Time
Samples Received By (print name & sign) Date/Time

FIGURES

TERRAPROBE INC.





| | | |
|--|---|-----------------------------|
|  Terraprobe 11 Indell Lane, Brampton, Ontario, L6T 3Y3 Tel: (905) 796-2650 Fax: (905) 796-2250 | Title: Municipal Class EA Study for Lawrence Park Neighbourhood SITE LOCATION PLAN File No. 11-12-2126 | FIGURE : 1 |
|--|---|-----------------------------|

