

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.

**SHELLEY STREET
MCBEY AVENUE TO WORDSWORTH WAY
2007 CITY OF WINNIPEG
RESIDENTIAL STREET RENEWAL**

Prepared for
Earth Tech (Canada) Inc.
1000 Waverley Street
Winnipeg, Manitoba
R3T 0P3

Prepared by
The National Testing Laboratories Limited
199 Henlow Bay
Winnipeg, Manitoba
R3Y 1G4

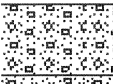

January 11, 2007

TESTHOLE TH1



Project Name: 2007 City of Winnipeg Residential Street Renewal
Client: Earth Tech (Canada) Inc.
Site: Shelley Street, McBey Avenue to Wordsworth Way
Testhole Location: 2.8 m N of the N property line of 375 Shelley St., 1.8 m W of the E side of the lane

Date Drilled: December 19, 2006
Depth of Testhole: 2.1 m
Logged by: Kurtis Kulchyski

Subsurface Profile			Laboratory Testing
Depth	Symbol	Description	Water Content (%)
0.0		Ground Surface	
		Concrete	
		Granular Fill - 25 mm maximum aggregate size Clay - grey, moist, firm, high plasticity, some silt, trace sand and fine grained gravel on the surface - brown below 0.9 m, trace thin silt layers	
2.1		End of testhole at 2.1 m below grade.	
2.5		No water seepage or soil sloughing were observed during or after the completion of drilling.	

TESTHOLE TH2



Project Name: 2007 City of Winnipeg Residential Street Renewal
Client: Earth Tech (Canada) Inc.
Site: Shelley Street, McBey Avenue to Wordsworth Way
Testhole Location: 2.8 m N of the N property line of 396 Shelley St., 2.3 m W of the E side of the lane

Date Drilled: December 19, 2006
Depth of Testhole: 2.1 m
Logged by: Kurtis Kulchyski

Subsurface Profile			Laboratory Testing
Depth	Symbol	Description	Water Content (%)
0.0		Ground Surface	
0.0 - 0.1		Concrete	
0.1 - 0.8		Granular Fill - 25 mm maximum aggregate size Clay - brown, moist, firm, high plasticity, some silt, trace sand and fine grained gravel on the surface - 25 mm layer of clayey silt observed at 0.8 m	
0.5			
1.0			
1.5			
2.0			
2.1		End of testhole at 2.1 m below grade.	
2.5		No water seepage or soil sloughing were observed during or after the completion of drilling.	

TESTHOLE TH3



Project Name: 2007 City of Winnipeg Residential Street Renewal
Client: Earth Tech (Canada) Inc.
Site: Shelley Street, McBey Avenue to Wordsworth Way
Testhole Location: 3.4 m N of the S property line of 418 Shelley St., 1.7 m E of the W side of the lane

Date Drilled: December 19, 2006
Depth of Testhole: 2.1 m
Logged by: Kurtis Kulchyski

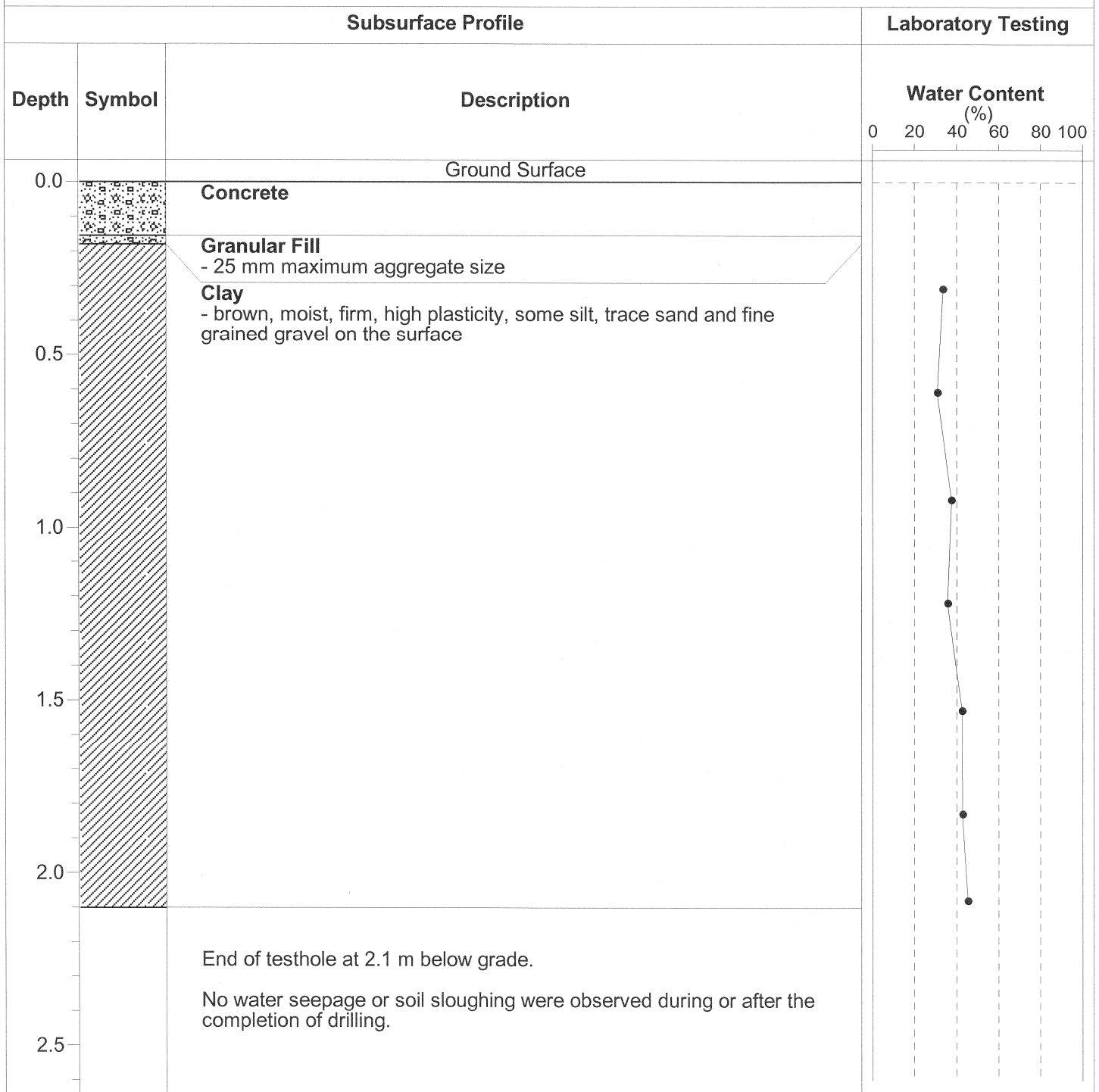
Subsurface Profile			Laboratory Testing					
Depth (m)	Symbol	Description	Moisture Content (%)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)
			PL	LL				
0.0		Ground Surface						
0.0 - 0.2		Concrete						
0.2 - 0.8		Granular Fill - 25 mm maximum aggregate size						
0.8 - 2.1		Clay - black/grey, moist, firm, high plasticity, some silt, trace sand and fine grained gravel on the surface - brown below 0.8 m						
1.0			25	75	0.0	3.9	12.6	83.5
2.1		End of testhole at 2.1 m below grade.						
2.5		No water seepage or soil sloughing were observed during or after the completion of drilling.						

TESTHOLE TH4



Project Name: 2007 City of Winnipeg Residential Street Renewal
Client: Earth Tech (Canada) Inc.
Site: Shelley Street, McBey Avenue to Wordsworth Way
Testhole Location: 4.5 m N of the S property line of 448 Shelley St., 1.7 m E of the W side of the lane

Date Drilled: December 19, 2006
Depth of Testhole: 2.1 m
Logged by: Kurtis Kulchyski

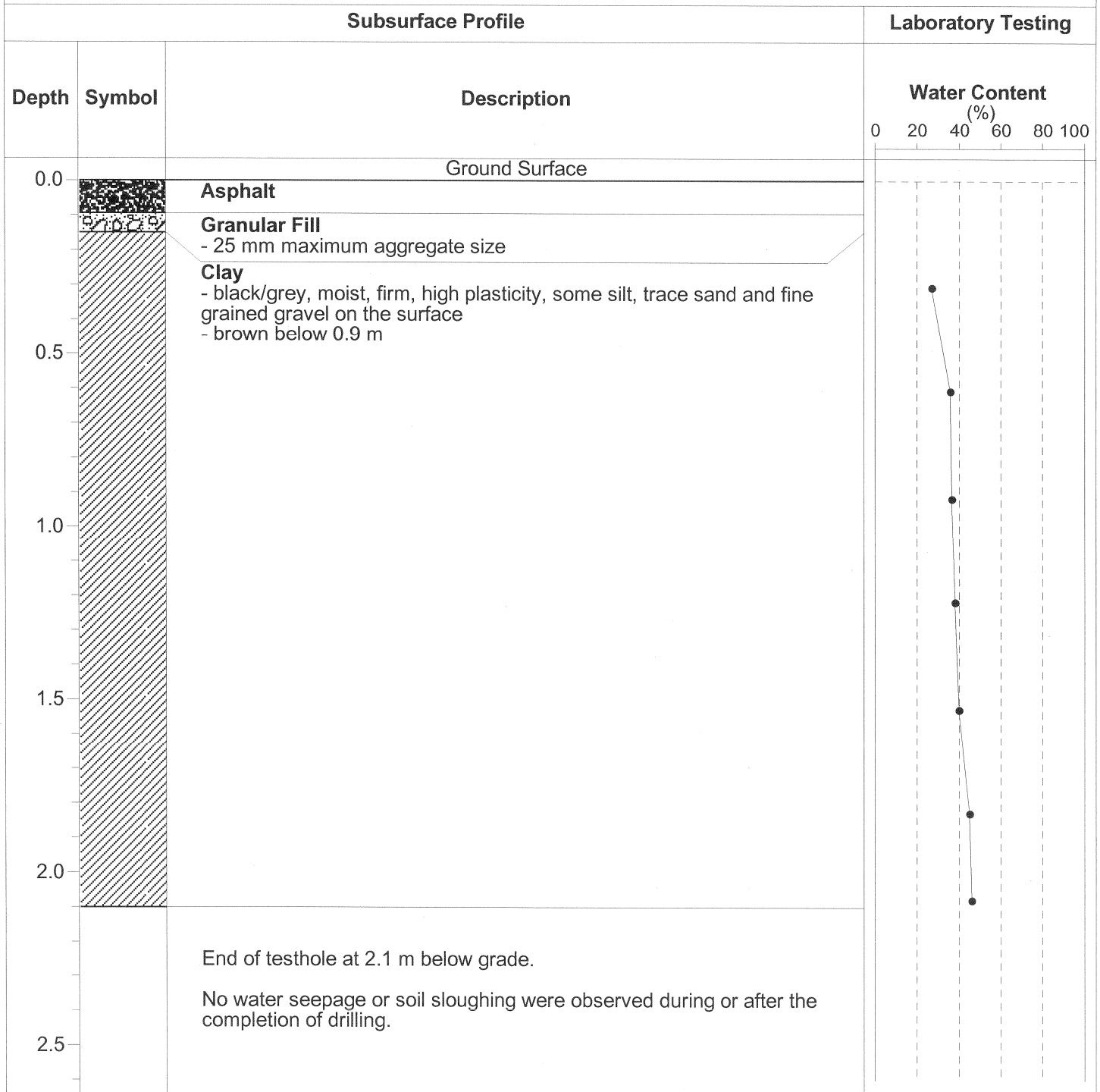


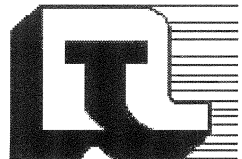
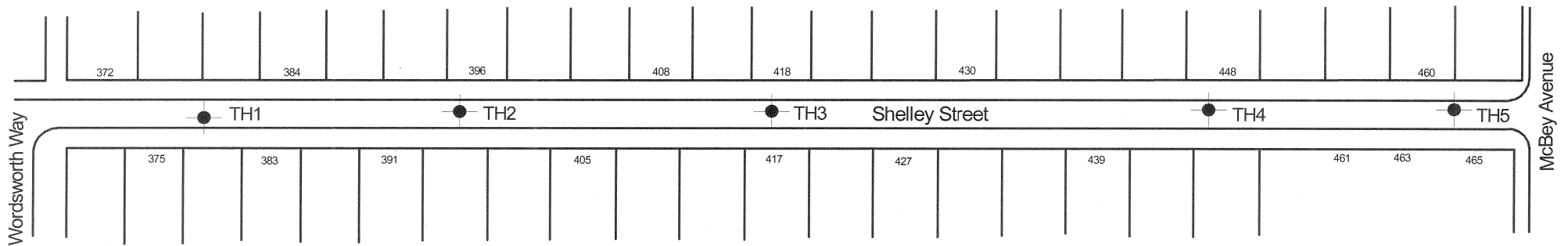
TESTHOLE TH5



Project Name: 2007 City of Winnipeg Residential Street Renewal
Client: Earth Tech (Canada) Inc.
Site: Shelley Street, McBey Avenue to Wordsworth Way
Testhole Location: In line with the N property line of 460 Shelley St., 1.7 m E of the W side of the lane

Date Drilled: December 19, 2006
Depth of Testhole: 2.1 m
Logged by: Kurtis Kulchyski





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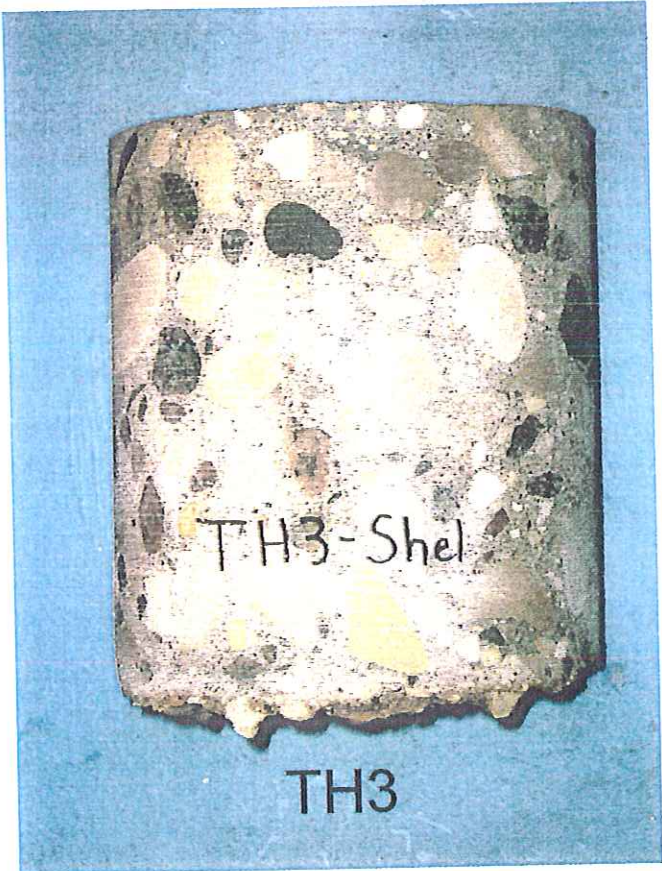
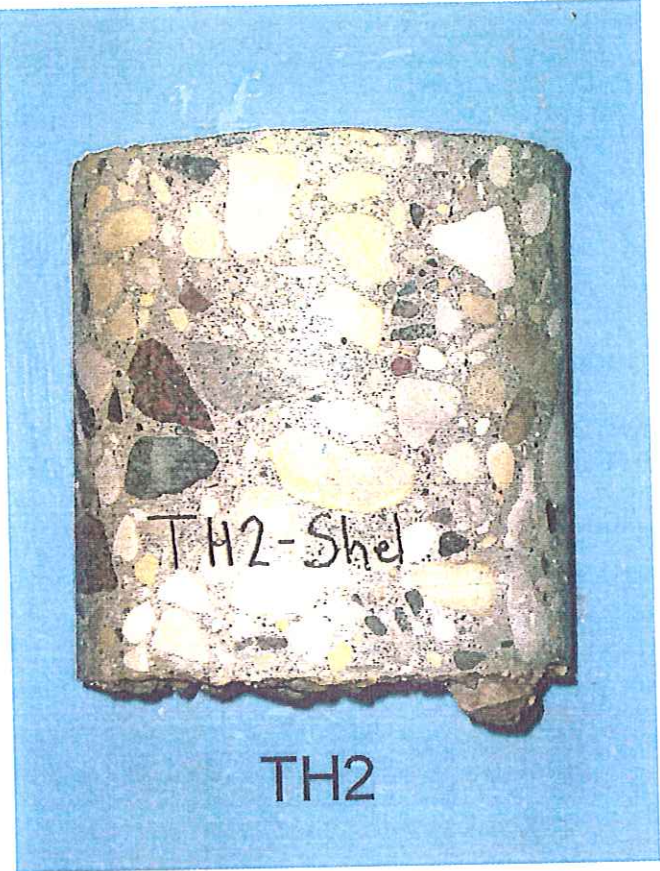
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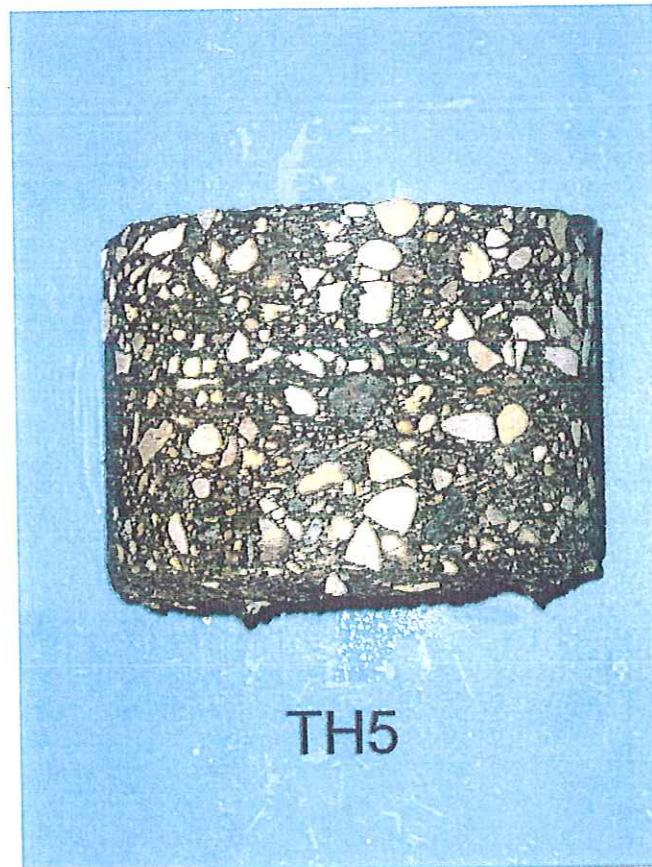
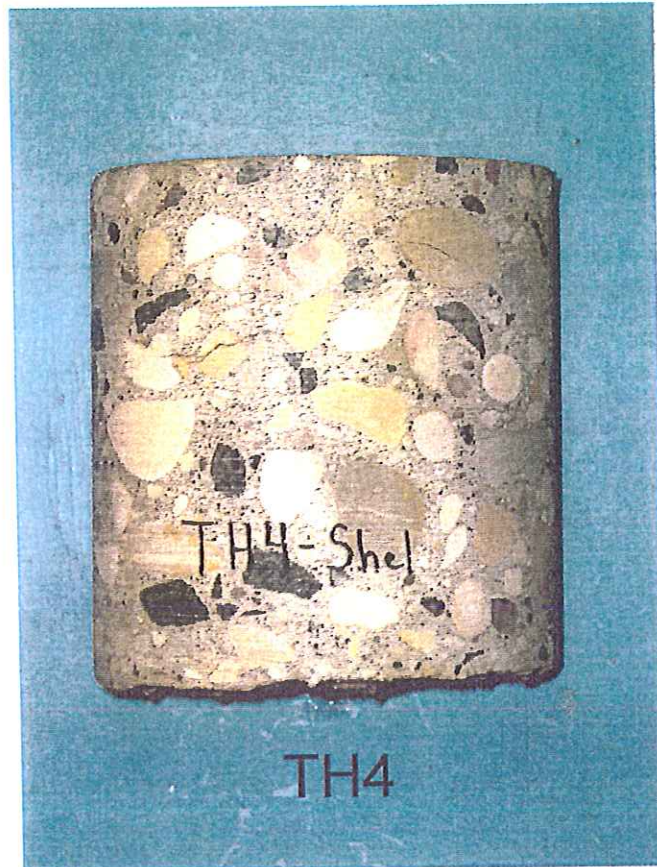
Drawn By: SD

Date: Jan. 2, 2007

Scale: NTS

Testhole Location Plan
2007 City of Winnipeg Residential Street Renewal
Shelley Street
McBey Avenue to Wordsworth Way







**CONWAY STREET
LODGE AVENUE TO PORTAGE AVENUE
2008 LOCAL STREETS RENEWAL PROGRAM**

Prepared for
Earth Tech (Canada) Inc.
1000 Waverley Street
Winnipeg, Manitoba
R3T 0P3

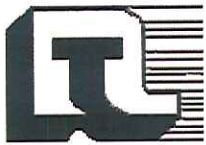
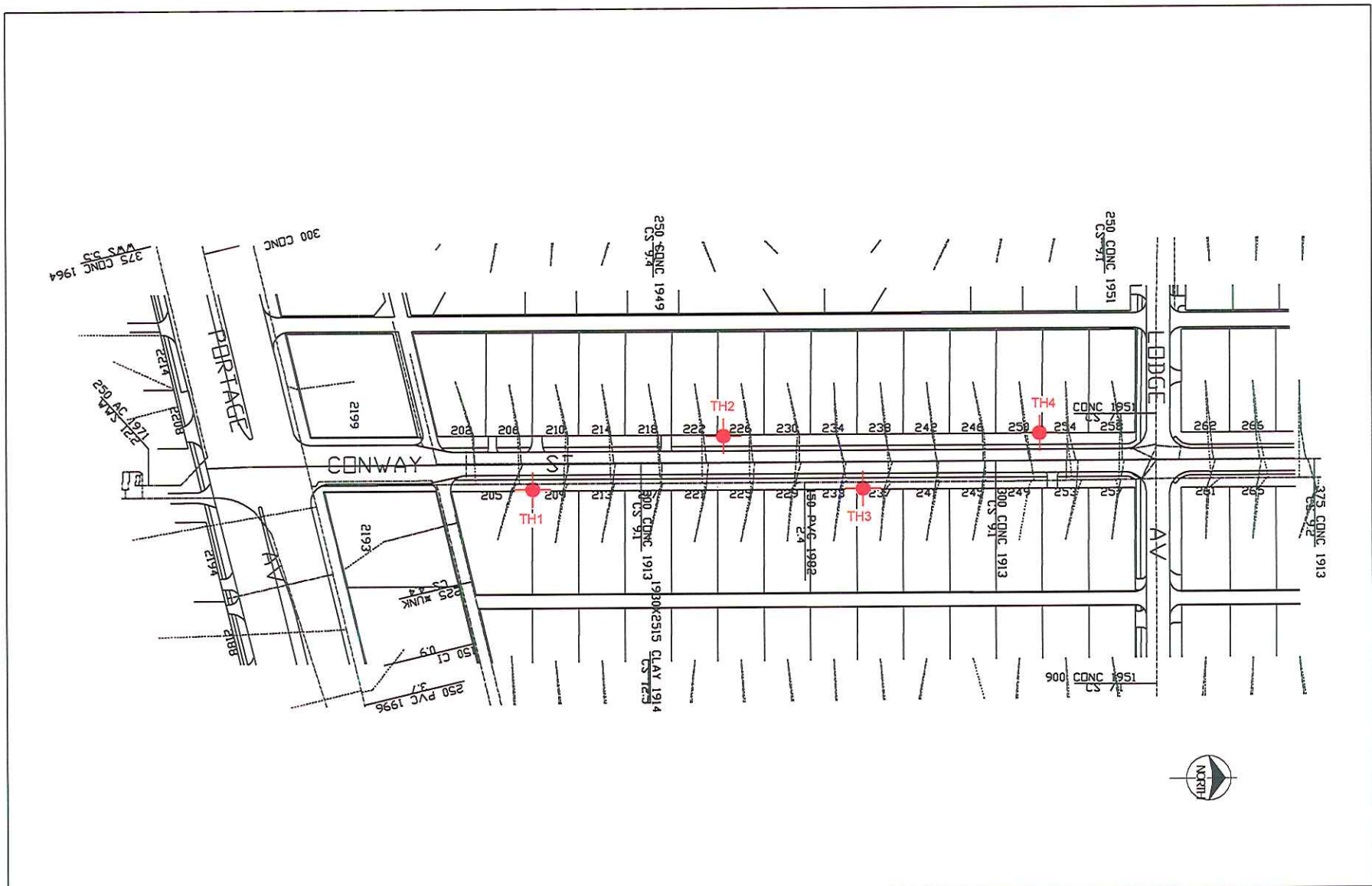
Prepared by
The National Testing Laboratories Limited
199 Henlow Bay
Winnipeg, Manitoba
R3Y 1G4

January 11, 2008

**Conway Street
Lodge Avenue to Portage Avenue
2008 Local Streets Renewal**

Testhole ID	Testhole Location	Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits		
					Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	North property line of 205 Conway Street, 5.3 m from east curb	Clayey Silt	1.05	9.4	0.4	12.6	55.3	31.7	31	14	17
TH2	1.4 m north of north property line of 222 Conway Street, 4.5 m from west curb	N/A	N/A	-	-	-	-	-	-	-	-
TH3	2 m north of north property line of 233 Conway Street, 5.3 m from east curb	Clay	0.9	34.3	0.0	2.3	8.6	89.1	83	11	72
TH4	0.4 m south of north property line of 250 Conway Street, 3.4 m from west curb	N/A	N/A	-	-	-	-	-	-	-	-

Note: Testholes were drilled behind the curb



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Project No.: EAR-710

Drawn by: KK

Figure: 1

Date: Jan. 10, 2008

Reviewed by: DF

Scale: NTS

Testhole Location Plan
Conway Street
2008 Local Streets Renewal

TESTHOLE TH1



Project Name: Conway Street Renewal
 Client: Earth Tech (Canada) Ltd.
 Site: Conway Street between Lodge Avenue and Portage Avenue
 Testhole Location: North property line of 205 Conway Street, 5.3 m from east curb

Date Drilled: December 20, 2007
 Depth of Testhole: 2.1 m
 Logged by: Kurtis Kulchyski

Subsurface Profile			Laboratory Testing					
Depth (m)	Symbol	Description	Water Content (%)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)
			PL	LL				
0.0		Ground Surface						
0.0 - 0.3	~	Topsoil						
0.3 - 0.4	▨	Clay Fill - black/brown, stiff, moist, high plasticity, trace fine gravel						
0.4 - 1.0	▧	Clay - brown, stiff, moist, high plasticity						
1.0 - 1.4	▩	Clayey Silt - tan, dry/moist, very stiff, intermediate plasticity - trace layers of clay below 1.2 m	9.4		0.4	12.6	55.3	31.7
1.4 - 2.1	▧	Clay - brown, stiff, moist, high plasticity, varved with layers of silt to 1.8 m, trace gypsum	24.7					
			23.3					
			24.0					
			21.3					
			26.4					
			33.5					
			40.3					
2.5		<ul style="list-style-type: none"> • Frost present to a depth of 0.3 m. • No water seepage or soil sloughing were observed during or after the completion of drilling. • Testhole was terminated at 2.1 m. • Elevation at testhole location is approx. 200 mm above the pavement surface 						

TESTHOLE TH2



Project Name: Conway Street Renewal

Date Drilled: December 20, 2007

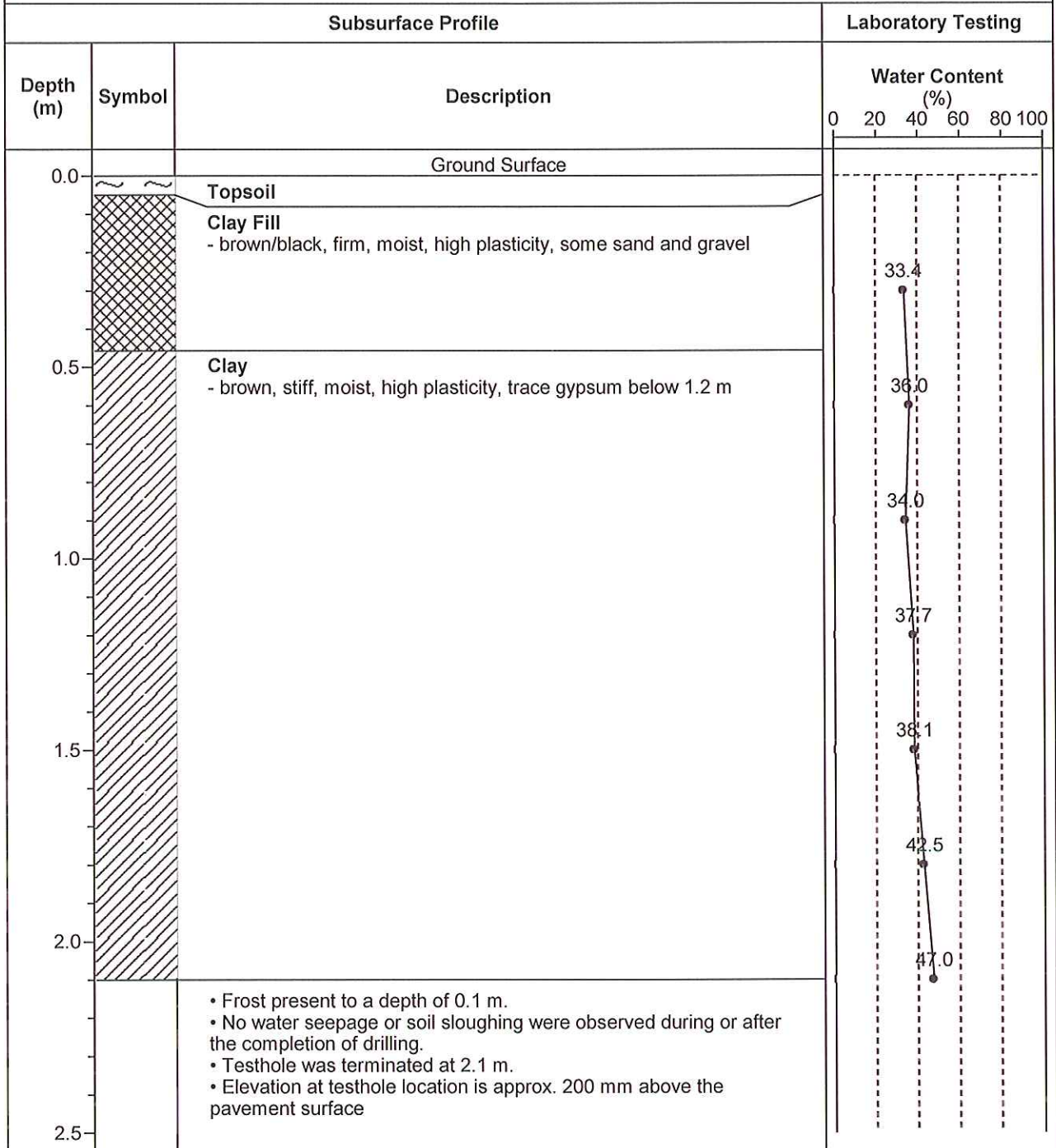
Client: Earth Tech (Canada) Ltd.

Depth of Testhole: 2.1 m

Site: Conway Street between Lodge Avenue and Portage Avenue

Logged by: Kurtis Kulchyski

Testhole Location: 1.4 m north of north property line of 222 Conway Street, 4.5 m from west curb



TESTHOLE TH4



Project Name: Conway Street Renewal

Date Drilled: December 20, 2007

Client: Earth Tech (Canada) Ltd.

Depth of Testhole: 2.1 m

Site: Conway Street between Lodge Avenue and Portage Avenue

Logged by: Kurtis Kulchyski

Testhole Location: 0.4 m south of north property line of 250 Conway Street, 3.4 m from west curb

