

APPENDIX 'A'

GEOTECHNICAL REPORT

**NESS AVENUE WESTBOUND
FERRY ROAD TO BELVIDERE STREET**

**2006 CITY OF WINNIPEG
REGIONAL AND LOCAL STREETS PROGRAM**

GEOTECHNICAL INVESTIGATION

City of Winnipeg
 2006 City of Winnipeg Regional and Local Streets Program
 Geotechnical Investigation
 Ness Avenue Westbound
 Ferry Road to Belvidere Street

Testhole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits			
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Limit	
1	Ness Avenue, Curb Lane	Asphalt/Concrete	85/205	N/A	N/A											
2	Ness Avenue, Median Lane	Asphalt/Concrete	76/200	N/A	N/A											
3	Ness Avenue, Curb Lane	Asphalt/Concrete	67/190	N/A	N/A											
4	Ness Avenue, Median Lane	Asphalt/Concrete	42/208	N/A	N/A	Clay	2.1	38.7	0.0	0.4	12.0	87.6	110.0	26.0	84.0	
5	Ness Avenue, Curb Lane	Asphalt/Concrete	50/215	N/A	N/A											
6	Ness Avenue, Median Lane	Asphalt/Concrete	40/200	Granular	335											
7	Ness Avenue, Curb Lane	Asphalt/Concrete	59/201	N/A	N/A											
8	Ness Avenue, Median Lane	Asphalt/Concrete	62/205	N/A	N/A											
9	Ness Avenue, Curb Lane	Asphalt/Concrete	50/190	N/A	N/A											
10	Ness Avenue, Median Lane	Asphalt/Concrete	34/196	N/A	N/A											
11	Ness Avenue, Curb Lane	Asphalt/Concrete	51/188	N/A	N/A											
12	Ness Avenue, Median Lane	Asphalt/Concrete	97/208	N/A	N/A	Clayey Silt	0.9	27.3	0.0	5.6	67.6	26.8	28.0	16.0	12.0	
13	Ness Avenue, Curb Lane	Asphalt/Concrete	57/192	N/A	N/A											
14	Ness Avenue, Median Lane	Asphalt/Concrete	105/190	N/A	N/A											

Notes:

1. A thin layer of clay fill was encountered underlying the concrete in TH1. Underlying the clay fill was a second layer of concrete. Auger refusal was encountered in TH1 within the second concrete layer at a depth of 675 mm below the top of the pavement.
2. Detailed testhole locations are provided in the attached testhole logs.
3. Granular fill was only encountered underlying the concrete in TH6. No granular fill was encountered in the remaining testholes.

TESTHOLE TH1



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LIMITED
Established in 1922

Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

Client: Stantec Consulting Ltd.




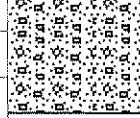
Depth of Testhole: 0.7 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 12 m W of Belvidere St. - Woodlawn St. Alley Centreline, 1.5 m S of curb

Subsurface Profile

Depth (m)	Symbol	Description
0.0		Ground Surface
		ASPHALT - 85 mm thick, good condition
		CONCRETE - 205 mm thick, good condition
		CLAY FILL - black
0.5		CONCRETE
1.0		
1.5		
2.0		
2.5		Auger refusal at 0.675 m below grade in concrete.

TESTHOLE TH2



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

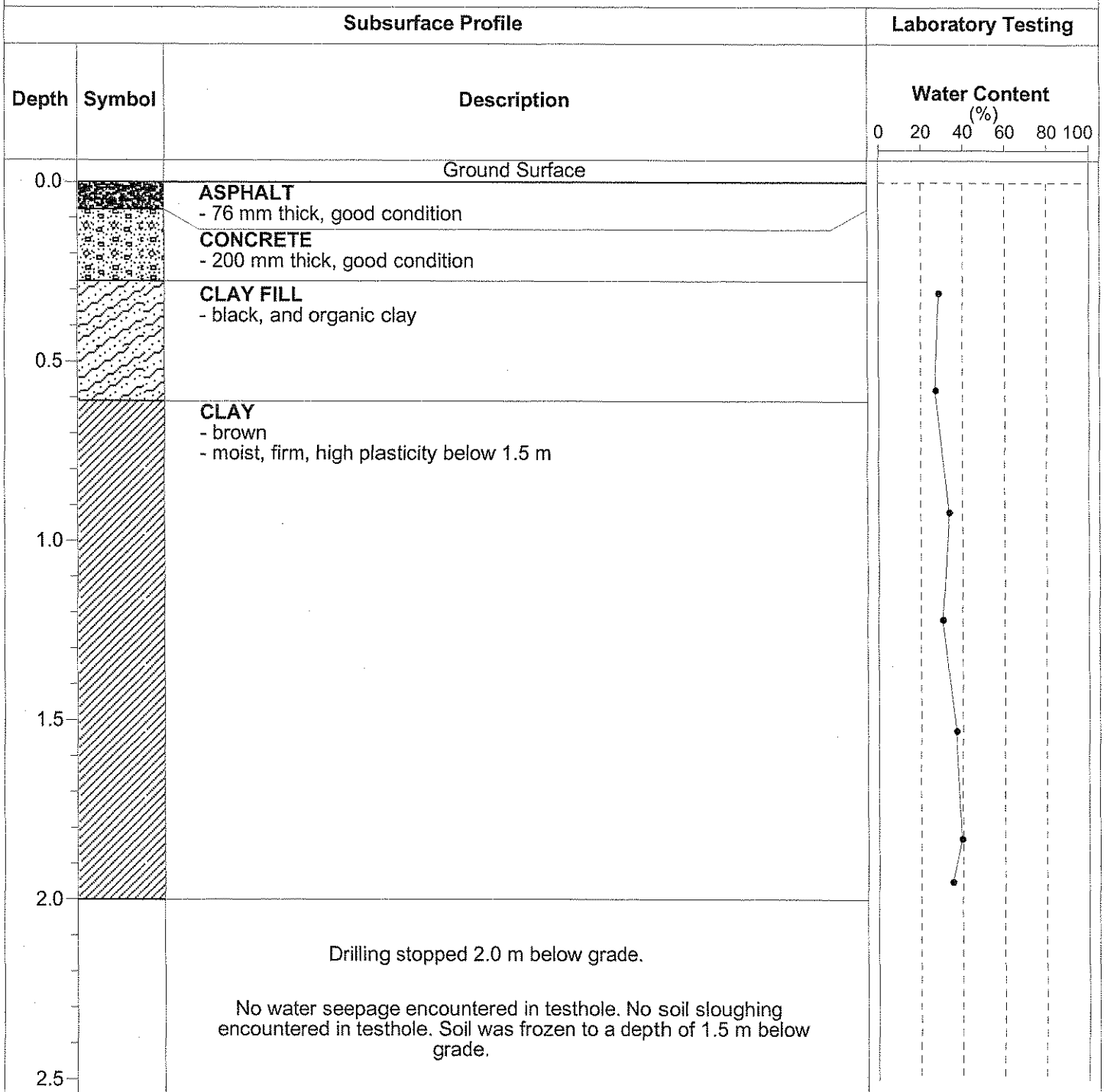
Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 6.0 m W of east lot line at #395 Belvidere, 4.5 m S of curb



TESTHOLE TH3



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

Client: Stantec Consulting Ltd.

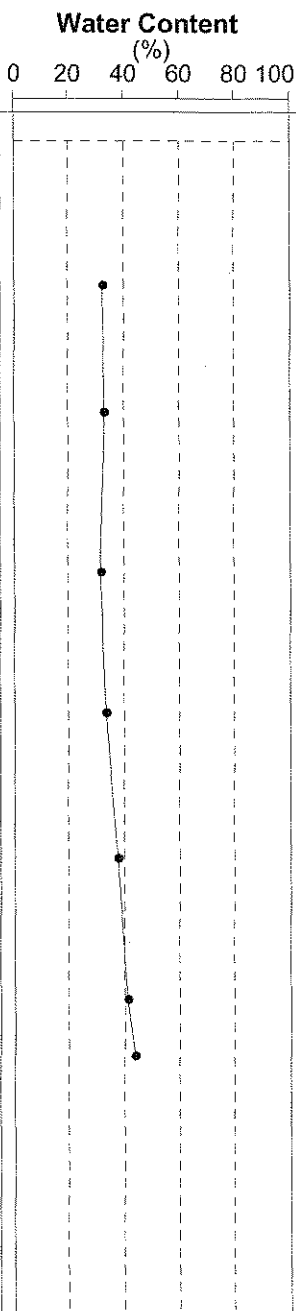
Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 20.5 m E of Mandeville St. centreline, 1.3 m S of curb

Subsurface Profile			Laboratory Testing
Depth	Symbol	Description	Water Content (%)
			0 20 40 60 80 100
0.0		Ground Surface	
		ASPHALT - 67 mm thick, good condition	
		CONCRETE - 190 mm thick, good condition	
		CLAY FILL - black, and organic clay	
0.5			
		CLAY - brown - moist, firm, high plasticity below 1.5 m - and silt, 5 cm thick silt layer at 1.7 m below grade	
1.0			
1.5			
2.0			
		Drilling stopped 2.0 m below grade.	
		No water seepage encountered in testhole. No soil sloughing encountered in testhole. Soil was frozen to a depth of 1.5 m below grade.	
2.5			



TESTHOLE TH5



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

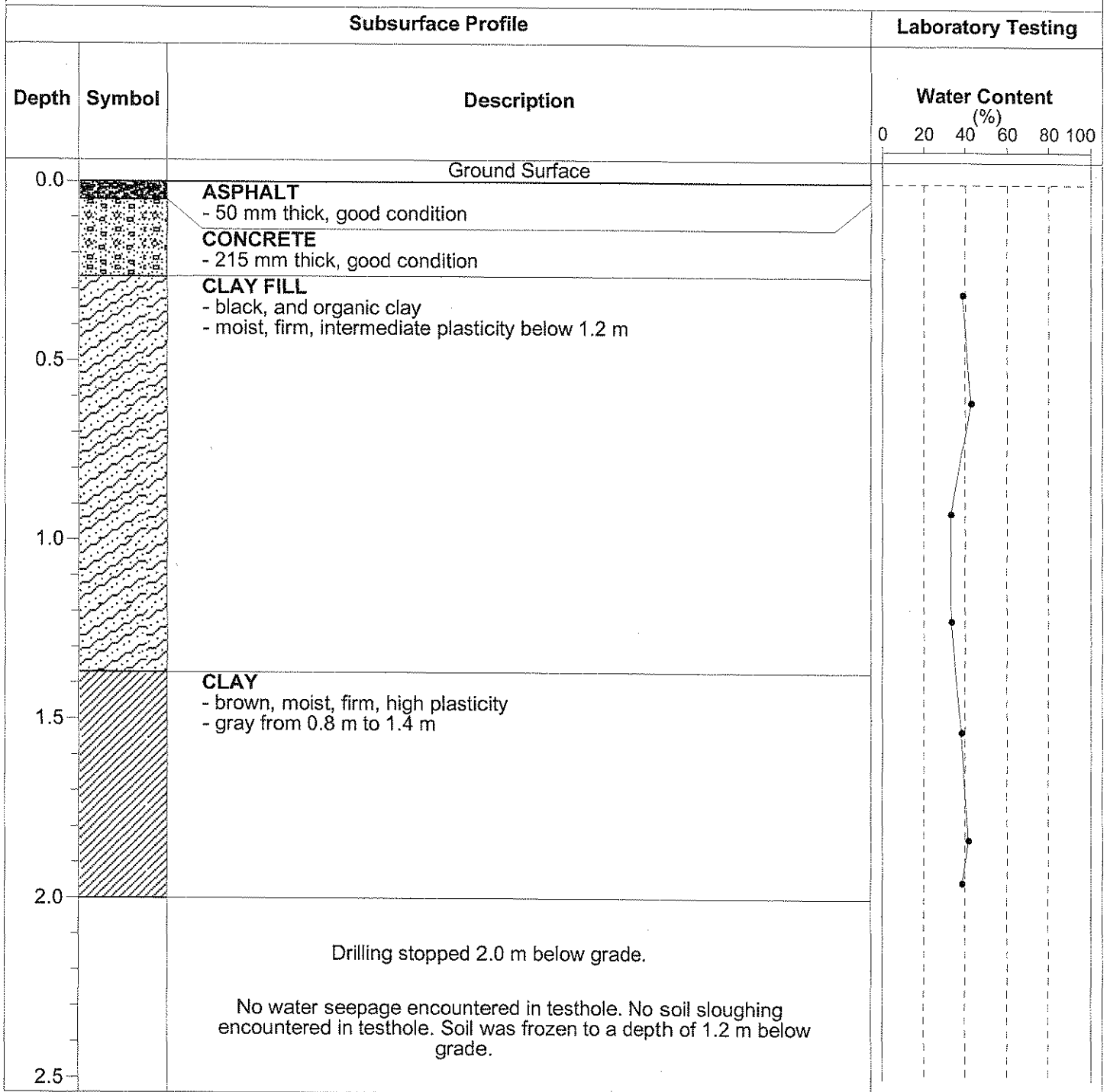
Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 20 m W of Linwood-Winchester Alley centreline, 2 m S of curb



TESTHOLE TH6



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

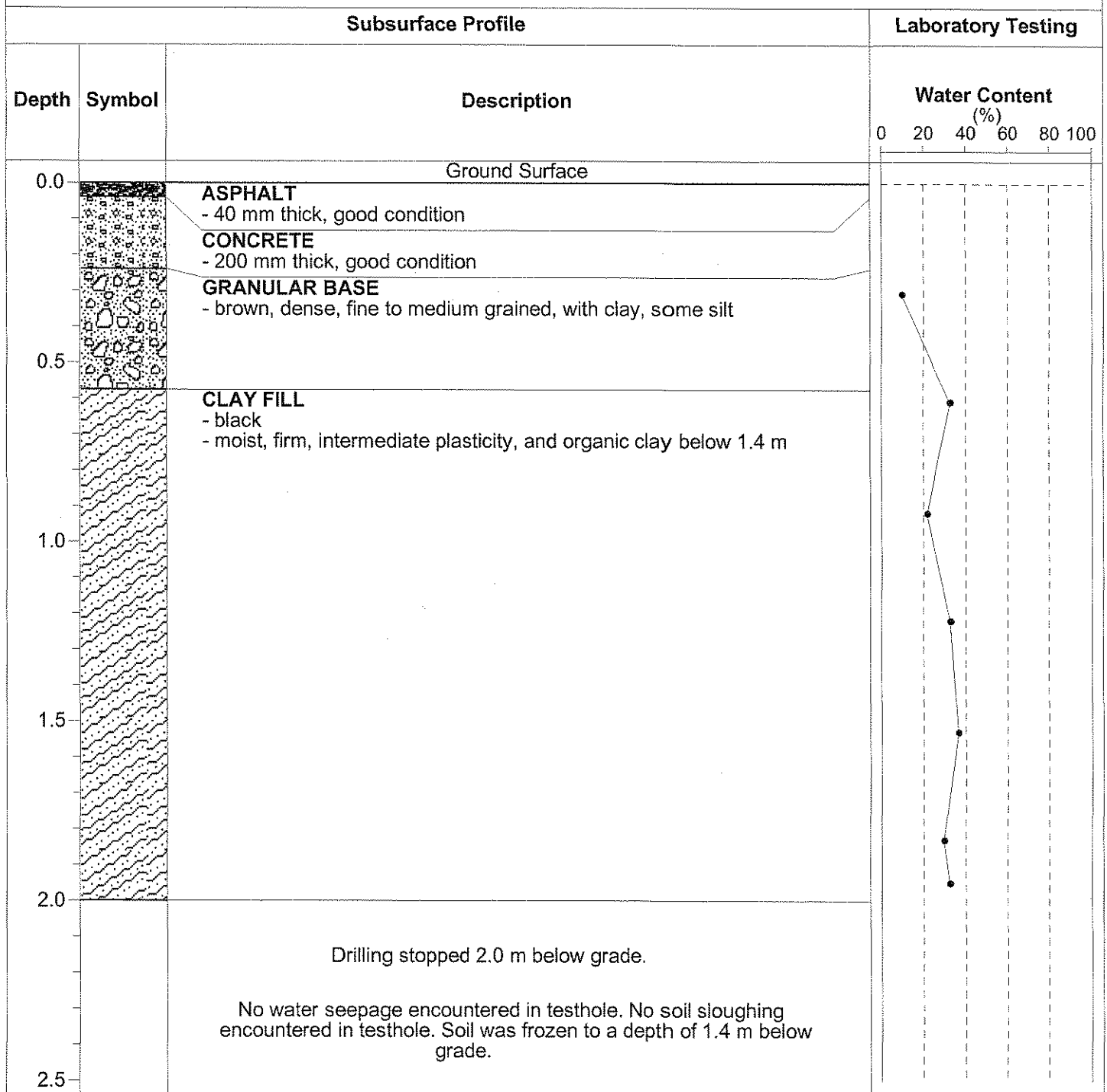
Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 14 m W of Lyle-Linwood Alley centreline, 4.5 m S of curb



TESTHOLE TH7



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

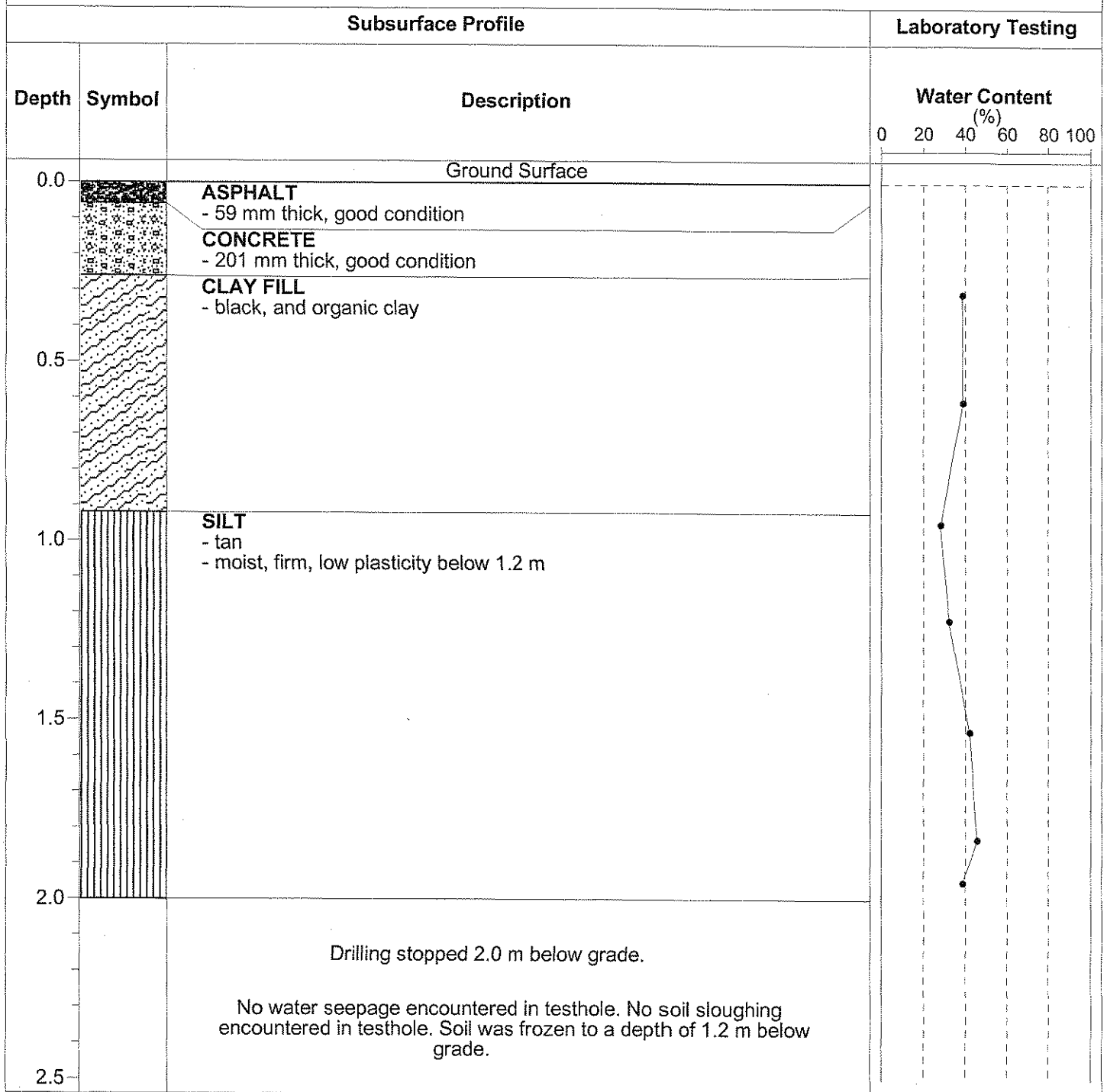
Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 18 m W of Albany-Lyle Alley centreline, 2 m S of curb



TESTHOLE TH8



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

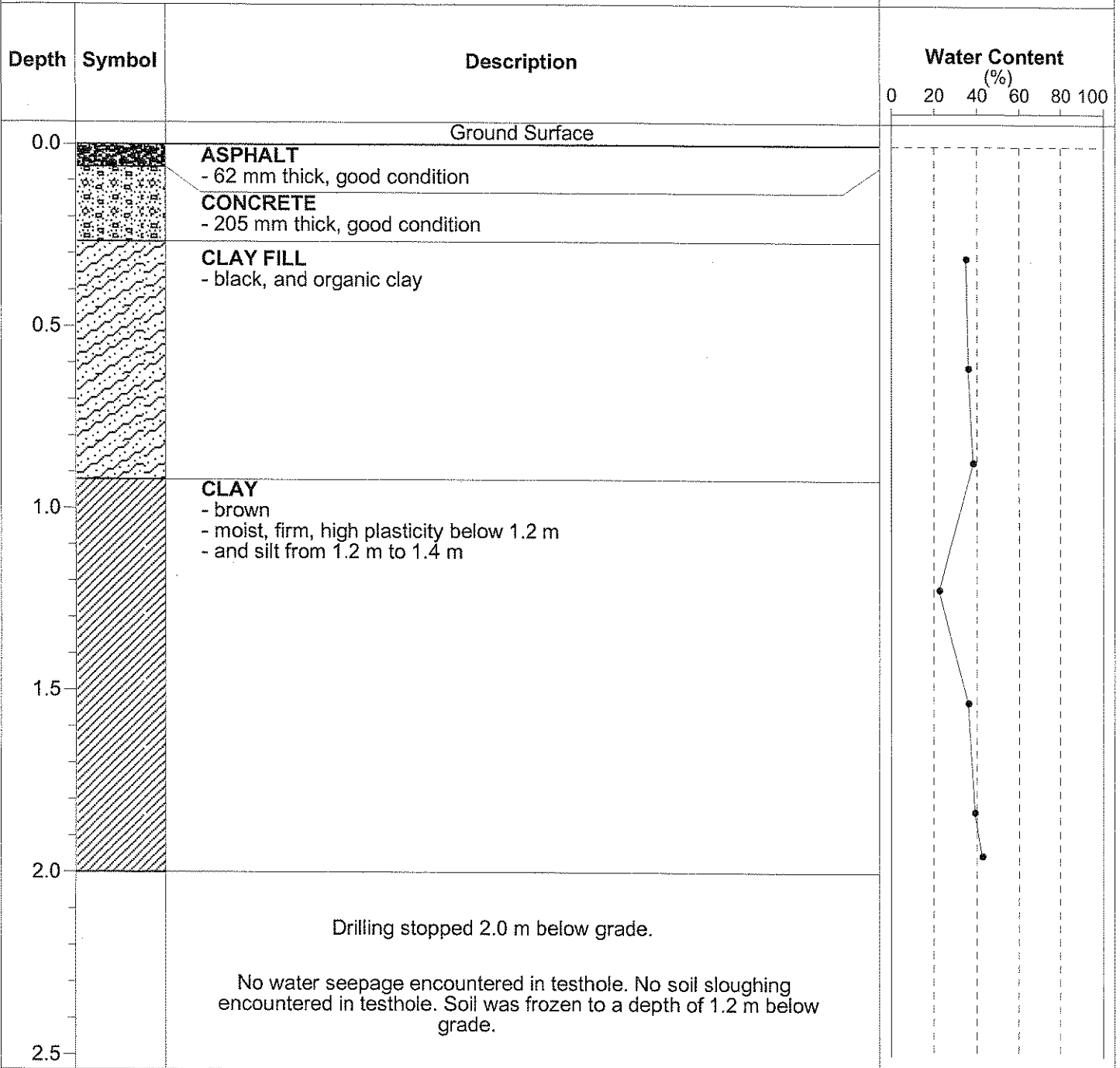
Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 17.5 m W of Truro-Albany Alley centreline, 4.5 m S of curb

Subsurface Profile

Laboratory Testing



TESTHOLE TH9



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

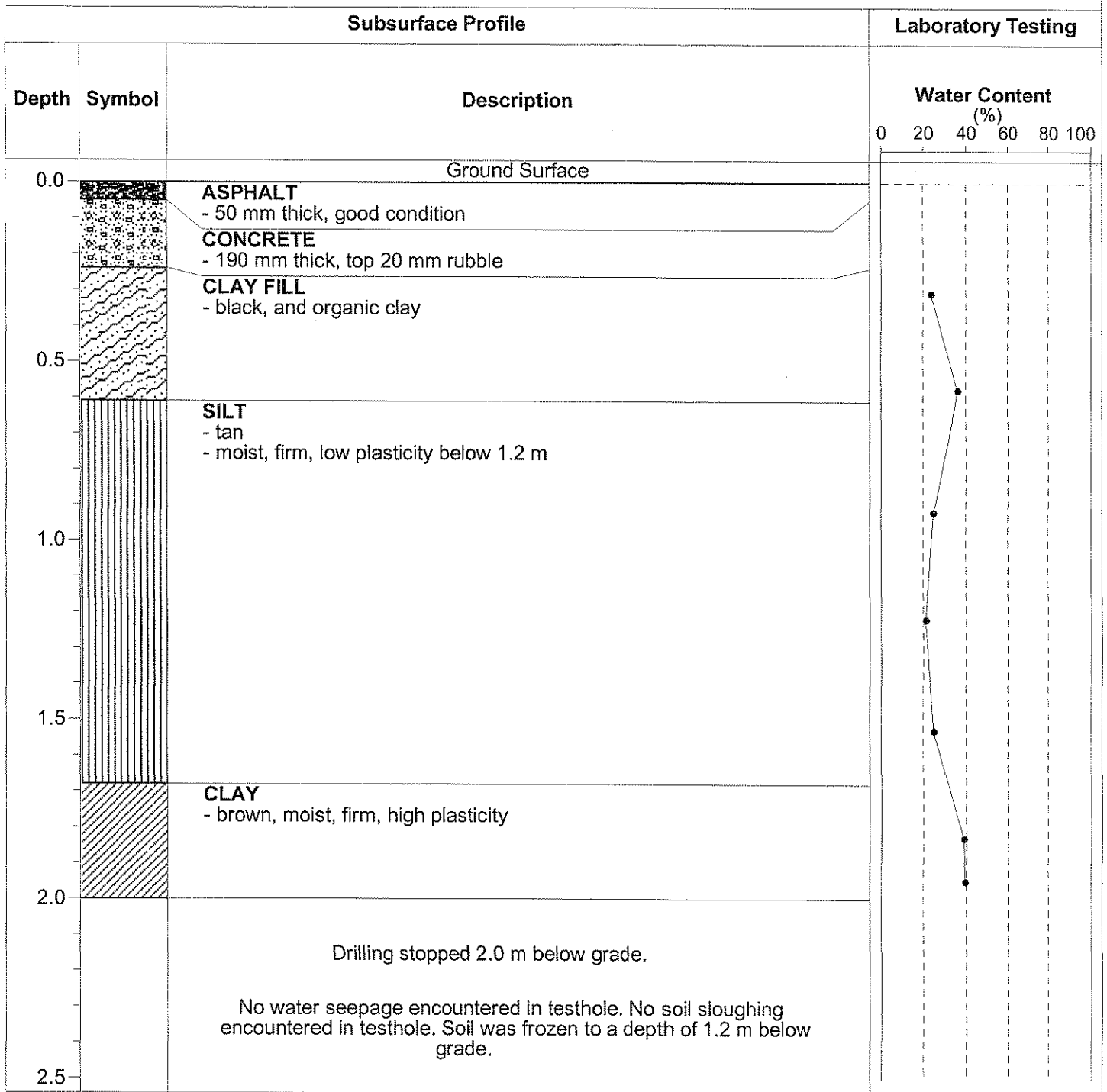
Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 11.5 m W of Sackville-Truro Alley centreline, 2 m S of curb



TESTHOLE TH10



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

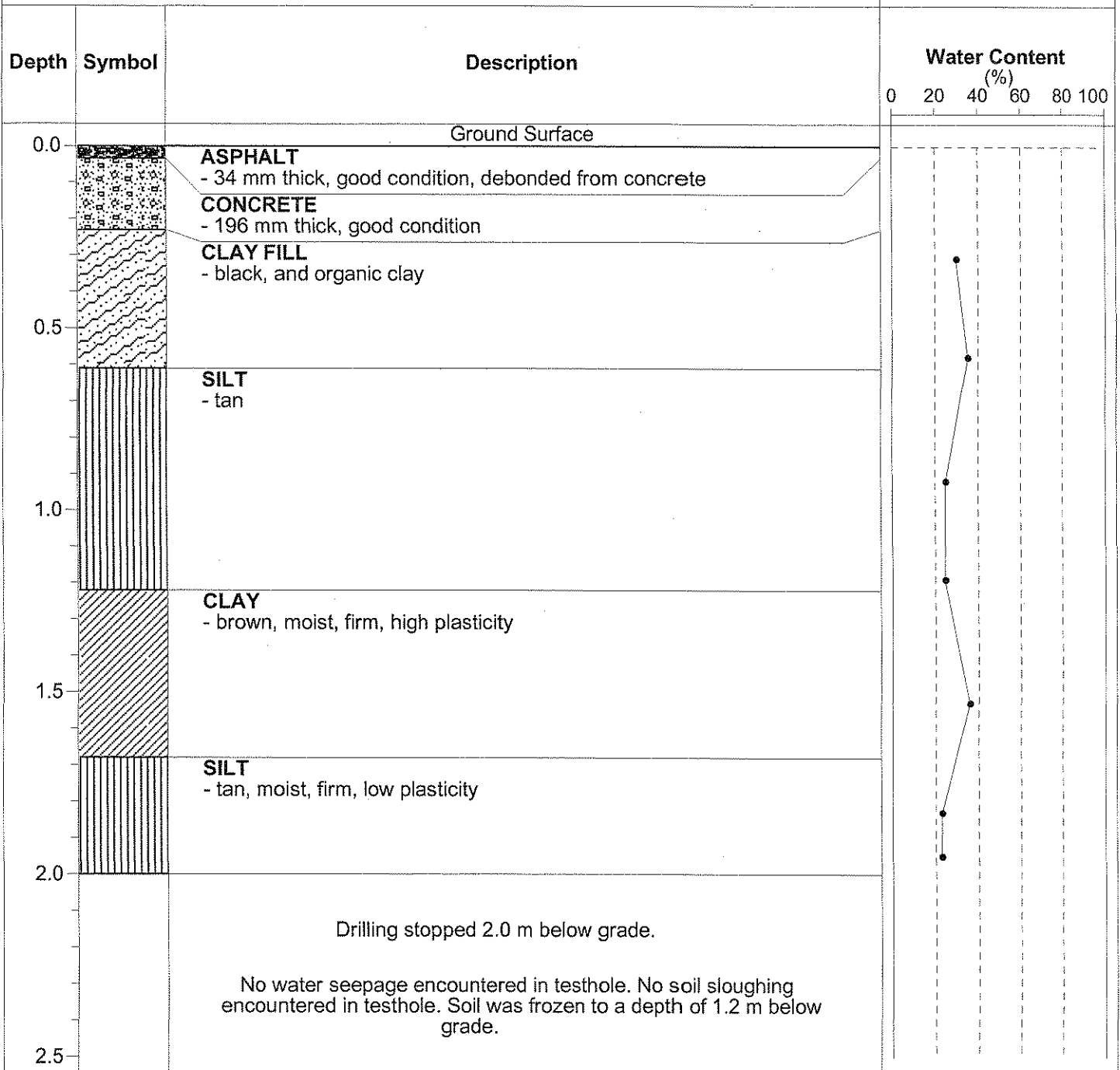
Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 12 m W of Amherst-Sackville Alley centreline, 4.5 m S of curb

Subsurface Profile

Laboratory Testing



TESTHOLE TH11



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

Client: Stantec Consulting Ltd.

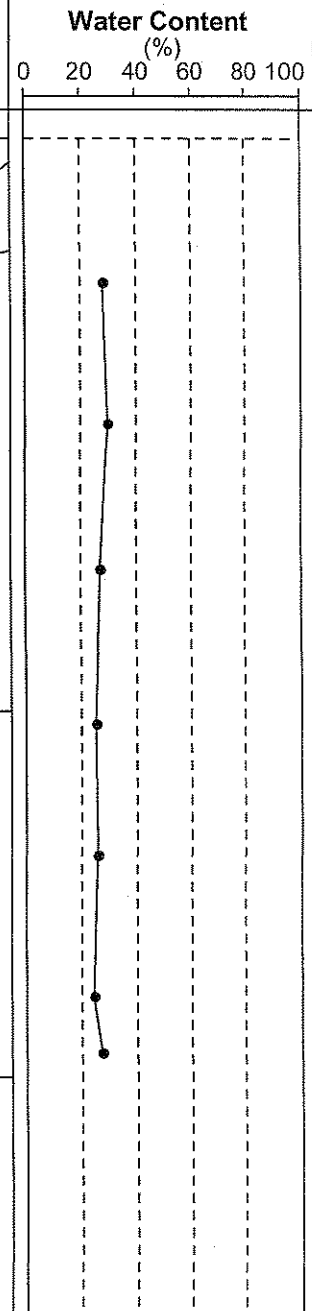
Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 12.5 m W of Rutland-Amherst Alley centreline, 1.7 m S of curb

Subsurface Profile			Laboratory Testing
Depth	Symbol	Description	Water Content (%)
0.0		Ground Surface	
		ASPHALT - 51 mm thick, good condition	
		CONCRETE - 188 mm thick, good condition	
		CLAY FILL - brown, some fine sand	
0.5			
1.0			
		SILT - tan, wet, soft, low plasticity, and clay	
1.5			
2.0		Drilling stopped 2.0 m below grade.	
		No water seepage encountered in testhole. No soil sloughing encountered in testhole. Soil was frozen to a depth of 1.4 m below grade.	
2.5			



TESTHOLE TH13



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

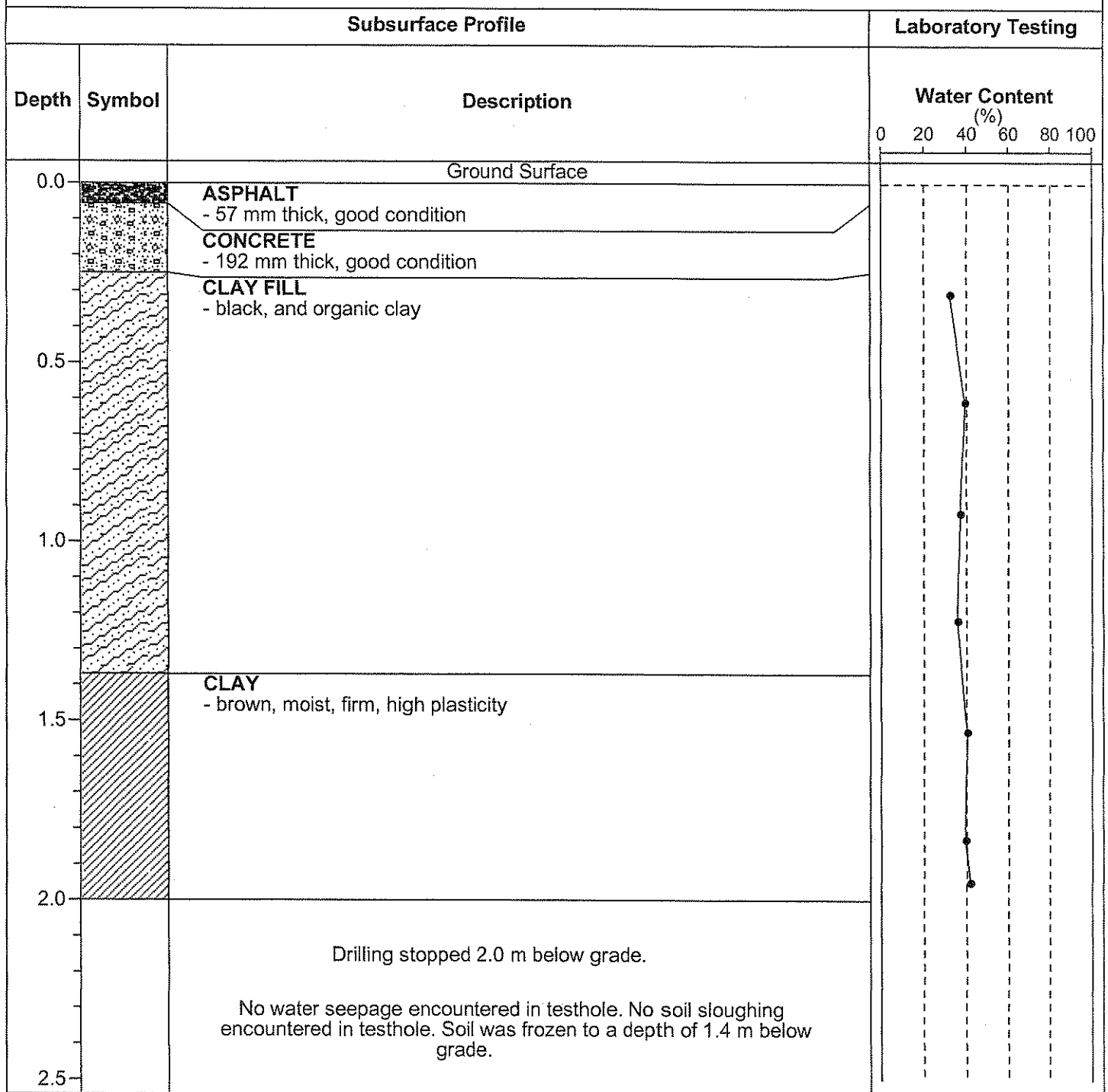
Client: Stantec Consulting Ltd.

Depth of Testhole: 2.0 m

Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 16 m W of Ferry-Inglewood Alley centreline, 1.6 m S of curb



TESTHOLE TH14



Project Name: 2006 Regional and Local Streets Program

Date Drilled: March 23, 2006

Client: Stantec Consulting Ltd.

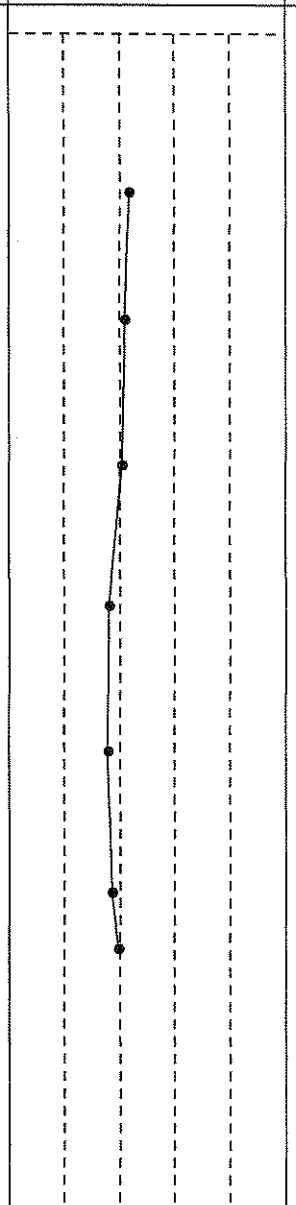
Depth of Testhole: 2.0 m

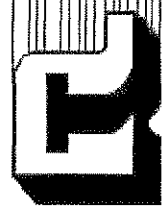
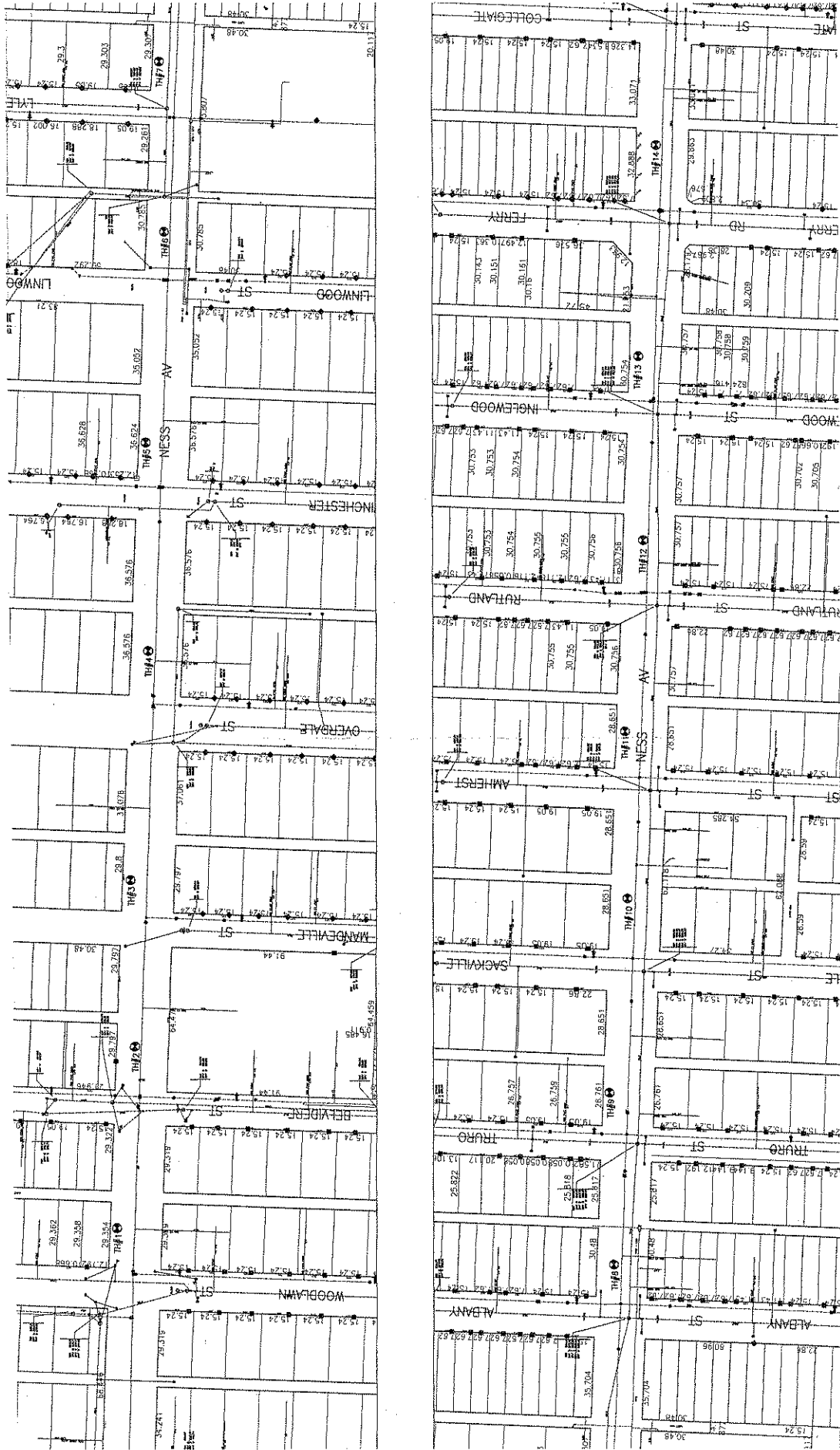
Site: Ness Avenue WB - Ferry Rd. to Belvidere St. Resurfacing

Logged by: Robert Brown

Testhole Location: 6 m W of Collegiate-Ferry Alley centreline, 4.5 m S of curb

Subsurface Profile			Laboratory Testing
Depth	Symbol	Description	Water Content (%)
			0 20 40 60 80 100
0.0		Ground Surface	
		ASPHALT - 105 mm thick, good condition	
		CONCRETE - 190 mm thick, good condition	
0.5		CLAY FILL - black, and organic clay	
1.0			
1.5		CLAY - brown, moist, firm, high plasticity	
2.0		Drilling stopped 2.0 m below grade.	
		No water seepage encountered in testhole. No soil sloughing encountered in testhole. Soil was frozen to a depth of 1.2 m below grade.	
2.5			





THE NATIONAL TESTING LABORATORIES LIMITED
 Established in 1923

Project No.: STA-604

Provided by: Stantec Consulting Ltd.

2006 City of Winnipeg Regional and Local Streets Program
 Ness Avenue Westbound
 Ferry Road to Belvidere Street
 Winnipeg, Manitoba

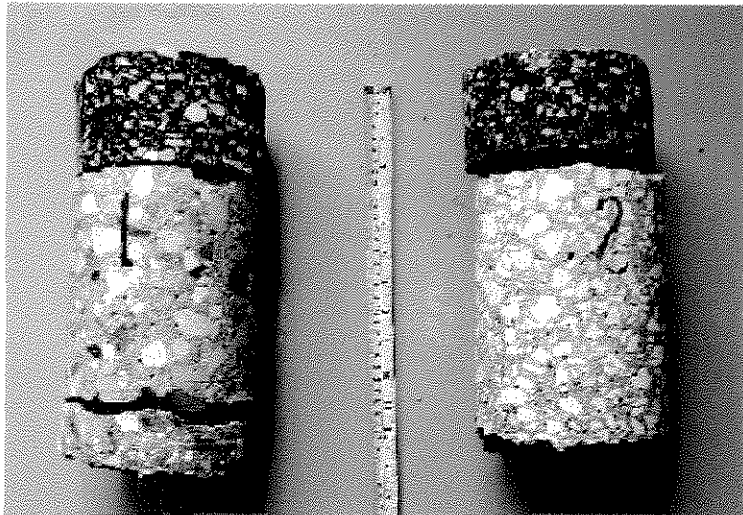
Date: March 30, 2006

Scale: NTS

2006 Regional and Local Streets Program

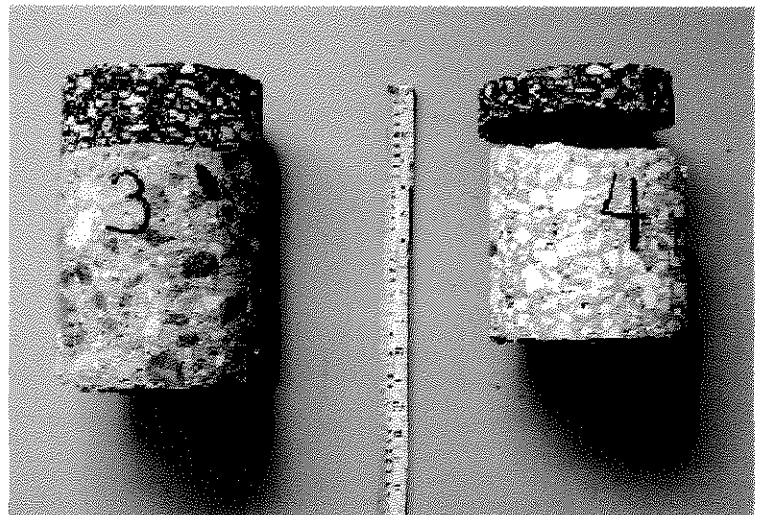
Ness Avenue Westbound

Ferry Road to Belvidere Street



TH1

TH2



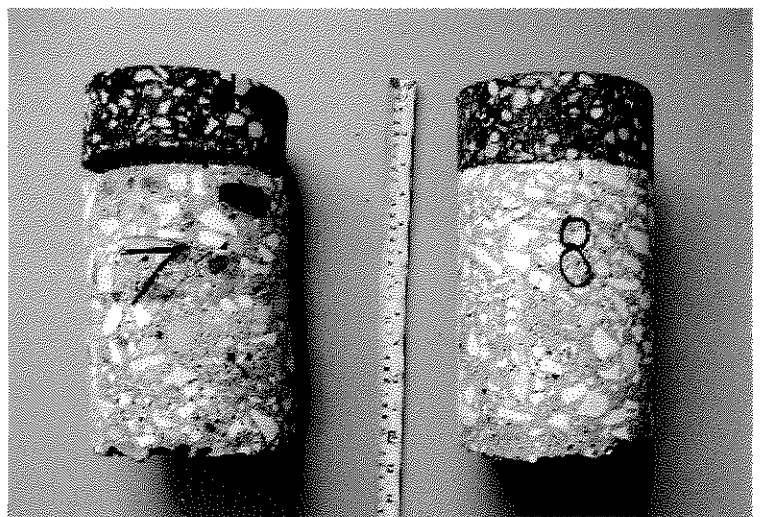
TH3

TH4



TH5

TH6



TH7

TH8

2006 Regional and Local Streets Program

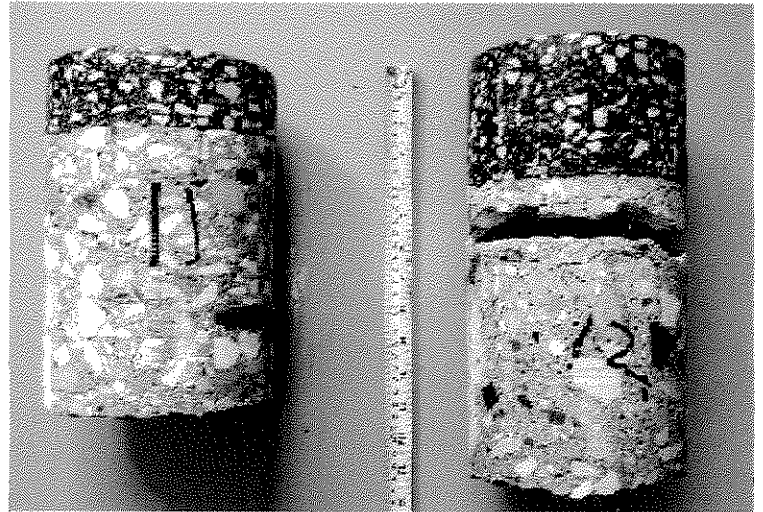
Ness Avenue Westbound

Ferry Road to Belvidere Street



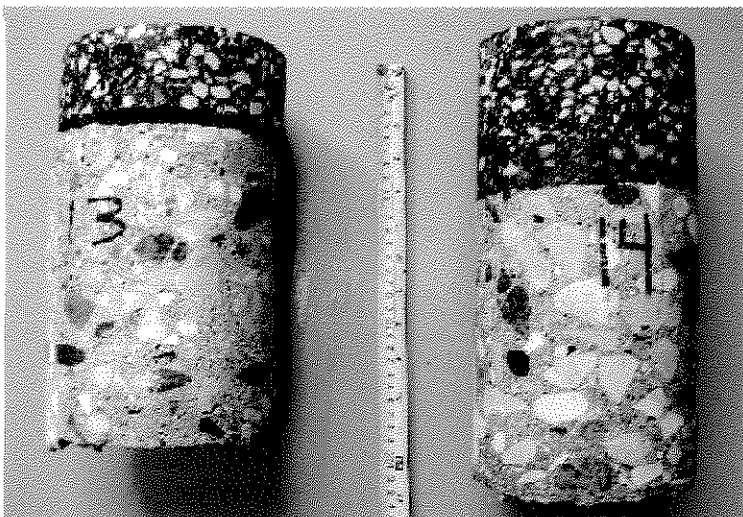
TH9

TH10



TH11

TH12



TH13

TH14