

APPENDIX 'A'

GEOTECHNICAL REPORT

APPENDIX 'A' - GEOTECHNICAL REPORT

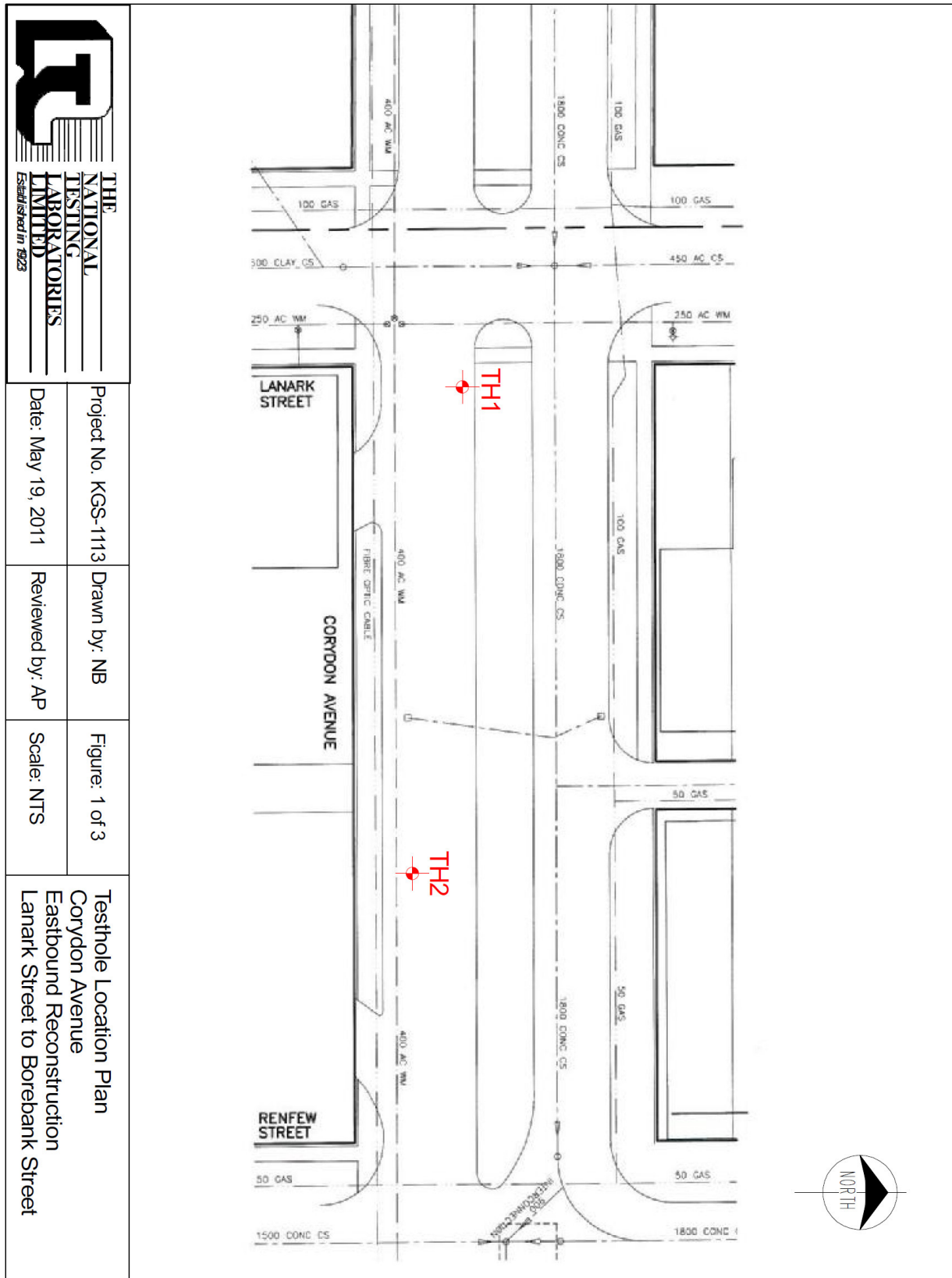
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The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling.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

Test Hole Locations



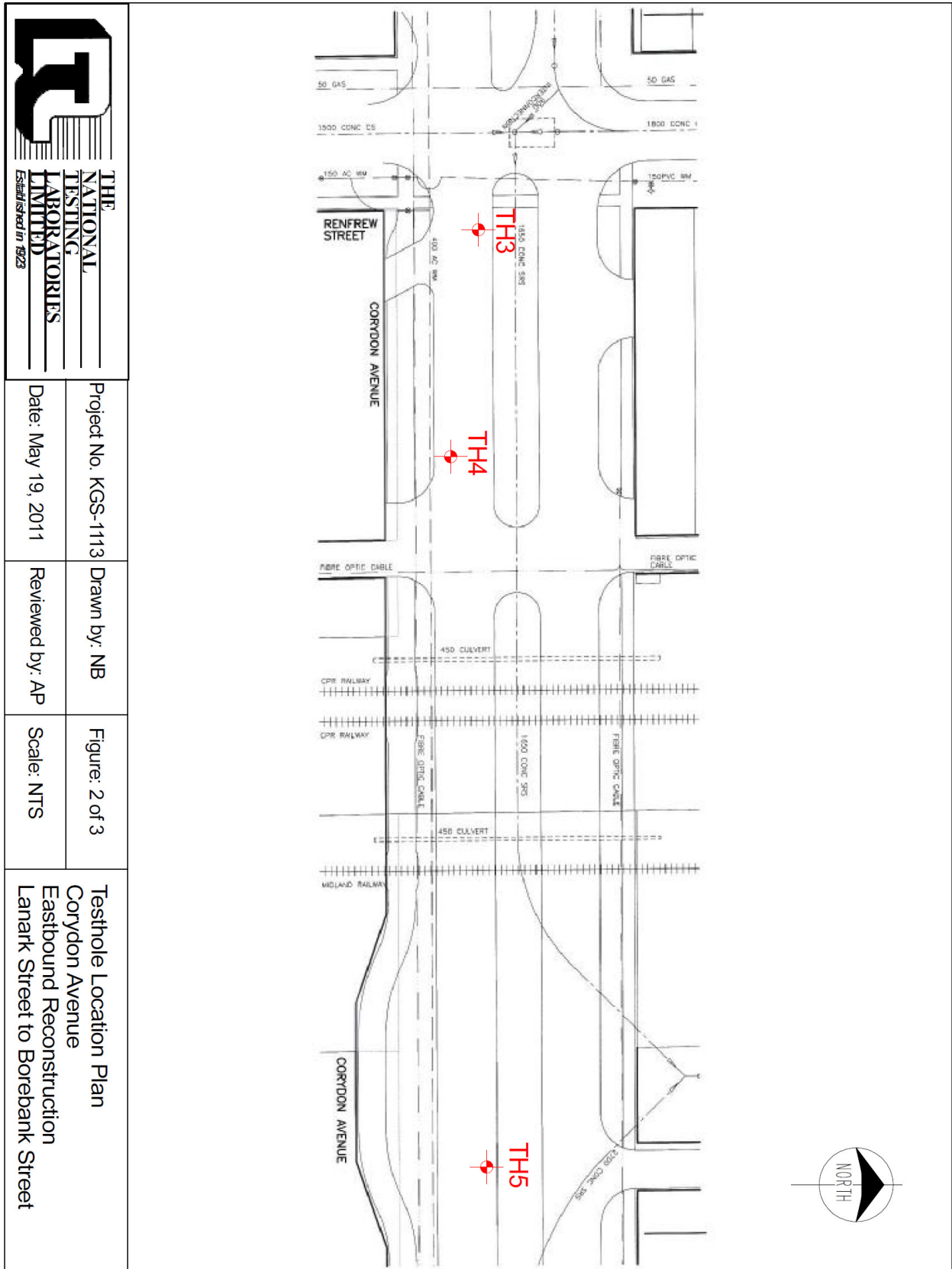
Project No. KGS-1113
 Date: May 19, 2011

Drawn by: NB
 Reviewed by: AP

Figure: 1 of 3
 Scale: NTS

Testhole Location Plan
 Corydon Avenue
 Eastbound Reconstruction
 Lanark Street to Borebank Street

Test Hole Locations



THE NATIONAL TESTING LABORATORIES LIMITED
 Established in 1923

Project No. KGS-1113

Date: May 19, 2011

Drawn by: NB

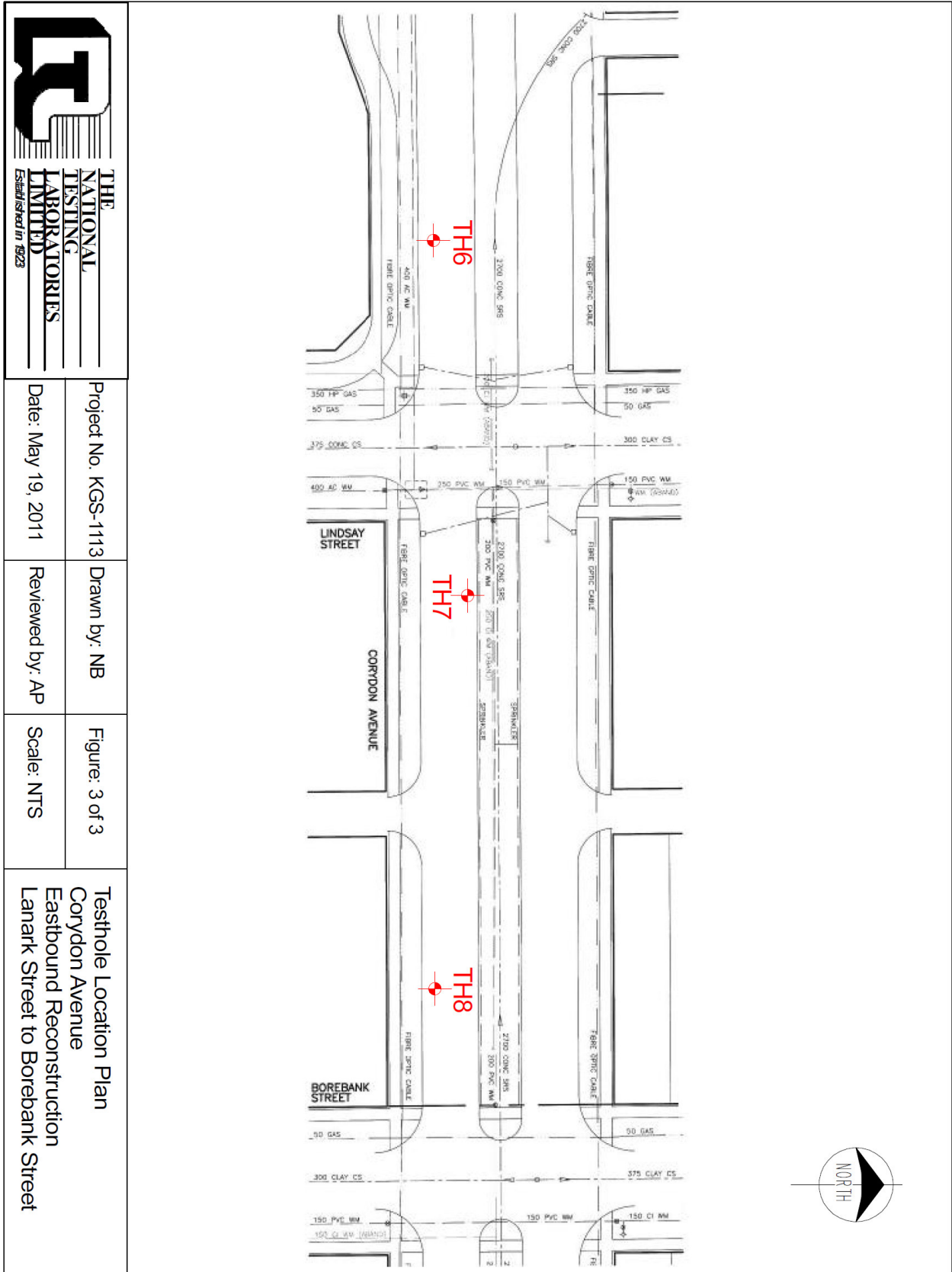
Reviewed by: AP

Figure: 2 of 3

Scale: NTS

Testhole Location Plan
 Corydon Avenue
 Eastbound Reconstruction
 Lanark Street to Borebank Street

Test Hole Locations



Project No. KGS-1113
 Date: May 19, 2011

Drawn by: NB
 Reviewed by: AP

Figure: 3 of 3
 Scale: NTS

Testhole Location Plan
 Corydon Avenue
 Eastbound Reconstruction
 Lanark Street to Borebank Street

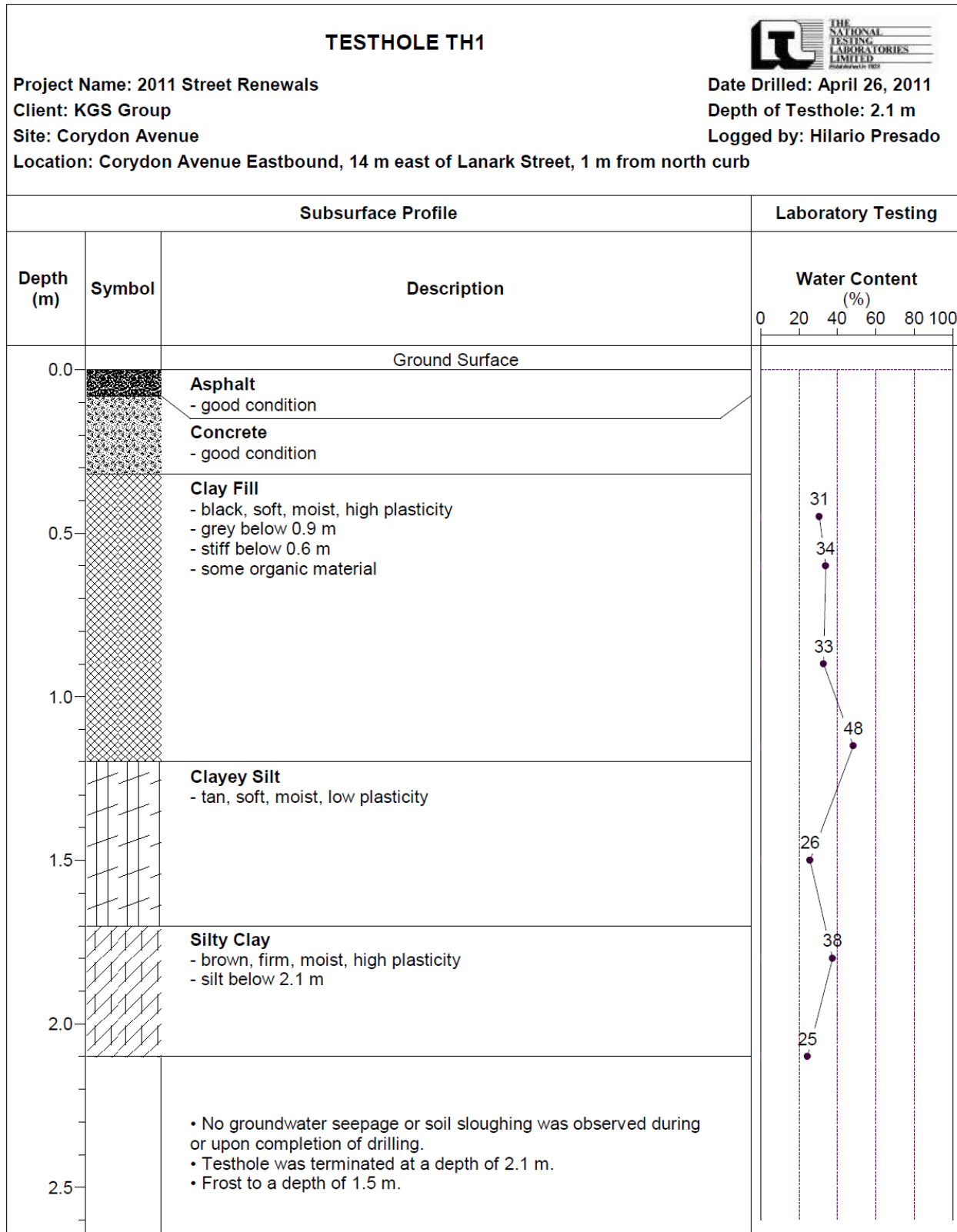
Summary of Core Samples

Corydon Avenue Eastbound Reconstruction Lanark Street to Borebank Street

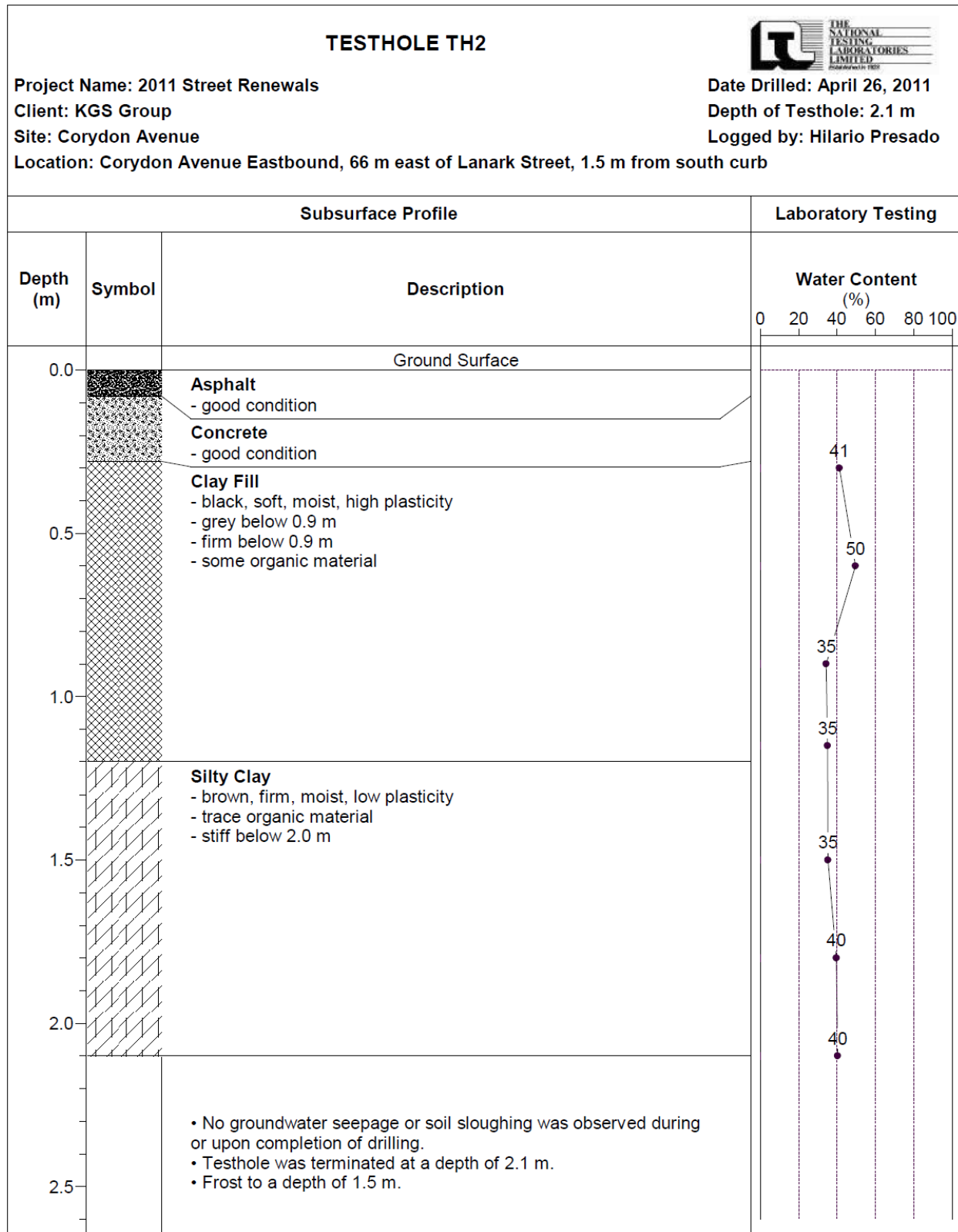
Testhole ID	Testhole Location	Pavement Surface		Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits		
		Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	Corydon Avenue Eastbound 14 m east of Lanark Street 1 m from north curb	Asphalt / Concrete	80 / 240	-	-	-	-	-	-	-	-	-	-
TH2	Corydon Avenue Eastbound 66 m east of Lanark Street 1.5 m from south curb	Asphalt / Concrete	80 / 200	-	-	-	-	-	-	-	-	-	-
TH3	Corydon Avenue Eastbound 9 m east of Renfrew Street 1.5 m from north curb	Asphalt / Concrete	70 / 200	Clayey Silt	0.9	29	0.1	7.6	68.2	24.1	30	18	12
TH4	Corydon Avenue Eastbound 30 m east of Renfrew Street 1.5 m from south curb	Asphalt / Concrete	70 / 190	-	-	-	-	-	-	-	-	-	-
TH5	Corydon Avenue Eastbound 67 m east of St. John Franklin Street 1.5 m from north curb	Asphalt / Concrete	135 / 240	-	-	-	-	-	-	-	-	-	-
TH6	Corydon Avenue Eastbound 102 m east of St. John Franklin Street 1.5 m from south curb	Asphalt / Concrete	90 / 230	-	-	-	-	-	-	-	-	-	-
TH7	Corydon Avenue Eastbound 15 m east of Lindsay Street 1 m from north curb	Asphalt / Concrete	120 / 230	-	-	-	-	-	-	-	-	-	-
TH8	Corydon Avenue Eastbound 66 m east of Lindsay Street 1.5 m from south curb	Asphalt / Concrete	65 / 170	Clay Fill	0.6	34	6.0	16.8	34.3	42.9	55	19	36

Note: Clay fill encountered beneath concrete pavement in all testholes.




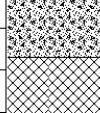
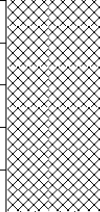
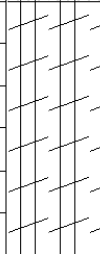
Test Hole Log #1 for Corydon Avenue



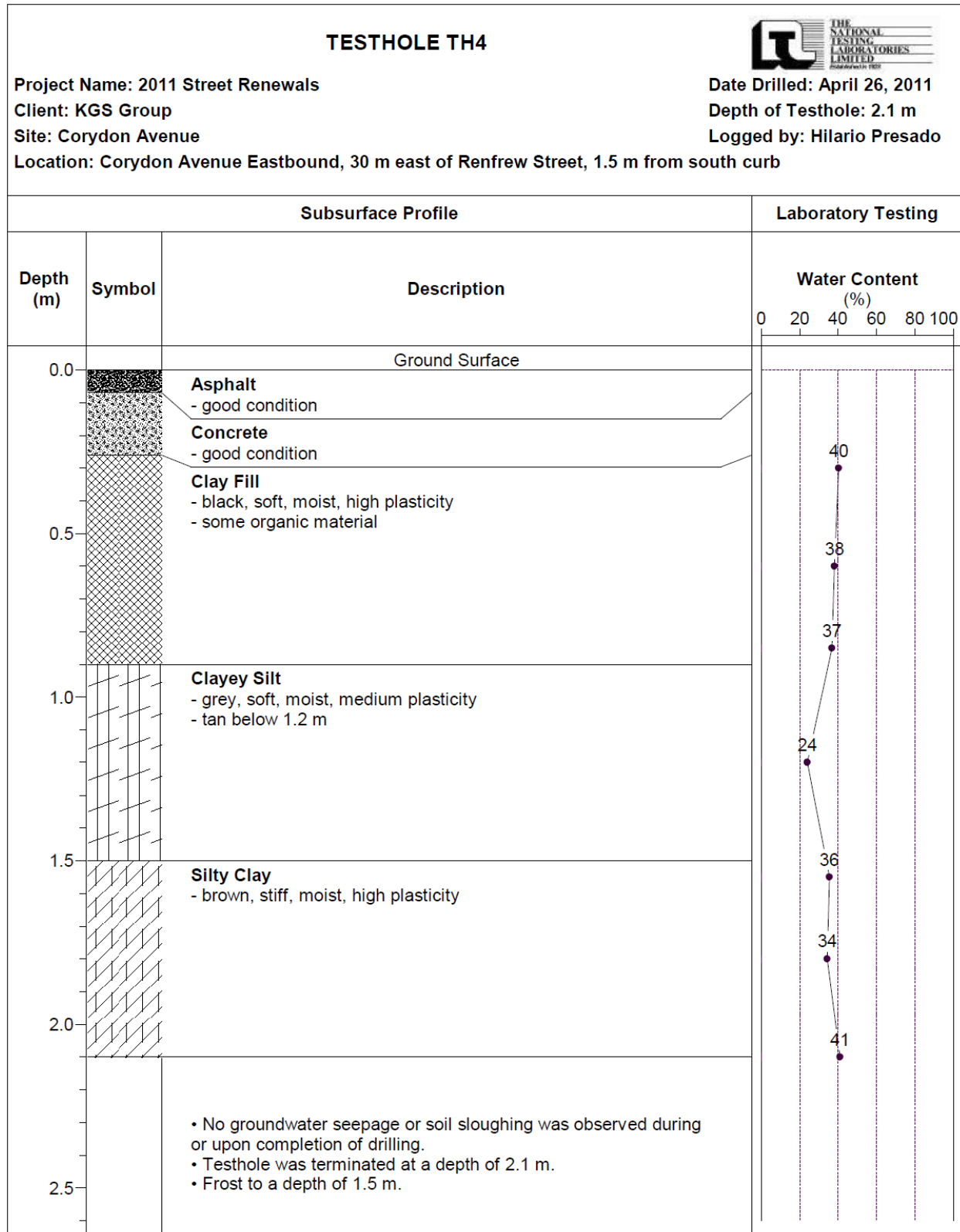
Test Hole Log #2 for Corydon Avenue



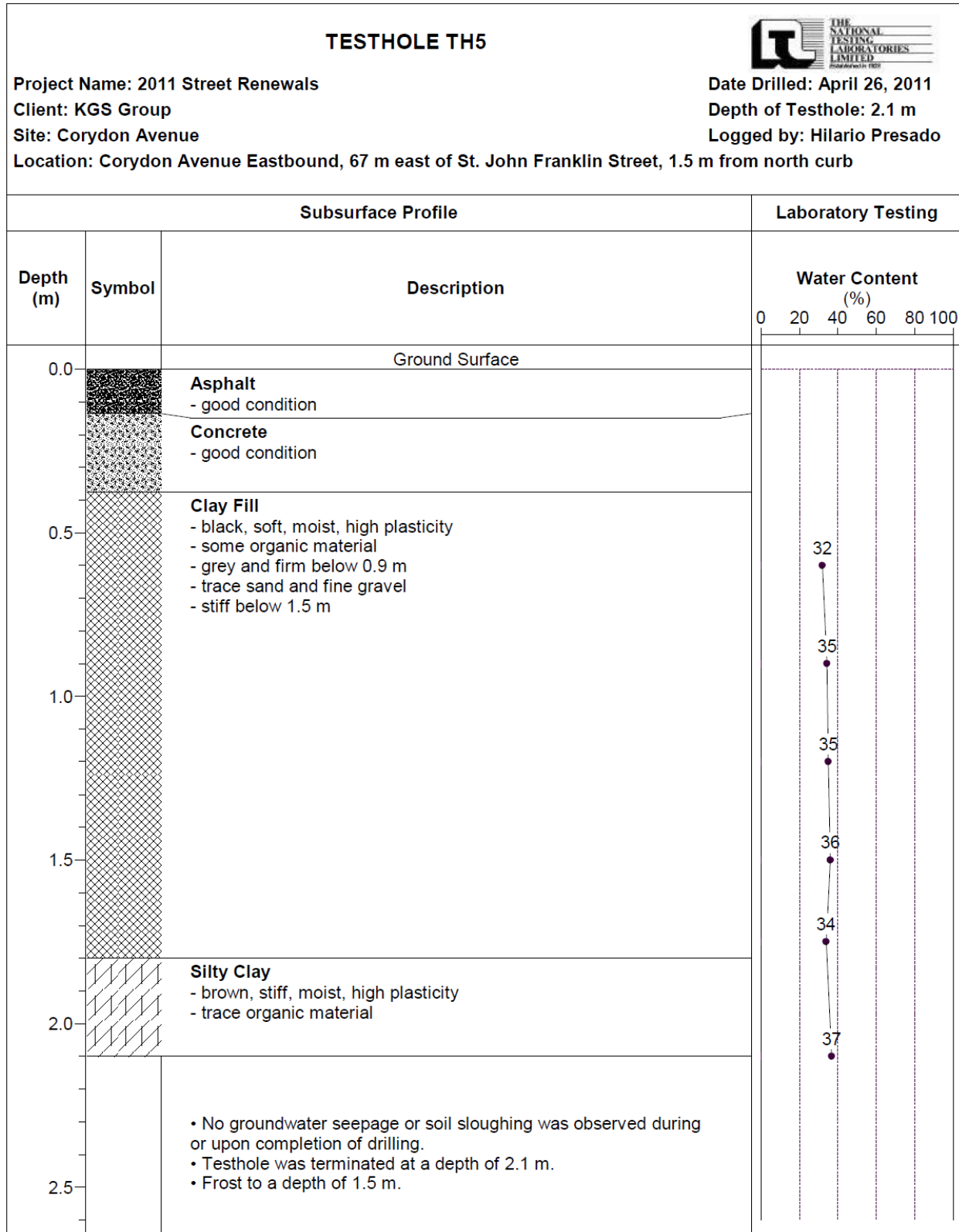
Test Hole Log #3 for Corydon Avenue

TESTHOLE TH3								
Project Name: 2011 Street Renewals Client: KGS Group Site: Corydon Avenue Location: Corydon Avenue Eastbound, 9 m east of Renfrew Street, 1.5 m from north curb			Date Drilled: April 26, 2011 Depth of Testhole: 2.1 m Logged by: Hilario Presado					
Subsurface Profile			Laboratory Testing					
Depth (m)	Symbol	Description	Water Content (%)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)
			PL	LL				
0.0		Ground Surface						
0.0 - 0.1		Asphalt - good condition						
0.1 - 0.3		Concrete - good condition						
0.3 - 0.9		Clay Fill - black, soft, moist, high plasticity - grey below 0.6 m - some organic material						
0.9 - 1.5		Clayey Silt - tan, soft, moist, medium plasticity	29	40	0.1	7.6	68.2	24.1
1.5 - 2.1		Silty Clay - brown, firm, moist, high plasticity - trace organic material - stiff below 2.0 m	26	39				
2.1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.5 m. 	42	41				
2.1			38					

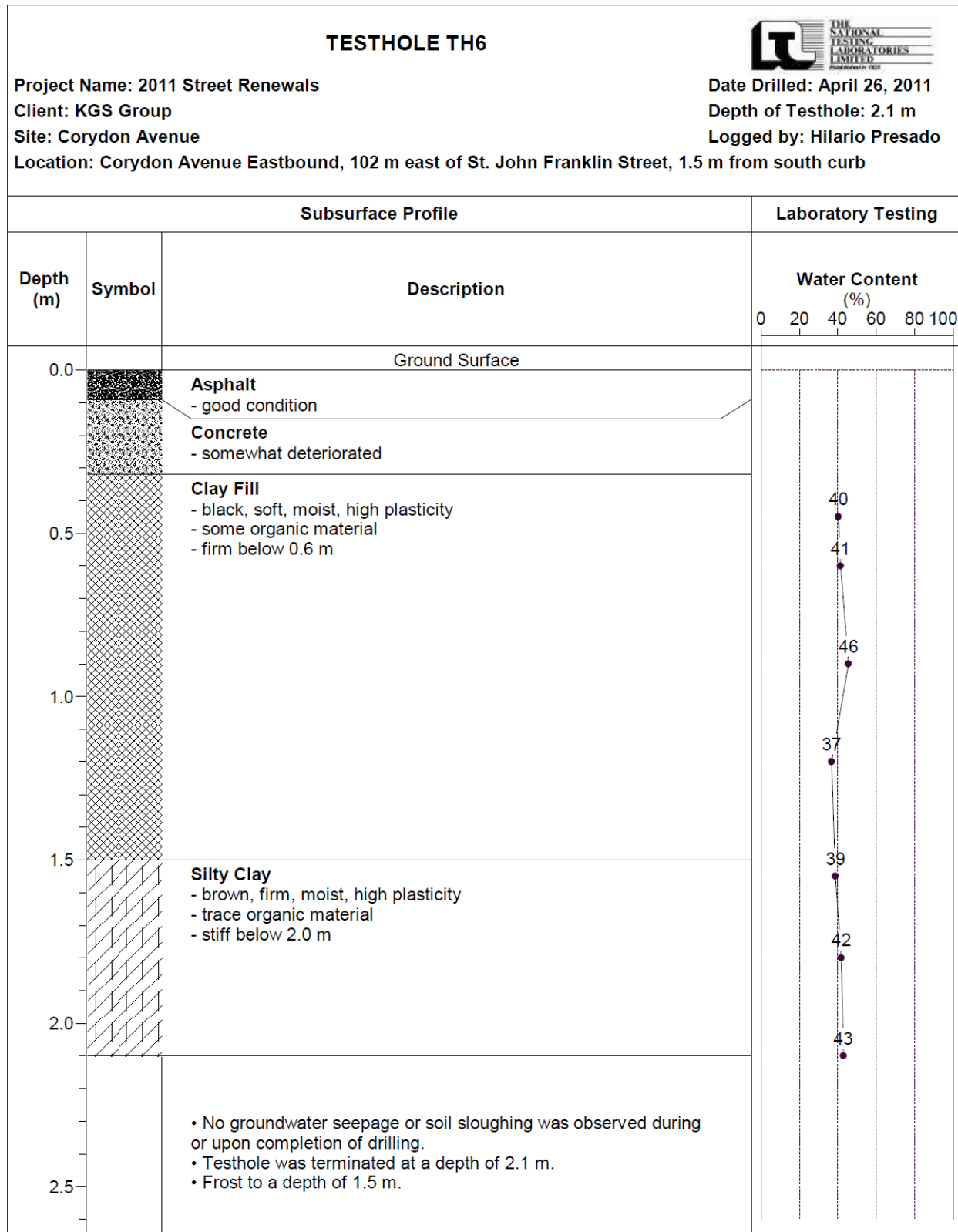
Test Hole Log #4 for Corydon Avenue



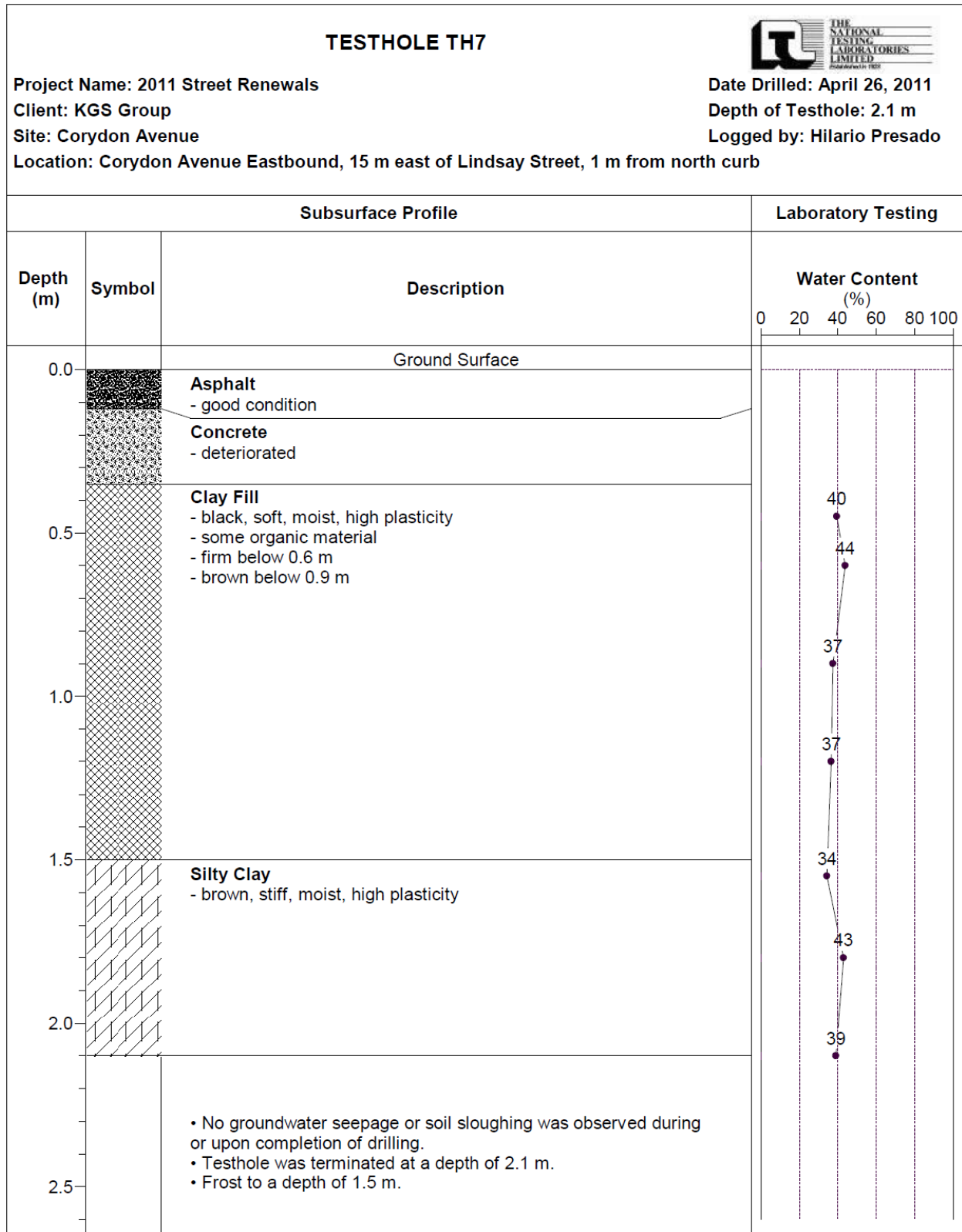
Test Hole Log #5 for Corydon Avenue



Test Hole Log #6 for Corydon Avenue



Test Hole Log #7 for Corydon Avenue



Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3

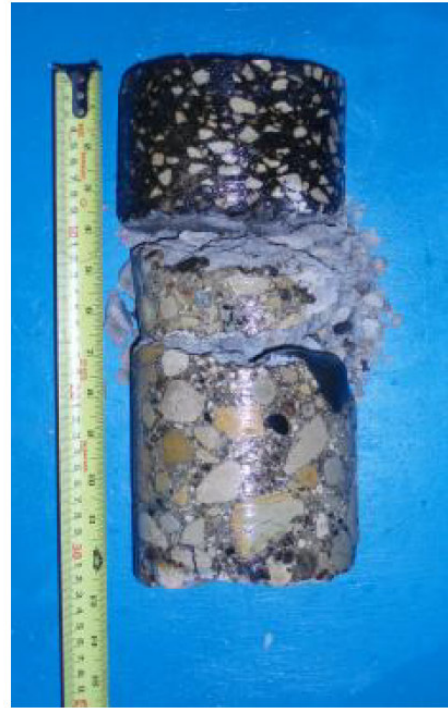


Core sample from Testhole TH4

Pavement Core Photos



Core sample from Testhole TH5



Core sample from Testhole TH6



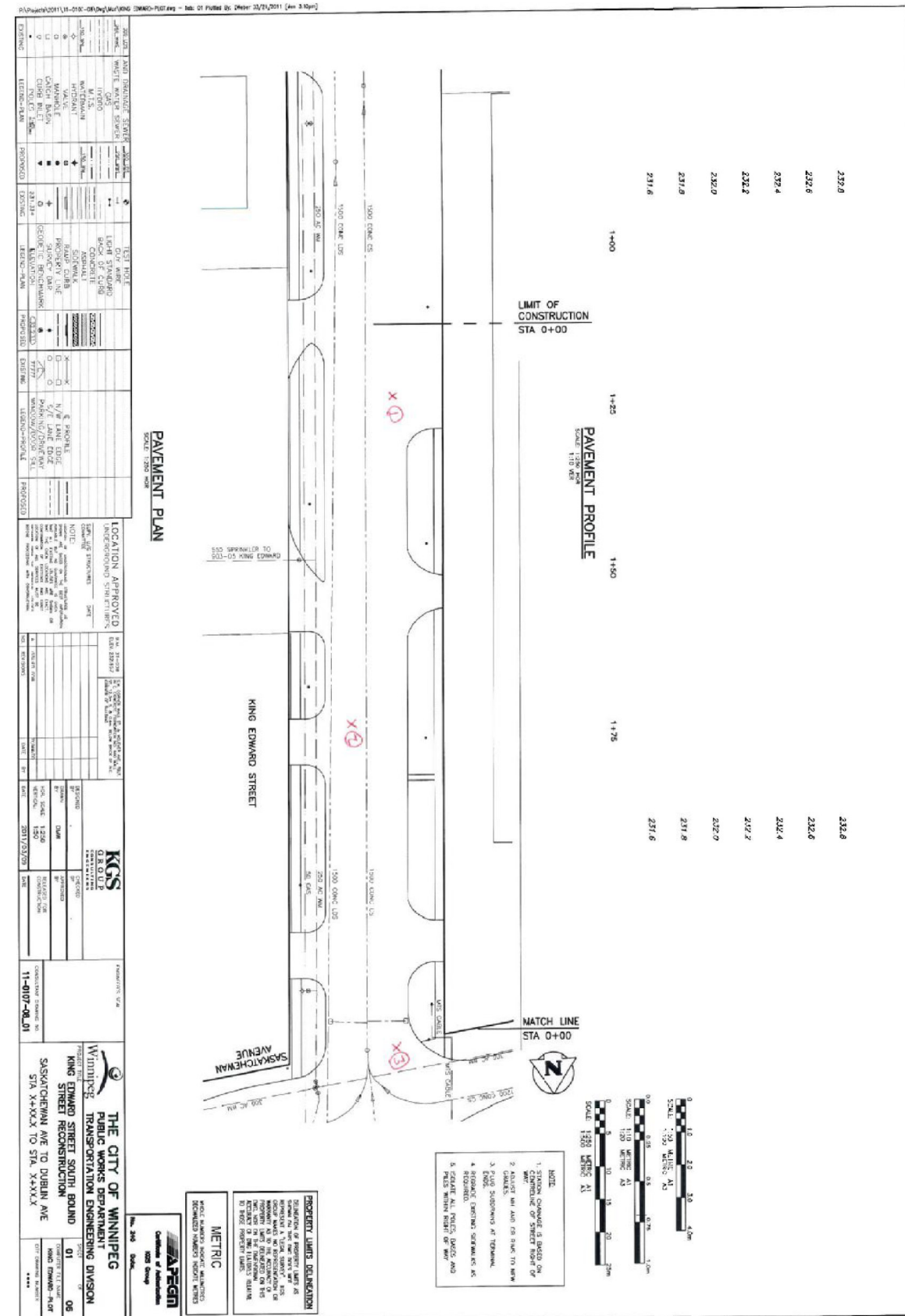
Core sample from Testhole TH7



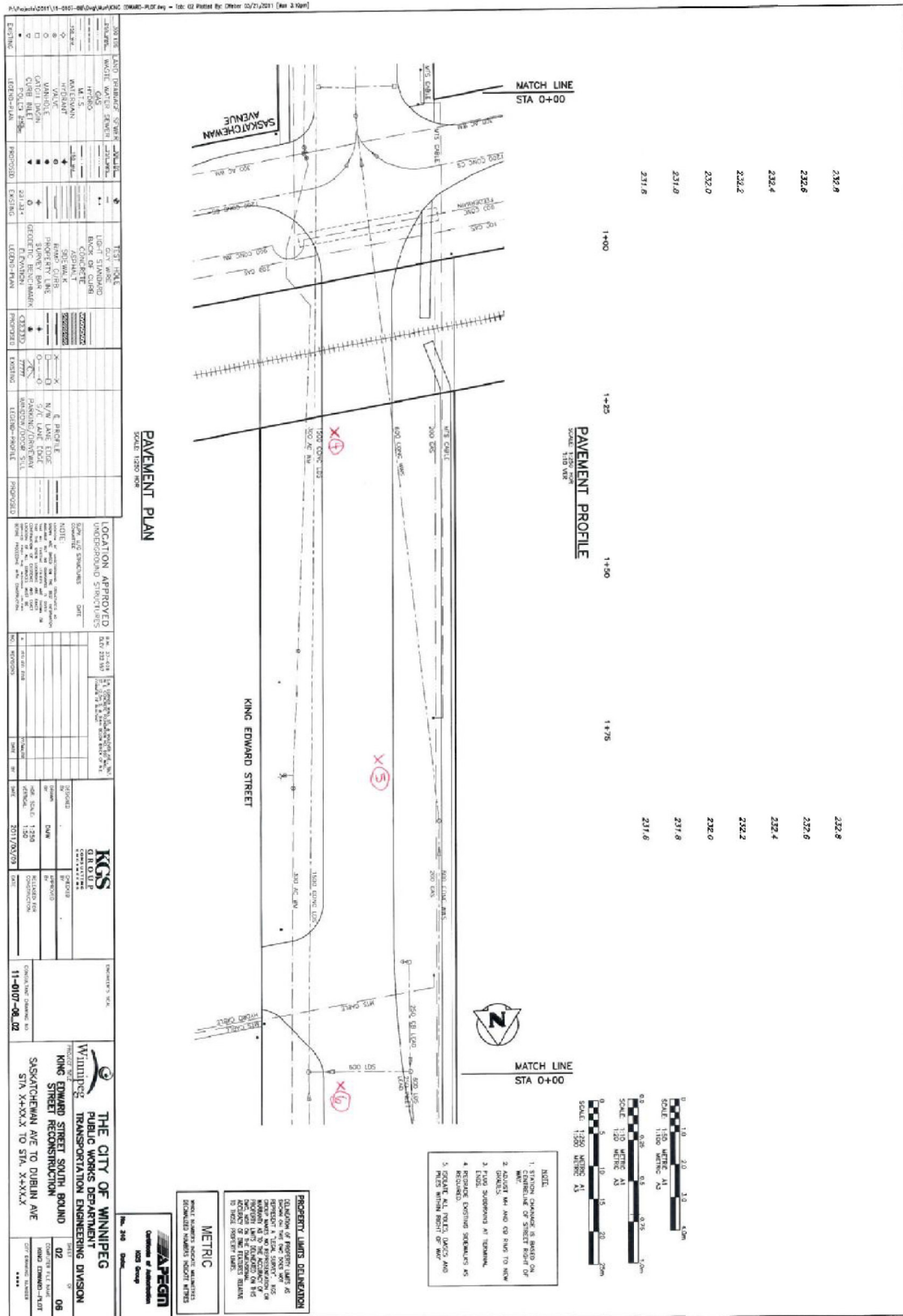
Core sample from Testhole TH8

Geotechnical Report for King Edward Street Southbound

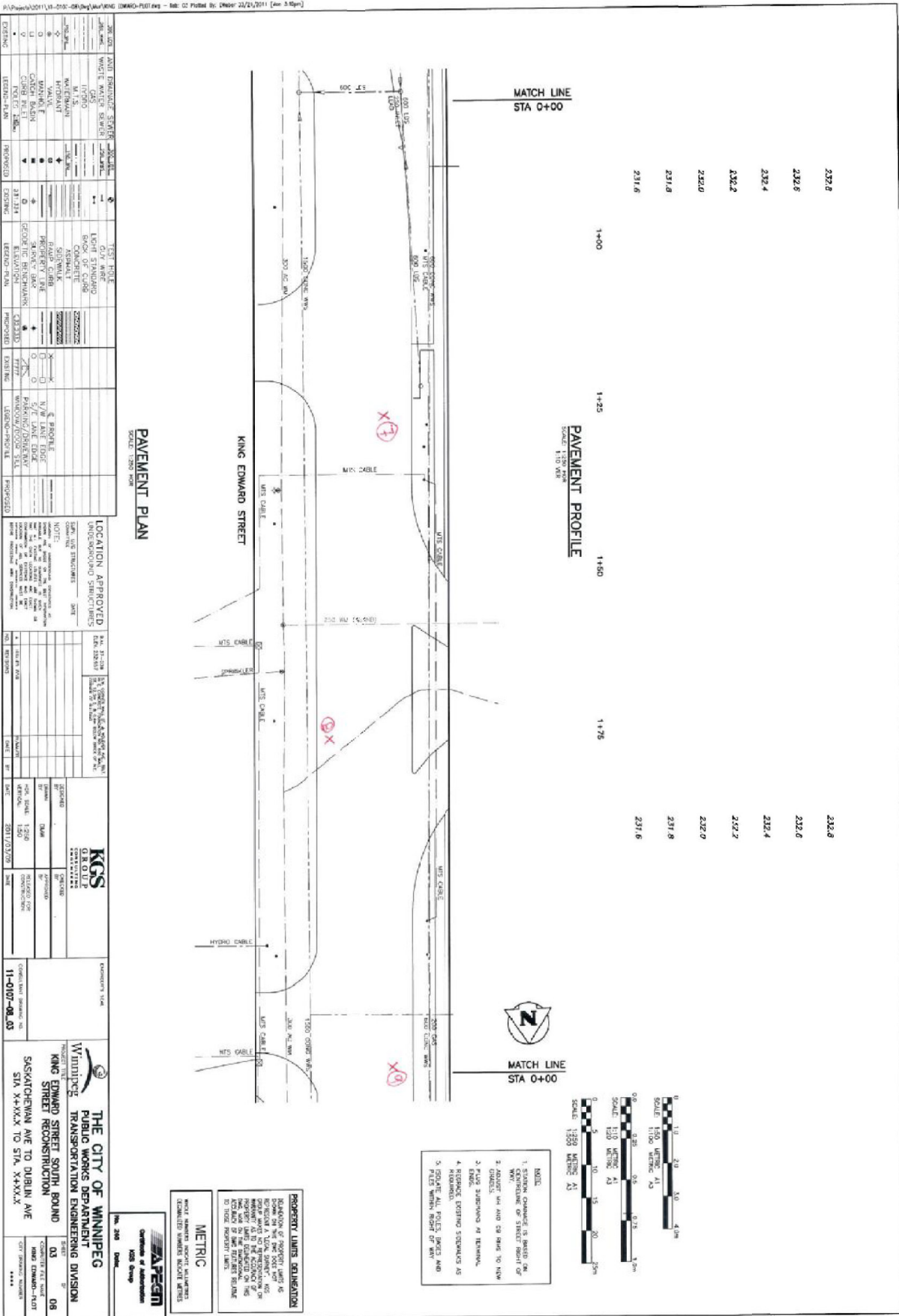
Test Hole Locations



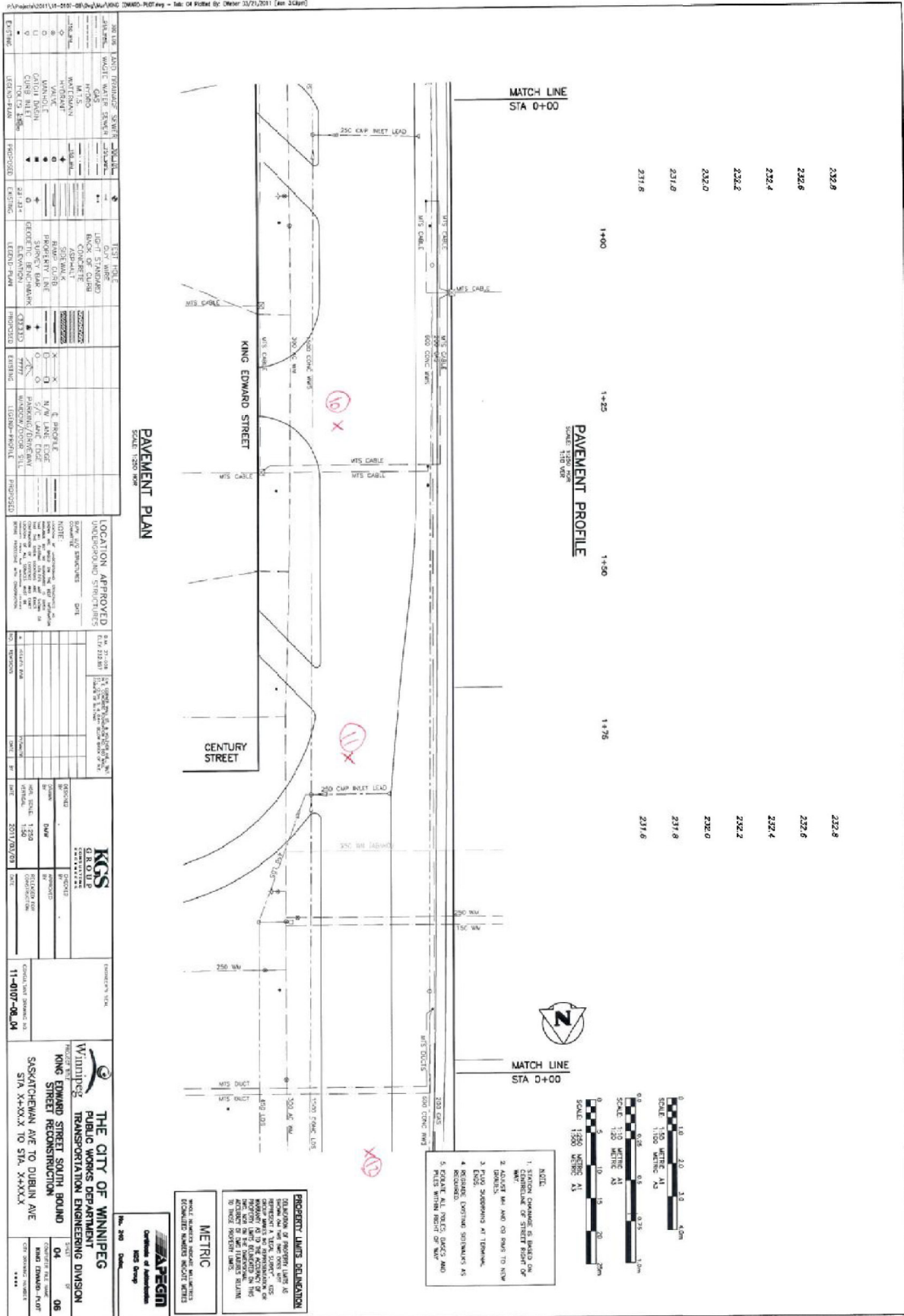
Test Hole Locations



Test Hole Locations



Test Hole Locations



<p>TEST HOLE</p> <p>TEST HOLE NO. 10, 11, 12</p> <p>TEST HOLE DEPTH (mm)</p> <p>TEST HOLE LOCATION</p> <p>TEST HOLE DATE</p> <p>TEST HOLE OPERATOR</p> <p>TEST HOLE REPORT NO.</p>	<p>LOCATION APPROVED</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>	<p>PROPOSED</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>	<p>EXISTING</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>
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<p>PAVEMENT PLAN</p> <p>SCALE: 1:200</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>	<p>PAVEMENT PROFILE</p> <p>SCALE: 1:100</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>
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<p>PROPERTY LIMITS DEMONSTRATION</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>	<p>METRIC</p> <p>DATE: 11-07-08</p> <p>BY: [Signature]</p> <p>FOR: [Signature]</p>
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THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 TRANSPORTATION ENGINEERING DIVISION

Winnipeg
 KING EDWARD STREET SOUTH BOUND
 STREET RECONSTRUCTION
 STA. 4+00.00 TO STA. 4+40.00

DATE: 11-07-08
 BY: [Signature]
 FOR: [Signature]

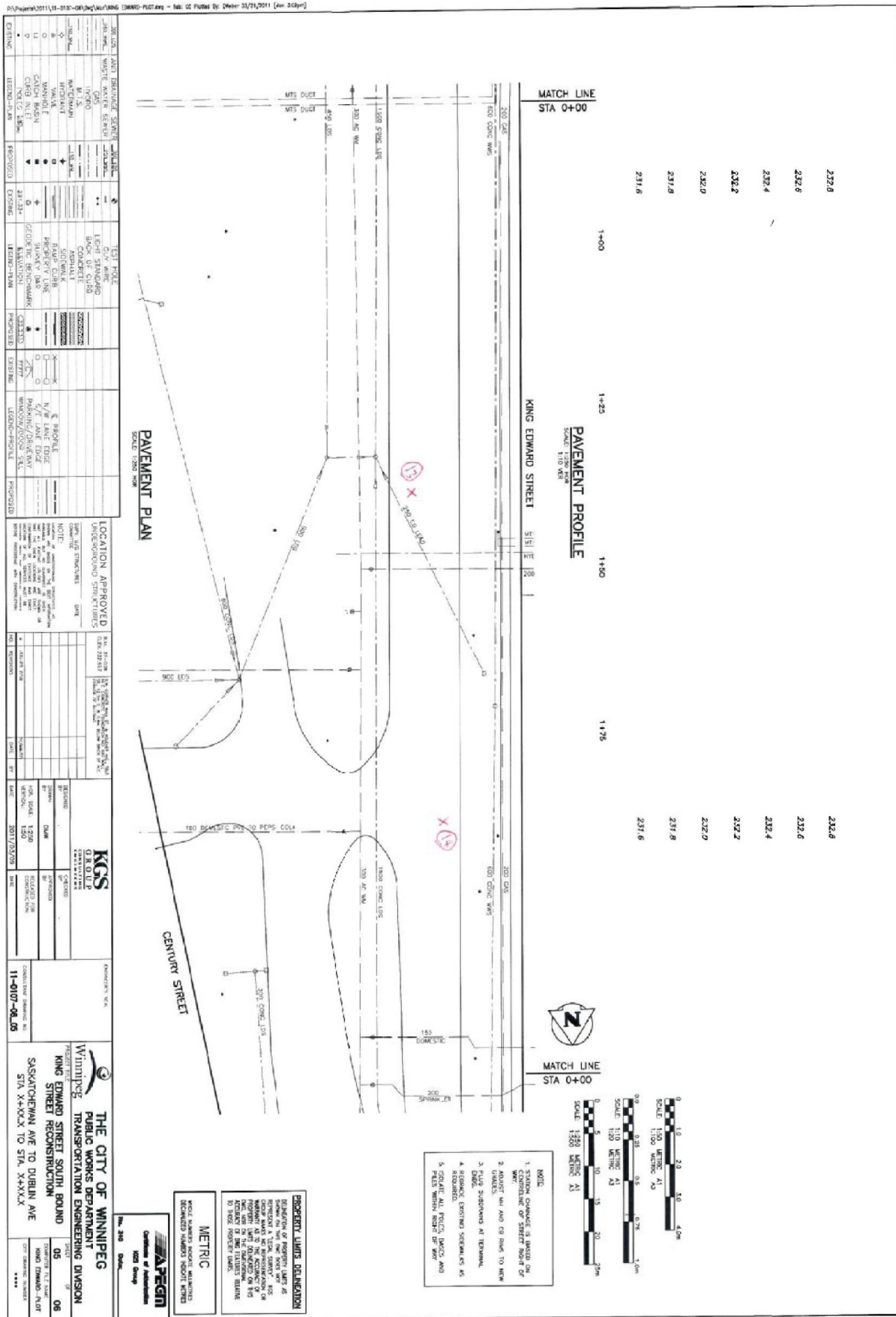
PROJECT NO. 11-017-08.04

CONSULTANT: [Signature]

DATE: 11-07-08

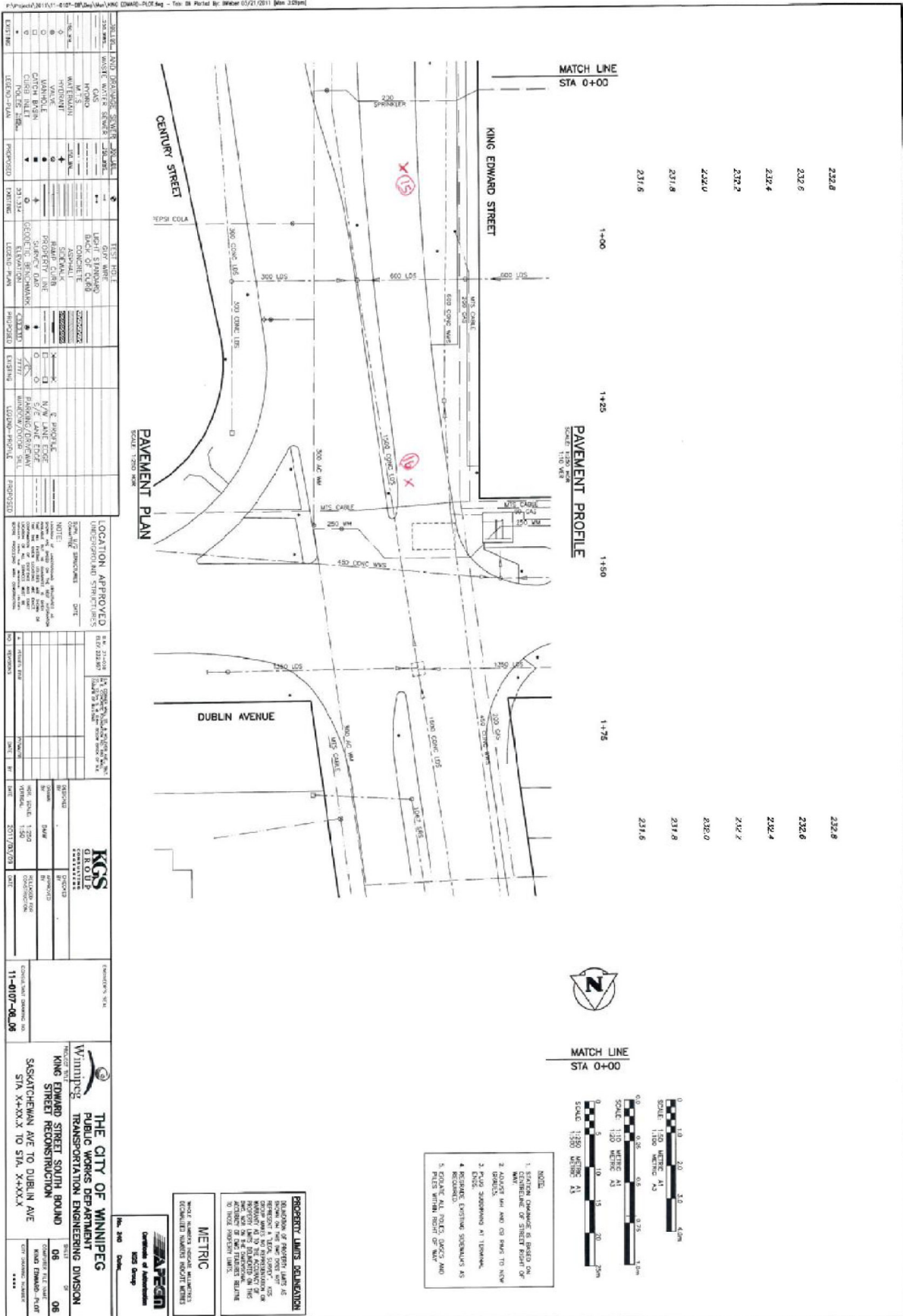
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Test Hole Locations



Template Version: C420110321 - RW

Test Hole Locations



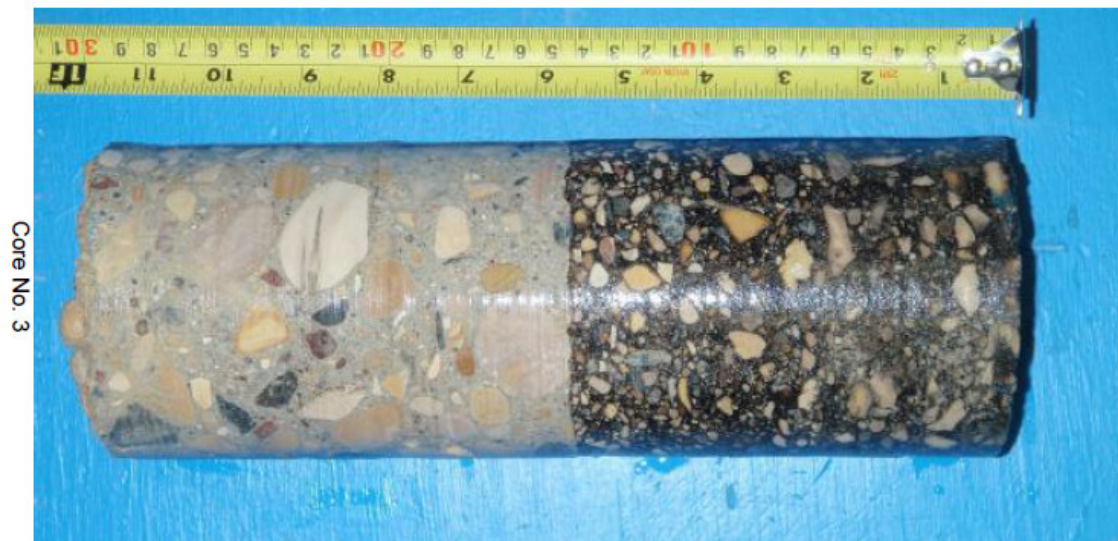
Summary of Core Samples

TABLE 1
KING EDWARD STREET
DUBLIN AVENUE TO SASKATCHEWAN AVENUE



Core No.	Core Location	Pavement Structure Thickness (mm)			Remarks
		Asphalt	Concrete	Total	
1	median lane, 2 m from east curb 14628768E, 5529583N	110	240	350	Sound concrete Granular base below pavement structure
2	centre lane, 4.7 m from west curb 14628769E, 5529647N	65	155	220	Sound concrete Clay subgrade below pavement structure
3	curb lane, 1.4 m from west curb 14628764E, 5529709N	140	155	295	Sound concrete Granular base below pavement structure
4	median lane, 1.4 m from east curb 14628790E, 5529757N	95	195	290	Asphalt pavement not bonded to concrete surface Sound concrete Granular base below pavement structure
5	centre lane, 5.8 m from east curb 14628770E, 5529784N	30	180	210	Sound concrete Granular base below pavement structure
6	curb lane, 2 m from west curb 14628769E, 5529828N	45	195	240	Asphalt pavement not bonded to concrete surface Sound concrete Granular base below pavement structure
7	centre lane, 5.5 m from east curb 14628773E, 5529871N	40	190	230	Sound concrete Granular base below pavement structure
8	median lane, 1.8 m from east curb 14628779E, 5529917N	30	180	210	Sound concrete Granular base below pavement structure
9	centre lane, 5.8 m from east curb 14628777E, 5529971N	60	195	255	Asphalt pavement not bonded to concrete surface Sound concrete Granular base below pavement structure
10	turn lane, 1.3 m from west curb 14628771E, 5530023N	70	210	280	Sound concrete Granular base below pavement structure
11	curb lane, 1.9 m from west curb 14628778E, 5530075N	30	185	215	Sound concrete Granular base below pavement structure
12	centre lane, 5.6 m from east curb 14628784E, 5530120N	35	200	235	Sound concrete Granular base below pavement structure
13	median lane, 2.1 m from east curb 14628790E, 5530180N	35	190	225	Sound concrete Granular base below pavement structure
14	centre lane, 5.5 m from west curb 14628788E, 5530226N	30	195	225	Sound concrete Granular base below pavement structure
15	curb lane, 1.7 m from west curb 14628786E, 5530264N	45	190	235	Sound concrete Granular base below pavement structure
16	median lane, 1.6 m from east curb 14628790E, 5530313N	30	170	200	Asphalt pavement not bonded to concrete surface Top 15 mm of concrete shows signs of deterioration Sound concrete below 15 mm Granular base below pavement structure

Pavement Core Photos



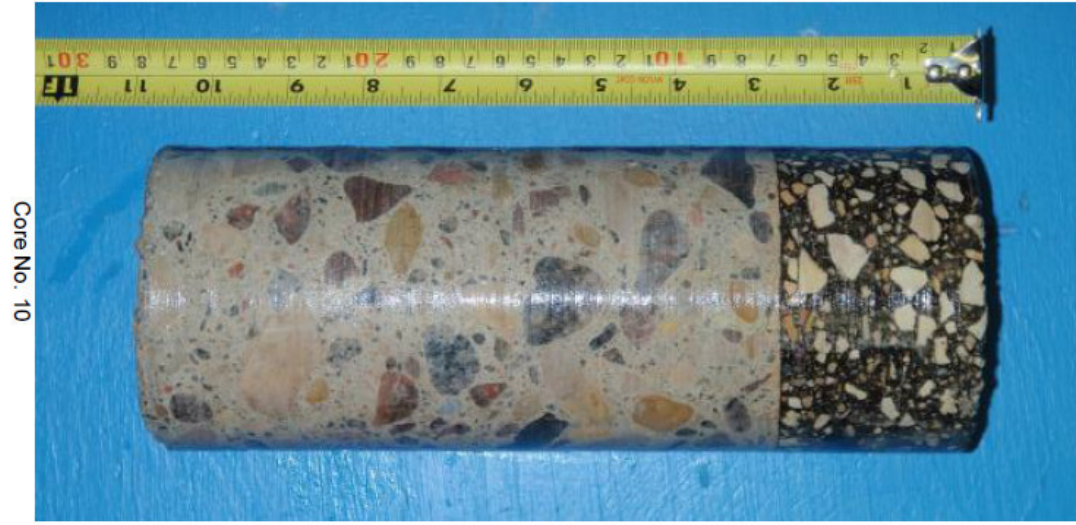
Pavement Core Photos



Pavement Core Photos



Pavement Core Photos



Pavement Core Photos



Pavement Core Photos

Core No. 16

