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 existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or 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.

Geotechnical Report for Galloway Street

Test Hole Locations

	378 TH1			Ga	allowa	y Stree		28 430	432 TH2	
381	385						4	05 409	411	
	462	464	466						488 49	
 	TH3			Gallo	way S	Street			TH4	
	447	449	451						469 47	

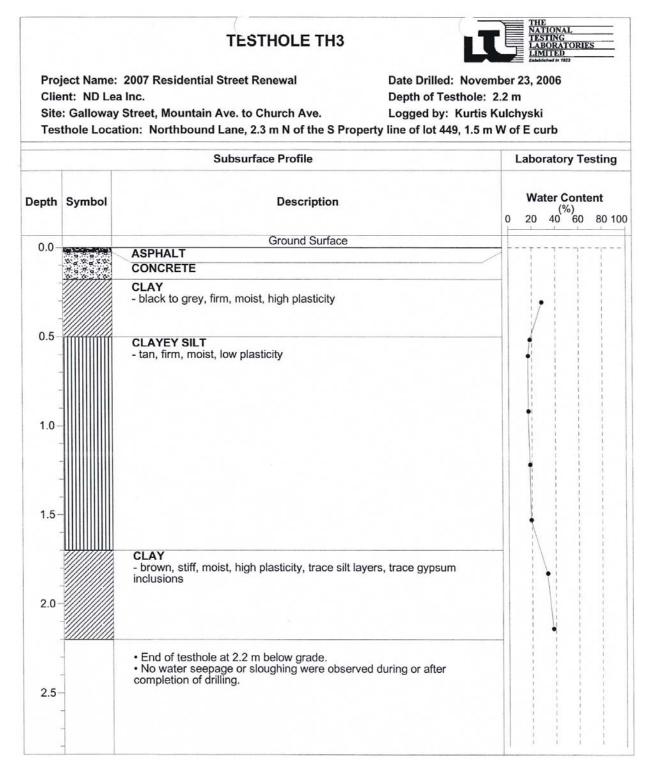
Summary of Core Samples

2007 City of Winnipeg Residential Street Renewal Geotechnical Investigation Galloway Street Mountain Avenue to Church Avenue

		Pavement Surface		Pavement Structure Material			Sample			Particle Siz	ze Analysis	8	Atterberg Limits		
Testhole ID	Testhole Location	Туре	Thickness (mm)	Туре	Thickness (mm)	Sample Description	Depth (m)	Content (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	3.4 m S of the N property line of lot 381, northbound lane, 1.35 m W of E curb	Asphalt/Concrete	20/180	N/A	2	Clayey Silt	0.9	21.2	0.0	6.3	59.7	34.0	27	18	9
TH2	5.2 m N of S property line of lot 430, southbound lane, 1.65 m E of W curb	Asphalt/Concrete	25/155	N/A		N/A				•					
тнз	2.3 m N of the S property line of lot 449, northbound lane, 1.5 m W of E curb	Asphalt/Concrete	25/155	N/A		N/A		.*	•	•			•		
TH4	0.5 m N of S property line of lot 492, southbound lane, 2.0 m E of W curb	Concrete	205	N/A		Clay	1.8	37.9	0.0	0.7	8.3	91.0	83	25	58

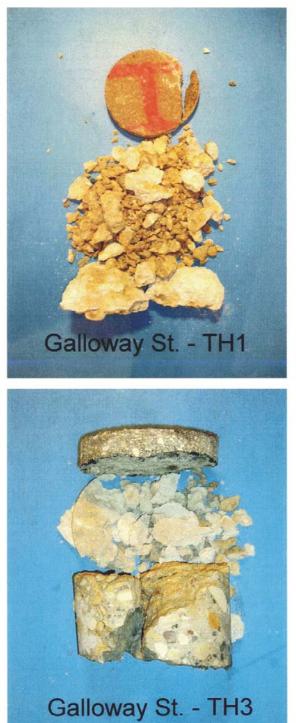
Clie Site	ent: ND Le : Gallowa	TESTHOLE T 2007 Residential Street Renewal a Inc. by Street, Mountain Ave. to Church Ave. ation: Northbound Lane, 3.4 m S of the	Date Drilled: Novem Depth of Testhole: 2 Logged by: Kurtis K	ber 23 2 m ulchys	ski	TORIES 27	
		Subsurface Profile	Laboratory	Testing	9		
Depth (m)	Symbol	Description	Moisture Content (%) PLLL 0 25 50 75 100	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
0.0-	1111-11-11-11-11-11-11-11-11-11-11-11-1	Ground Surface		-			
		ASPHALT CONCRETE					
0.5		CLAY - black to grey, stiff, moist, high plasticity, trace silt pockets CLAYEY SILT - tan, firm to soft, moist, low plasticity, trace fine grained sand		0.0	6.3	59.7	34
1.5-		CLAY - brown, stiff, moist, high plasticity - 50 mm silt layer at 2.0 m					
2.0-							
	-	 End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 					

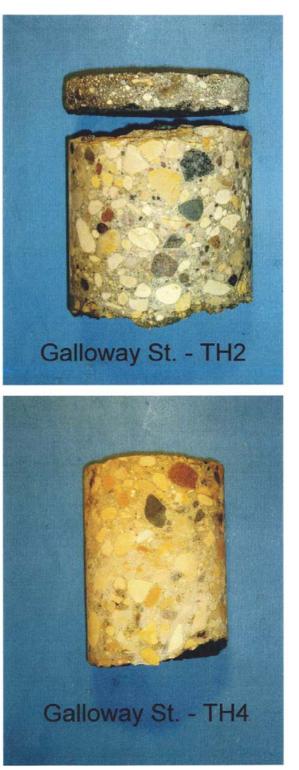
TESTHOLE TH2 Date Drilled: November 23, 2006 Project Name: 2007 Residential Street Renewal Client: ND Lea Inc. Depth of Testhole: 2.2 m Logged by: Kurtis Kulchyski Site: Galloway Street, Mountain Ave. to Church Ave. Testhole Location: Southbound Lane, 5.2 m N of the S property line of lot 430, 1.65 m E of W curb Subsurface Profile Laboratory Testing Water Content Depth Symbol Description (%) 40 60 80 100 20 0 Ground Surface 0.0 ASPHALT CONCRETE **CLAY FILL** - black to grey, firm, moist, high plasticity, trace silt pockets, trace fine grained gravel 0.5 CLAY - black to grey, firm, moist, high plasticity **CLAYEY SILT** - tan, firm, moist, low plasticity 1.0 1.5 CLAY - brown, stiff, moist, high plasticity, trace silt layers, trace gypsum inclusions 2.0 · End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 2.5



Clie	ent: ND Le	y Street, Mountain Ave. to Church Ave.	Date Drilled: November 23, 2006 Depth of Testhole: 2.2 m Logged by: Kurtis Kulchyski e S property line of lot 492, 2.0 m E of W curb Laboratory Testing							
Depth (m)	Symbol	Description	Moisture Content (%) PLLL 0 25 50 75 100	Gravel (%)	Sand (%)	Silt (%)	Clay (%)			
0.0	7:67:677:	Ground Surface		0	S	S	0			
		CONCRETE								
0.5-		CLAY - black to grey, firm, moist, high plasticity								
1.0-		CLAYEY SILT - tan, firm, moist, low plasticity								
1.5-	_									
2.0		CLAY - brown, stiff, moist, high plasticity		0.0	0.7	8.3	91.0			
			-							
2.5	-	 End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 								

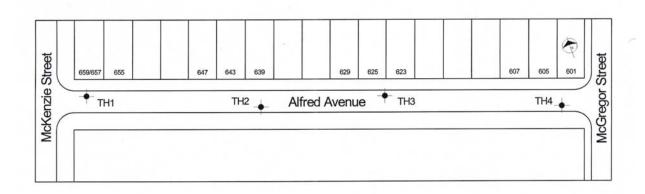
Pavement Core Photos





Geotechnical Report for Alfred Avenue

Test Hole Locations



Summary of Core Samples

2007 City of Winnipeg Residential Street Renewal Geotechnical Investigation Alfred Avenue McGregor Street to McKenzie Street

		Pavement Surface		Pavement Structure Material			Sample	Moisture		Particle Siz	te Analysis		Atterberg Limits		
Testhole ID	Testhole Location	Туре	Thickness (mm)	Туре	Thickness (mm)	Sample Description	Depth (m)	Content (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	6.9 m E of the W property line of lot 657, westbound lane, 1.7 m S of N curb	Asphalt/Concrete	75/75	N/A	-	Clayey Silt	1.2	19.3	0.0	3.8	64.9	31.3	30	17	13
TH2	4.9 m W of the W property line of lot 639, eastbound lane, 1.4 m N of S curb	Asphalt/Concrete	60/90	N/A		N/A			-		•		•	-	•
тнз	In line with the E property line of lot 625, westbound lane, 1.3 m S of N curb	Asphalt/Concrete	90/80	N/A		N/A	•		1	-		-	-		
TH4	8.6 m W of the E property line of lot 601, eastbound lane, 1.7 m N of S curb	Asphalt/Concrete	40/120	N/A		Clay	1.2	30.2	0.0	0.9	9.0	90.1	76	23	53

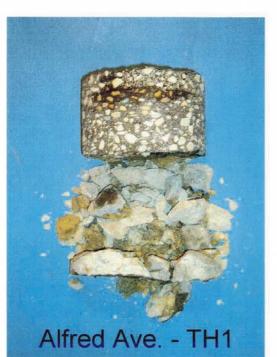
E.		TESTHOLE TH	11				T		HE ATIONA ESTING ABORA IMITED	L FORIES	_
Clie Site	ject Name: ent: ND Le e: Alfred A thole Loca	Date Drilled: November 23, 2006 Depth of Testhole: 2.2 m Logged by: Kurtis Kulchyski V property line of lot 657, 1.7 m S of N curb									
		Subsurface Profile				Laborat	ory T	esting	1		
Depth (m)	Symbol	Description	PL.	Moistu 25	ire Con	tent (% 75) LL 100	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
		Ground Surface						0	0)	0)	0
0.0-		ASPHALT			_T						
-		CONCRETE		- 1	1	1					
0.5-		 black to grey, stiff, moist, high plasticity brown below 0.5 m thinly varved with silt below 0.8 m 									
1.0-		CLAYEY SILT - tan, firm, moist, low plasticity - trace fine grained sand below 1.4 m						0.0	3.8	64.9	31.
1.5-		 End of testhole at 2.2 m below grade. No water seepage or sloughing were 									
2.5	-	 End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 									

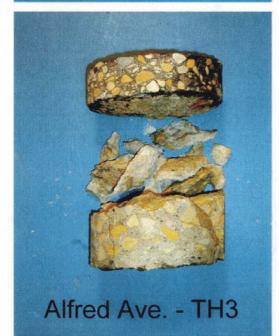
Clie Site	ent: ND Lea a: Alfred Av		tis Kulchyski
		Subsurface Profile	Laboratory Testing
Depth	Symbol	Description	Water Content (%) 0 20 40 60 80 100
0.0		Ground Surface	
0.0-		ASPHALT	
		CONCRETE CLAY - black to grey, stiff to firm, moist, high plasticity - thinly varved with silt below 0.3 m	
0.5-	-	CLAYEY SILT - tan, firm, moist, low plasticity	
1.0-		CLAY - brown, stiff, moist, high plasticity - 50 mm clayey silt layer at 2.0 m	
1.5-			
2.0-			
	-	 End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 	

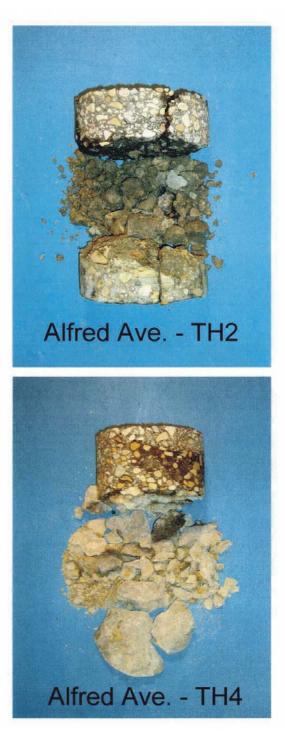
,		TESTHOLE TH3	INTERNATIONAL TESTING LABORATORIES LIMITED Established in 1923
Clie	ent: ND Le	a Inc. Depth of Testh	urtis Kulchyski
Tes	thole Loca	Subsurface Profile	Laboratory Testing
Depth	Symbol	Water Content (%) 0 20 40 60 80 100	
		Ground Surface	
0.0-	2222	ASPHALT	
-		CONCRETE	
		CLAY - black to grey, stiff to firm, moist, high plasticity	/
0.5-		CLAYEY SILT - tan, firm, moist, low plasticity	
1.5-		CLAY - brown, stiff, moist, high plasticity - 50 mm clayey silt layer at 2.0 m	
2.0			
2.5	-	 End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 	

TESTHOLE TH4 ORIF Project Name: 2007 Residential Street Renewal Date Drilled: November 23, 2006 Client: ND Lea Inc. Depth of Testhole: 2.2 m Site: Alfred Avenue, McGregor St. to McKenzie St. Logged by: Kurtis Kulchyski Testhole Location: Eastbound lane, 8.6 m W of the E property line of lot 601, 1.7 m N of S curb Subsurface Profile Laboratory Testing Gravel (%) Depth Sand (%) Clay (%) Symbol Description Moisture Content (%) Silt (%) (m) PL 0 25 50 75 100 Ground Surface 0.0 ASPHALT CONCRETE CLAY - black to grey, stiff, moist, high plasticity 0.5 **CLAYEY SILT** - tan, firm, moist, low plasticity 1.0 90.1 CLAY 0.0 0.9 9.0 - brown, stiff, moist, high plasticity - 50 mm clayey silt layer at 2.1 m 1.5 2.0 · End of testhole at 2.2 m below grade. No water seepage or sloughing were observed during or after completion of drilling. 2.5

Pavement Core Photos







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