

# **APPENDIX 'A'**

# **GEOTECHNICAL REPORT**

## APPENDIX 'A' - GEOTECHNICAL REPORT

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The geotechnical report is provided to aid in the Contractor's evaluation of the soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.



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March 29, 2006

File No.: 06-079-02

Earth Tech (Canada) Inc.  
850 Pembina Highway  
Winnipeg, Manitoba  
R3M 2M7

**ATTENTION:** Ryan Cunningham, EIT

**RE:** Geotechnical Investigation – Simcoe Street Rehabilitation - Between Ellice Avenue and St. Matthews Avenue, Winnipeg, Manitoba

Dear Mr. Cunningham

### **Terms of Reference**

ENG-TECH Consulting Limited (ENG-TECH) was retained by Earth Tech (Canada) Inc. to conduct a geotechnical investigation at seven (7) select locations along Simcoe Street between Ellice Avenue to St. Matthews Avenue. The geotechnical investigation included utility clearances, coring, drilling, visual classification and logging, testing, photographs of core pavement, and a report. The purpose of the geotechnical investigation was to identify the pavement structure and the underlying stratigraphy. In addition, a laboratory testing program consisting of moisture contents, Atterberg Limit and Particle Size Analyses tests were completed to classify the underlain soils.

### **Scope of Work**

ENG-TECH's completed scope of work for the project was as follows:

- Core through the existing pavement structure using a 150 mm diameter core barrel at the seven (7) locations designated by the Earth Tech (Canada) Inc. and retain the cores for photographing at ENG-TECH's laboratory.
- Drill a test hole at each designated location to a minimum depth of 2.0 m below the surface of the pavement structure. Collect samples of the underlying sub-grade soils at 0.3 m intervals for laboratory testing and classification.
- Complete a report outlining the work conducted including test hole summary logs, laboratory test results, and photographs of the cores.

## Coring, Test Hole Drilling and Laboratory Testing Program

ENG-TECH completed the coring and test hole drilling program between March 9<sup>th</sup> to March 14<sup>th</sup> of 2006. The specific location of each test hole is shown in Table 1. The test holes were drilled using 125 mm diameter solid stem continuous flight augers mounted on a S250 Bobcat drill rig owned and operated by Winnipeg Environmental Remediation Inc (WERInc). The completion depth for all test holes was approximately 2.0 m below grade, with soil samples collected at regular depth intervals and at stratigraphic changes. All test holes were backfilled with the auger cuttings and all core holes were backfilled with limestone base followed by a bituminous cold mix upon the completion of drilling. The core thicknesses and stratigraphy at the test hole locations are outlined on the attached tables and summary logs.

In ENG-TECH's laboratory, moisture content analyses was performed on all soil samples collected, with five (5) soil samples selected and tested for Atterberg Limit and Particle Size Analyses. Outlined on the tables appended are the results from the coring, test hole drilling and laboratory testing program. The test hole locations, summary tables, test hole summary logs, and photographs of the cores are also appended to this report. The test hole locations provided to ENG-TECH are shown on Figure 1, attached.

## Closure

ENG-TECH trusts this is all the information required. If there are any questions, please contact the undersigned.

Sincerely,  
ENG-TECH Consulting Limited



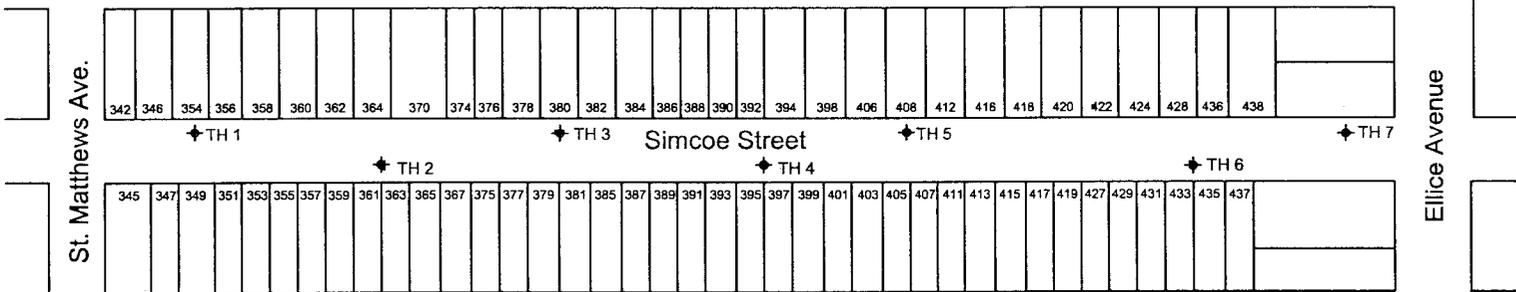
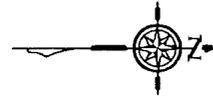
Clark Hryhoruk, M.Sc., P. Eng.  
Principal, Geotechnical Engineer

Reviewed by

  
for: Danny Holfeld, Principal  
Manager of Operations

CDH/kik

Attachments: Figure 1 – Test Hole Location Plan  
Table 1 - Test Hole Summary Locations  
Table 2 – Summary of Pavement Structure and Sub-grade Description  
Stratigraphy Soil Logs (7)  
Particle Size Analysis Reports E6-079-2-1 to 5  
Photographs of Cores (4 sheets)



No.	DD / MM / YYYY		BY
No.	DD / MM / YYYY	DESCRIPTION	BY


 #6 - 854 Marion Street  
 Winnipeg, MB R2J 0K4  
 Phone: (204) 233-1694  
 Fax: (204) 235-1579

ENG. STAMP:



Certificate of Authorization  
 ENG-TECH Consulting Limited  
 No. 2475 Expiry: April 30, 2006

CLIENT:  
EARTH TECH (CANADA) LTD.

PROJECT:  
GEOTECHNICAL INVESTIGATION - SIMCOE STREET REHABILITATION - BETWEEN ELLICE AVENUE AND ST. MATTHEWS AVENUE

DWG DESCRIPTION:  
TEST HOLE LOCATION PLAN

SCALE:  
NOT APPLICABLE

DRAWN BY: KIK	DATE: MARCH 2006
------------------	---------------------

FILE No.: 06-079-02	CLIENT DWG/FIG. No.:
------------------------	----------------------

ENG-TECH DWG/FIG. No.: 1	REV.: 0
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**Table 1 – Test Hole Summary Locations  
Geotechnical Investigation – Simcoe Street Rehabilitation  
Between Ellice Avenue and St. Matthews Avenue, Winnipeg, Manitoba**

Test Hole #	Lane	Location
TH1	South Bound	<ul style="list-style-type: none"> <li>• In front of 354 Simcoe Street</li> <li>• 326 meters south of the centre line of Ellice Avenue</li> <li>• 1.96 meters east of the west curb</li> </ul>
TH2	North Bound	<ul style="list-style-type: none"> <li>• Between 361 and 363 Simcoe Street</li> <li>• 273 meters south of the centre line of Ellice Avenue</li> <li>• 1.60 meters west of the east curb</li> </ul>
TH3	South Bound	<ul style="list-style-type: none"> <li>• In front of 380 Simcoe Street</li> <li>• 222 meters south of the centre line of Ellice Avenue</li> <li>• 1.93 meters east of the west curb</li> </ul>
TH4	North Bound	<ul style="list-style-type: none"> <li>• Between 395 and 397 Simcoe Street</li> <li>• 178 meters south of the centre line of Ellice Avenue</li> <li>• 1.83 meters west of the east curb</li> </ul>
TH5	South Bound	<ul style="list-style-type: none"> <li>• In front of 408 Simcoe Street</li> <li>• 136 meters south of the centre line of Ellice Avenue</li> <li>• 1.50 meters east of the west curb</li> </ul>
TH6	North Bound	<ul style="list-style-type: none"> <li>• Between 433 and 435 Simcoe Street</li> <li>• 61 meters south of the centre line of Ellice Avenue</li> <li>• 1.68 meters west of the east curb</li> </ul>
TH7	South Bound	<ul style="list-style-type: none"> <li>• Along east side of 770 Ellice Avenue</li> <li>• 20 meters south of the centre line of Ellice Avenue</li> <li>• 1.63 meters east of the west curb</li> </ul>

**Table 2 – Summary of Pavement Structure and Sub-grade Description  
Geotechnical Investigation – Simcoe Street Rehabilitation  
Between Ellice Avenue and St. Matthews Avenue, Winnipeg, Manitoba**

Test Hole No.	Pavement Surface		Pavement Structure Material		Sub-grade Description	Depth of Sample (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits			
	Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index	
1	Asphalt	120	Granular Base Course	65	Silty Clay Fill	0.41	31.4	--	--	--	--	--	--	--	
					Clay	0.71	31.8	--	--	--	--	--	--	--	
					Clay	0.91	32.0	--	--	--	--	--	--	--	
					Clayey Silt	1.22	20.5	0.0	7.9	67.5	24.6	33.8	19.0	14.8	
	Concrete	121			Clayey Silt	1.52	22.0	--	--	--	--	--	--	--	
					Silty Clay	1.93	33.2	--	--	--	--	--	--	--	
					Silty Clay	2.49	48.1	--	--	--	--	--	--	--	
2	Asphalt	80	Granular Base Course	85	Silty Clay Fill	0.41	32.4	--	--	--	--	--	--	--	
					Clay	0.66	29.2	0.0	10.9	38.9	50.2	66.3	29.5	36.8	
					Clay	0.92	29.6	--	--	--	--	--	--	--	--
					Silty Clay	1.17	30.7	--	--	--	--	--	--	--	--
	Concrete	136			Clayey Silt	1.57	26.3	--	--	--	--	--	--	--	
					Granular Fill	1.88	6.8	--	--	--	--	--	--	--	
					Granular Fill	2.13	8.8	--	--	--	--	--	--	--	
3	Asphalt	125	Granular Base Course	65	Silty Clay Fill	0.35	27.6	--	--	--	--	--	--	--	
					Clay	0.61	30.0	--	--	--	--	--	--	--	
					Clay	0.91	27.9	--	--	--	--	--	--	--	
					Clay	1.22	28.4	--	--	--	--	--	--	--	
	Concrete	116			Silty Clay	1.52	25.9	--	--	--	--	--	--	--	
					Silt	1.83	24.8	--	--	--	--	--	--	--	
					Clay	2.13	38.4	--	--	--	--	--	--	--	



**Table 2 – Summary of Pavement Structure and Sub-grade Description  
Geotechnical Investigation – Simcoe Street Rehabilitation  
Between Ellice Avenue and St. Matthews Avenue, Winnipeg, Manitoba**

Test Hole No.	Pavement Surface		Pavement Structure Material		Sub-grade Description	Depth of Sample (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits		
	Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
7	Asphalt	125	Granular Base Course	152	Silty Clay Fill	0.33	26.5	--	--	--	--	--	--	--
					Silty Clay Fill	0.61	29.1	0.0	3.2	28.0	68.8	85.0	36.5	48.5
					Clay	0.91	31.7	--	--	--	--	--	--	--
					Clay	1.22	36.9	--	--	--	--	--	--	--
					Clayey Silt	1.52	32.7	--	--	--	--	--	--	--
					Silty Clay	1.98	34.1	--	--	--	--	--	--	--
					Clay	2.44	49.0	--	--	--	--	--	--	--

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: South Bound Lane / 326 m south of center line of Ellice Ave.

**Test Hole #: TH1**

File No: 06-079-02

Date Drilled: March 14, 2006

Grade Elevation: 100.0 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
0		Ground Surface	100												
		120 mm Asphalt													
		121 mm Concrete													
		- freeze / thaw delaminations present throughout core.													
		65 mm Granular Base		S1	Shelby Tube										
		Silty Clay Fill													
		- dark brown, highly plastic, moist, firm, with silt, trace sand sizes.		S2	Shelby Tube										
		Clay													
		- black, highly plastic, moist, firm, with silt, trace sand sizes, some silt inclusions.		S3	Shelby Tube										
1		- below 0.91 m, grey.	99												
		Clayey Silt													
		- light brown, medium plastic, moist, soft, with clay, trace sand sizes.		S4	Shelby Tube							0.0	7.9	67.5	24.6
				S5	Shelby Tube										
				S6	Shelby Tube										
2		Silty Clay	98												
		- light brown, highly plastic, moist, firm, with silt.													
				S7	Shelby Tube										
3		End of Test Hole	97												
		- ended test hole at 2.59 m below asphalt surface grade.													
		- no seepage or sloughing encountered during or after drilling.													
		- test hole backfilled with auger cuttings followed by limestone and then cold patch mix to existing asphalt grade upon completion of drilling.													

ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm dia. solid stem

Completion Depth: 2.59 m

Completion Elevation: 97.41 m

Sheet: 1 of 1

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: North Bound Lane / 273 m south of center line of Ellice Ave.

Test Hole #: TH2

File No: 06-079-02

Date Drilled: March 14, 2006

Grade Elevation: 100.0 m (local)

Water Elevation: --

SUBSURFACE PROFILE			SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)						
								PL	0	LL				
0		Ground Surface	100											
		80 mm Asphalt												
		136 mm Concrete - concrete has no visible freeze / thaw damage present.												
		85 mm Granular Base												
		Silty Clay Fill - dark brown, highly plastic, moist, firm, with silt, trace sand sizes.		S1	Shelby Tube									
		Clay black, highly plastic, moist, firm, and silt, some sand sizes, some silt inclusions. - below 0.91 m, brown.		S2	Shelby Tube									
				S3	Shelby Tube									
		Silty Clay - brown, highly plastic, moist, firm, with silt.		S4	Shelby Tube									
		Clayey Silt - light brown, medium plastic, moist, firm to soft, with clay, trace sand sizes.		S5	Shelby Tube									
		Granular Fill - suspected buried utility underlying granular fill.		S6	Shelby Tube									
				S7	Shelby Tube									
		End of Test Hole - ended of test hole at 2.29 m below asphalt surface grade. - no seepage or sloughing encountered during or after drilling. - test hole backfilled with auger cuttings followed by limestone and then cold patch mix to existing asphalt grade upon completion of drilling.												
3			97											

ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *AK*

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm dia. solid stem

Completion Depth: 2.29 m

Completion Elevation: 97.71 m

Sheet: 1 of 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: South Bound Lane / 222 m south of the center line of Ellice Ave.

Test Hole #: TH3

File No: 06-079-02

Date Drilled:

Grade Elevation: 100 (local)

Water Elevation: --

SUBSURFACE PROFILE			SAMPLE DATA				Water Content (%)	GRAIN SIZE DISTRIBUTION %			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)		blows/300 mm	Gravel	Sand	Silt
0		Ground Surface	100								
		125 mm Asphalt									
		116 mm Concrete - concrete has severe freeze / thaw damage. - core could not be retrieved.		S1	Shelby Tube						
		65 mm Granular Base									
		Silty Clay Fill - dark brown, highly plastic, moist, stiff, with silt, trace sand sizes.		S2	Shelby Tube						
		Clay - black, highly plastic, moist, firm, some silt, trace sand sizes.		S3	Shelby Tube						
1		- below 0.91 m, turning brown	99								
		- below 1.02 m.		S4	Shelby Tube						
		Silty Clay - light brown, highly plastic, moist, firm, with silt.		S5	Shelby Tube						
		Silt - light brown, low plastic, moist, soft, some clay, trace sand sizes.		S6	Shelby Tube						
2		Clay - brown, high plastic, moist, stiff, with silt.	98								
				S7	Shelby Tube						
		End of Test Hole - ended test hole at 2.29 m depth - no seepage or sloughing encountered during or after drilling. - test hole backfilled with auger cuttings followed by limestone and then cold patch mix to the existing asphalt grade upon completion of drilling.									
3			97								

ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *AK*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm dia. solid stem

Completion Depth: 2.29 m

Completion Elevation: 97.71

Sheet: 1 of 1

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: North Bound Lane / 178 m south of the center line of Ellice Ave.

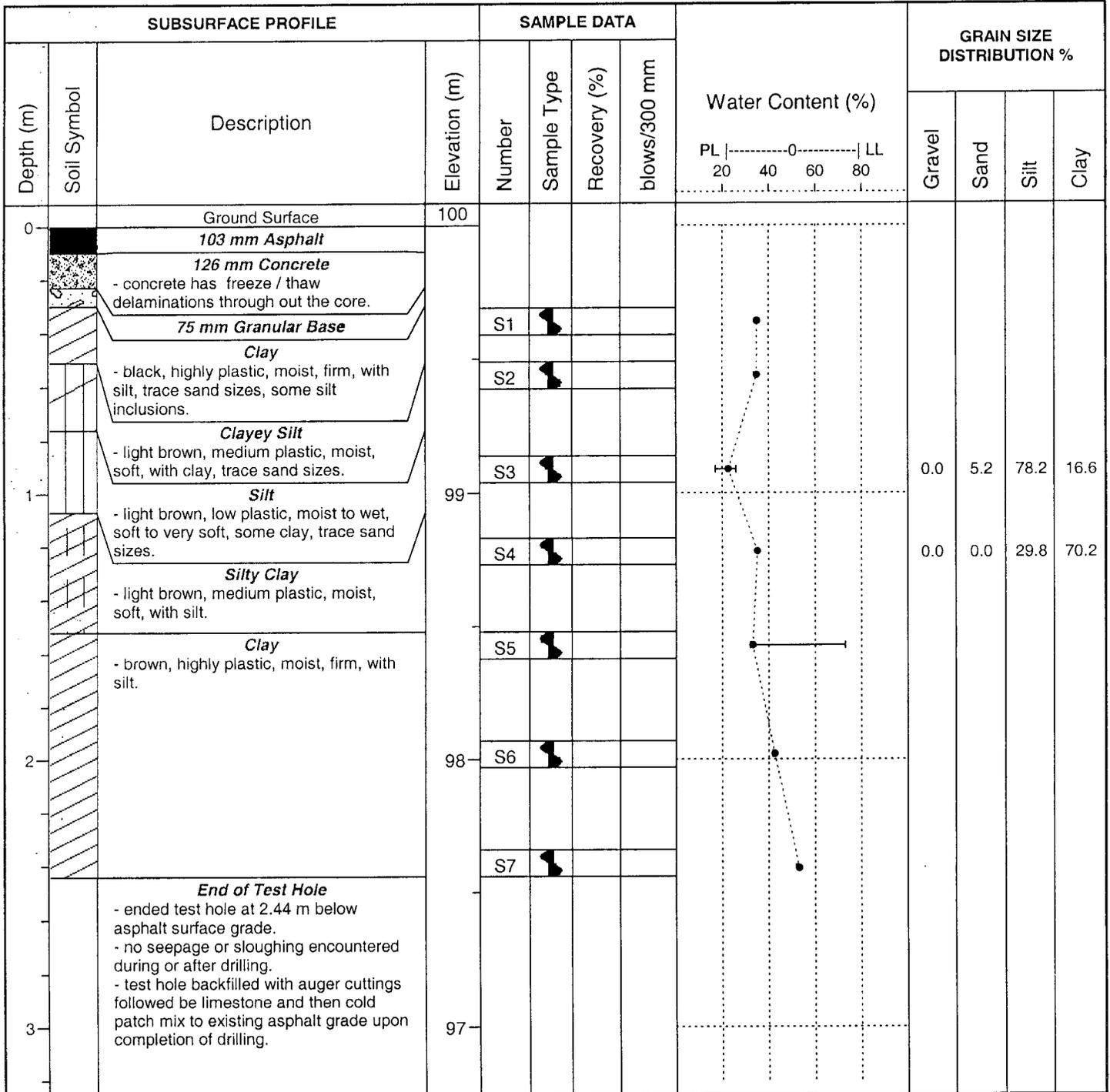
Test Hole #: TH4

File No: 06-079-02

Date Drilled: March 14, 2006

Grade Elevation: 100 (local)

Water Elevation: --



ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *KA*

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm dia. solid stem

Completion Depth: 2.44 m

Completion Elevation: 97.56

Sheet: 1 of 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: South Bound Lane / 136 m south of the center line of Ellice Ave.

Test Hole #: TH5

File No: 06-079-02

Date Drilled: March 14, 2006

Grade Elevation: 100 (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
								20	40	60	80	Gravel	Sand	Silt	Clay
0		Ground Surface	100												
		83 mm Asphalt													
		136 mm Concrete													
		- concrete has severe freeze / thaw damage.													
		- core could not be retrieved.													
		75 mm Granular Base													
		Clay													
		- dark brown, highly plastic, moist, firm, with silt, trace sand sizes, some silt inclusions.													
1		Clayey Silt	99												
		- light brown, medium plastic, moist, soft, with clay, trace sand sizes.													
		Silt													
		- light brown, low plastic, moist to wet, soft to very soft, some clay, trace sand sizes.													
		Clay													
		- brown, highly plastic, moist, stiff, with silt.													
2			98												
3		End of Test Hole	97												
		- ended test hole at 2.59 m below asphalt surface grade.													
		- no seepage or sloughing encountered during or after drilling.													
		- test hole backfilled with auger cuttings followed by limestone and then cold patch mix to existing asphalt grade upon completion of drilling.													

ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm dia. solid stem

Completion Depth: 2.59 m

Completion Elevation: 97.41

Sheet: 1 of 1

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: North Bound Lane / 61 m south of the center line of Ellice Ave.

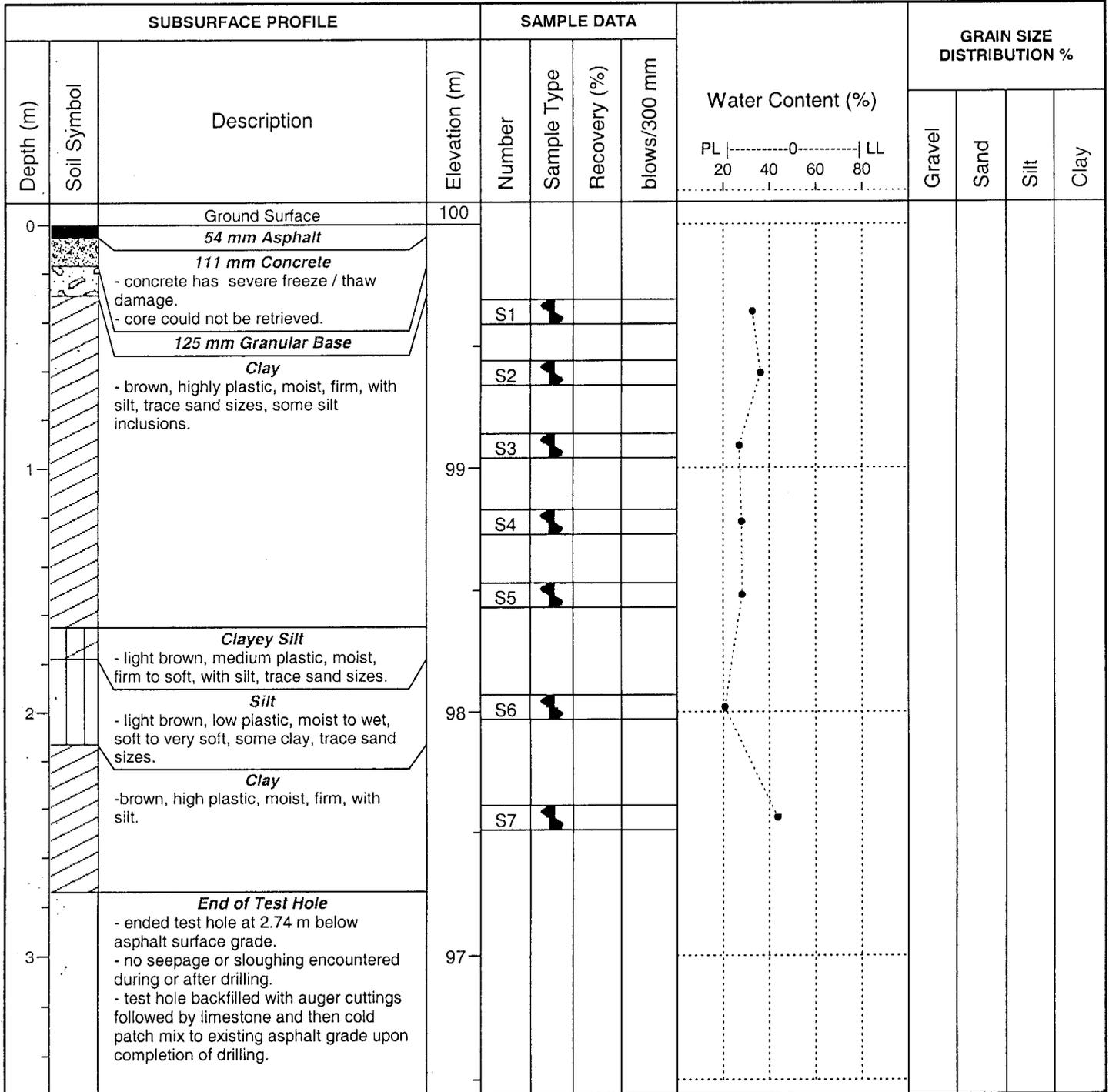
**Test Hole #: TH6**

File No: 06-079-02

Date Drilled: March 14, 2006

Grade Elevation: 100 (local)

Water Elevation: --



ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *CA*

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm dia. solid stem

Completion Depth: 2.74 m

Completion Elevation: 97.26

Sheet: 1 of 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

# ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: Earth Tech (Canada) Inc.

Project: Geotechnical Investigation - Simcoe Street Rehabilitation

Site: Simcoe Street, Winnipeg, Manitoba

Location: South Bound Lane / 20 m south of the center line of Ellice Ave.

Test Hole #: TH7

File No: 06-079-02

Date Drilled: March 14, 2006

Grade Elevation: 100 (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
0		Ground Surface	100												
		125 mm Asphalt													
		152 mm Granular Base													
		<b>Silty Clay Fill</b> - dark brown, highly plastic, moist, firm, with silt, trace sand sizes.		S1	Shelby Tube										
				S2	Shelby Tube							0.0	3.2	28.0	68.8
		<b>Clay</b> - black, highly plastic, moist, firm, with silt, trace sand sizes, some silt inclusions.  - below 1.02 m, brown	99	S3	Shelby Tube										
				S4	Shelby Tube										
		<b>Clayey Silt</b> - light brown, medium plastic, moist, soft, with clay, trace sand sizes.		S5	Shelby Tube										
		<b>Silty Clay</b> - light brown, medium plastic, moist, firm, and silt.	98	S6	Shelby Tube										
		<b>Clay</b> - brown, highly plastic, moist, firm, with silt.		S7	Shelby Tube										
3		<b>End of Test Hole</b> - Ended test hole at 2.59 m below asphalt surface grade. - no seepage or sloughing encountered during or after drilling. - test hole backfilled with auger cuttings followed by limestone and then cold patch mis to existing asphalt grade upon completion of drilling	97												

ENG-TECH Consulting Limited

Logged by: KIK

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: WERInc.

Drill Rig: S250 Bobcat

Auger Size: 125 mm solid stem

Completion Depth: 2.59 m

Completion Elevation: 97.41 m

Sheet: 1 of 1



#6 - 854 Marion Street  
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 www.eng-tech.ca

**PARTICLE SIZE  
 ANALYSIS REPORT**

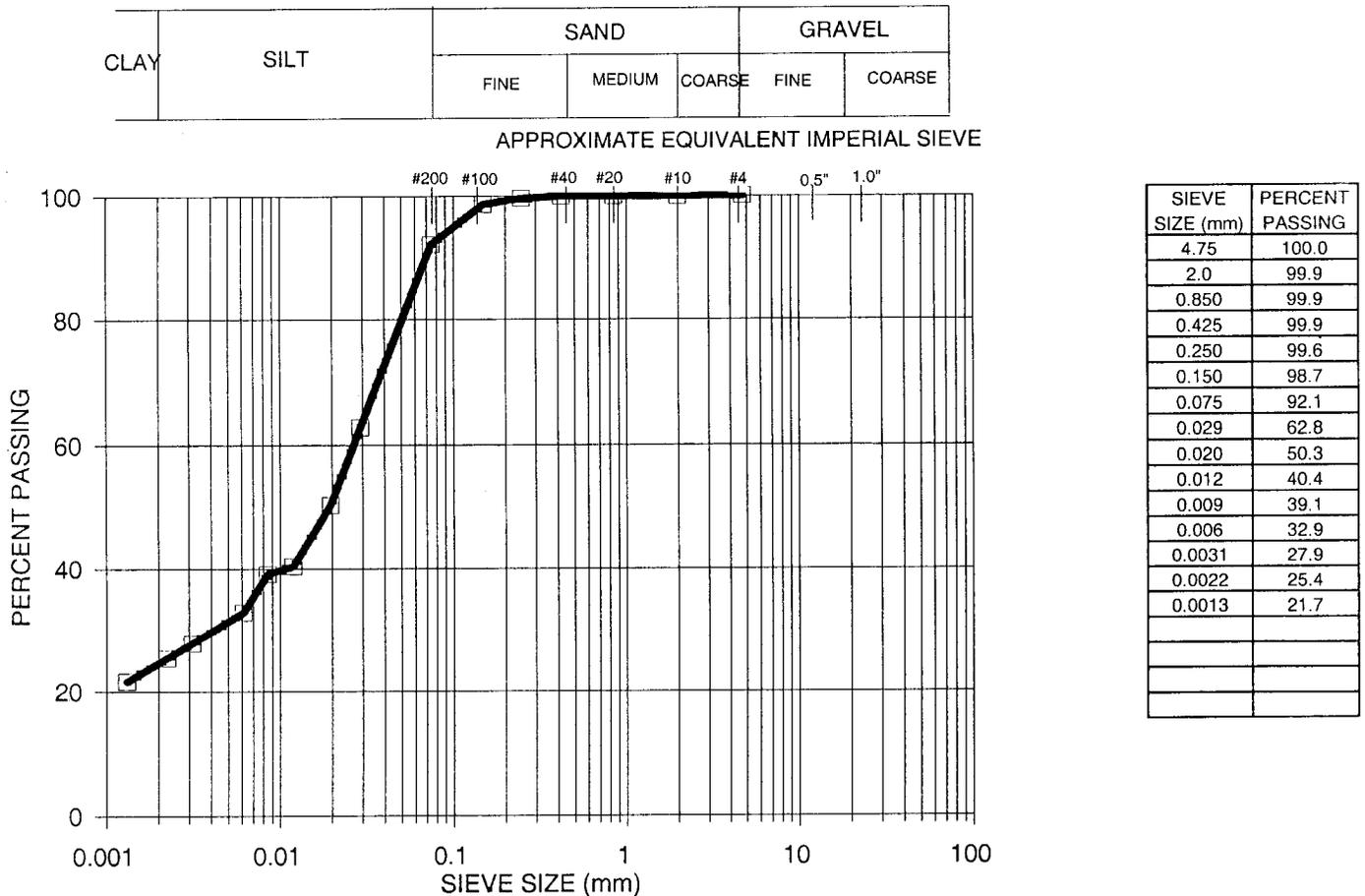
Earth Tech (Canada) Inc.  
 850 Pembina Highway  
 Winnipeg, Manitoba  
 R3M 2M7

**File No.:** 06-079-02  
**Reference No.:** 6-79-2-1

**ATTENTION:** Ryan Cunningham, E.I.T.

**PROJECT:** Geotechnical Investigation, Simcoe Street Rehabilitation, Winnipeg, MB.

<b>Test Hole No.</b> TH 1	<b>Sample No.</b> S4	<b>Depth:</b> 1.22 m
<b>Sampled By:</b> ENG-TECH	<b>Type of Sample:</b> Grab	<b>Source:</b> Simcoe Street
<b>Date Sampled:</b> March 9/06	<b>Date Received:</b> March 17/06	<b>Date Tested:</b> Mar 22/06



**Percent of:** GRAVEL (0.0%), SAND (7.9%), SILT (67.5%) and CLAY (24.6%)  
**Sample Description:** See Test Hole Logs

**COMMENTS:**

**ENG-TECH Consulting Limited**

per   
 Clark Hryhoruk, M.Sc, P.Eng.  
 Ph: (204) 233-1694  
 Fax: (204) 235-1579



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**PARTICLE SIZE  
 ANALYSIS REPORT**

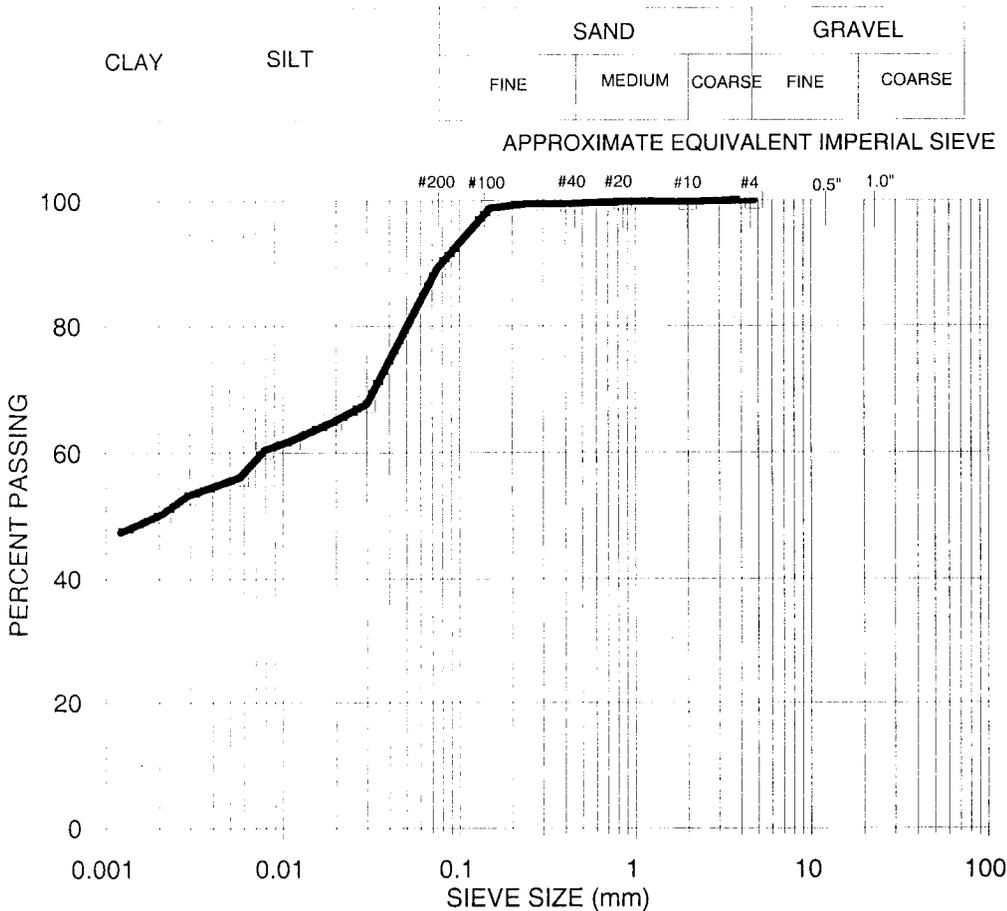
Earth Tech (Canada) Inc.  
 850 Pembina Highway  
 Winnipeg, Manitoba  
 R3M 2M7

**File No.:** 06-079-02  
**Reference No.:** 6-79-2-2

**ATTENTION:** Ryan Cunningham, E.I.T.

**PROJECT:** Geotechnical Investigation, Simcoe Street Rehabilitation, Winnipeg, MB.

<b>Test Hole No.</b>	TH 2	<b>Sample No.</b>	S2	<b>Depth:</b>	0.61m
<b>Sampled By:</b>	ENG-TECH	<b>Type of Sample:</b>	Grab	<b>Source:</b>	Simcoe Street
<b>Date Sampled:</b>	March 9/06	<b>Date Received:</b>	March 17/06	<b>Date Tested:</b>	Mar 22/06



SIEVE SIZE (mm)	PERCENT PASSING
4.75	100.0
2.0	99.9
0.850	99.9
0.425	99.6
0.250	99.6
0.150	98.8
0.075	89.1
0.030	67.6
0.019	64.7
0.011	61.9
0.008	60.4
0.006	56.2
0.0029	53.3
0.0021	50.5
0.0012	47.6

**Percent of:** GRAVEL (0.0%), SAND (10.9%), SILT (38.9%) and CLAY (50.2%)  
**Sample Description:** See Test Hole Logs

**COMMENTS:**

**ENG-TECH Consulting Limited**

per   
 Clark Hryhoruk, M.Sc, P.Eng.  
 Ph: (204) 233-1694  
 Fax: (204) 235-1579







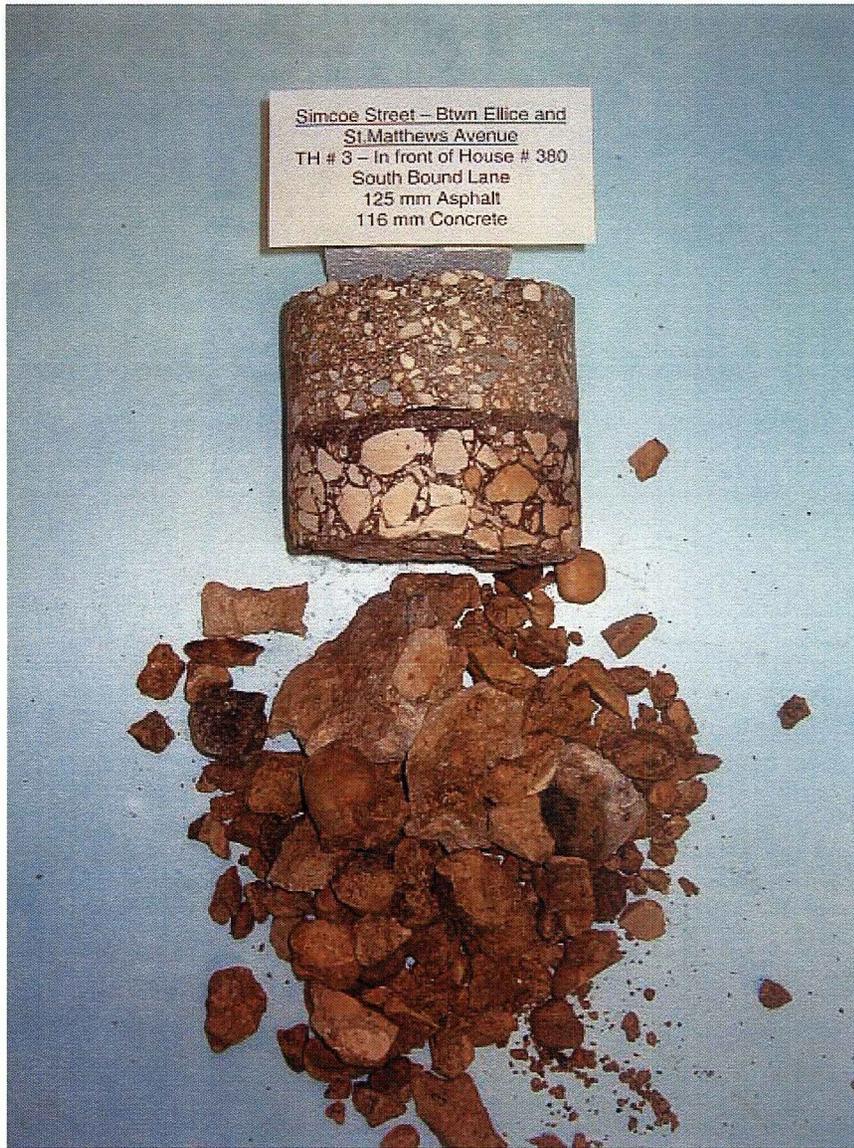
Simcoe Street – Btwn Ellice and  
St. Matthews Avenue  
TH # 1 – In front of House # 354  
South Bound Lane  
120 mm Asphalt  
121 mm Concrete



Simcoe Street – Btwn Ellice and  
St. Matthews Avenue  
TH # 2 – Btwn House # 361 and #363  
North Bound Lane  
80 mm Asphalt  
136 mm Concrete



Simcoe Street – Test Holes TH1 and TH2

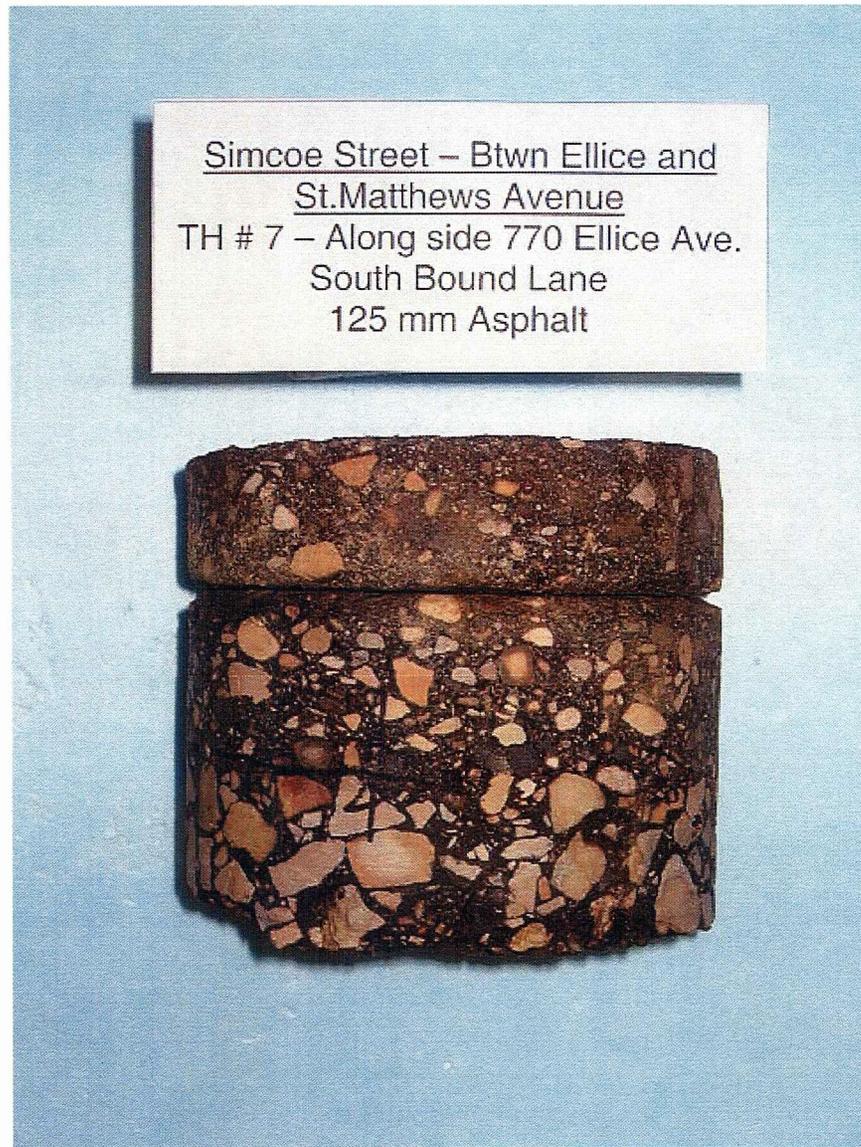


Simcoe Street – Test Holes TH3 and TH4



Simcoe Street – Test Holes TH5 and TH6

Simcoe Street – Btwn Ellice and  
St. Matthews Avenue  
TH # 7 – Along side 770 Ellice Ave.  
South Bound Lane  
125 mm Asphalt



Simcoe Street – Test Hole TH7