Template Version: C420081212 - RW

APPENDIX 'A' GEOTECHNICAL REPORT

Template Version: C420081212 - RW

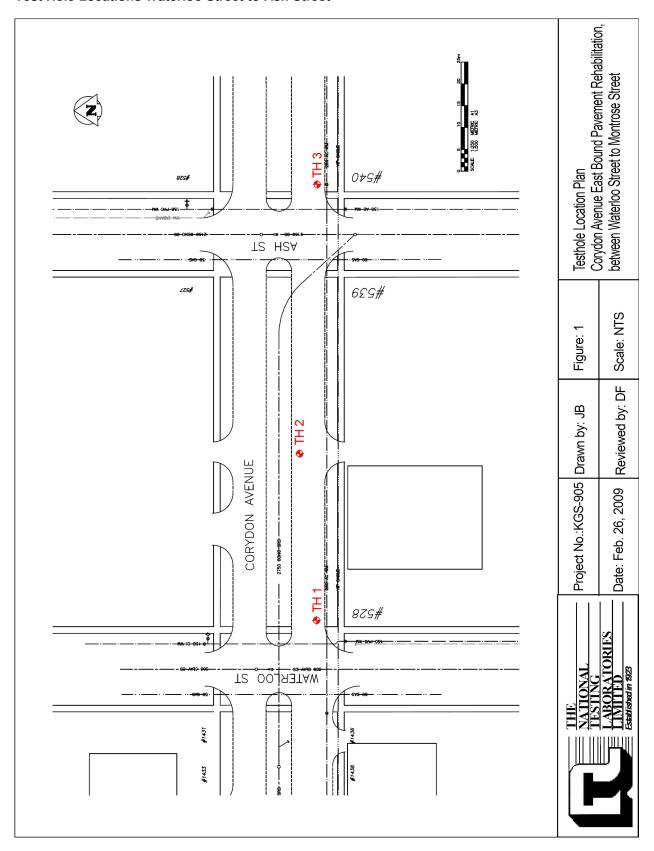
APPENDIX 'A' - GEOTECHNICAL REPORT

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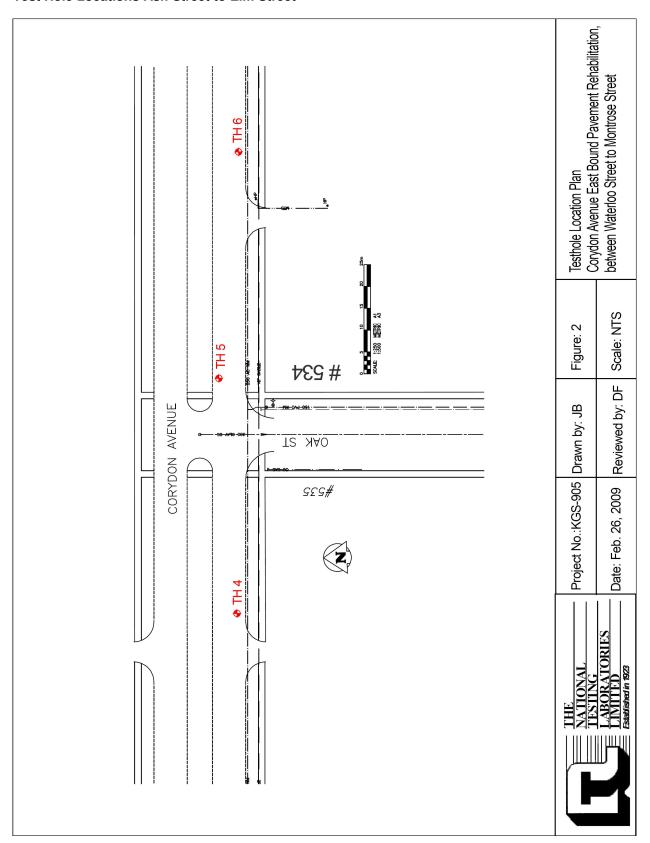
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The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. 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.

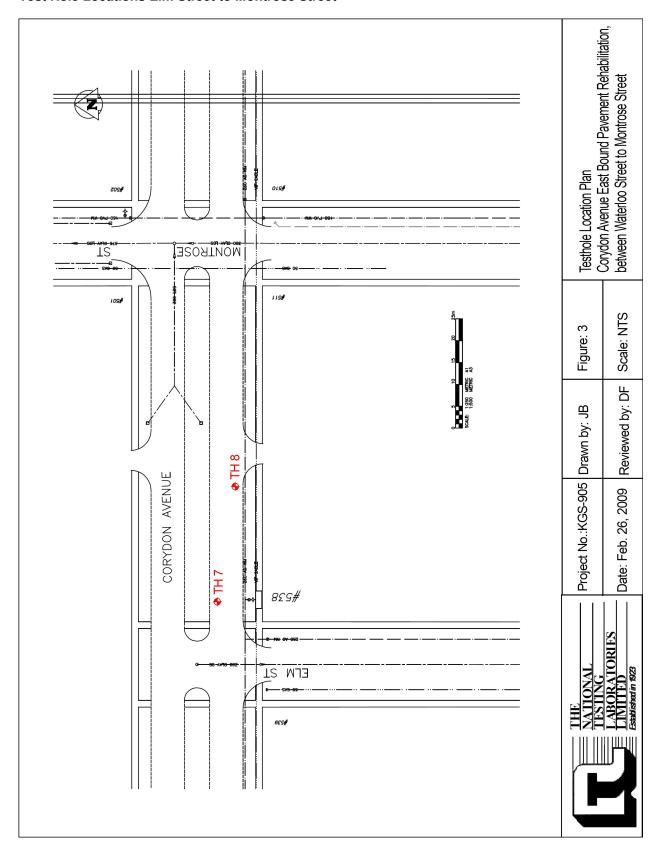
Test Hole Locations Waterloo Street to Ash Street



Test Hole Locations Ash Street to Elm Street



Test Hole Locations Elm Street to Montrose Street



Summary of Core Samples

Corydon Avenue Eastbound Waterloo Street to Montrose Street

		Pavemen	Pavement Surface	Pavement S	Pavement Structure Material		Sample	Moisture	Pa	Particle Size Analysis	Analysis	Ĺ,	ΑĦ	Atterberg Limits	nits
Testhole ID	Testhole Location	Туре	Thickness (mm)	Туре	Thickness (mm)	Sample Description	Depth (m)	Content (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid	Plastic Limit	Plasticity Index
TH.	Curb lane 1 m east of the west property line of 528 Waterloo St. 1.5 m from the south curb	Asphalt / Concrete	100 / 180	,		·									
TH2	Median lane 47 m east of the west property line of 528 Waterloo 5t. 1 5 m from the north curh	Asphalt / Concrete	70 / 230	1									ı		
TH3	Curb lane 2 m east of the west property line of 540 Ash St. 1.5 m from the south curb	Asphalt / Concrete	100 / 220	Granular Base	180	ı	-			-		1	ı	,	ı
TH4	Curb lane 31 m west of the east property line of 535 Oak St. 1.5 m from the south curb	Asphalt / Concrete	80 / 220	Granular Base	20	Clay	6.0	59	0.0	2.5	20.5	0.77	83	21	62
TH5	Median lane 11 m east of the west property line of 534 Oak St. 1.5 m from the north curb	Asphalt / Concrete	69 / 225	1	-				,	-			ı	,	
ТН6	Curb lane 55 m east of the west property line of 534 Oak St. 1.5 m from the south curb	Asphalt / Concrete	70 / 200	Crushed Limestone	320	Silt	6.0	20	0.2	6.4	71.2	22.2	24	17	7
TH7	Median lane 5 m east of the west property line of 538 Elm St. 1.5 m from the north curb	Asphalt / Concrete	70 / 187		-	-	-		i	-			1	í	
TH8	Curb lane 31 m east of the west property line of 538 Elm St. 1.5 m from the south curb	Asphalt / Concrete	91 / 210	ı	•	-	-	,	ı	-		,	ı		

Test Hole Log #1 for Corydon Avenue

TESTHOLE TH1

THE NATIONAL DESCRIPTION OF TH

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group

Date Drilled: January 30, 2009 Depth of Testhole: 2.1 m

Site: Waterloo to Montrose Street

Logged by: Kurtis Kulchyski

Testhole Location: Curb Lane / 1 m E of W property line of 528 Waterloo St. / 1.5 m from the curb

		Subsurface Profile		Labor	atory	Гesting
Depth (m)	Symbol	Description	0	Wa 20	ter Co (%) 40 6	ntent 0 80 100
0.0-		Ground Surface				
0.0		Asphalt				
-		Concrete		3	 	
- 0.5– - -		Clay - black, stiff, moist, high plasticity with trace of fine gravel at 0.3 m - brown below 0.4 m - some layers of tan silt below 0.8 m		3.		
- 1.0- - -		Silt - grey, firm, moist, low plasticity - tan below 1.1 m		2/1		
- 1.5- - -		Clay - brown, stiff, moist, high plasticity		3	2	
2.0- - - - -		Frost present to 1.4 m No water seepage or sloughing observed during or upon completion of drilling Testhole was terminated at 2.1 m			34	
2.5-						

Test Hole Log #2 for Corydon Avenue

TESTHOLE TH2

THE NATIONAL TESTING LABORATORIES LABORATORIES LABITATION IN THE NATIONAL TESTING LABORATORIES LABITATION IN THE NATIONAL TESTING LABORATORIES LABITATION IN THE NATIONAL TESTING LABITATION IN

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group Site: Waterloo to Montrose Street Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Testhole Location: Median Lane / 40 m E of W property line of 528 Waterloo St. / 1.5 m from the curb

		Subsurface Profile	\perp	Labo	rator	y Tes	sting
Depth (m)	Symbol	Description	0 1	W a 20	40	Conte	ent 80 100
0.0-		Ground Surface	Jt				
0.0-		Asphalt	\prod				
-		Concrete					
- 0.5– - -		Clay - brown, stiff, moist, high plasticity with trace of fine gravel to 0.5 m - trace of gypsum and silt below 0.6 m - layers of tan silt below 1.1 m		26) 		
- 1.0- - -				24	7		
- 1.5- - - -		Silt - tan, firm, moist, low plasticity		25			
2.0-		 Frost present to 1.5 m No water seepage observed during or upon completion of drilling Sloughing observed below 1.8 m Testhole was terminated at 2.1 m 		23			
2.5-							

Test Hole Log #3 for Corydon Avenue

TESTHOLE TH3

IHE NATIONAL IESING LABORATORIES LIMITED DO

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group Site: Waterloo to Montrose Street Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Testhole Location: Curb Lane / 2 m E of W property line of 540 Ash St. / 1.5 m from the curb

		Subsurface Profile	\perp	Laboratory T	esting
Depth (m)	Symbol	Description	0	Water Cor (%) 20 40 60	ntent 0 80 100
0.0-		Ground Surface	#		
-		Asphalt	_		
-		Concrete			
- -0.5	2002 200 2003 200 2003 200	Granular Base - 20 mm maximum aggregate size			
0.5- - -		Clay - brown, stiff, moist, high plasticity with trace of fine gravel to 0.8 m - layers of tan silt below 1.0 m		30	
- 1.0-				34	
- - - 1.5- -		Silt - tan, firm, moist, low plasticity		24 25	
- 2.0-		Clay - brown, stiff, moist, high plasticity		31	
- - -		 Frost present to 1.5 m No water seepage observed during or upon completion of drilling Sloughing observed below 1.9 m Testhole was terminated at 2.1 m 			
2.5-	-				

Test Hole Log #4 for Corydon Avenue

TESTHOLE TH4



Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group Site: Waterloo to Montrose Street Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Testhole Location: Curb Lane / 31m W of E property line of 535 Oak St. / 1.5 m from the curb

		Subsurface Profile				Labora	tory 1	Γestin	g		
Depth (m)	Symbol	Description	PL - 0 L	Wate : 25	Conte	ent (%) 75	LL 100	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
0.0-		Ground Surface	<u> </u>								
0.0		Asphalt									
-		Concrete				! ! !					
_		Granular Base	11			i					
0.5- - - -		- 20 mm maximum aggregate size Clay - grey, stiff, moist, high plasticity with trace fine gravel to 0.5 m - brown below 0.5 m - layers of tan silt between 1.2 m to 1.5 m - layers of silty clay at 2.0 m		23				0.0	2.5	20.5	77.0
1.0- - - -				30							
1.5- - - -				32	6						
2.0-					41	***					
- - - 2.5		 Frost present to 1.5 m No water seepage or sloughing observed during or upon completion of drilling Testhole was terminated at 2.1 m 									

Test Hole Log #5 for Corydon Avenue

TESTHOLE TH5

THE NATIONAL TESTING LABORATORIES LAMITED LAMITED

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group Site: Waterloo to Montrose Street Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Testhole Location: Median Lane / 3 m E of W property line of 534 Oak St. / 1.5 m from the curb

		Subsurface Profile		Labor	atory Te	sting
Depth (m)	Symbol	Description	0		(%) 40 60	
0.0-		Ground Surface				
0.0-		Asphalt				
-		Concrete			37	
- - 0.5		Clay - brown, stiff, moist, high plasticity with layers of tan silt				
-		Silt - tan, firm, moist, low plasticity - layers of brown clay to 0.8 m		26		
1.0- -		Clay		24	35	
- - 1.5- -		- brown, stiff, moist, high plasticity			37	
2.0- -		For all and a second to 4.7 as			35	
- - 2.5-		 Frost present to 1.7 m No water seepage or sloughing observed during or upon completion of drilling Testhole was terminated at 2.1 m 				

Test Hole #6 for Corydon Avenue

TESTHOLE TH6

THE NATIONAL LESTING LABORATORIES LIMITED

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group

Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Site: Waterloo to Montrose Street

Testhole Location: Curb Lane / 55 m E of W property line of 534 Oak St. / 1.5 m from the curb

		Subsurface Profile			ı	_abora	tory 1	Γestin	g		
Depth (m)	Symbol	Description	PL ·	Wate	r Conte	nt (%)	LL 100	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
		Ground Surface	+								
0.0-		Asphalt	-								
-		Concrete									
- 0.5-		Crushed Limestone - 20 mm maximum aggregate size									
-	-	Silt - tan, firm, moist, low plasticity, some sand and fine gravel - layers of brown clay below 1.7 m		20				0.2	6.4	71.2	22.2
1.0- - - -	-			24							
- 1.5- - -				24							
2.0- -		Clay - brown, stiff, moist, high plasticity			40						
- - 2.5		 Frost present to 1.7 m No water seepage during or upon completion of drilling Sloughing observed below 1.8 m Testhole was terminated at 2.1 m 									

Test Hole #7 for Corydon Avenue

TESTHOLE TH7

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group

Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Site: Waterloo to Montrose Street

Testhole Location: Median Lane / 5 m E of W property line of 538 Elm St. / 1.5 m from the curb

		Subsurface Profile		Laboratory Testing
Depth (m)	Symbol	Description	o_	Water Content (%) 20 40 60 80 100
0.0		Ground Surface	\dashv	
0.0-		Asphalt		
-		Concrete		50
- - 0.5		Clay - brown, stiff, moist, high plasticity with layers of silt below 0.5 m		53
0.5- - -				39
1.0-				35
1.5- - 		Silt - tan, firm, moist, low plasticity		28
- 2.0-		Clay - brown, stiff, moist, high plasticity with layers of silt below 1.9 m		42
- - 2.5-		 Frost present to 1.7 m No water seepage or sloughing observed during or upon completion of drilling Testhole was terminated at 2.1 m 		

Test Hole #8 for Corydon Avenue

TESTHOLE TH8

THE NATIONAL LESTING LABORATORIES LIMITED

Project Name: Corydon Avenue E.B. Pavement Rehabilitation

Client: KGS Group

Depth of Testhole: 2.1 m Logged by: Kurtis Kulchyski

Date Drilled: January 30, 2009

Site: Waterloo to Montrose Street

Testhole Location: Curb Lane / 31 m E of W property line of 538 Elm St. / 1.5 m from the curb

	,	Subsurface Profile		Labo	rator	y Tes	sting
Depth (m)	Symbol	Description	O _L	W a 20	40	6)	e nt 80 100
0.0-		Ground Surface	#				
-		Asphalt Concrete	$\ $				
-		Clay - black, stiff, moist, high plasticity with layers of silt	-				20 00 00 EE 00 00 00 00 00 00 00 00 00 00
0.5- - - - 1.0-		Silt - tan, firm, moist, low to intermediate plasticity with layers of brown clay		21	36		
- - - 1.5		Clay - brown, stiff, moist, high plasticity with layers of tan clayey silt between 1.8 m to 1.9 m			35		
- - - 2.0-					42		
- - -		 Frost present to 1.7 m No water seepage during or upon completion of drilling Sloughing observed below 1.8 m Testhole was terminated at 2.1 m 					

Pavement Core Photos



Testhole TH1



Testhole TH3



Testhole TH2



Testhole TH4

Pavement Core Photos



Testhole TH5





Testhole TH7



Testhole TH8