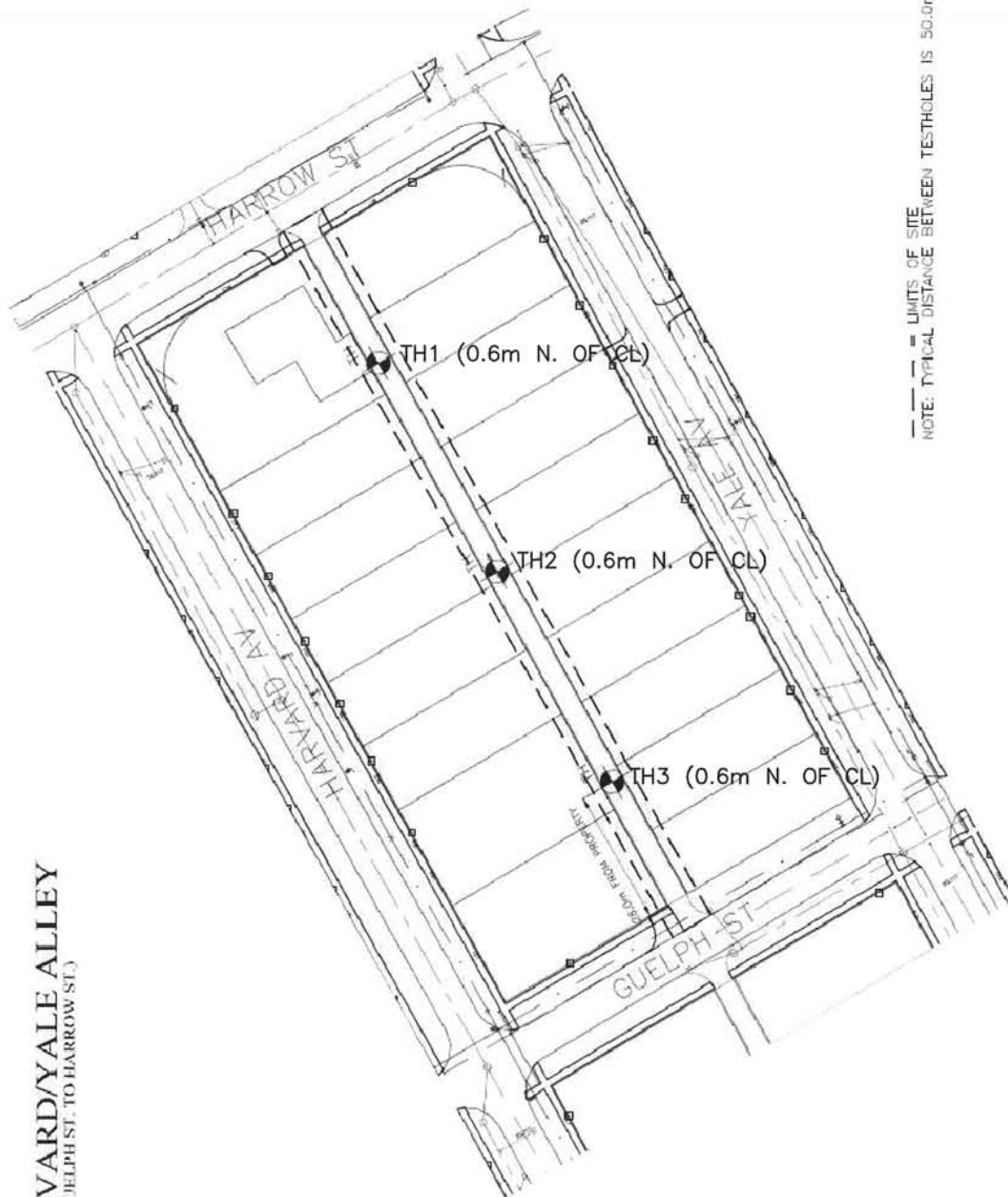


APPENDIX 'A' - GEOTECHNICAL REPORT



HARVARD/YALE ALLEY
(FROM GUELPH ST. TO HARROW ST.)



GENIVAR

10 PRAIRIE WAY
WINNIPEG, MB R2J 3J8
Tel: (204)477-6650
Fax: (204)474-2864

CITY OF WINNIPEG
2010 STREET RENEWAL

TESTHOLE LOCATIONS
HARVARD-YALE ALLEY

DATE: (YY/MM/DD)

10/04/23

APPROVED:

SSU

DRAWN BY:

AO

PROJ. NO.

WE09 151

DWG. NO.

GEO-6

[illegible]



GENIVAR

Project No: WE-09-151-00-WE

TH1

Project: 2010 Street Renewal

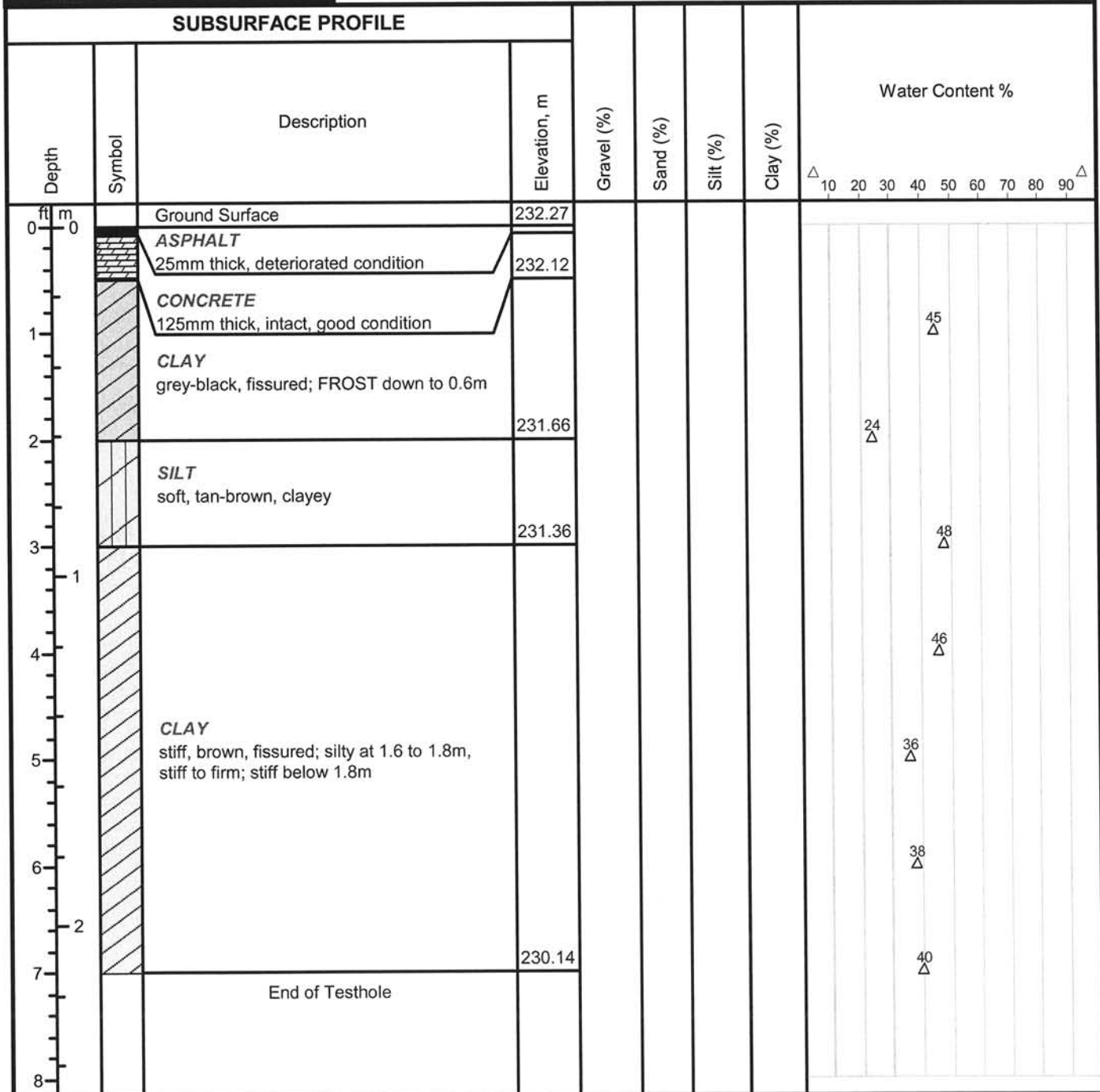
Client: City of Winnipeg

Enclosure:

Location: Harvard/Yale Alley;fr.Guelph-Harrow

Engineer: SSU

SUBSURFACE PROFILE



Drill Method: Truck- Mounted

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

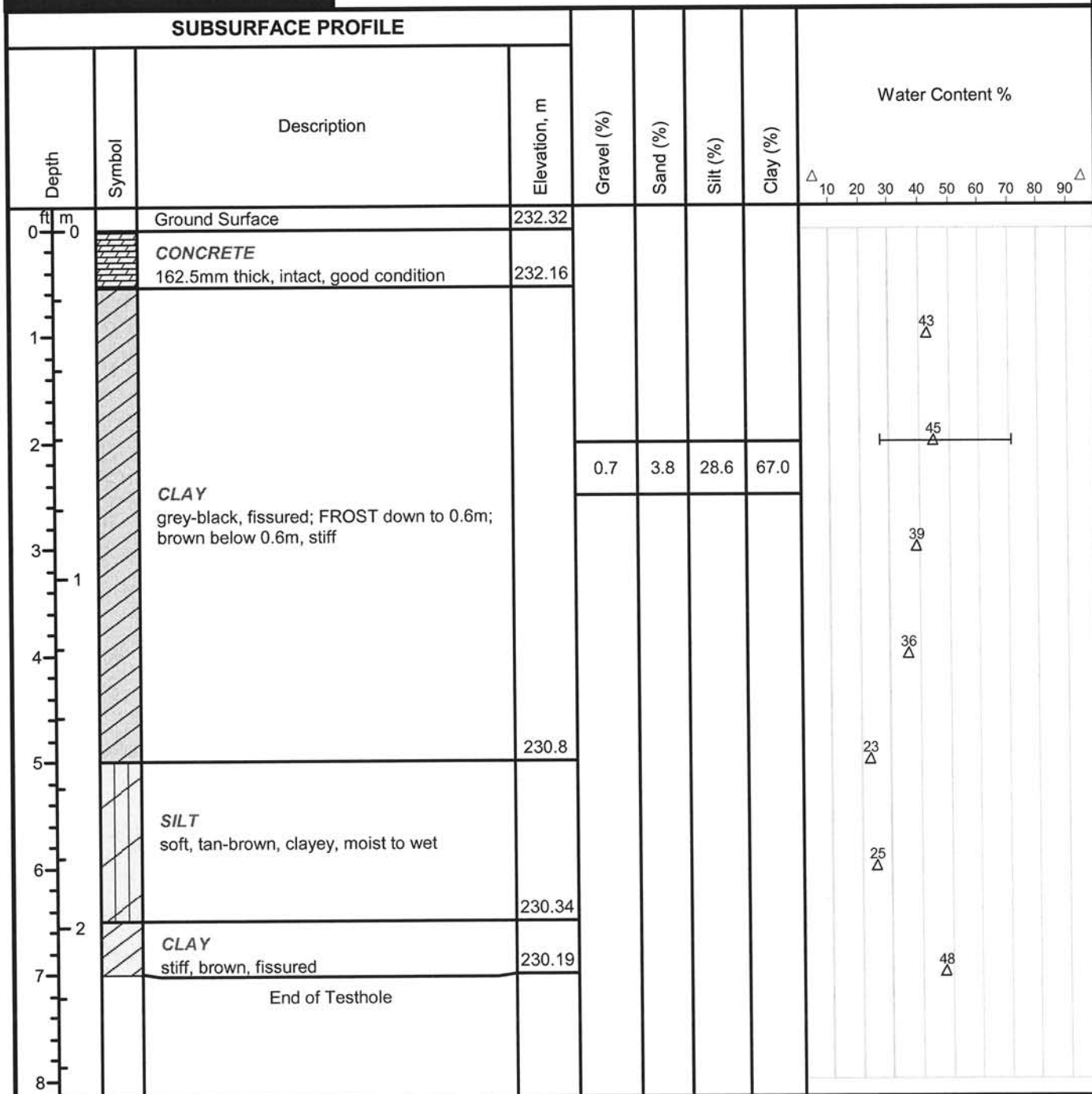
Datum: 232.27m

Drill Date: 12/11/09

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

**GENIVAR****Project No:** WE-09-151-00-WE**TH2****Project:** 2010 Street Renewal**Client:** City of Winnipeg**Enclosure:****Location:** Harvard/Yale Alley;fr.Guelph-Harrow**Engineer:** SSU**SUBSURFACE PROFILE**

Drill Method: Truck- Mounted

Drill Date: 12/11/09

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.32m

Checked by: SSU

Sheet: 1 of 1



GENIVAR

Project No: WE-09-151-00-WE

TH3

Project: 2010 Street Renewal

Client: City of Winnipeg

Enclosure:

Location: Harvard/Yale Alley;fr.Guelph-Harrow

Engineer: SSU

SUBSURFACE PROFILE

Depth ft m	Symbol	Description	Elevation, m	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Water Content % △ 10 20 30 40 50 60 70 80 90 △
0		Ground Surface	232.15					
		CONCRETE 162.5mm thick, intact, good condition	231.99					
1		CLAY grey-black, fissured; FROST down to 0.6m	231.54					45 △
2								24 △
3		SILT soft, tan-brown, clayey, moist to wet; very soft below 0.9m	230.63	0	4.6	60.4	35.0	28 △
4								29 △
5								41 △
6		CLAY stiff, brown, fissured	230.02					43 △
7		End of Testhole						46 △
8								

Drill Method: Truck- Mounted

Drill Date: 12/11/09

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.15m

Checked by: SSU

Sheet: 1 of 1



TBT ENGINEERING CONSULTING GROUP

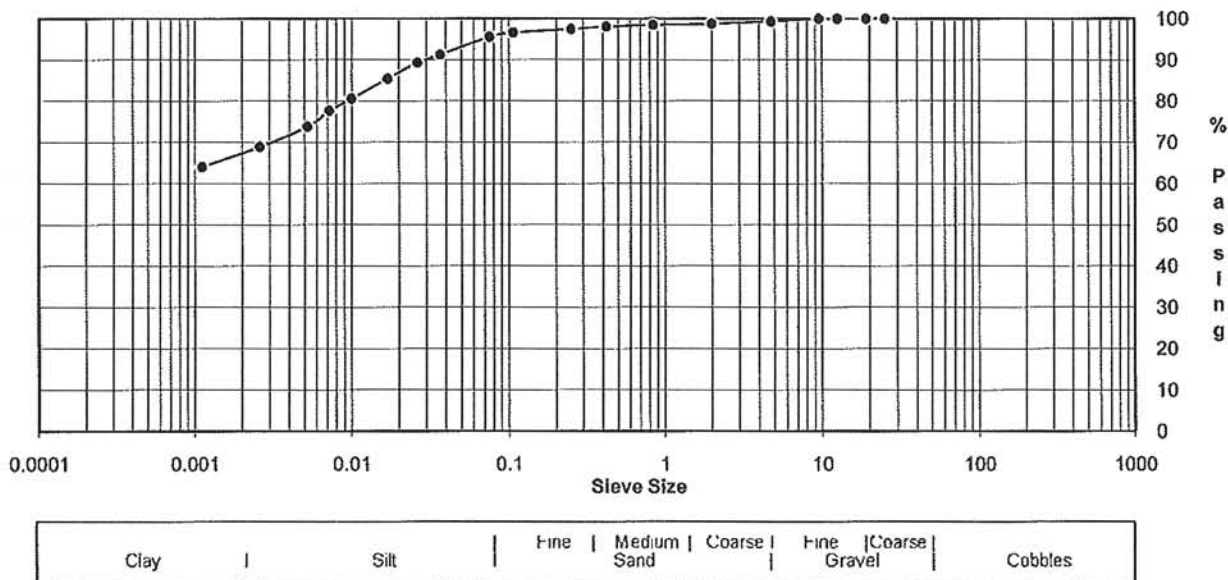
TBT Engineering Limited
110 Paramount Road, Winnipeg, MB R2X 2W3
PH: (204) 633-6008 FAX: (204) 633-6620
E-Mail: hmanalo@tble.ca

Particle Size Analysis of Soils Test Report

To: Genivar	TBTE Project No.: 10-505
10 Prairie Way	Client Project No.: 10-151
Winnipeg, Manitoba	Lab Sample No.: 338
Attention: Silvestre Urbano, P. Eng.	Date: 19-Apr-10
Project: 2010 Street Renewal Project (Harvard Yale, Guelph St. to Harrow St.)	

Date Sampled:	-	Date Received:	14-Apr-10	Sieve Analysis		Hydrometer Analysis	
Sampled By:	Client	Date Tested:	14-Apr-10	Sieve(mm)	% Passing	Diameter	% Finer
Material Identification B.H./T.H. No. TH 2 Sample No. - Depth 2 ft Specific Gravity of Material: 2.65				37.5	100.0	0.106	96.6
				25	100.0	0.075	95.6
				19	100.0	0.0367166	91.3
				12.5	100.0	0.0262153	89.4
				9.5	100.0	0.0168952	85.5
				4.75	99.3	0.0099772	80.6
				2	98.8	0.0071876	77.7
				0.841	98.5	0.0051981	73.8
				0.42	98.1	0.0025885	69.0
				0.25	97.4	0.0011083	64.1

Grain Size Analysis



Soil Classification Based on the City of Winnipeg Public Works Reconstruction Projects Standard

% Composition

0.7 Gravel

3.8 Sand

28.6 Silt

67.0 Clay

D10 0

D30 0

D60 0

Cu -

Cc -

Clay

Test Method: ASTM D422, D2216, D4318, D2487

TBT Technician: Elena Oberez

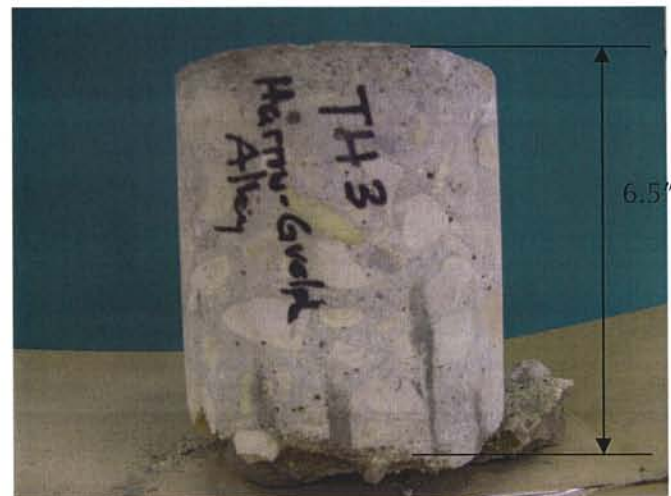
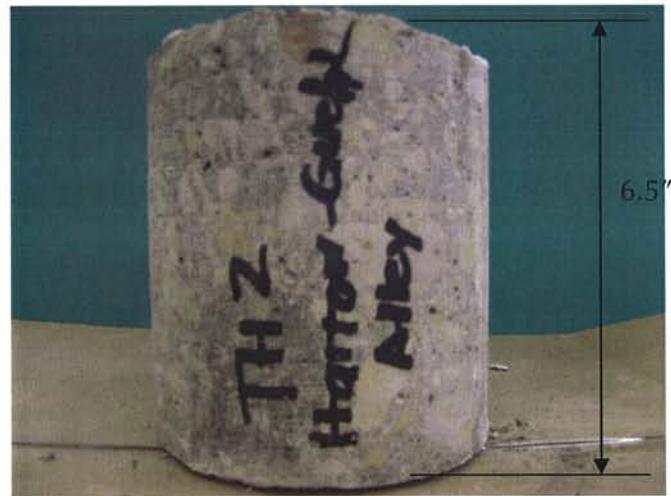
REVIEWED BY: *Hermano*
Hermie Manalo

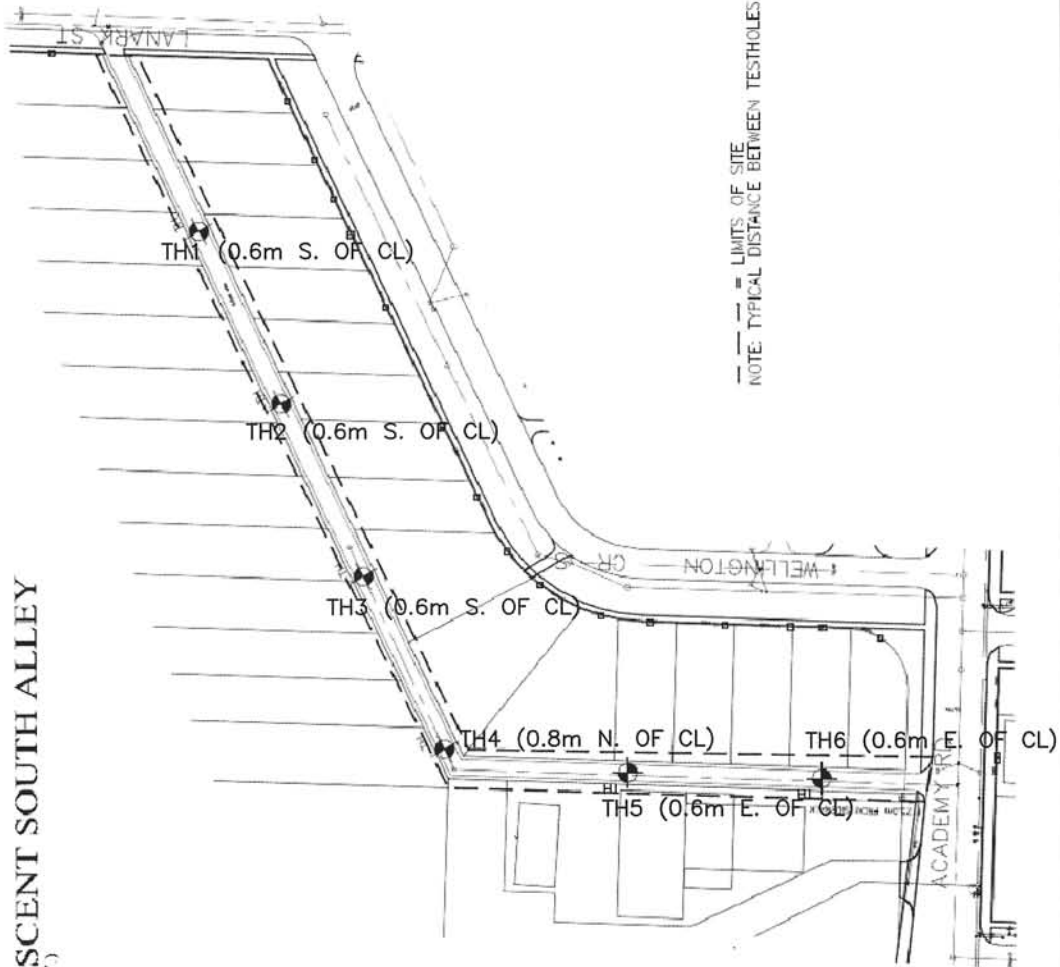
PROJECT:

2010 STREET RENEWAL

STREET:

BACK ALLEY BET. HARVARD AND YALE,
CORE SAMPLES FROM HARROW ST. TO GUELPH ST.





GENIVAR

10 PRAIRIE WAY
WINNIPEG, MB R2J 3J8
Tel: (204)477-6650
Fax: (204)474-2864

CITY OF WINNIPEG
2010 STREET RENEWAL

TESTHOLE LOCATIONS
WELLINGTON CRESCENT SO. ALLEY

DATE: (YY/MM/DD)

10/04/23

APPROVED:

SSU

DRAWN BY:

AO

PROJ. NO.

WE09 151

DWG. NO.

GEO-8

[illegible]



GENIVAR

Project No: WE-09-151-00-WE

TH1

Project: 2010 Street Renewal

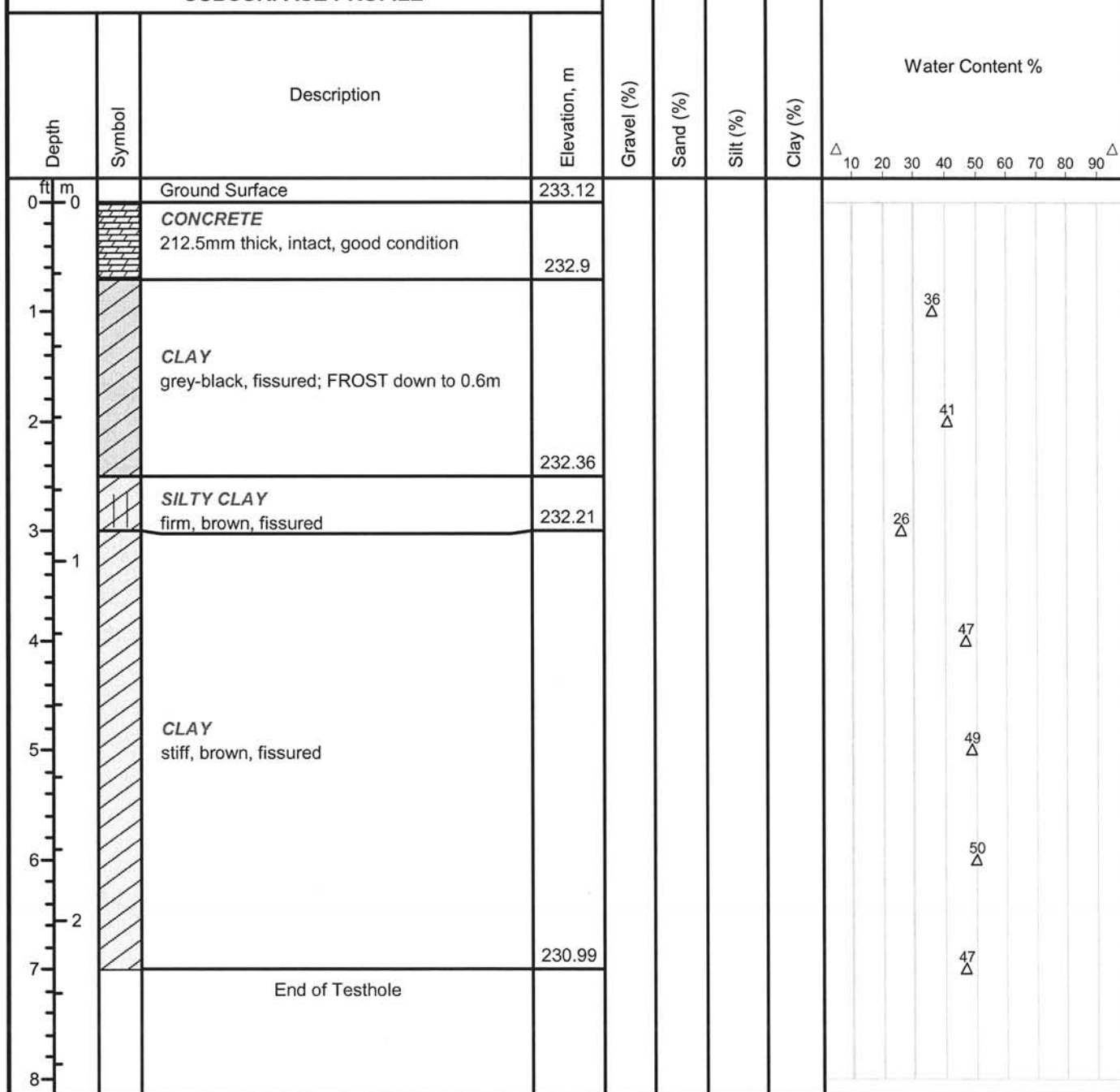
Client: City of Winnipeg

Enclosure:

Location: Wellington South Alley(Lanark-Academy)

Engineer: SSU

SUBSURFACE PROFILE



Drill Method: Truck- Mounted

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

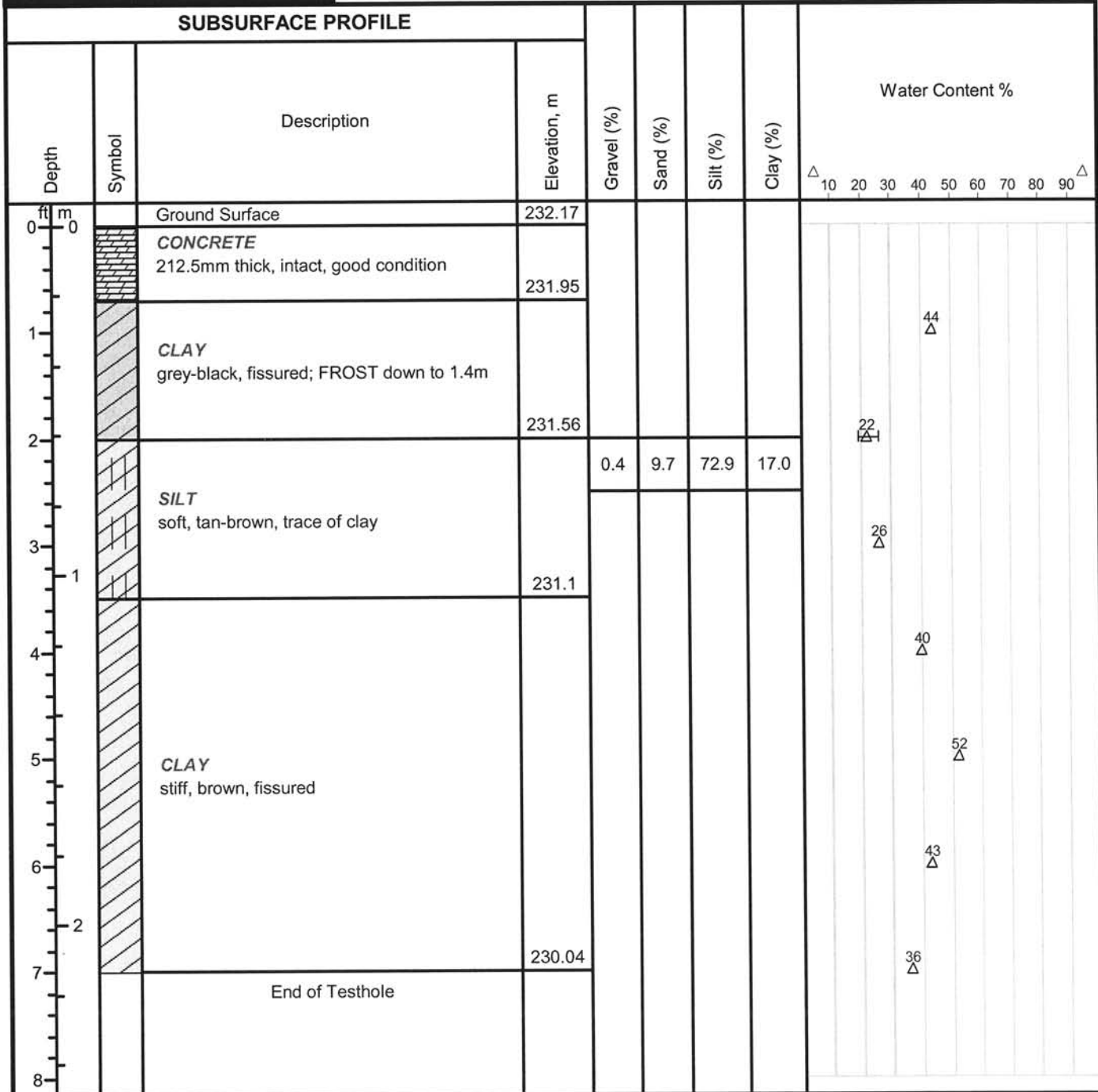
Datum: 233.12m

Drill Date: 12/11/09

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

**GENIVAR****Project No:** WE-09-151-00-WE**TH2****Project:** 2010 Street Renewal**Client:** City of Winnipeg**Enclosure:****Location:** Wellington South Alley(Lanark-Academy)**Engineer:** SSU**SUBSURFACE PROFILE**

Drill Method: Truck- Mounted

 Genivar
 10 Prairie Way
 Winnipeg, Mb.
 R2J 3J8

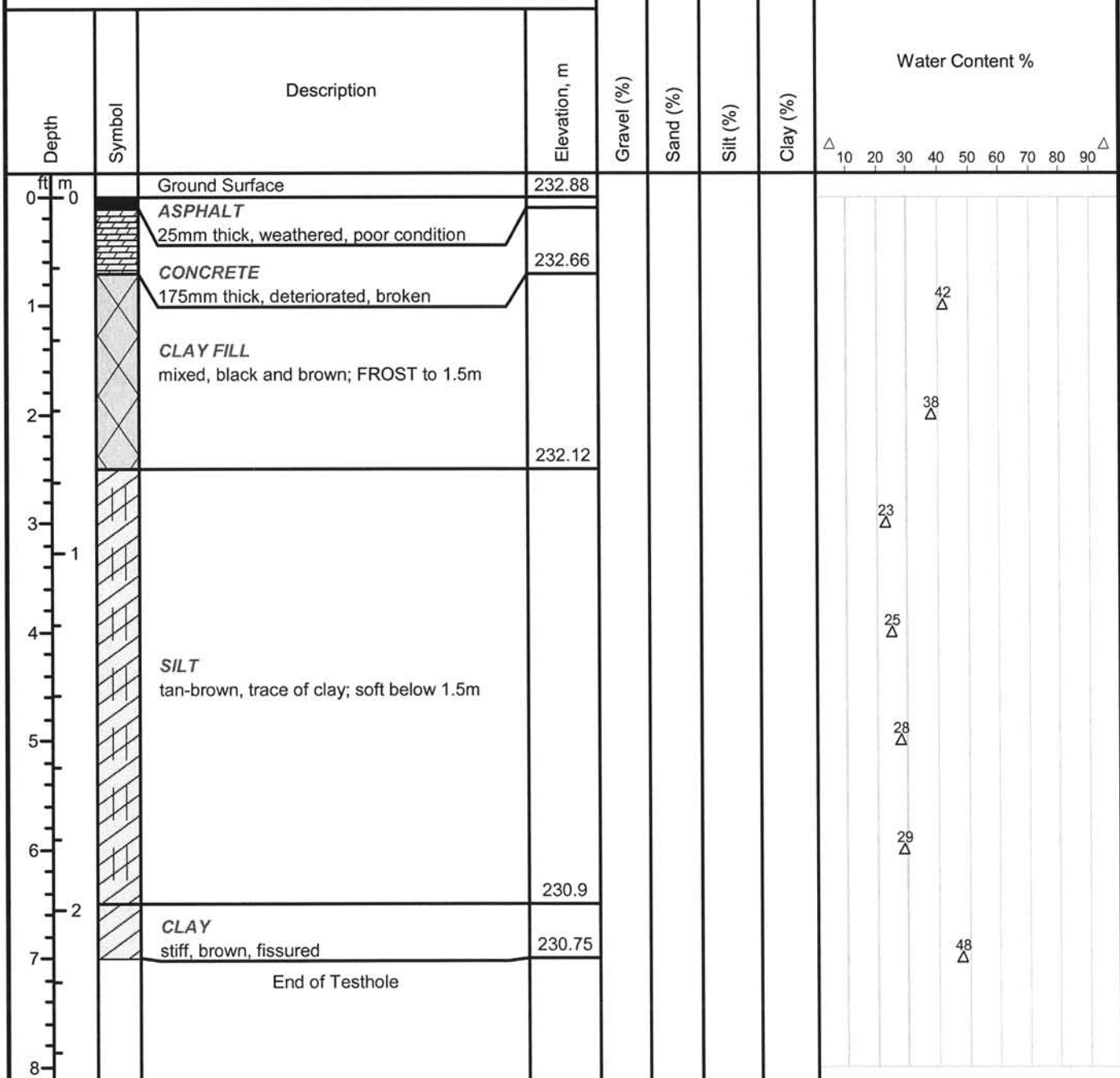
Datum: 233.17m

Drill Date: 03/02/10

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

**GENIVAR****Project No:** WE-09-151-00-WE**TH3****Project:** 2010 Street Renewal**Client:** City of Winnipeg**Enclosure:****Location:** Wellington South Alley(Lanark-Academy)**Engineer:** SSU**SUBSURFACE PROFILE**

Drill Method: Truck- Mounted

Drill Date: 03/02/10

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.88m

Checked by: SSU

Sheet: 1 of 1

**GENIVAR**

Project No: WE-09-151-00-WE

TH4

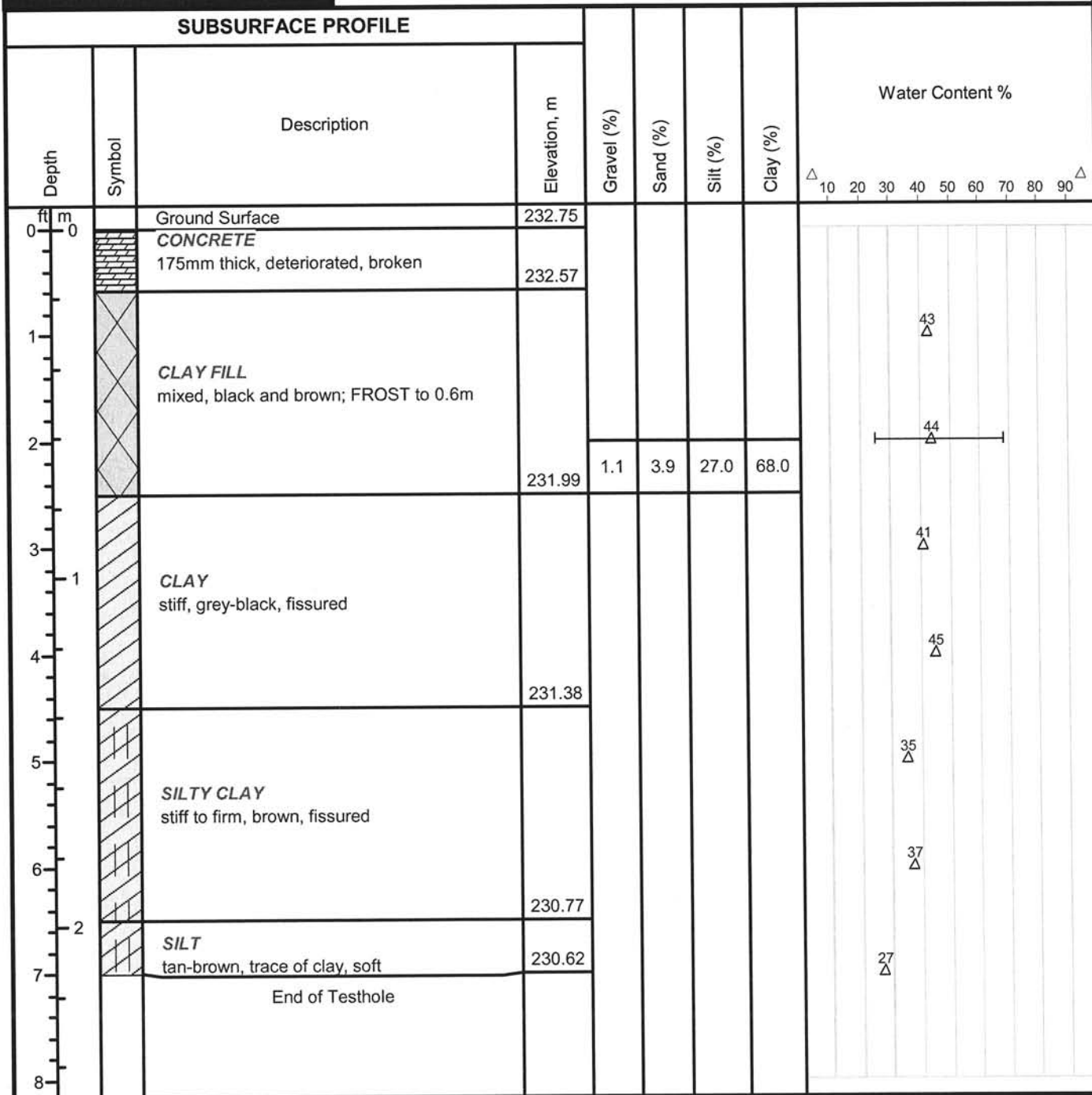
Project: 2010 Street Renewal

Client: City of Winnipeg

Enclosure:

Location: Wellington South Alley(Lanark-Academy)

Engineer: SSU

SUBSURFACE PROFILE

Drill Method: Truck- Mounted

Drill Date: 03/02/10

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.75m

Checked by: SSU

Sheet: 1 of 1



Project No: WE-09-151-00-WE

TH5

Project: 2010 Street Renewal

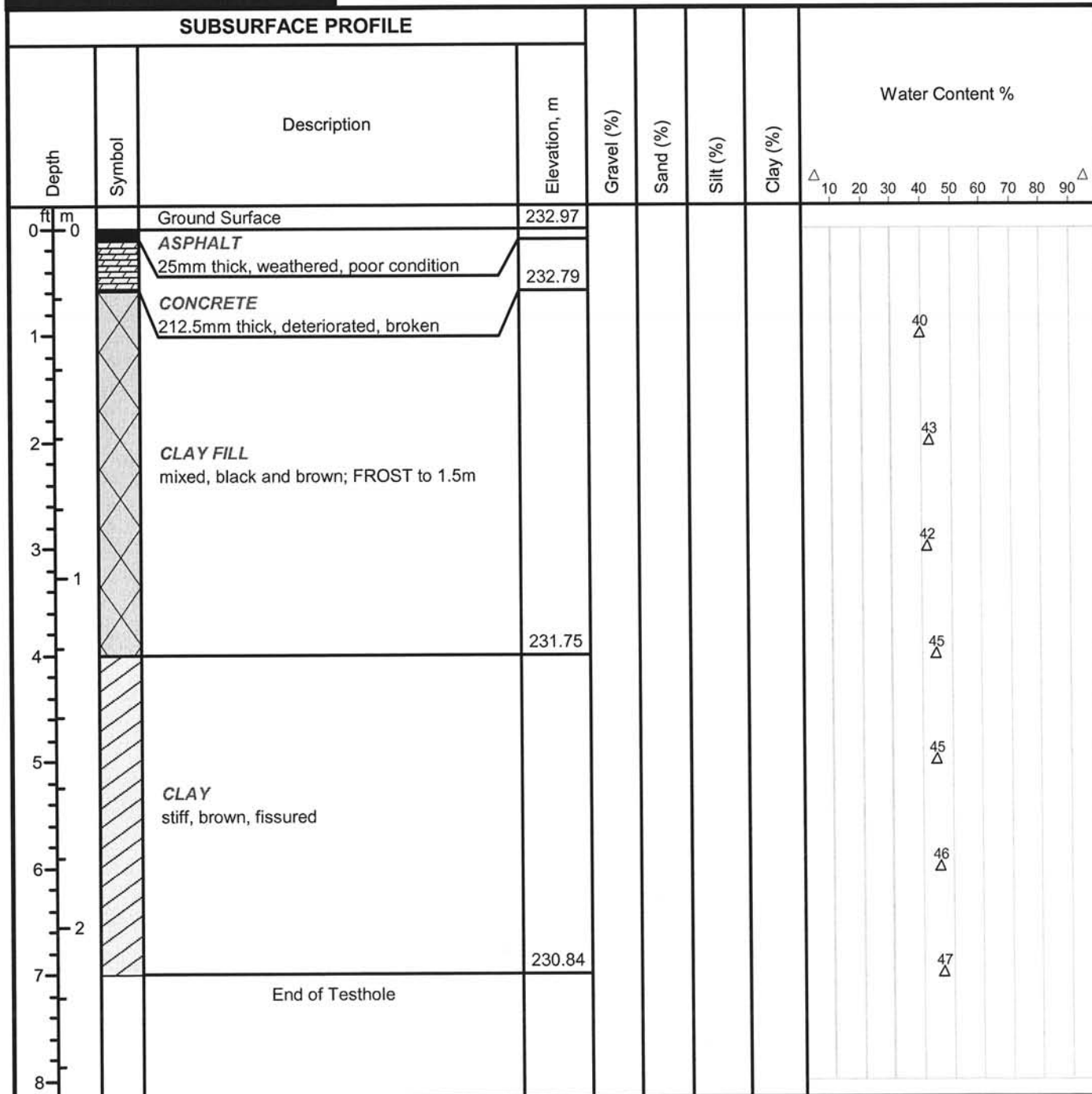
Client: City of Winnipeg

Enclosure:

Location: Wellington South Alley(Lanark-Academy)

Engineer: SSU

SUBSURFACE PROFILE



Drill Method: Truck- Mounted

Drill Date: 03/02/10

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.97m

Checked by: SSU

Sheet: 1 of 1



Project No: WE-09-151-00-WE

TH6

Project: 2010 Street Renewal

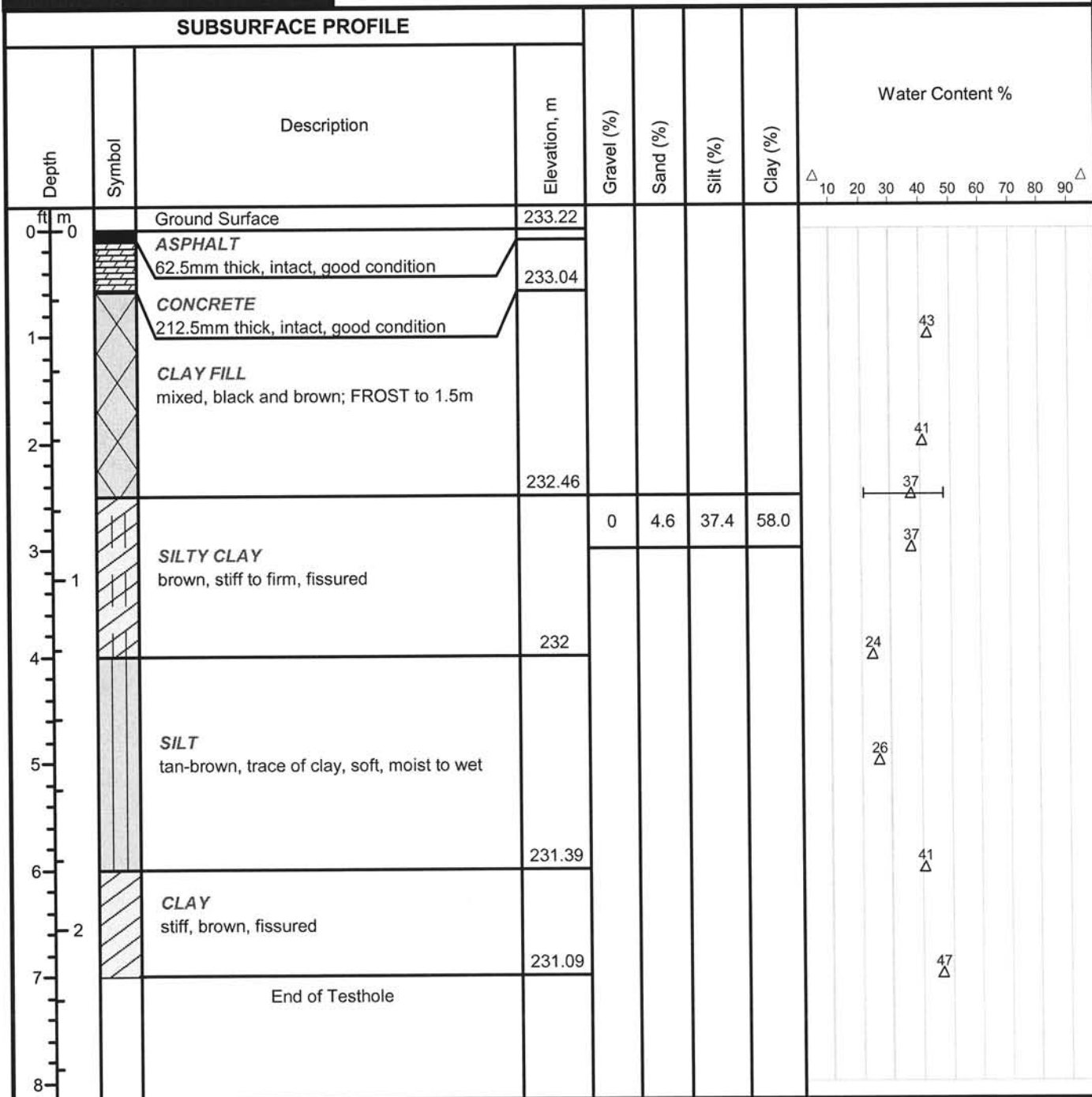
Client: City of Winnipeg

Enclosure:

Location: Wellington South Alley(Lanark-Academy)

Engineer: SSU

SUBSURFACE PROFILE



Drill Method: Truck- Mounted

Drill Date: 03/02/10

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 233.22m

Checked by: SSU

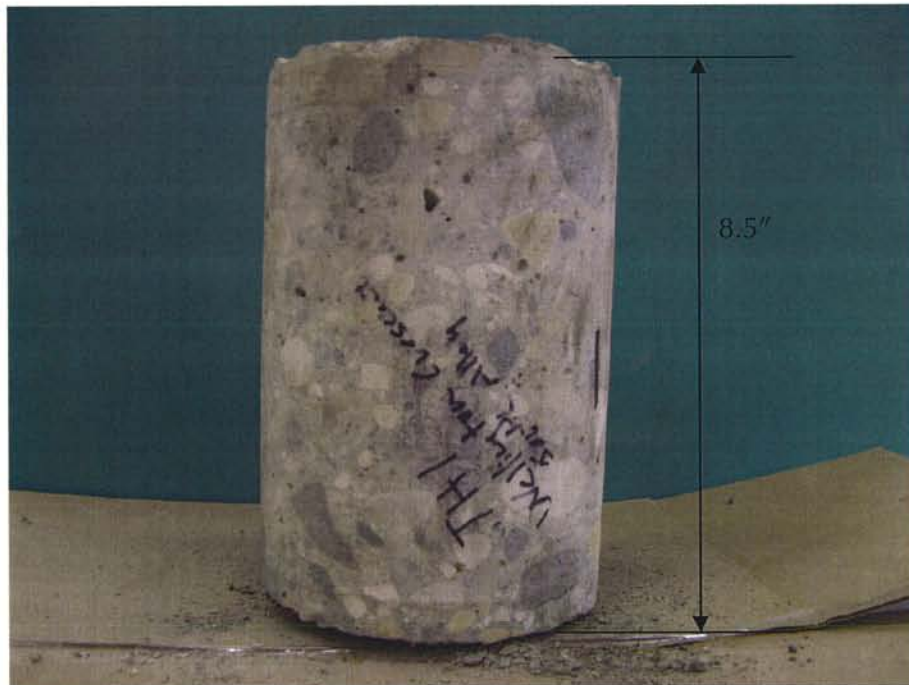
Sheet: 1 of 1

PROJECT:

2010 STREET RENEWAL

STREET:

SOUTH ALLEY BET. LANARK ST. AND ACADEMY RD.
CORE SAMPLES FROM LANARK ST. TO ACADEMY RD.



PROJECT:

2010 STREET RENEWAL

STREET:

SOUTH ALLEY BET. LANARK ST. AND ACADEMY RD.
CORE SAMPLES FROM LANARK ST. TO ACADEMY RD.



PROJECT:

2010 STREET RENEWAL

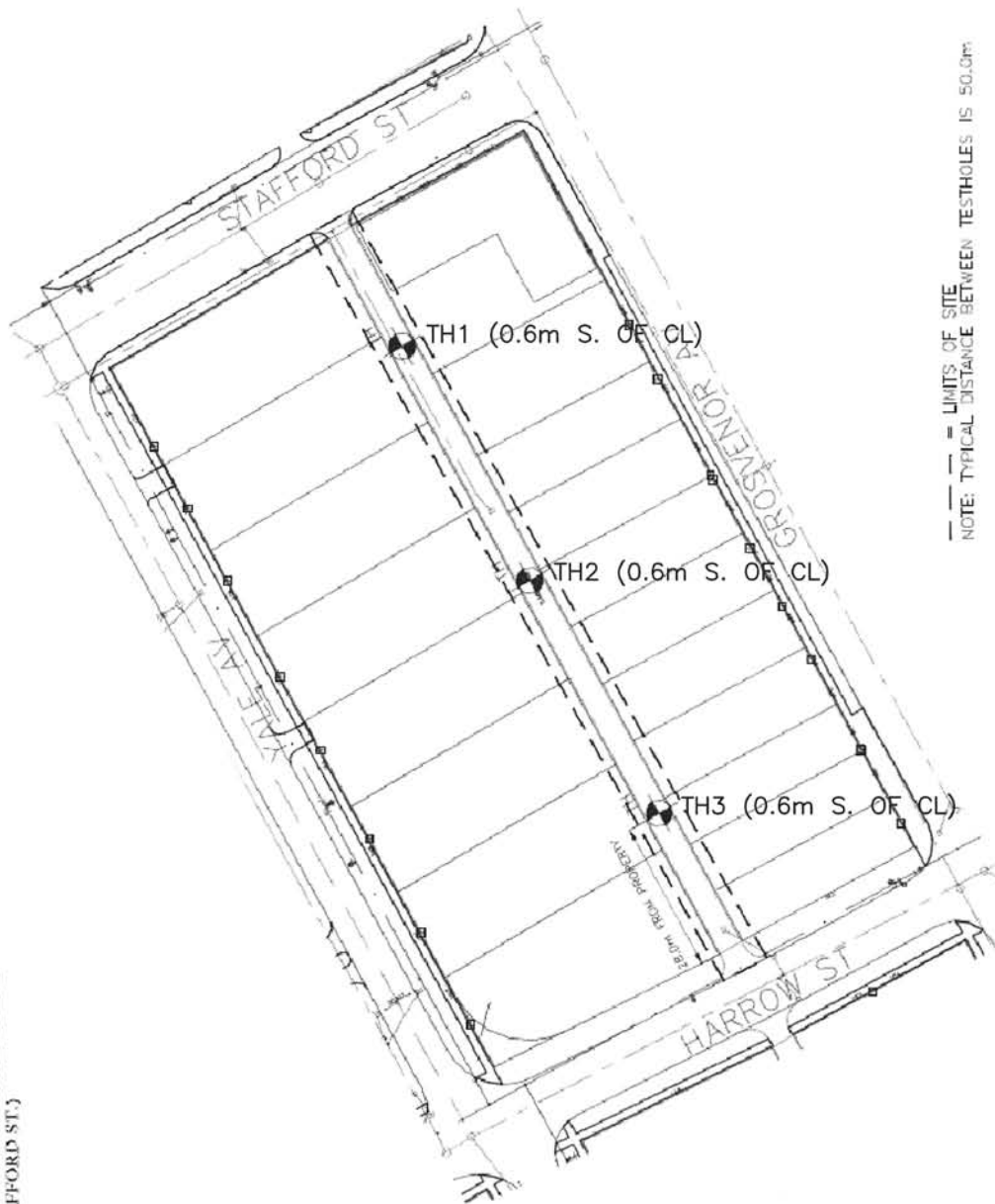
STREET:

SOUTH ALLEY BET. LANARK ST. AND ACADEMY RD.
CORE SAMPLES FROM LANARK ST. TO ACADEMY RD.





YALE/GROSVENOR ALLEY
(FROM HARROW ST. TO STAFFORD ST.)



--- = LIMITS OF SITE
--- = TYPICAL DISTANCE BETWEEN TESTHOLES IS 50.0m



GENIVAR

10 PRAIRIE WAY
WINNIPEG, MB R2J 3J8
Tel: (204)477-6650
Fax: (204)474-2864

CITY OF WINNIPEG
2010 STREET RENEWAL

TESTHOLE LOCATIONS
YALE-GROSVENOR ALLEY

DATE: (YY/MM/DD)

10/04/23

APPROVED:

SSU

DRAWN BY:

AO

PROJ. NO.

WE09 151

DWG. NO.

GEO-5

Yale/Grosvenor Alley

[illegible]

**GENIVAR**

Project No: WE-09-151-00-WE

TH1

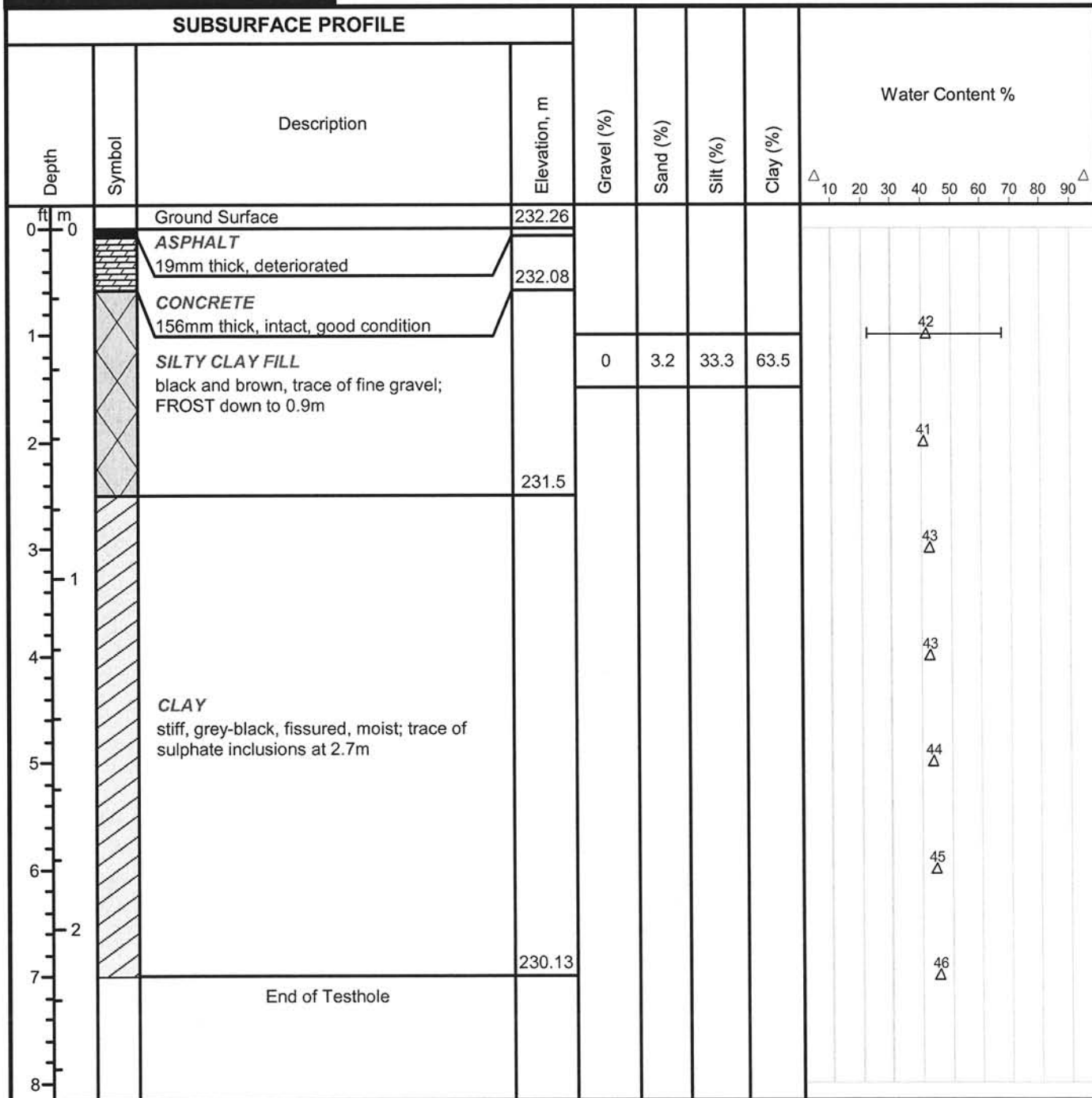
Project: 2010 Street Renewal

Client: City of Winnipeg

Enclosure:

Location: Yale/Grosvenor Alley;fr.Harrow-Stafford

Engineer: SSU

SUBSURFACE PROFILE

Drill Method: Truck- Mounted

Drill Date: 12/16/09

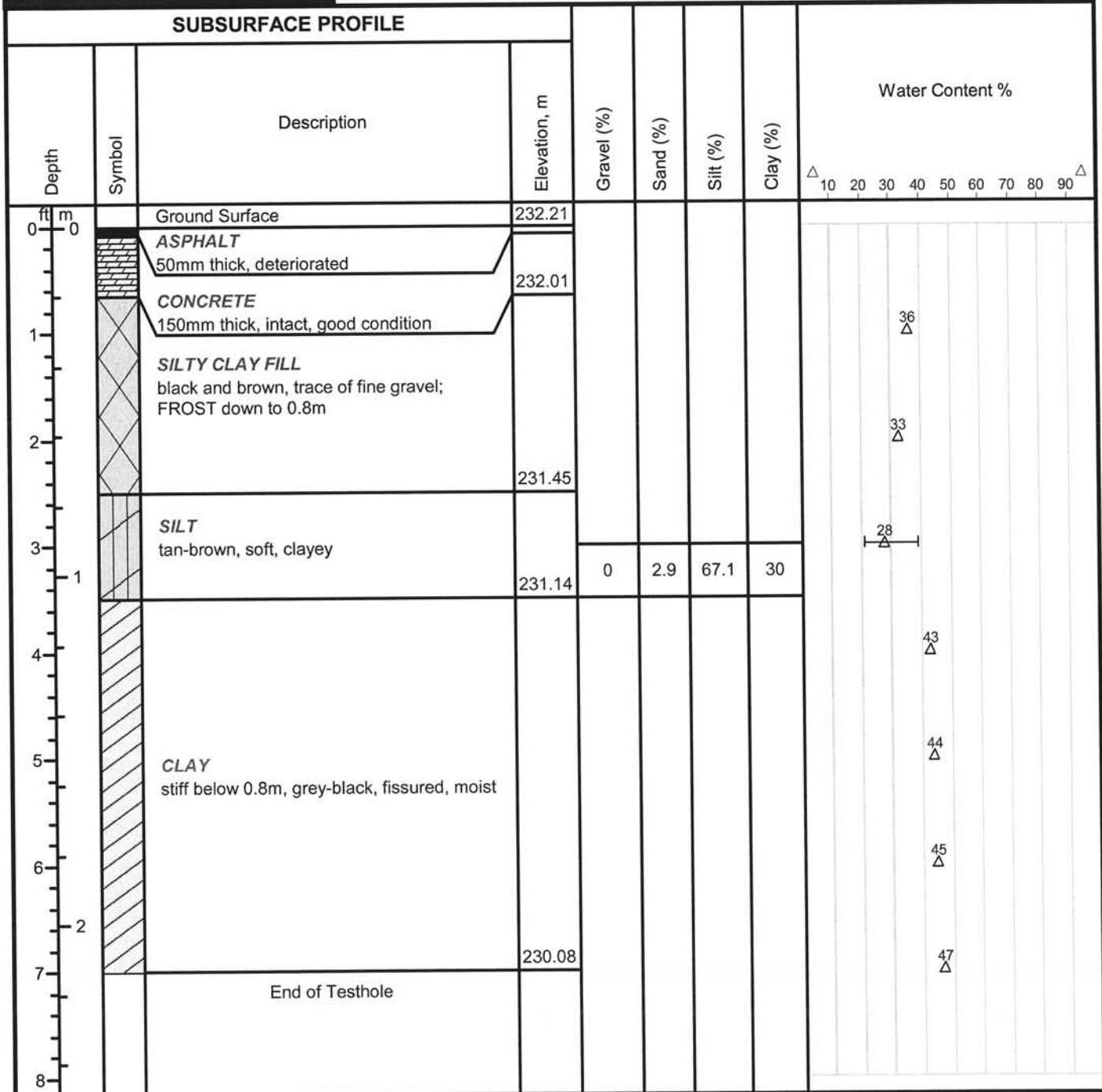
Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.26m

Checked by: SSU

Sheet: 1 of 1

**GENIVAR****Project No:** WE-09-151-00-WE**TH2****Project:** 2010 Street Renewal**Client:** City of Winnipeg**Enclosure:****Location:** Yale/Grosvenor Alley;fr.Harrow-Stafford**Engineer:** SSU**SUBSURFACE PROFILE**

Drill Method: Truck- Mounted

Drill Date: 12/16/09

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.21m

Checked by: SSU

Sheet: 1 of 1



GENIVAR

Project No: WE-09-151-00-WE

TH3

Project: 2010 Street Renewal

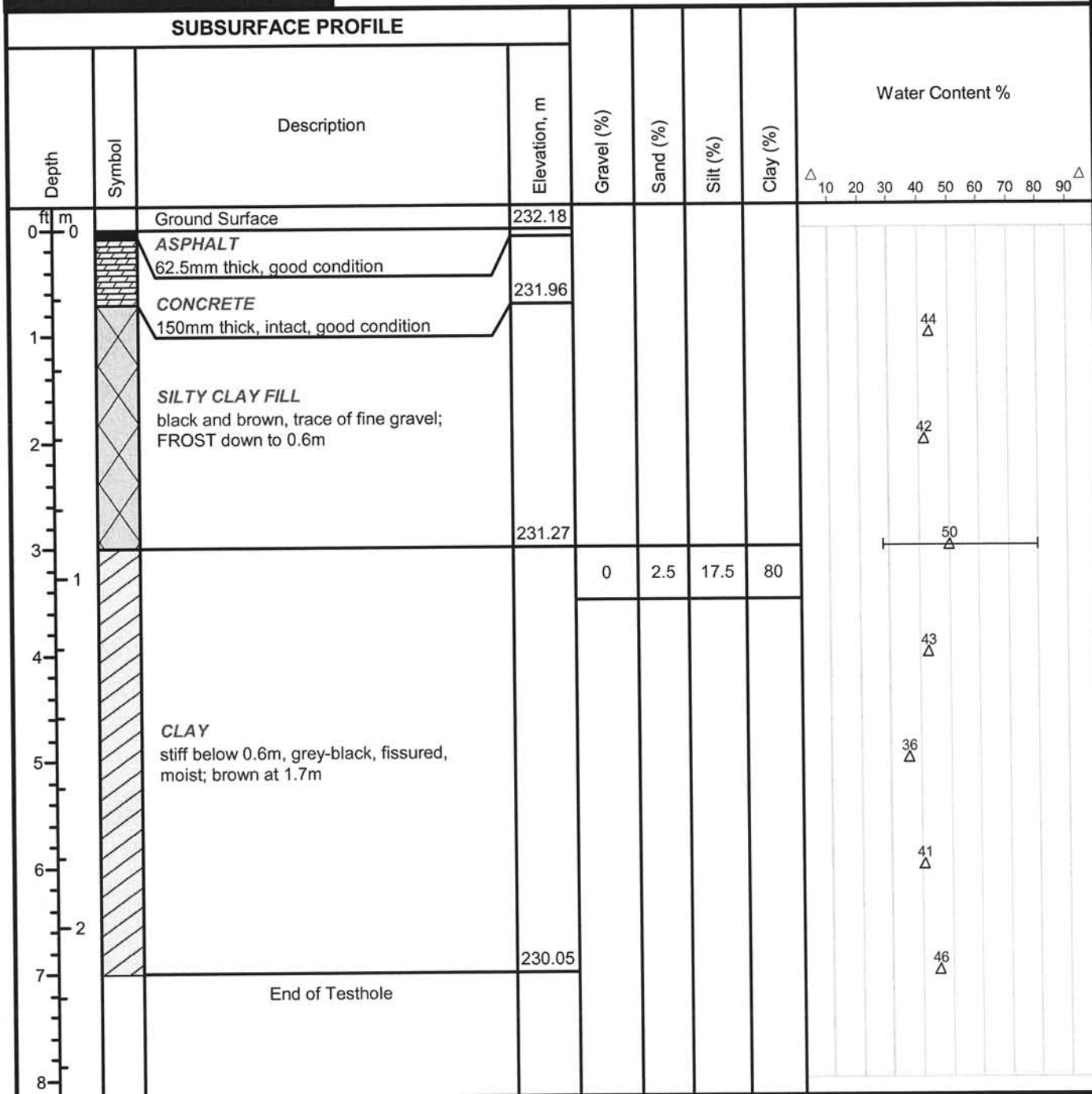
Client: City of Winnipeg

Enclosure:

Location: Yale/Grosvenor Alley;fr.Harrow-Stafford

Engineer: SSU

SUBSURFACE PROFILE



Drill Method: Truck- Mounted

Drill Date: 12/16/09

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.18m

Checked by: SSU

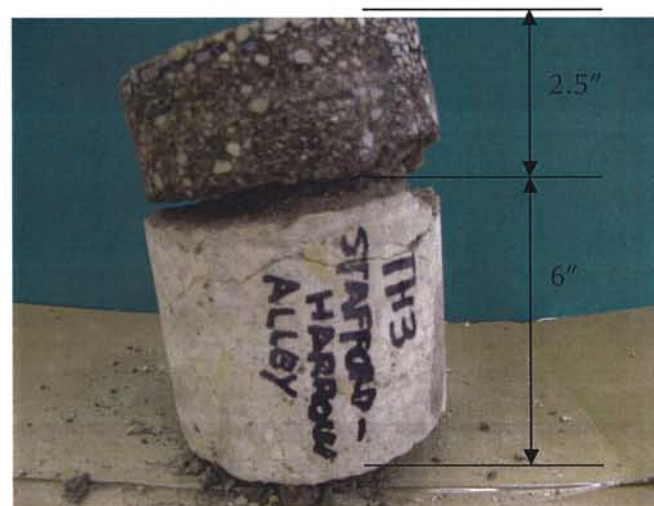
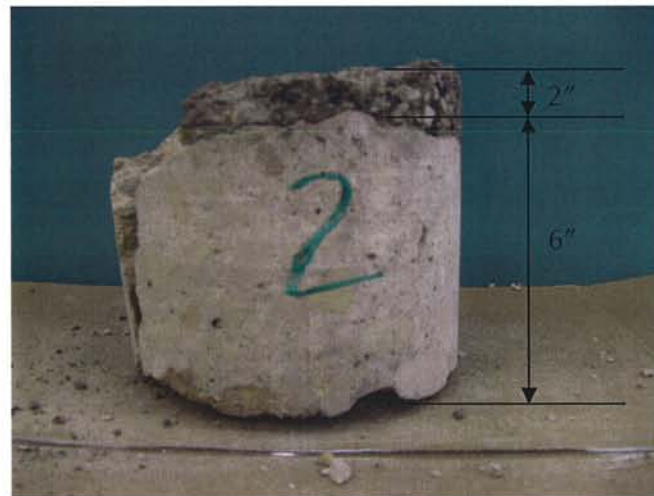
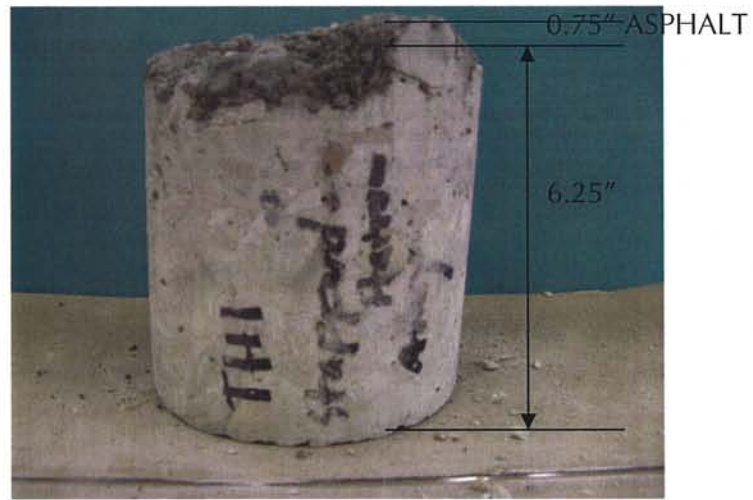
Sheet: 1 of 1

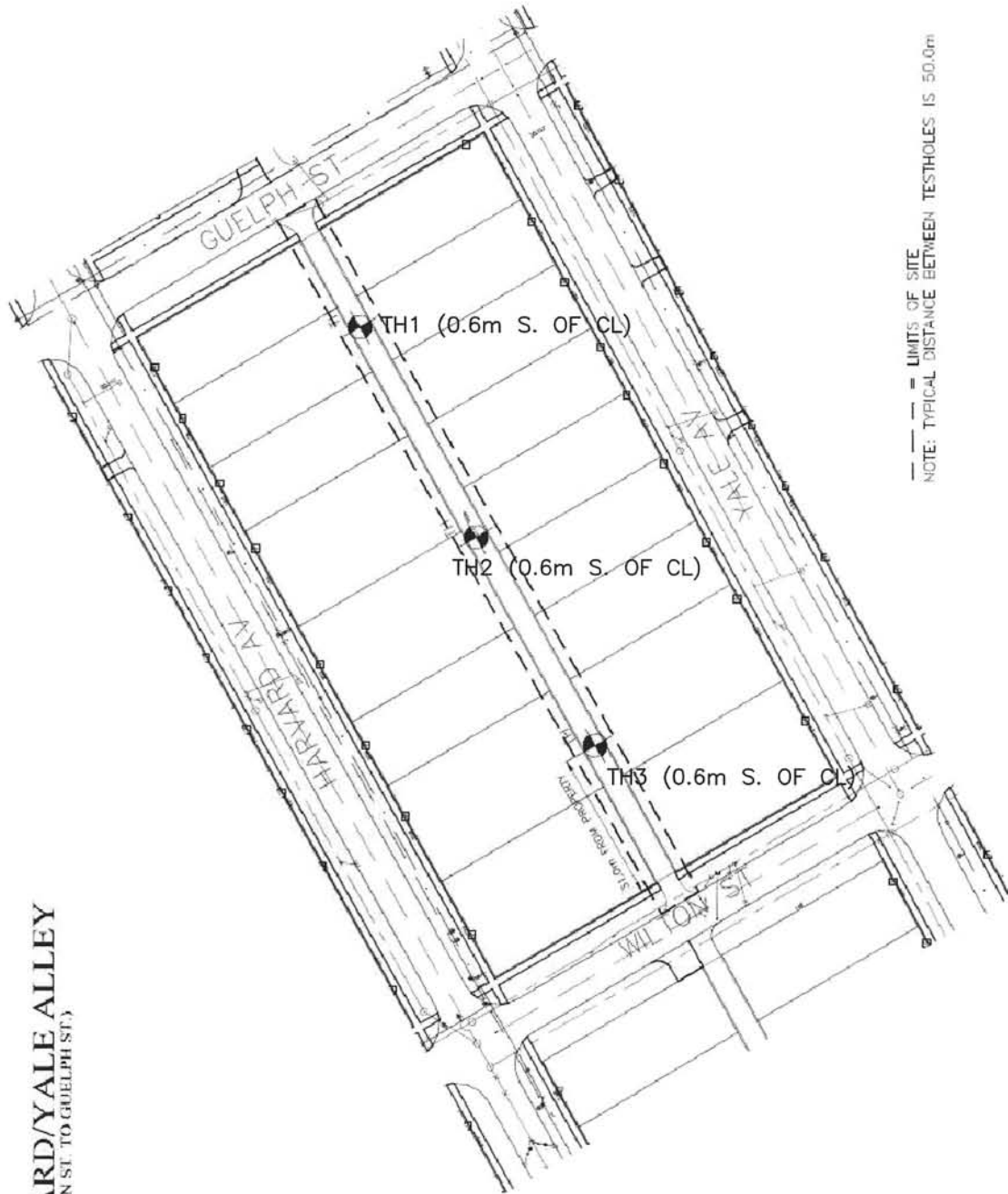
PROJECT:

2010 STREET RENEWAL

STREET:

BACK ALLEY BET. HARVARD AND YALE,
CORE SAMPLES FROM STAFFORD ST. TO HARROW ST.





HARVARD/YALE ALLEY
(FROM WILTON ST. TO GUELPH ST.)



GENIVAR

10 PRAIRIE WAY
WINNIPEG, MB R2J 3J8
Tel: (204)477-6650
Fax: (204)474-2864

CITY OF WINNIPEG
2010 STREET RENEWAL

TESTHOLE LOCATIONS
HARVARD-YALE ALLEY

DATE: (YY/MM/DD)

10/04/23

APPROVED:

SSU

DRAWN BY:

AO

PROJ. NO.

WE09 151

DWG. NO.

GEO-7

Harvard/ Yale Alley
Wilton Street to Guelph Street

[illegible]

**GENIVAR****Project No:** WE-09-151-00-WE**TH1****Project:** 2010 Street Renewal**Client:** City of Winnipeg**Enclosure:****Location:** Harvard/Yale Alley;fr.Wilton-Guelph St.**Engineer:** SSU**SUBSURFACE PROFILE**

Depth	Symbol	Description	Elevation, m	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Water Content %
ft m								Δ 10 20 30 40 50 60 70 80 90 Δ
0		Ground Surface	232.09					
0		CONCRETE 162.5mm thick, intact, good condition	231.93					
1		CLAY grey-black, fissured; FROST down to 0.6m	231.48					43 Δ
2		SILT soft, tan-brown, clayey, moist to wet	231.33	0	3.1	75.9	21	25 Δ
3		CLAY stiff, brown, fissured	230.87					39 Δ
4		SILT soft, tan-brown, moist to wet	230.41					24 Δ
5								26 Δ
6		SILTY CLAY stiff to firm, brown, fissured	229.96					33 Δ
7		End of Testhole						35 Δ
8								

Drill Method: Truck- Mounted

 Genivar
 10 Prairie Way
 Winnipeg, Mb.
 R2J 3J8

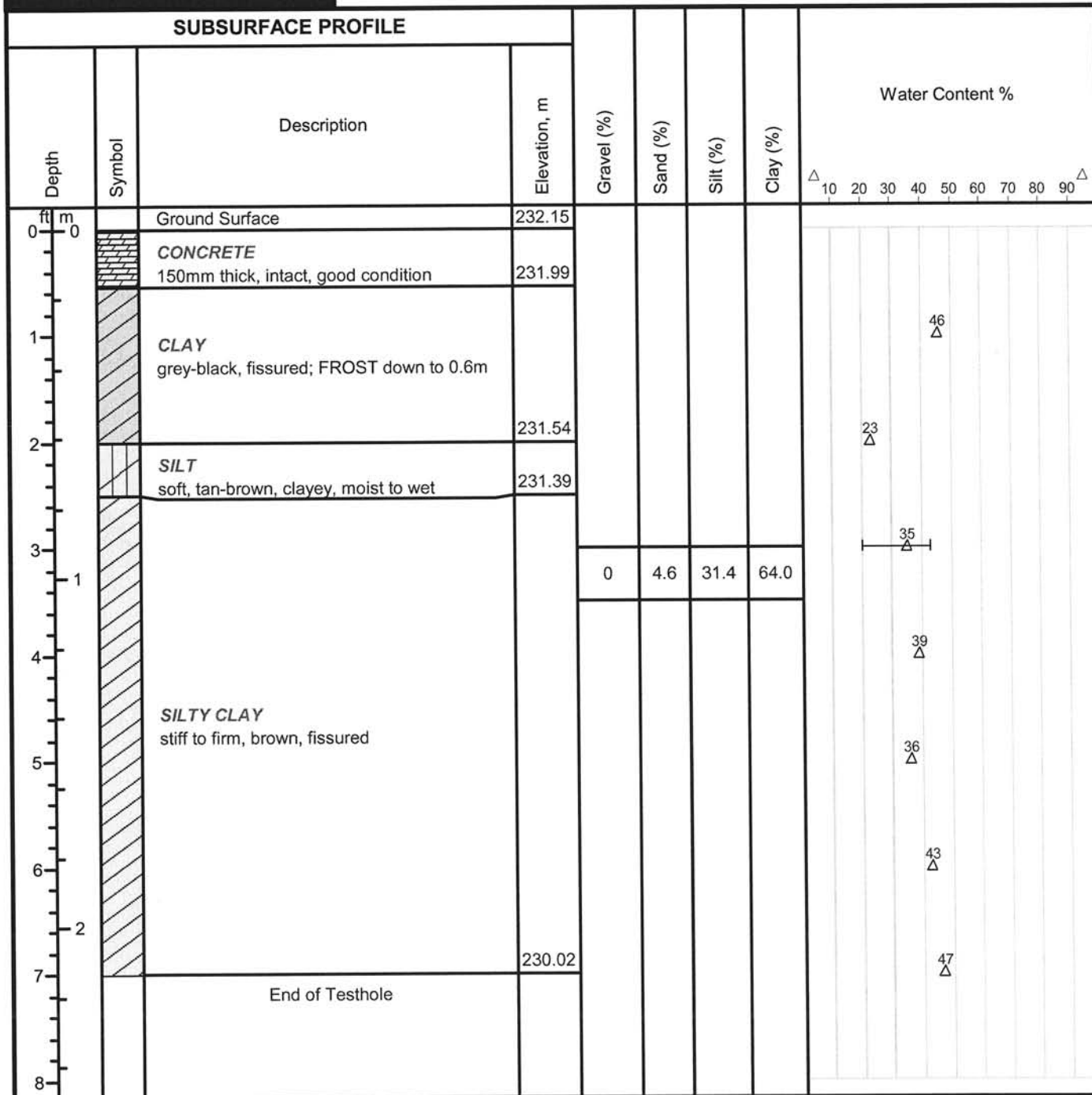
Datum: 232.09m

Drill Date: 12/11/09

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

**GENIVAR****Project No:** WE-09-151-00-WE**TH2****Project:** 2010 Street Renewal**Client:** City of Winnipeg**Enclosure:****Location:** Harvard/Yale Alley;fr.Wilton-Guelph St.**Engineer:** SSU**SUBSURFACE PROFILE**

Drill Method: Truck- Mounted

Drill Date: 12/11/09

Hole Size: 125mm

Genivar
10 Prairie Way
Winnipeg, Mb.
R2J 3J8

Datum: 232.15m

Checked by: SSU

Sheet: 1 of 1

PROJECT:

2010 STREET RENEWAL

STREET:

BACK ALLEY BET. HARVARD AND YALE
CORE SAMPLES FROM GUELPH ST. TO WILTON ST.

