



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix R - Part 1

Hydrogeological Assessment Report

PROJECT: 19119989 (2000)

RECORD OF BOREHOLE: 20-12

SHEET 2 OF 2

LOCATION: See Figure 1

BORING DATE: July 10, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		STRATA PLOT	SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	ELEV. DEPTH (m)		NUMBER	TYPE	BLWS/0.3m	20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴			10 ⁻³	
						SHEAR STRENGTH		nat V. + Q - ●		WATER CONTENT PERCENT		Wp — W — WI						
						Cu, kPa		rem V. ⊕ U - ○										
						20		40		60		80						
						10		20		30		40						
— CONTINUED FROM PREVIOUS PAGE —																		
10	Mobile B-46 110 mm Tricone with Mud	(CL-ML) CLAYEY SILT and SAND, some gravel; grey (TILL), contains cobbles and boulders; cohesive, w<PL, hard	9.96															
11			10	SS	50/ 0.10													
12																		
13																		
14																		
15																		
16																		
17		END OF BOREHOLE	203.31 16.89	14	SS	50/ 0.13												
18	NOTE: 1. Borehole open upon completion of drilling. 2. Heaving sand encountered at a depth of 7.6 m, drilling method changed to 110 mm tricone with mud.																	
19																		
20																		

GTA-BHS 001 S:\CLIENTS\SCS CONSULTING\BERCZYGLIEN MARKHAM\02 DATA\GINT\BERCZYGLIEN MARKHAM.GPJ GAL-MIS.GDT 6/25/21

DEPTH SCALE
1 : 50



LOGGED: MJB/BD
CHECKED: KN

PROJECT: 19119989 (2000)

RECORD OF BOREHOLE: 20-13

SHEET 1 OF 2

LOCATION: See Figure 1

BORING DATE: July 20, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k_v , cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		rem V. U.		Wp				Wi	
0		GROUND SURFACE		218.30													
0		TOPSOIL (690 mm)		0.00	1	SS	6										
1		(CL) SILTY CLAY, trace sand to sandy, trace gravel; brown, organic staining, oxidation staining; cohesive, w>PL, stiff		217.61 0.69	2	SS	10										
2		(SM) SILTY SAND, some gravel; brown to grey (TILL), contains cobbles and boulders; non-cohesive, moist, dense to very dense		216.17 2.13	3	SS	12										
3		- Becoming grey at a depth of 3.4 m			4	SS	31										
4					5	SS	73										
5					6	SS	93/ 0.2										
6		- Auger grinding between depths of 5.5 m and 6.1 m			7	SS	50/ 0.1								MH		
7					8	SS	50/ 0.13										
8					9	SS	50/ 0.08										
9																	
10																	

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DEPTH SCALE

1 : 50



LOGGED: BD

CHECKED: KN

PROJECT: 19119989 (2000)

RECORD OF BOREHOLE: 20-13

SHEET 2 OF 2

LOCATION: See Figure 1

BORING DATE: July 20, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k_v , cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		+ ϕ U - ϕ		Wp			WI
							20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			
10		— CONTINUED FROM PREVIOUS PAGE — (SM) SILTY SAND, some gravel; brown to grey (TILL), contains cobbles and boulders; non-cohesive, moist, dense to very dense															
11				10	SS	50/0.08											
12		- Auger grinding between depths of 12.2 m and 13.1 m															
13				11	SS	50/0.08											
14	Mobile B-45 110 mm Tricone with Mud			12	SS	50/0.13											
15				13	SS	50/0.13											
16				14	SS	50/0.13											
17		END OF BOREHOLE		201.26 17.04													
18		NOTE: 1. Borehole open upon completion of drilling.															
19																	
20																	

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DEPTH SCALE
1 : 50



LOGGED: BD
CHECKED: KN

PROJECT: 19119989 (2000)
 LOCATION: N 4861885.83; E 632932.01

RECORD OF BOREHOLE: 21-1

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: May 10, 2021

SPDT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	20	40	60	80	10 ⁶	10 ⁵		
0		GROUND SURFACE		216.45											
		ASPHALT (150 mm)		0.00											
		FILL - (SP) gravelly SAND; brown; non-cohesive, moist, dense		0.15	1	SS	30								
				215.69											
		FILL - (CL) sandy SILTY CLAY; brown; cohesive, w<PL, firm		0.76	2	SS	8								
				214.32											
				2.13											
		(CL) sandy SILTY CLAY to SILTY CLAY and SAND, some gravel; brown to grey at 6.1 m (TILL), contains cobbles and boulders; cohesive, w<PL, very stiff to hard			3	SS	6								
					4	SS	17								
					5	SS	20								
					6	SS	50/ 0.13								
					7	SS	93/ 0.23								
					8	SS	83								
					9	SS	50/ 0.13								

DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: YS

GTA-BHS 001: S:\CLIENTS\SCS CONSULTING\BERCZYGLIEN_MARKHAM\02_DATA\GINT\BERCZYGLIEN_MARKHAM.GPJ GAL-MIS.GDT 6/25/21

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PROJECT: 19119989 (2000)

RECORD OF BOREHOLE: 21-1

SHEET 2 OF 2

LOCATION: N 4861885.83; E 632932.01

BORING DATE: May 10, 2021

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		rem V		Wp				Wi	
		— CONTINUED FROM PREVIOUS PAGE —					20	40	60	80	10 ⁶	10 ⁵	10 ⁴	10 ³			
10		(CL) sandy SILTY CLAY to SILTY CLAY and SAND, some gravel; brown to grey at 6.1 m (TILL), contains cobbles and boulders; cohesive, w<PL, very stiff to hard															
11				10	SS	50/0.07											
12				11	SS	50/0.07											
13				12	SS	50/0.13											
14	Track Mount Mobile B57 130 mm Tricone Mud Rotary			13	SS	100/0.25											
15				14	SS	50/0.07											
16				15	SS	52											
17				16	SS	50/0.13											
17		END OF BOREHOLE		199.41		17.04											
18		NOTES:															
18		1. Water encountered at a depth of 4.6 m during drilling.															
18		2. Water level measured in monitoring well as follows:															
18		Date	Depth (m)	Elev. (m)													
18		20-May-21	0.6	215.9													
19																	
20																	

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DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: YS

PROJECT: 19119989 (2000)
 LOCATION: N 4861617.47; E 632979.74

RECORD OF BOREHOLE: 21-2

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: May 7, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	20	40	60	80	10 ⁶	10 ⁵		
0		GROUND SURFACE		220.80											
		TOPSOIL (100 mm)		0.00											
		FILL - (CL) sandy SILTY CLAY; brown, rootlets, organic inclusions; cohesive, w-PI, firm		0.10	1	SS	5								50 mm Diameter PVC Monitoring Well (Flush mount)
1	Track Mount Mobile B57 200 mm O.D. Hollow Stem Augers				2	SS	8								
2				218.67	3	SS	4								
		(SM) SILTY SAND; brown; non-cohesive, moist, very dense		2.13	4	SS	65								Bentonite
3					5	SS	72								
4				216.76	6	SS	61								Sand
		(SP) gravelly SAND, some fines; brown; non-cohesive, wet, very dense		4.04	7	SS	83/0.25								May 20, 2021
5	Track Mount Mobile B57 130 mm Tricone Mud Rotary				8	SS	50/0.10								Screen
6					9	SS	50/0.10								MH
7				213.75											
		(CL) sandy SILTY CLAY, some gravel; grey (TILL), contains cobbles and boulders; cohesive, w<PL, hard		7.05											
8															
9															
10															

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DEPTH SCALE
1 : 50



LOGGED: SC
CHECKED: YS

PROJECT: 19119989 (2000)
 LOCATION: N 4861617.47; E 632979.74

RECORD OF BOREHOLE: 21-2

SHEET 2 OF 2

BORING DATE: May 7, 2021

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		+ Q - U				Wp	
		— CONTINUED FROM PREVIOUS PAGE —															
10		(CL) sandy SILTY CLAY, some gravel; grey (TILL), contains cobbles and boulders; cohesive, w<PL, hard															
11					10	SS	50/0.15										
12					11	SS	50/0.10										
13					12	SS	50/0.08										
14					13	SS	50/0.08										
15					14	SS	50/0.08										
16					15	SS	50/0.10										
17					16	SS	50/0.10										
18					17	SS	50/0.10										
19					202.42	SS	50/0.10										
20					18.38												

END OF BOREHOLE

NOTES:

- Water encountered at a depth of 4.6 m during drilling.
- Water level measured in monitoring well as follows:

Date	Depth (m)	Elev. (m)
20-May-21	4.7	216.1

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DEPTH SCALE
1 : 50



LOGGED: SC
CHECKED: YS

PROJECT: 19119989 (2000)
 LOCATION: N 4861620.43; E 633018.12

RECORD OF BOREHOLE: 21-3

SHEET 1 OF 3
 DATUM: Geodetic

BORING DATE: May 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	SHEAR STRENGTH				WATER CONTENT PERCENT					
							Cu, kPa		nat V. rem V.		Wp		Wi			
0		GROUND SURFACE		220.82												
		TOPSOIL (680 mm)		0.00	1	SS	6								50 mm Diameter PVC Monitoring Well (Flush mount)	
1		(CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w<PL, stiff		220.14 0.68	2	SS	11									
2		(SM) SILTY SAND, trace gravel; brown (TILL); very dense		219.45 1.37	3	SS	50								Bentonite	
3		(ML) SILT and SAND; brown; non-cohesive, moist to wet, dense to very dense		218.69 2.13	4	SS	84									
4					5	SS	61									
5					6	SS	32									
6		(SP) gravelly SAND, trace fines; brown; non-cohesive, wet, very dense		215.25 5.56	7	SS	84									
7					8	SS	71									
8					9	SS	50/ 0.10									
9																
10																

GTA-BHS 001 S'VICIENISSCS CONSULTINGBERCZYGIEN MARKHAM02 DATAINTBERCZYGIEN MARKHAM GPJ GAL-MIS.GDT 8/25/21

Track Mount Mobile BS7
200 mm O.D. Hollow Stem Augers

CONTINUED NEXT PAGE

DEPTH SCALE
1 : 50



LOGGED: SC
CHECKED: YS

PROJECT: 19119989 (2000)
 LOCATION: N 4861620.43; E 633018.12

RECORD OF BOREHOLE: 21-3

SHEET 2 OF 3
 DATUM: Geodetic

BORING DATE: May 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		STRATA PLOT	SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	ELEV. DEPTH (m)		NUMBER	TYPE	BLOWS/0.3m	20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			
		— CONTINUED FROM PREVIOUS PAGE —																
10	Track Mount Mobile BS7 200 mm O.D. Hollow Stem Augers	(CL) sandy SILTY CLAY, some gravel; grey (TILL), contains cobbles and boulders; cohesive, w<PL to w-PL, hard	210.89															
				10.13														
11					10	SS	50/0.08											
12					11	SS	50/0.10											
13					12	SS	50/0.10											
14					13	SS	50/0.15											
15					14	SS	50/0.13											
16			Track Mount Mobile BS7 130 mm Tricone Mud Rotary		15	SS	50/0.13											
17					16	SS	50/0.19											
18					17	SS	50/0.13											
19				END OF BOREHOLE	202.40													
					18.42													
19				NOTES: 1. NP = Non-Plastic 2. Water encountered at a depth of 4.6 m during drilling.														
20				CONTINUED NEXT PAGE														

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DEPTH SCALE
1 : 50



LOGGED: SC
CHECKED: YS

PROJECT: 19119989 (2000)
 LOCATION: N 4861620.43; E 633018.12

RECORD OF BOREHOLE: 21-3

SHEET 3 OF 3
 DATUM: Geodetic

BORING DATE: May 4, 2021

SPT/DIPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	20	40	60	80	10 ⁶	10 ⁵	10 ⁴		
		--- CONTINUED FROM PREVIOUS PAGE ---													
20		3. Water level measured in monitoring well as follows:													
		Date	Depth (m)	Elev. (m)											
		20-May-21	4.5	216.3											
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															

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DEPTH SCALE
 1 : 50



LOGGED: SC
 CHECKED: YS

LOG OF DRILLING OPERATIONS

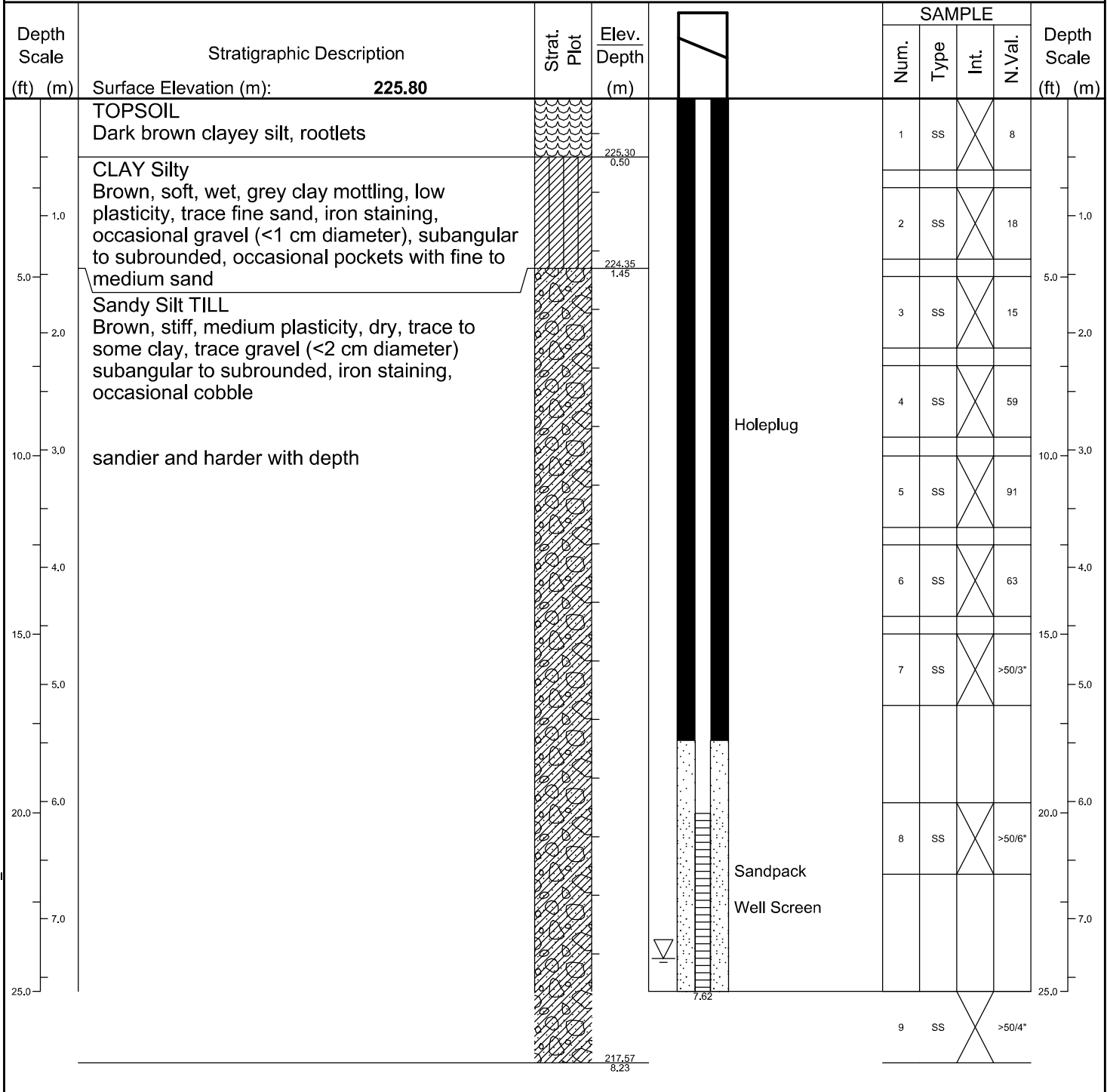


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AG-MW1

Page 1 of 1

Client: Angus Glen Developments Inc.	Project Name: Angus Glen MESP	Logged by: C. D.
Project No.: 300036802	Location: Markham, ON	Ground (m amsl): 225.80
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 3/2/2015	Static Water Level Depth (m): 7.34
Drilling Method: Hollow Stem Auger	Date Completed: 3/2/2015	Sand Pack Depth (m) : 5.48 - 7.62



BHLOG GUELPH P:\GINT\PROJECTS\300 JOBS\300036802_SE WARDEN AND ELGIN MILLS.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **3/3/2015**
This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE
Water found @ time of drilling Static Water Level - 6/16/2015	Pipe: 51 mm dia. PVC Screen: 51 mm dia. PVC #10 slot	AC Auger Cutting CS Continuous RC Rock Core SS Split Spoon AR Air Rotary WC Wash Cuttings

LOG OF DRILLING OPERATIONS

BG-MW1

Page 1 of 1



R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Guelph, Ontario N1H 1C4
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Client: Berczy Glen Landowners Group	Project Name: Berczy Glen Lands	Logged by: C. Dinulescu
Project No.: 300033248	Location: Markham, ON	Ground (m amsl): 220.2
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 9/18/2013	Static Water Level Depth (m):
Drilling Method: Hollow Stem Auger	Date Completed: 9/18/2013	Sand Pack Depth (m) : 4.57 - 6.86

Depth Scale (ft) (m)	Stratigraphic Description	Strat. Plot	Depth (m)	SAMPLE				Depth Scale (ft) (m)
				Num.	Type	Int.	N.Val.	
	Surface Elevation (m): 220.20							
	TOPSOIL - dark brown loam							
1.0	SILTY CLAY - with sand, trace fine subrounded gravel, pockets of fine to medium grained sand, damp, weakly plastic, light brown, soft, iron staining		0.35		SS	X	24	1.0
5.0	SANDY SILT - trace clay, trace fine gravel, light brown, weakly plastic, soft, damp		1.57		SS	X	24	5.0
2.0	SAND - very fine to fine grained, trace silt, occasional gravel, uniform, light brown, damp to wet, loose.		2.21		SS	X	82/10'	2.0
10.0								10.0
3.0								3.0
4.0								4.0
15.0	SANDY GRAVEL - trace clay, trace silt, well graded, wet to saturated, loose, fine to large.		4.70		SS	X	105	15.0
5.0								5.0
6.0	SAND - medium to very coarse grained, trace fine gravel, trace silt, uniform, light brown, loose, saturated, well graded		5.64		SS	X	77	6.0
20.0	SANDY GRAVEL - fine to coarse grained subangular to subrounded, trace silt, trace clay, cobbles, saturated, loose		6.25		SS	X		20.0
	SAND - fine to coarse grained, trace silt, trace gravel, uniform, light brown, saturated, cobbles and boulders		6.45		SS	X		
	Stone refusal at 6.86 m		6.86					

B:\LOG GUELPH\PI\GINT\PROJECTS\300 JOBS\300033248 BERCZY GLEN.GPJ TEMPLATE.GDT 1/28/14

Prepared By: **S. Charity** Checked By: **C. Dinulescu** Date Prepared: **10/7/2013**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND Water found @ time of drilling Static Water Level -	MONITORING WELL DATA Pipe: 51 mm dia. PVC Screen: 51 mm dia. PVC #10 slot	SAMPLE TYPE <table style="width: 100%;"> <tr> <td>AC </td> <td>Auger Cutting</td> <td>SS </td> <td>Split Spoon</td> </tr> <tr> <td>CS </td> <td>Continuous</td> <td>AR </td> <td>Air Rotary</td> </tr> <tr> <td>RC </td> <td>Rock Core</td> <td>WC </td> <td>Wash Cuttings</td> </tr> </table>	AC	Auger Cutting	SS	Split Spoon	CS	Continuous	AR	Air Rotary	RC	Rock Core	WC	Wash Cuttings
AC	Auger Cutting	SS	Split Spoon											
CS	Continuous	AR	Air Rotary											
RC	Rock Core	WC	Wash Cuttings											

Log of Borehole 116

Project No. BRM-00609175-AO

Drawing No. 20

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 1

Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 13, 2020

Auger Sample

Combustible Vapour Reading

Drill Type: Dietrich 120

SPT (N) Value

Natural Moisture

Datum: Geodetic

Dynamic Cone Test

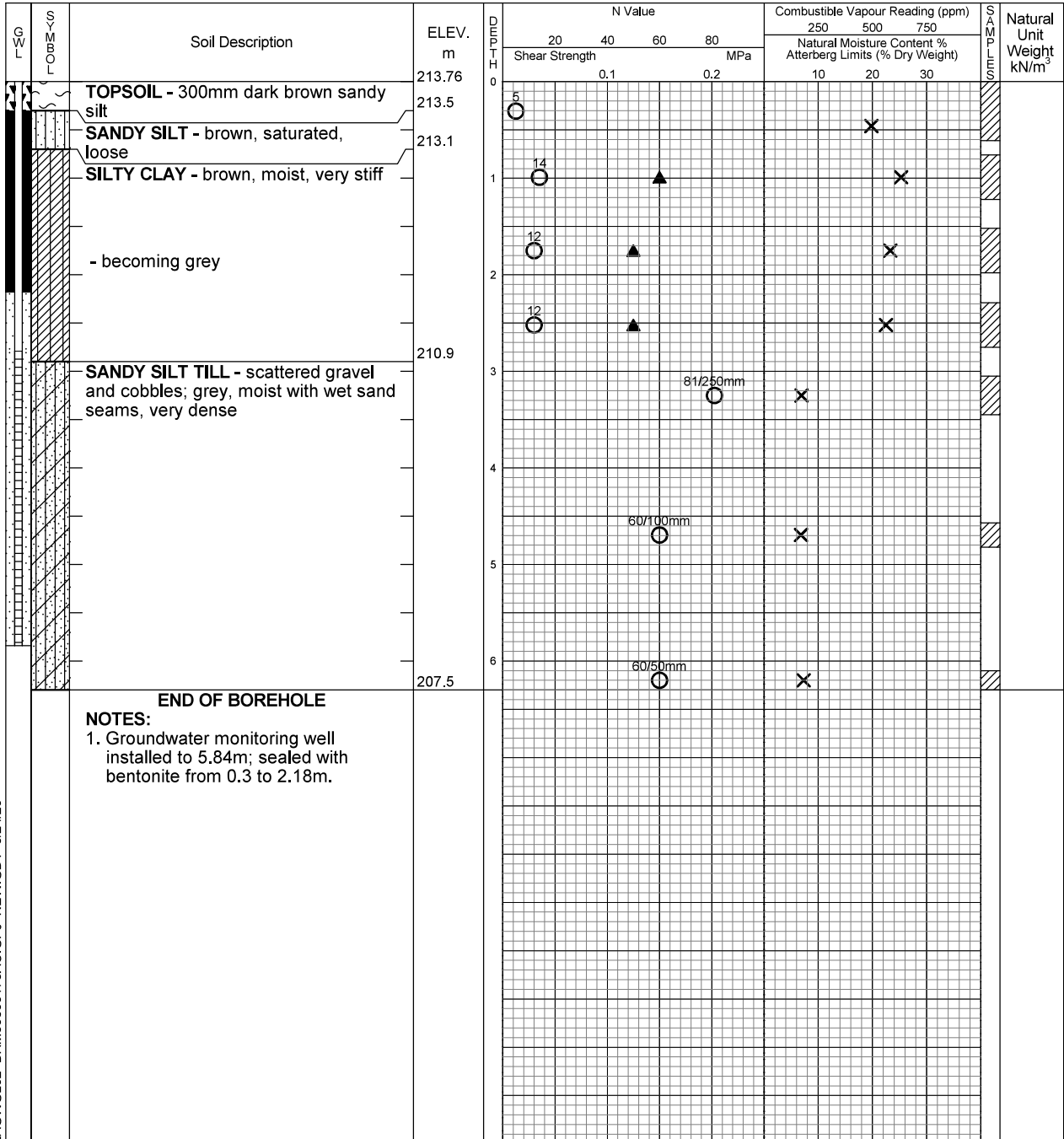
Plastic and Liquid Limit

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



Time	Water Level (m)	Depth to Cave (m)
On completion	Dry	Borehole
After 9 days	0.97	Well
After 14 days	0.99	Well

Log of Borehole 113

Project No. BRM-00609175-AO


Drawing No. 16


Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 2


Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 19 and 22, 2020

Auger Sample 


Combustible Vapour Reading 


Drill Type: Dietrich 120

SPT (N) Value 


Natural Moisture 

Datum: Geodetic

Dynamic Cone Test 

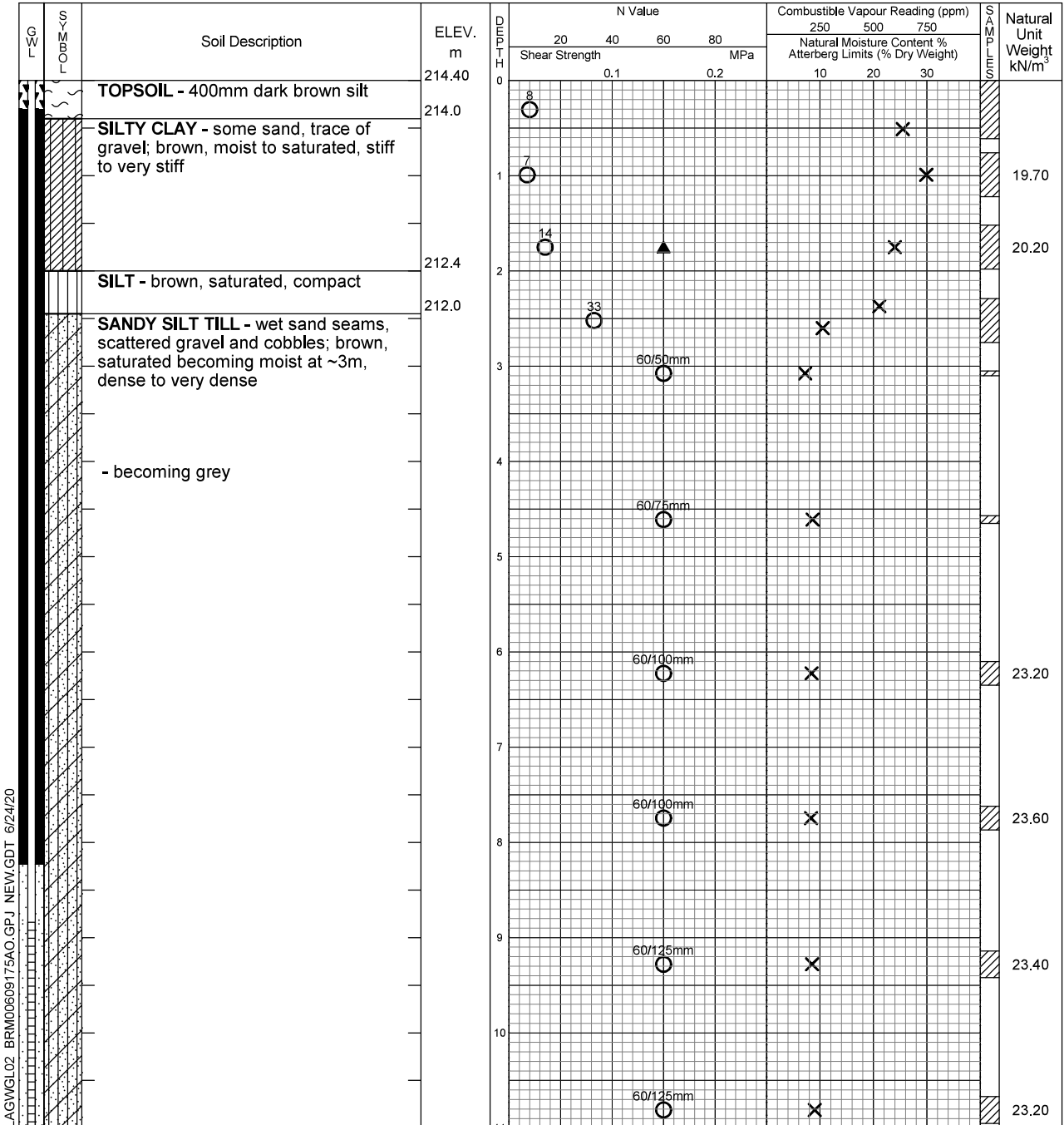
Plastic and Liquid Limit 

Shelby Tube 

Undrained Triaxial at % Strain at Failure 

Field Vane Test 

Penetrometer 



Continued Next Page



Time	Water Level (m)	Depth to Cave (m)
On completion	3.96	Borehole
After 4 hours	0.61	Well
After 5 days	0.58	Well

Log of Borehole 113

Project No. BRM-00609175-AO

Drawing No. 16

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 2 of 2

G W L	S O I L	Soil Description	ELEV. m	D I P T H	N Value				Combustible Vapour Reading (ppm)			N a t u r a l U n i t W e i g h t k N/m ³	
					20	40	60	80	250	500	750		
					Shear Strength MPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
			203.40	11	0.1		0.2			10	20	30	
			201.9										23.30
		END OF BOREHOLE											
		NOTES: 1. Groundwater monitoring well installed to 11.89m; sealed with bentonite from 0.3 to 8.23m.											

LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



Time	Water Level (m)	Depth to Cave (m)
On completion	3.96	Borehole
After 4 hours	0.61	Well
After 5 days	0.58	Well

Log of Borehole 113A

Project No. BRM-00609175-AO

Drawing No. 17

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 1

Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 22, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Dynamic Cone Test

Plastic and Liquid Limit

Shelby Tube

Undrained Triaxial at % Strain at Failure

Drill Type: Dietrich 120

Field Vane Test

Penetrometer

Datum: Geodetic

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value				Combustible Vapour Reading (ppm)			Natural Unit Weight kN/m ³	
					20	40	60	80	250	500	750		
					Shear Strength MPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		TOPSOIL - 400mm dark brown silt	214.40	0	0.1		0.2			10	20	30	
		SILTY CLAY - some sand, trace of gravel; brown, moist to saturated, stiff to very stiff	214.0	1									
		SILT - brown, saturated, compact	212.4	2									
		SANDY SILT TILL - wet sand seams, scattered gravel and cobbles; brown, saturated becoming moist at ~3m, dense to very dense	212.0	3									
		- becoming grey		4									
				5									
				6									
				7									
		END OF BOREHOLE	207.2										
		NOTES: 1. Groundwater monitoring well installed to 7.19m; sealed with bentonite from 0.3 to 3.53m.											

LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



Time	Water Level (m)	Depth to Cave (m)
On completion	Dry	Borehole
After 4 hours	1.14	Well
After 5 days	1.09	Well

LOG OF DRILLING OPERATIONS

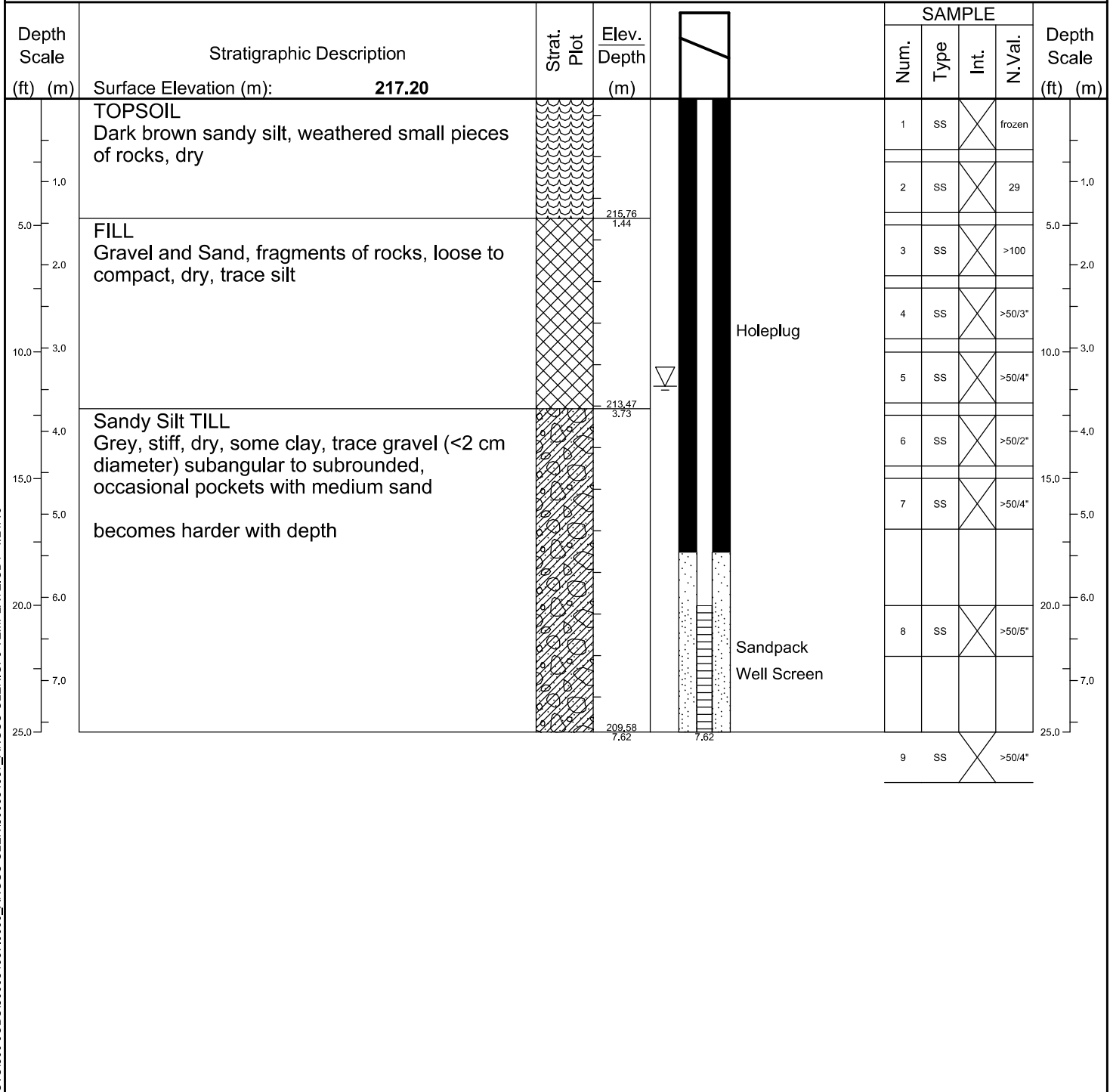


R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Guelph, Ontario N1H 1C4
telephone (519) 823-4995 fax (519) 836-5477

AG-MW12

Page 1 of 1

Client: Angus Glen Developments Inc.	Project Name: Angus Glen MESP	Logged by: C. D.
Project No.: 300034937	Location: Markham, ON	Ground (m amsl): 217.20
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 2/25/2015	Static Water Level Depth (m): 3.46
Drilling Method: Hollow Stem Auger	Date Completed: 2/25/2015	Sand Pack Depth (m) : 5.46 - 7.62



BHLOG GUELPH P:\GINT\PROJECTS\3000 JOBS\300034937\0000_ANGUS GLEN\300034937_AUGUS GLEN.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND Water found @ time of drilling Static Water Level - 6/16/2015	MONITORING WELL DATA Pipe: 51 mm dia. PVC Screen: 51 mm dia. PVC #10 slot	SAMPLE TYPE AC Auger Cutting SS Split Spoon CS Continuous AR Air Rotary RC Rock Core WC Wash Cuttings
---	--	--

PROJECT: 14-1186-0012

RECORD OF BOREHOLE: 14-16

SHEET 1 OF 2

LOCATION: See Figure 2

BORING DATE: May 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Wp				W	
0		GROUND SURFACE		214.70													
		FILL - (ML) CLAYEY SILT, some sand, organic inclusions; dark brown; cohesive, W<PL to W~PL, firm		0.00	1	SS	5								Concrete		
1		(ML) sandy CLAYEY SILT; pale brown, with oxidation staining; cohesive, W<PL, stiff		214.01 0.69	2	SS	9										
2		(CI) SILTY CLAY, some sand; grey, with oxidation staining; cohesive, W>PL, firm to stiff		213.33 1.37	3	SS	7							PL			
		Very thinly bedded with fine sand below a depth of approximately 2.1 m below existing ground surface			4	SS	12										
3		(ML) sandy SILT, some clay to clayey, trace gravel, with pockets of medium sand; grey (TILL); non-cohesive, moist, very dense		211.80 2.90	5	SS	83										
5	TRACK MOUNTED CME 55 Hollow Stem Augers				6	SS	50/.05								Bentonite Seal		
7					7	SS	50/.13										
8					8	SS	50/.08										
9					9	SS	50/.13										

CONTINUED NEXT PAGE

GTA-BHS 001 S:\CLIENTS\STONYBROOK\BERCZY_CREEK\02_DATA\JOB\141186\0012\GP1_GAL-MIS.GDT 10/6/17

DEPTH SCALE

1 : 50



LOGGED: JG

CHECKED: AM

PROJECT: 14-1186-0012

RECORD OF BOREHOLE: 14-16

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: May 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Wp				W	
10	TRACK MOUNTED CME 55: Hollow-Stem Augers	— CONTINUED FROM PREVIOUS PAGE — (ML) sandy SILT, some clay to clayey, trace gravel, with pockets of medium sand; grey (TILL); non-cohesive, moist, very dense															
11				10	SS	50/.13									Bentonite Seal		
13		11	SS	50/.13													
14		12	SS	99/.13											Silica Sand Filter		
15		Augers grinding below a depth of approximately 14.9 m below ground surface. Inferred cobble/boulder															
16		Auger refusal on inferred COBBLE/BOULDER END OF BOREHOLE		199.16 15.54											1. Water level measured at a depth of 3.87 m below ground surface, June 20/14		

GTA-BHS 001 S:\CLIENTS\STONYBROOK\BERCZY_CREE\02_DATA\GINTV1411860012.GPJ GAL-MIS.GDT 10/6/17



PROJECT: 20146456
 LOCATION: N 4861996.50; E 634983.99

RECORD OF BOREHOLE: KP1

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕			Q - ●	U - ○
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		204.50													
		ASPHALT (140 mm thick)		0.00													
		Crushed granular; brown		0.14	1A												
		FILL - (SP-SM) SAND, trace gravel, some fines; brown; non-cohesive, moist (Cl) SILTY CLAY, some sand; brown, oxidation staining; cohesive, w<PL, very stiff		0.45	1B												
1				0.70	2	SS	15										
2				202.52	3	SS	15										
2		END OF BOREHOLE		1.98													
3		NOTES: 1. Borehole caved to a depth of 1.3 m upon completion of drilling. 2. Borehole was dry upon completion of drilling.															
4																	
5																	
6																	
7																	
8																	
9																	
10																	

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM_WARDEN&KENNEDY_RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456
 LOCATION: N 4862126.14; E 634957.69

RECORD OF BOREHOLE: KP2

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		207.80													
		ASPHALT (160 mm thick)		0.00													
		Crushed granular with RAP; brown		0.18	1A												
		FILL- (SP-SM) SAND, trace gravel, some fines; brown; non-cohesive, moist		0.43	1B	AS	-										
1		FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND, brown; cohesive, w>PL, stiff to very stiff		0.76	2	SS	11								MH		
2		END OF BOREHOLE		205.82	3	SS	18										
				1.98													
3	NOTES: 1. Borehole caved to a depth of 1.5 m upon completion of drilling. 2. Borehole was dry upon completion of drilling. 3. RAP = Recycled asphalt pavement																
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4862283.37; E 634927.65

RECORD OF BOREHOLE: KP3

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		212.00													
		Crushed granular; brown		0.00	1A												
		FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist		211.60	AS	-											
				0.40	1B												
1		FILL - (CL) SILTY CLAY, some sand; dark grey and black, organic inclusions; cohesive, w~PL, stiff		211.24	2	SS	11										
			0.76														
		(CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w<PL, very stiff		210.63													
			210.63														
			1.37	3	SS	20											
2		END OF BOREHOLE		210.02													
			1.98														
3	NOTES:																
	1. Borehole caved to a depth of 1.2 m upon completion of drilling.																
	2. Borehole was dry upon completion of drilling.																
4																	
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8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4862501.24; E 634887.30

RECORD OF BOREHOLE: KP4

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		217.50													
		ASPHALT (120 mm thick)		0.00													
		Crushed granular with RAP; brown		0.12	217.15	1A	AS	-									
		FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist		0.35	216.75	1B											
1		FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND, brown; cohesive, w>PL, stiff		0.75	216.13	2	SS	13									
	(SM) SILTY SAND, some gravel; brown; non-cohesive, moist, compact		1.37	215.52	3	SS	16										
2		END OF BOREHOLE		1.98													
3	NOTES: 1. Borehole caved to a depth of 1.5 m upon completion of drilling. 2. Borehole was dry upon completion of drilling. 3. RAP = Recycled asphalt pavement																
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4862688.03; E 634846.61

RECORD OF BOREHOLE: KP5

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ - ⊙		Wp				W	
0		GROUND SURFACE		219.80													
		Crushed granular; brown		0.00													
	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist		219.41	1A												
		Recycled asphalt pavement		0.39													
		FILL - (CL) SILTY CLAY, some sand; dark brown; cohesive, w>PL, stiff		0.55	1B	AS											
1					219.02												
		FILL - (CL) SILTY CLAY, some sand; dark brown; cohesive, w>PL, stiff		0.78	2	SS	9										
		(CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w<PL, stiff		218.43													
				1.37													
2		END OF BOREHOLE		217.82	3	SS	8										
				1.98													
3		NOTES: 1. Borehole caved to a depth of 1.2 m upon completion of drilling. 2. Borehole was dry upon completion of drilling															
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4862905.53; E 634805.64

RECORD OF BOREHOLE: KP6

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊖		Wp				W	
0		GROUND SURFACE		221.80													
		ASPHALT (200 mm thick)		0.00 221.60													
		Crushed granular; brown		0.20 221.40	1A												
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		0.40 221.40	1B	AS	-								M		
		FILL - (CL) SILTY CLAY, some sand; dark brown; cohesive, w>PL, stiff		0.82 220.98	2A												
		FILL - (CL) SILTY CLAY, some sand; dark brown; cohesive, w>PL, stiff		0.82 220.98	2B	SS	8										
		(SM) gravelly SILTY SAND; brown (TILL); non-cohesive, moist, compact		1.37 220.43													
		(SM) gravelly SILTY SAND; brown (TILL); non-cohesive, moist, compact		1.37 220.43	3	SS	28										
2		END OF BOREHOLE		219.82 1.98													
3		NOTES: 1. Borehole caved to a depth of 1.3 m upon completion of drilling. 2. Borehole was dry upon completion of drilling.															
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4863105.31; E 634761.62

RECORD OF BOREHOLE: KP7

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊖		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		222.80													
		Crushed granular; brown		0.00													
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		222.25	1A	AS	-										
		FILL - (SM) SILTY SAND and GRAVEL with RAP; brown; non-cohesive, moist, compact		221.83	2A	SS	18										
		FILL - (SM) SILTY SAND and GRAVEL; brown; non-cohesive, moist, compact		221.43	2B												
		(CI) SILTY CLAY, trace sand; brown; cohesive, w>PL, very stiff		1.37	3	SS	15										
2		END OF BOREHOLE		220.82													
		NOTES:		1.98													
3		1. Borehole caved to a depth of 1.3 m upon completion of drilling.															
		2. Borehole was dry upon completion of drilling.															
		3. RAP = Recycled asphalt pavement															
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4863330.56; E 634715.76

RECORD OF BOREHOLE: KP8

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊖		Q - U -				Wp	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		223.40													
		ASPHALT (120 mm thick)		0.00													
		Crushed granular; brown		0.12	1A	AS	-										
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		0.38	1B	AS	-										
		ASPHALT (260 mm)		0.62	2A	SS	69/0.18*										
1		FILL - (CL) gravelly SILTY CLAY and SAND, grey; cohesive, w>PL, hard to stiff		0.88	2B	SS	11										
		- Auger grinding at a depth of 1.1 m			3	SS	11										
2		END OF BOREHOLE		221.42													
		NOTES:		1.98													
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4863498.29; E 634672.80

RECORD OF BOREHOLE: KP9

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		223.20													
		Crushed granular; brown		0.00	1A												
		FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist		0.40	1B	AS	-										
1		FILL - (CL) gravelly SILTY CLAY and SAND, dark brown; cohesive, w<PL, stiff to very stiff		0.90	2A	SS	14										
				0.90	2B												
					3	SS	15										
2		END OF BOREHOLE		221.22													
		NOTES:		1.98													
3		1. Borehole caved to a depth of 1.2 m upon completion of drilling.															
		2. Borehole was dry upon completion of drilling.															
4																	
5																	
6																	
7																	
8																	
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10																	

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PROJECT: 20146456
 LOCATION: N 4863698.71; E 634626.76

RECORD OF BOREHOLE: KP10

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		223.50													
		ASPHALT (180 mm thick)		223.00													
		Crushed granular; brown		223.32	1A	AS	-										
		FILL - (SP-SM) gravelly SAND, some fines: brown, non-cohesive, moist		223.18	1B	AS	-										
1		FILL - (CL) gravelly SILTY CLAY and SAND, dark brown, organic inclusions; cohesive, w>PL, stiff		222.75	2	SS	12										
				222.75													
				0.75													
2		END OF BOREHOLE		221.52	3	SS	12										
				1.98													
3	NOTES: 1. Borehole caved to a depth of 1.3 m upon completion of drilling. 2. Borehole was dry upon completion of drilling.																
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4863918.31; E 634575.98

RECORD OF BOREHOLE: KP11

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Wp				Wi	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		221.20													
		ASPHALT (180 mm thick)		221.02													
		Crushed granular; brown		0.18	1A	AS	-										
		FILL - (SP-SM) gravelly SAND, some fines: brown; non-cohesive, moist		0.34	1B	AS	-										
1		FILL - (CL) gravelly SILTY CLAY and SAND; dark brown, organic inclusions; cohesive, w<PL, very stiff to hard		220.62													
				0.58													
					2	SS	18								MH		
2		- Auger resistance between a depth of 1.8 m and 1.9 m		219.22													
		END OF BOREHOLE		1.98													
		NOTES: 1. Borehole caved to a depth of 1.2 m upon completion of drilling. 2. Borehole was dry upon completion of drilling. 3. *N value may not be representative of the soil's consistency due to obstructions encountered															

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PROJECT: 20146456
 LOCATION: N 4864147.22; E 634531.61

RECORD OF BOREHOLE: KP12

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Wp				W	
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		220.10													
		Crushed granular; brown	[Cross-hatch pattern]	0.00	1A												
		FILL - (SP-SM) gravelly SAND, some fines: brown; non-cohesive, moist	[Diagonal lines pattern]	219.65	1B	AS											
1		(Cl) SILTY CLAY, some sand, some gravel; brown; cohesive, w>PL, stiff	[Horizontal lines pattern]	219.28	2	SS	8										
		(ML) sandy SILT; brown; non-cohesive, wet, compact	[Dotted pattern]	218.73													
				218.73													
				1.37	3	SS	22										
2		END OF BOREHOLE		218.12													
				1.98													
3	NOTES:																
	1. Borehole caved to a depth of 1.3 m upon completion of drilling.																
	2. Borehole was dry upon completion of drilling.																
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4864251.68; E 634519.69

RECORD OF BOREHOLE: KP13

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕			Q -	U -
0	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	GROUND SURFACE		222.80													
		ASPHALT (240 mm thick)		0.00													
		Crushed granular; brown		222.56													
		FILL - (SP-SM) gravelly SAND, some fines; brown; non-cohesive, moist, compact		0.24	1A	AS	-										
1			FILL - (SM) SILTY SAND and GRAVEL; brown; non-cohesive, moist, compact		221.75	2A	SS	15									
			(ML) sandy SILT, some gravel, brown; non-cohesive, moist, compact		221.43	2B	SS	15									
					1.37	3	SS	19									
2		END OF BOREHOLE		220.82													
		NOTE: 1. Borehole open and dry upon completion of drilling.		1.98													

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PROJECT: 20146456
 LOCATION: N 4861907.72; E 635019.68

RECORD OF BOREHOLE: KS1

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕			Q -	U -
0		GROUND SURFACE		204.00													
		ASPHALT (265 mm thick)		0.00	1A												
		Crushed granular; brown		203.74	AS	-											
				0.28	1B												
		FILL - (SP-SM) gravelly SAND, some fines; brown; non-cohesive, moist, compact		203.49													
				0.51													
1					2	SS	12										
				202.63													
		FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND; brown, containing asphalt pieces; cohesive, w>PL, stiff		1.37													
					3	SS	11										
2																	
					4	SS	15										
				201.10													
		(CL) SILTY CLAY and SAND, some gravel, grey (TILL); cohesive, w~PL to w<PL, very stiff to hard		2.90													
					5	SS	21										
3																	
					6	SS	50/0.13										
4																	
		- Auger grinding between depths of 4.3 m and 4.4 m															
5																	
					7	SS	56										
6																	
7																	
8																	
					8	SS	49										
9																	
9																	
					9	SS	70										
10																	
		END OF BOREHOLE		194.25													
				9.75													
		CONTINUED NEXT PAGE															

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DEPTH SCALE
 1 : 50



LOGGED: YS
 CHECKED: TO

PROJECT: 20146456
 LOCATION: N 4861907.72; E 635019.68

RECORD OF BOREHOLE: KS1

SHEET 2 OF 2
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT Wp ----- W ----- WI					
								20	40	60	80	10 ⁻⁵	10 ⁻⁵	10 ⁻⁴			10 ⁻³
10		--- CONTINUED FROM PREVIOUS PAGE ---															
11		NOTES: 1. Water encountered at a depth of 9.0 m during drilling. 2. Groundwater level was measured in monitoring well at a depth of 2.0 mbgs (El. 202m) on January 29, 2021.															
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

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PROJECT: 20146456
 LOCATION: N 4862189.80; E 634962.05

RECORD OF BOREHOLE: KS2

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: January 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕			Q -	U -
0		GROUND SURFACE		209.30													
		Crushed granular; brown		0.00	1A												
		FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist		208.95	AS	-											
				0.35	1B												
1		FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND; brown; cohesive, w<PL, stiff		208.54	2	SS	8										
				207.93													
		FILL - (ML) sandy SILT; brown; non-cohesive, wet, compact		1.37	3	SS	14										
2				207.17													
		(ML) SILT and SAND, trace gravel; brown (TILL); non-cohesive, moist, very dense		2.13	4	SS	65										
3																	
					5	SS	85										
4				205.26													
		(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard		4.04	6	SS	54										
5																	
					7	SS	91										
6																	
					8	SS	92										
7																	
					9	SS	50/0.13										
8																	
9																	
		END OF BOREHOLE		200.03													
				9.27													
10		NOTES: 1. Borehole was open and dry upon completion of drilling.															
		CONTINUED NEXT PAGE															

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DEPTH SCALE
1 : 50



LOGGED: YS
CHECKED: TO

PROJECT: 20146456
 LOCATION: N 4862189.80; E 634962.05

RECORD OF BOREHOLE: KS2

SHEET 2 OF 2
 DATUM: Geodetic

BORING DATE: January 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT Wp -----○ W----- WI					
								20	40	60	80	10 ⁻⁵	10 ⁻⁵	10 ⁻⁴			10 ⁻³
10		-- CONTINUED FROM PREVIOUS PAGE --															
11		2. Groundwater level was measured in monitoring well at a depth of 1.7 mbgs (El. 207.6m) on January 29, 2021.															
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

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PROJECT: 20146456
 LOCATION: N 4862378.69; E 634920.57

RECORD OF BOREHOLE: KS3

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕	Q - U - ⊙	Wp	W			Wl	
0		GROUND SURFACE		214.70													
		Crushed granular; brown		0.00													
				214.29	1A												
		FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist		0.41	AS	-											
				214.00	1B												
1		FILL - (CL) SILTY CLAY and SAND, some gravel; dark brown; cohesive, w>PL, firm		0.70	2	SS	7										
				213.33													
		(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, very stiff to hard		1.37	3	SS	27										
2																	
				211.80													
3		(SM) SILTY SAND, some gravel; brown (TILL); non-cohesive, moist, very dense		2.90	5	SS	50/0.13								Bentonite		
4	B57 Truck Mount 200 mm O.D. Hollow Stem Auger			210.66													
		(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard		4.04	6	SS	96/0.25										
5																	
6																	
7					7	SS	50/0.13										
8		END OF BOREHOLE		206.80	8	SS	50/0.13										
				7.90													
9		NOTES: 1. Borehole was open and dry upon completion of drilling. 2. Groundwater level was measured in monitoring well at a depth of 7.7 mbgs (El. 206.9m) on January 29, 2021.															
10																	

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PROJECT: 20146456
 LOCATION: N 4862601.12; E 634875.39

RECORD OF BOREHOLE: KS4

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: January 18, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT			
						20 40 60 80				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³					
						nat V. + Q - ● rem V. ⊕ U - ○				Wp — W — WI					
0		GROUND SURFACE		218.70											
		Crushed granular; brown		0.00	1	AS	-								
		FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist, loose		218.28	2	SS	6								
1				0.42											
		FILL - (CI) SILTY CLAY, some sand; brown; cohesive, w>PL, firm		217.33	3	SS	7								
				1.37											
2				216.57	4	SS	6								
		FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist, loose		2.13											
				215.80	5	SS	61								
		(SM) SILTY SAND, fine; brown; non-cohesive, moist to wet, very dense		2.90											
					6	SS	50/0.15								
5															
					7	SS	73								
8					8	SS	50								
		- 0.3m thick sand blowout was observed at 7.6 m													
					9	SS	50/0.13								
9															
10															

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DEPTH SCALE
 1 : 50



LOGGED: YS
 CHECKED: TO

PROJECT: 20146456
 LOCATION: N 4862601.12; E 634875.39

RECORD OF BOREHOLE: KS4

SHEET 2 OF 2
 DATUM: Geodetic

BORING DATE: January 18, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.	+ ⊕	- ⊖	Wp	W			WI
10	BS7 Truck Mount 200 mm O.D. Hollow Stem Auger	--- CONTINUED FROM PREVIOUS PAGE --- (SM) SILTY SAND, fine; brown; non-cohesive, moist to wet, very dense															
11		- 1.5m thick sand blowout was observed at 10.7 m		10	SS	50											
12				11	SS	65											
13				12	SS	50/ 0.13											
14																	
15																	
16																	
17																	
18																	
19																	
20																	
		END OF BOREHOLE					201.94										
		NOTES:					16.76										
		1. Water was encountered at a depth of 4.6 m during drilling.															
		2. Sand blowout was cleaned out using water prior to advancing augers.															
		3. Groundwater level was measured in monitoring well at a depth of 6.6 mbgs (El. 211.6m) on January 29, 2021.															
		4. SPT N-value could not be carried out at 16.7mbgs due to a 1.5m sand blowout. The sand could not be completely cleaned out during drilling.															

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PROJECT: 20146456
 LOCATION: N 4862815.63; E 634829.53

RECORD OF BOREHOLE: KS5

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 15, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		+				Q - U -	
0		GROUND SURFACE		221.30													
		ASPHALT (280 mm thick)		0.00													
				221.02													
		Crushed granular; brown		0.28	1A	AS	-										
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		0.41	1B	AS	-										
1		(C) SILTY CLAY, some sand; brown; cohesive, w>PL, stiff to very stiff		220.54	2	SS	9										
				0.76													
					3	SS	24										
2				219.17													
		(SP) SAND, trace fines; brown; non-cohesive, moist to wet, very dense		2.13	4	SS	65										
					5	SS	56										
					6	SS	83										
					7	SS	50/0.13										
					8	SS	50/0.10										
8		END OF BOREHOLE		213.43													
				7.87													
		NOTE: 1. Borehole was open and dry upon completion of drilling.															

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PROJECT: 20146456
 LOCATION: N 4863022.33; E 634786.84

RECORD OF BOREHOLE: KS6

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 22, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp				W	
0		GROUND SURFACE		222.30													
		ASPHALT (140 mm thick)		0.00													
		Crushed granular with RAP; brown		0.14													
				221.88	1A												
		FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist		0.42	AS	-											
				221.45	1B												
1		FILL - (CL) SILTY CLAY, some sand; brown; cohesive, w>PL, stiff		0.85	2A	13											
				220.93	2B												
		(ML) SILT and SAND, some gravel; brown (TILL); non-cohesive, moist, compact to dense		1.37	3	19						○					
2																	
					4	37											
3																	
					5	37						○			MH		
4	B57 Truck Mount 150 mm O.D. Hollow Stem Auger	(SM) SILTY SAND, some gravel; brown; non-cohesive, moist, very dense		218.26													
				4.04													
5					6	84											
6																	
					7	70						○					
7																	
8		END OF BOREHOLE		214.40	8	50/ 0.13											
		NOTE: 1. Borehole was open and dry upon completion fo drilling. 2. RAP = Recycled asphalt pavement		7.90													
9																	
10																	

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PROJECT: 20146456
 LOCATION: N 4863216.48; E 634749.77





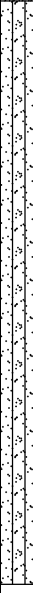
RECORD OF BOREHOLE: KS7

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 19, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V.		Q - U				Wp	
0		GROUND SURFACE		223.00													
		Crushed granular; brown		0.00	1	AS	-										
		FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist, dense		222.43 0.57	2	SS	32										
		FILL - (CL) gravelly SILTY CLAY and SAND; dark grey and brown, organic inclusions; cohesive, w>PL, stiff		221.63 1.37	3	SS	11										
		(CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w>PL, stiff		220.87 2.13	4	SS	10										
		(SM) SILTY SAND; brown; non-cohesive, wet, very dense		218.96 4.04	5	SS	11										
					6	SS	58										
					7	SS	89										
					8	SS	50/ 0.13										
8		END OF BOREHOLE		215.10 7.90													
9		NOTES: 1. Water was encountered at a depth of 4.6 m during drilling. 2. Groundwater level was measured in monitoring well at a depth of 2.2 mbgs (El. 220.8m) on January 29, 2021.															

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PROJECT: 20146456
 LOCATION: N 4863405.94; E 634706.26

RECORD OF BOREHOLE: KS8

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: January 22, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕			Q - ●	U - ○
0		GROUND SURFACE		223.50													
		Crushed granular; brown		0.00	1A										Sand		
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		223.02	AS	-											
				0.48	1B												
				222.65	2A												
1		FILL - (CI) SILTY CLAY, some sand, trace gravel; dark grey and brown, organic inclusions; cohesive, w>PL, stiff to firm		0.85	2B	SS	13										
					3	SS	9										
					4	SS	7										
2																	
3		(CL) SILTY CLAY and SAND, trace gravel; brown; cohesive, w>PL, firm		220.60													
				2.90	5	SS	7										
4		(CL) SILTY CLAY and SAND, some gravel; brown to grey (TILL); cohesive, w<PL, hard		219.46													
				4.04	6	SS	40										
5																	
6																	
7																	
8																	
9																	
10																	

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DEPTH SCALE
 1 : 50



LOGGED: JL
 CHECKED: TO

PROJECT: 20146456
 LOCATION: N 4863405.94; E 634706.26

RECORD OF BOREHOLE: KS8

SHEET 2 OF 2
 DATUM: Geodetic

BORING DATE: January 22, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	Q -	rem V. ⊕			U -
10		--- CONTINUED FROM PREVIOUS PAGE --- (CL) SILTY CLAY and SAND, some gravel; brown to grey (TILL); cohesive, w<PL, hard															
11					10	SS	80/0.28									Grout	
12					11	SS	50/0.07										
13	B57 Truck Mount 200 mm O.D. Hollow Stem Auger				12	SS	50/0.07										
14					13	SS	75										
15					14	SS	130/0.18										
16																	
17				206.41													
18		END OF BOREHOLE		17.09													
19		NOTES:															
20		1. Water was encountered at a depth of 7.0 m during drilling.															
		2. Groundwater level was measured in monitoring well at a depth of 4.1 mbgs (El. 219.4m) on January 29, 2021.															

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PROJECT: 20146456
 LOCATION: N 4863597.66; E 634660.05

RECORD OF BOREHOLE: KS9

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: January 28, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
							20	40	60	80	nat V. rem V.	+ ⊕	- ⊖			Q - U
0		GROUND SURFACE		222.90												
		Crushed granular; brown		0.00	1A											
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		222.48	AS											
		FILL - (CL) gravelly SILTY CLAY and SAND; brown and black, organic inclusions; cohesive, w<PL, stiff to very stiff		222.17	1B											
1				0.73	2	SS	28									
2				220.77	3	SS	10									
3		(SM) SILTY SAND; brown; non-cohesive, moist to wet, compact to dense		2.13	4	SS	19									
4					5	SS	29									
5					6	SS	42									
6					7	SS	35									
7					8	SS	31									
8					9	SS	19									
9				214.29												
		(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w>PL, very stiff		8.61	9	SS	19									
10																

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B57 Truck Mount
200 mm O.D. Hollow Stem Auger

Bentonite

January 29, 2021

DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: TO

PROJECT: 20146456
 LOCATION: N 4863597.66; E 634660.05

RECORD OF BOREHOLE: KS9

SHEET 2 OF 2
 DATUM: Geodetic

BORING DATE: January 28, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕	Q - ●			U - ○
10	BS7 Truck Mount 200 mm O.D. Hollow Stem Auger	--- CONTINUED FROM PREVIOUS PAGE --- (CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w>PL, very stiff															
11				10	SS	18											
12		(ML) SILT and SAND, some gravel; grey (TILL); non-cohesive, moist, compact		211.24 11.66													Bentonite
13		(SM) SILTY SAND and GRAVEL; grey; non-cohesive, wet, very dense		209.72 13.18													Sand
14				208.19 14.71													Screen
15		(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard		207.38 15.52													Sand
16	END OF BOREHOLE																
17	NOTES: 1. Water was encountered at a depth of 6.1 m during drilling 2. Groundwater level was measured in monitoring well at a depth of 7.0 mbgs (El. 215.9m) on January 29, 2021																
18																	
19																	
20																	

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PROJECT: 20146456
 LOCATION: N 4863803.25; E 634615.91

RECORD OF BOREHOLE: KS10

SHEET 1 OF 2
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Wp				W	
0		GROUND SURFACE		223.20													
		ASPHALT (265 mm thick)		0.00													
				222.94													
		Crushed granular; brown		0.28	1	AS	-										
				222.75													
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist, compact		0.45													
1					2	SS	11										
				221.94													
		FILL - (CL) gravelly SILTY CLAY and SAND, brown; cohesive, w>PL, firm		1.26													
2					3	SS	5										
				220.30													
				2.90													
3		(SM) SILTY SAND, fine; brown; non-cohesive, moist to wet, compact to dense			5	SS	25										
4					6	SS	47										
5																	
6																	
7																	
8																	
9																	
10		END OF BOREHOLE		213.60													
		NOTES:		9.60													
		CONTINUED NEXT PAGE															

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B57 Truck Mount
200 mm O.D. Hollow Stem Auger

Bentonite

MH

Sand

January 29, 2021

Screen

Sand

DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: TO

PROJECT: 20146456
 LOCATION: N 4863803.25; E 634615.91

RECORD OF BOREHOLE: KS10

SHEET 2 OF 2
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp		W			Wi
10		--- CONTINUED FROM PREVIOUS PAGE ---															
11		1. Water was encountered at a depth of 7.6 m during drilling.															
12		2. Groundwater level was measured in monitoring well at a depth of 7.8 mbgs (El. 215.4m) on January 29, 2021															
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

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PROJECT: 20146456
 LOCATION: N 4864045.36; E 634563.11

RECORD OF BOREHOLE: KS11

SHEET 1 OF 1
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕			Q - ●	U - ○
0		GROUND SURFACE		218.70													
		Crushed granular; brown		0.00	1A												
		FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist		218.40	1B	AS	-								M		
		ASPHALT (240 mm thick)		0.30													
				218.19													
				0.51													
				217.95													
1		FILL - (CL) gravelly SILTY CLAY and SAND, black and brown, containing rootlets and organic inclusions; cohesive, w-PL to w>PL, stiff to soft		0.75	2	SS	12										
					3	SS	13										
2																	
					4	SS	3										
3																	
					5	SS	4										
4																	
				214.66													
		(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard		4.04	6	SS	39										
5																	
6																	
					7	SS	50/ 0.07										
7																	
8		END OF BOREHOLE		210.98	8	SS	50/ 0.16										
		NOTES:		7.72													
9		1. Water was encountered at a depth of 2.3 m during drilling.															
		2. Groundwater level was measured in monitoring well at a depth of 2.5mbgs (El. 216.2m) on January 29, 2021															
10																	

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LOG OF DRILLING OPERATIONS



H. J. Burnside & Associates Limited
 15 Tavolara, Orangeville, Ontario L9W 3P4
 telephone (518) 841-8331 fax (518) 841-8120

RJB9

Page 1 of 1

Client: North Markham Landowners Group	Project Name: North Markham	Logged by: D. Weir
Project No.: PTN14385.0	Location: Markham	Ground (m amsl): 220.00
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 6/5/2008	Static Water Level (m amsl): 213.82
Drilling Method: Hollow Stem Auger	Date Completed: 6/5/2008	Sand Pack (m amsl): 214.21 - 212.38

Depth Scale (ft) (m)	Stratigraphic Description	Strat. Plot	Elev. Depth (m)	SAMPLE				Depth Scale (ft) (m)
				Num.	Type	Int.	N.Val.	
	Surface Elevation (m): 220.00							
0.0 - 1.0	TOPSOIL silty sand, trace clay, trace rootlets, brown, moist, compact		219.39 0.61	1	SS	X	11	0.0 - 1.0
1.0 - 5.0	SILTY SAND, trace gravel, trace clay, trace rootlets, brown, moist, compact		218.63 1.37	2	SS	X	18	1.0 - 5.0
5.0 - 2.0	SILTY SAND TILL, some clay, trace gravel, brown, moist, compact		217.87 2.13	3	SS	X	17	2.0 - 5.0
2.0 - 10.0	SILTY SAND, trace gravel, brown, oxidized, moist, very dense			4	SS	X	98/20cm	5.0 - 10.0
10.0 - 3.0				5	SS	X	50/3cm	10.0 - 3.0
3.0 - 4.0				6	SS	X	50/10cm	4.0 - 5.0
4.0 - 15.0				7	SS	X	50/5cm	15.0 - 5.0
15.0 - 5.0				8	SS	X	50/3cm	5.0 - 20.0
5.0 - 20.0				9	SS	X	50/5cm	20.0 - 6.0
6.0 - 25.0	- wet at 6.10 m		213.29 6.71	10	SS	X	50/8cm	7.0 - 25.0
7.0 - 25.0	SAND, trace silt, brown, oxidized, wet, very dense			11	SS	X	50/5cm	25.0 - 8.0
25.0 - 8.0			211.77 8.23					8.0

BHLOG ORANGEVILLE F:\STAFF\JACKIE\PROJECTS\PTN14385 NORTH MARKHAM LANDS\BOREHOLE LOGS.GPJ TEMPLATE.GDT 5/25/09

Prepared By: **J.Shaw** Checked By: **J. Thompson** Date Prepared: **11/5/2008**
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE
Water found @ time of drilling	Pipe: 51 mm dia. PVC	AC Auger Cutting
Static Water Level - 7/7/2008	Screen: 51 mm dia. PVC #10 slot	CS Continuous
		RC Rock Core
		SS Split Spoon
		AR Air Rotary
		WC Wash Cuttings

JOB NO: 1308-S161

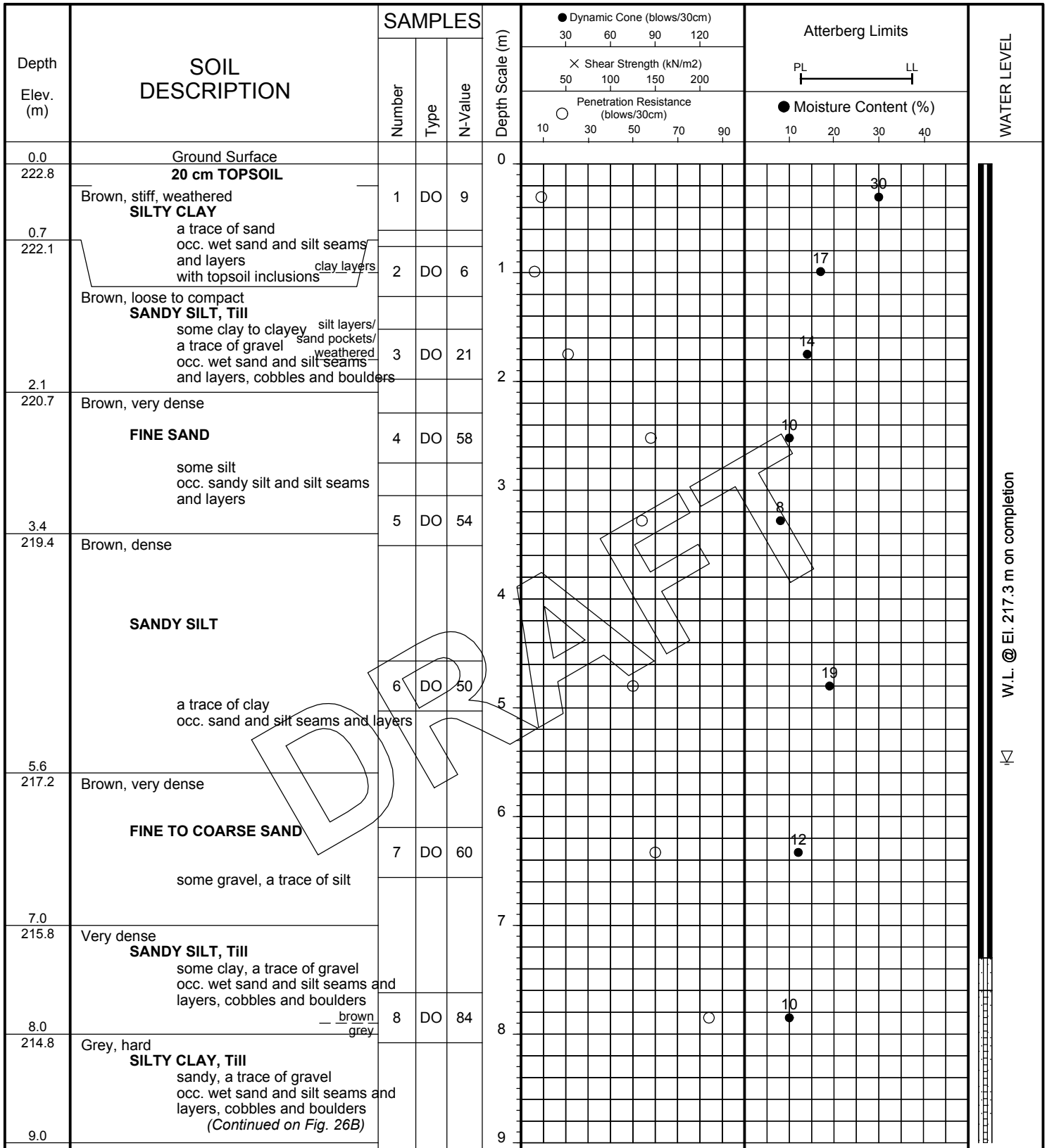
LOG OF BOREHOLE NO: 224

FIGURE NO: 26A

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road
 City of Markham

METHOD OF BORING: Hollow-Stem
DATE: October 17, 2013



Soil Engineers Ltd.

JOB NO: 1308-S161

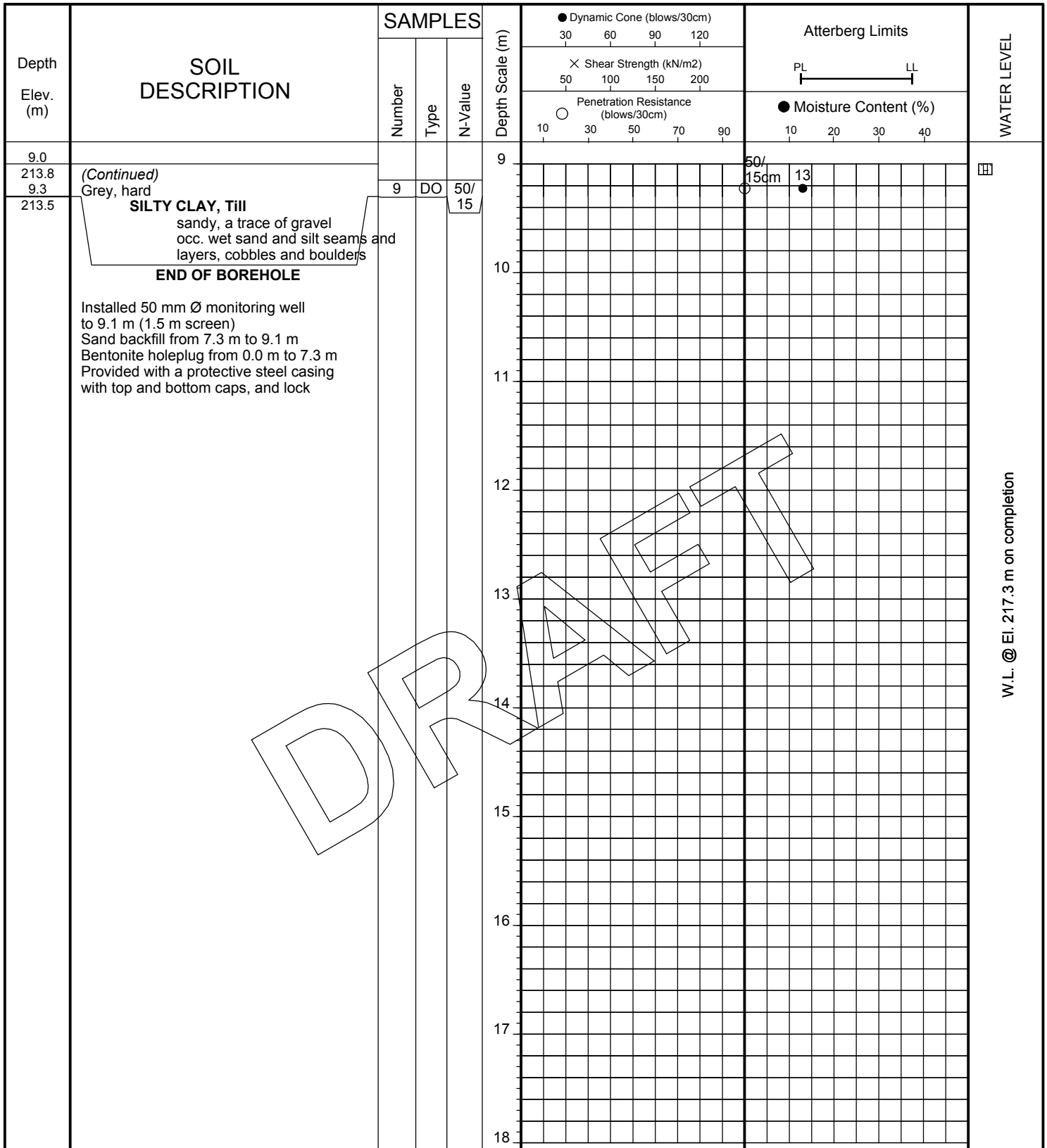
LOG OF BOREHOLE NO: 224

FIGURE NO: 26B

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road
City of Markham

METHOD OF BORING: Hollow-Stem
DATE: October 17, 2013



Soil Engineers Ltd.

JOB NO: 1308-S161

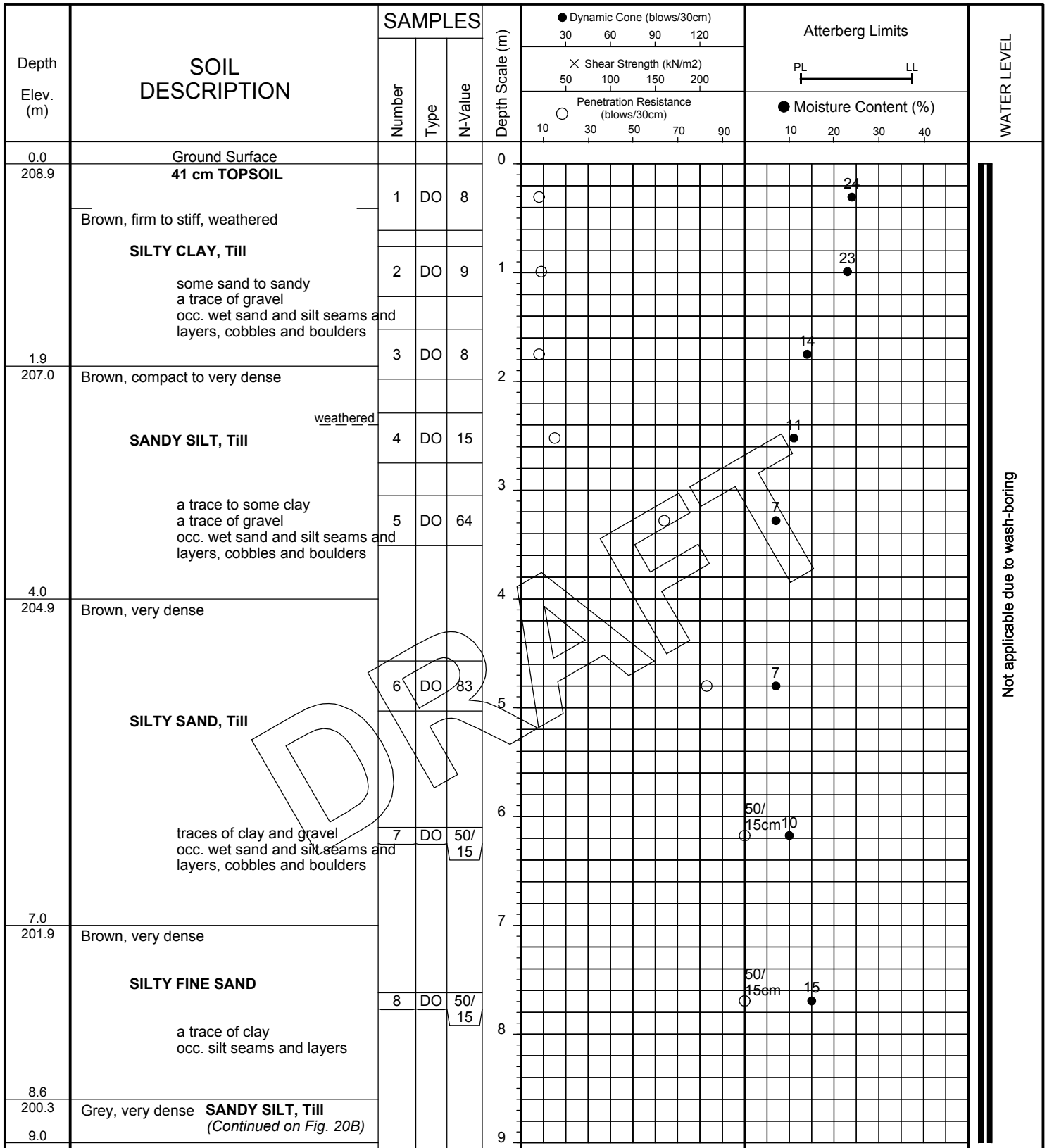
LOG OF BOREHOLE NO: 220

FIGURE NO: 20A

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road
 City of Markham

METHOD OF BORING: Hollow-Stem/Wash-Bore
DATE: October 23 & 24, 2013



Not applicable due to wash-boring



Soil Engineers Ltd.

JOB NO: 1308-S161

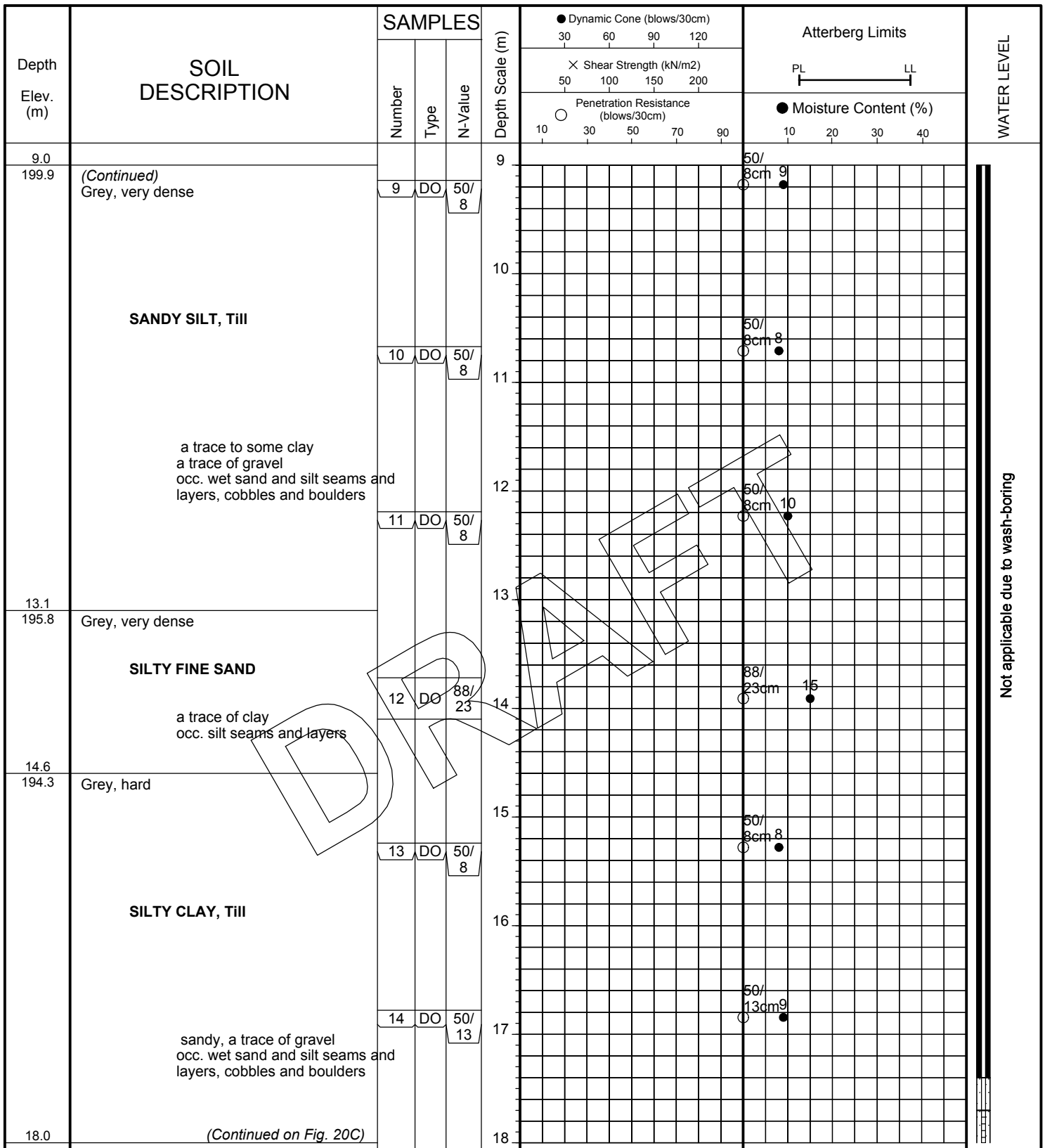
LOG OF BOREHOLE NO: 220

FIGURE NO: 20B

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road
 City of Markham

METHOD OF BORING: Hollow-Stem/Wash-Bore
DATE: October 23 & 24, 2013



Soil Engineers Ltd.

JOB NO: 1308-S161

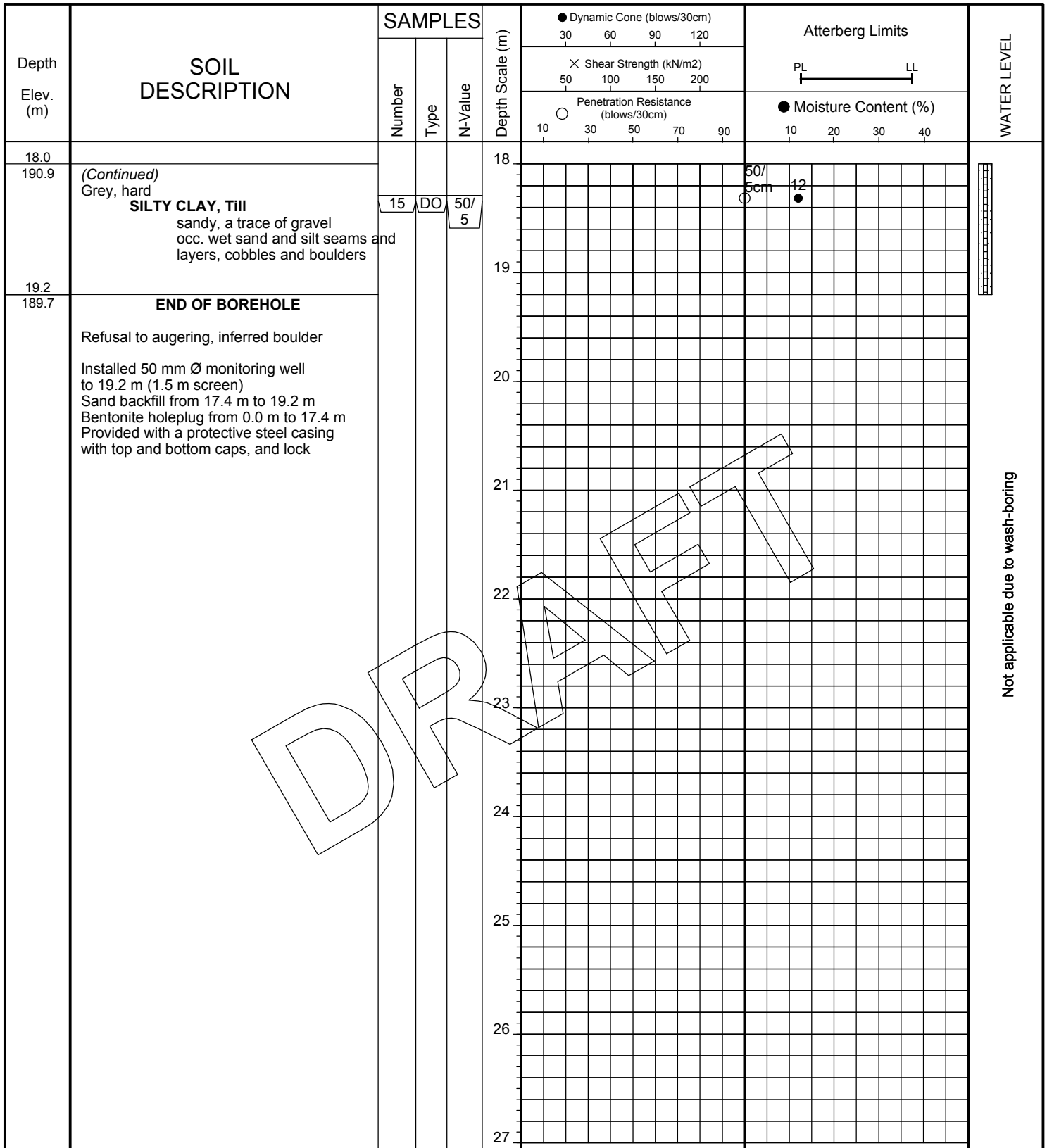
LOG OF BOREHOLE NO: 220

FIGURE NO: 20C

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road
City of Markham

METHOD OF BORING: Hollow-Stem/Wash-Bore
DATE: October 23 & 24, 2013



DRAFT

Not applicable due to wash-boring

JOB NO: 1308-S161

LOG OF BOREHOLE NO: 220N FIGURE NO: 21

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road
 City of Markham

METHOD OF BORING: Hollow-Stem
DATE: October 24, 2013

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES			Depth Scale (m)	● Dynamic Cone (blows/30cm) 30 60 90 120	Atterberg Limits PL LL	WATER LEVEL
		Number	Type	N-Value		× Shear Strength (kN/m ²) 50 100 150 200	● Moisture Content (%) 10 20 30 40	
0.0 208.9	Ground Surface				0			
	50 mm NESTED PVC WELL				1			
4.6 204.3	END OF BOREHOLE				2			
	Installed 50 mm Ø monitoring well to 4.6 m (1.5 m screen) Sand backfill from 2.7 m to 4.6 m Bentonite holeplug from 0.0 m to 2.7 m Provided with a protective steel casing with top and bottom caps, and lock				3			
					4			
					5			
					6			
					7			
					8			
					9			



Soil Engineers Ltd.

LOG OF DRILLING OPERATIONS

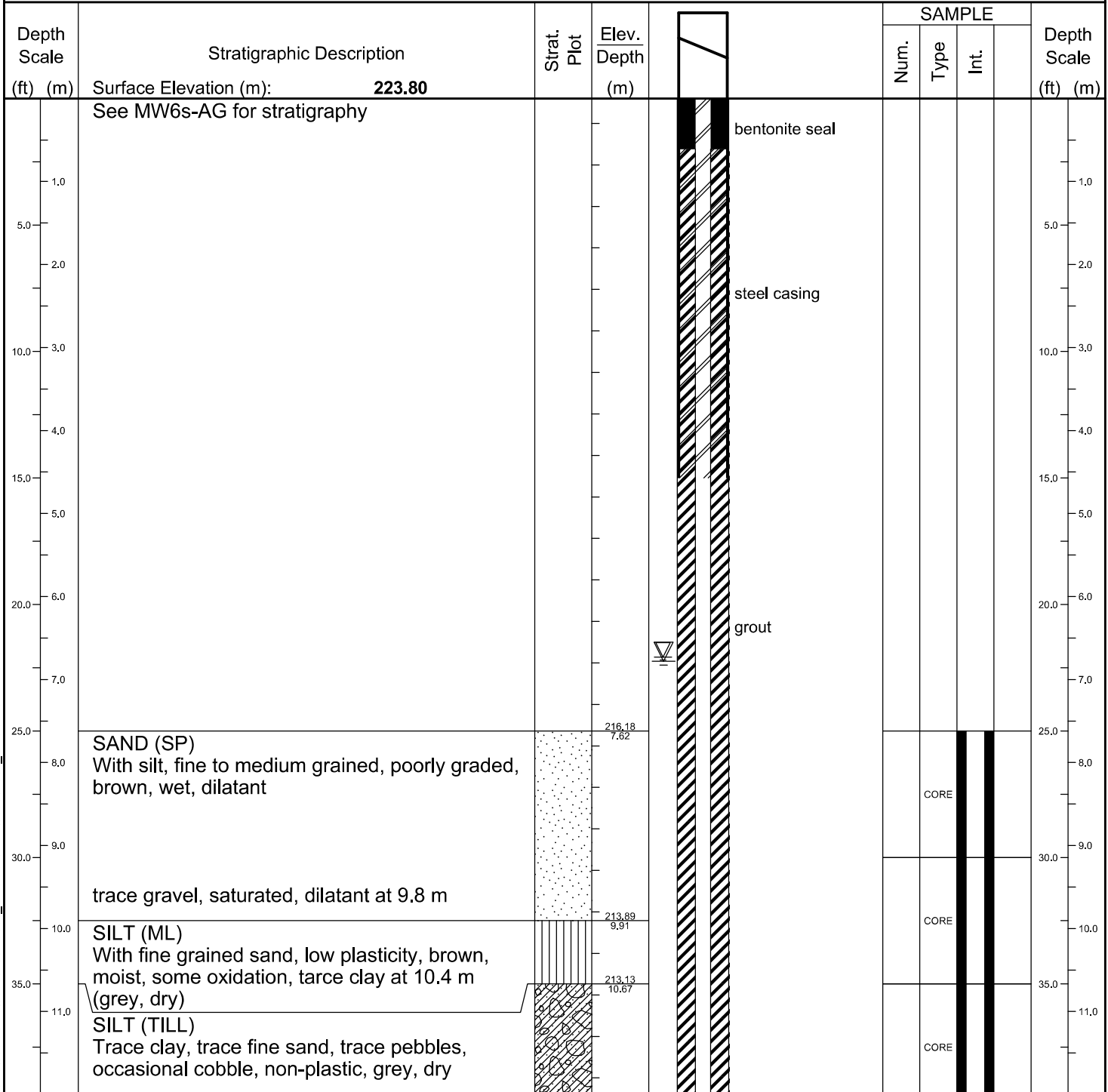


R.J. Burnside & Associates Limited
 292 Speedvale Avenue West, Guelph, Ontario N1H 1C4
 telephone (519) 823-4995 fax (519) 836-5477

AG-MW6D

Page 1 of 2

Client: Angus Glen Developments Inc.	Project Name: Angus Glen MESP	Logged by: I. Murphy
Project No.: 300034937	Location: Markham, ON	Ground (m amsl): 223.80
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 3/18/2015	Static Water Level Depth (m): 6.78
Drilling Method: PQ Coring	Date Completed: 3/18/2015	Sand Pack Depth (m) : 14.32 - 17.98



BHL0G GUELPH P:\GINT\PROJECTS\300034937\0000_ANGUS GLEN\300034937_Angus Glen.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE
▼ Water found @ time of drilling ▽ Static Water Level - 6/16/2015	Pipe: 51 mm dia. PVC Screen: 51 mm dia. PVC #10 slot	AC Auger Cutting CS Continuous RC Rock Core SS Split Spoon AR Air Rotary WC Wash Cuttings

LOG OF DRILLING OPERATIONS

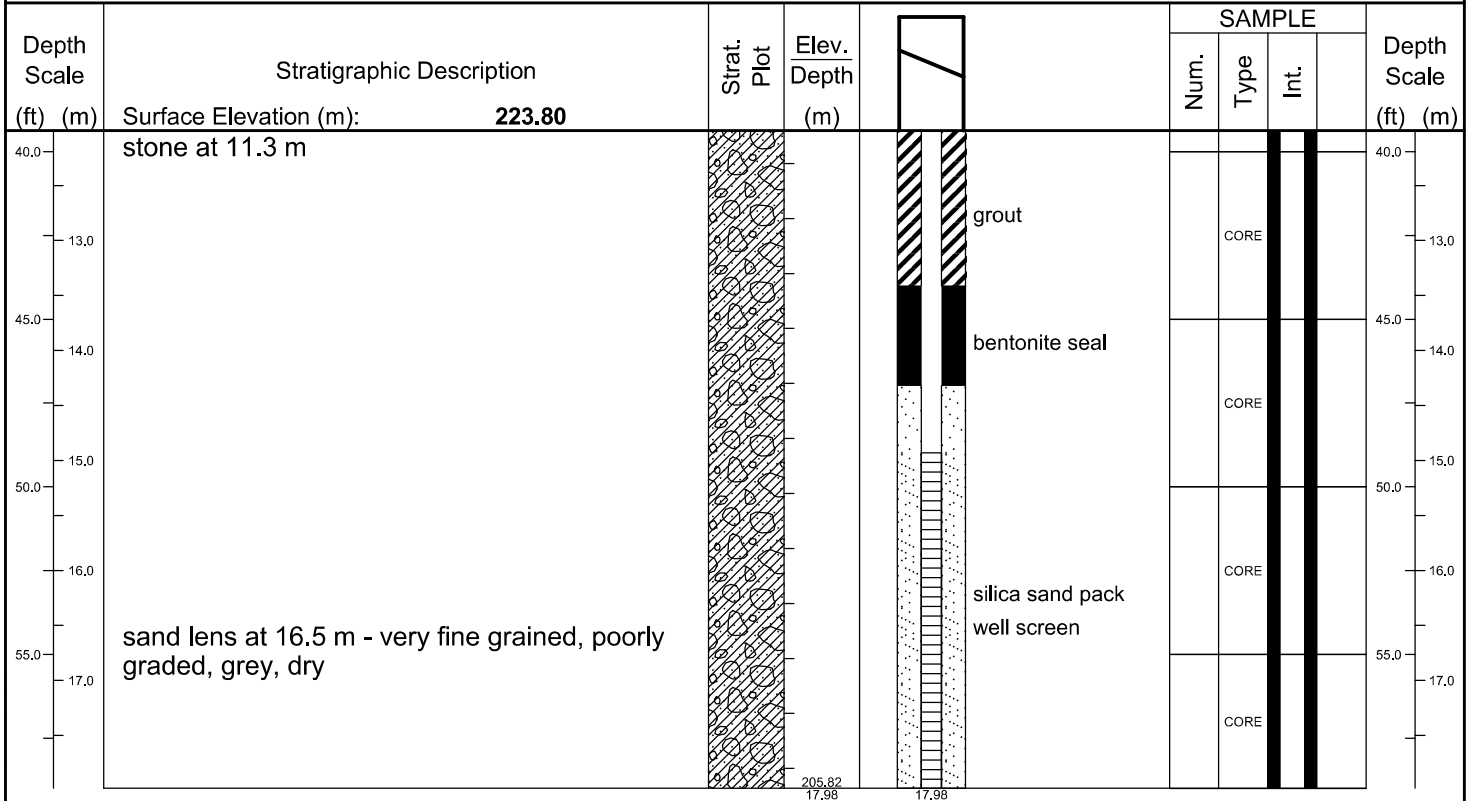


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AG-MW6D

Page 2 of 2

Client: Angus Glen Developments Inc.	Project Name: Angus Glen MESP	Logged by: I. Murphy
Project No.: 300034937	Location: Markham, ON	Ground (m amsl): 223.80
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 3/18/2015	Static Water Level Depth (m): 6.78
Drilling Method: PQ Coring	Date Completed: 3/18/2015	Sand Pack Depth (m) : 14.32 - 17.98



BHLOG GUELPH P:\GINT\PROJECTS\3000_JOBS\300034937_0000_ANGUS GLEN\300034937_ANGUS GLEN.GPJ TEMPLATE.GDT 1/21/16

Prepared By: C. D.		Checked By: J. S.		Date Prepared: 7/26/2015	
This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.					
LEGEND Water found @ time of drilling Static Water Level - 6/16/2015		MONITORING WELL DATA Pipe: 51 mm dia. PVC Screen: 51 mm dia. PVC #10 slot		SAMPLE TYPE AC Auger Cutting CS Continuous RC Rock Core SS Split Spoon AR Air Rotary WC Wash Cuttings	

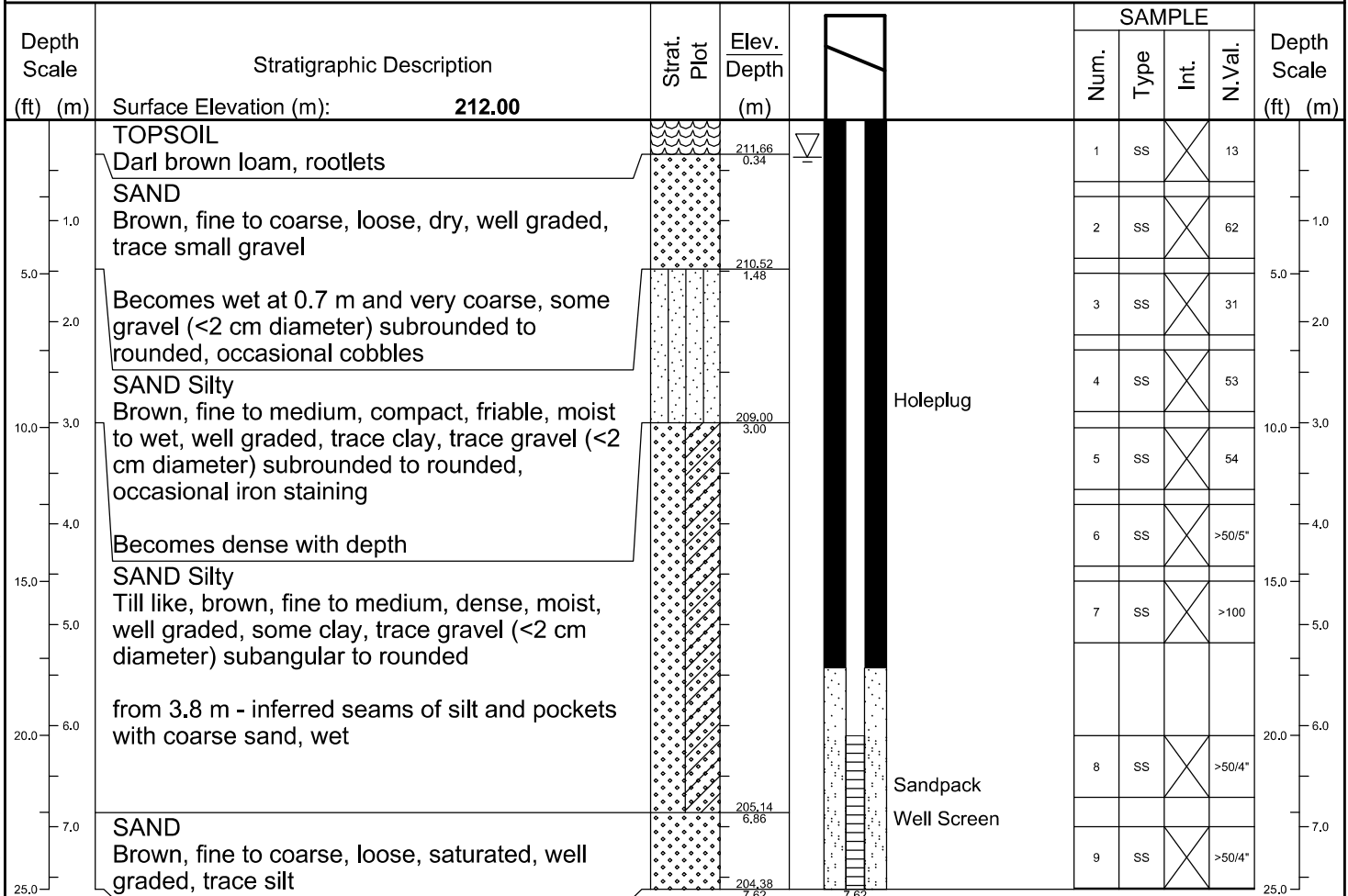
LOG OF DRILLING OPERATIONS

AG-MW7



R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Guelph, Ontario N1H 1C4
telephone (519) 823-4995 fax (519) 836-5477

Client: Angus Glen Developments Inc.	Project Name: Angus Glen MESP	Logged by: C. D.
Project No.: 300034937	Location: Markham, ON	Ground (m amsl): 212.00
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 2/24/2015	Static Water Level Depth (m): 0.37
Drilling Method: Hollow Stem Auger	Date Completed: 2/24/2015	Sand Pack Depth (m) : 5.43 - 7.62



B:\LOG GUELPH\PI\GINT\PROJECTS\300 JOBS\300034937.0000_ANGUS GLEN\300034937_GPT TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE
Water found @ time of drilling	Pipe: 51 mm dia. PVC	AC Auger Cutting
Static Water Level - 6/16/2015	Screen: 51 mm dia. PVC #10 slot	CS Continuous
		RC Rock Core
		SS Split Spoon
		AR Air Rotary
		WC Wash Cuttings

LOG OF DRILLING OPERATIONS

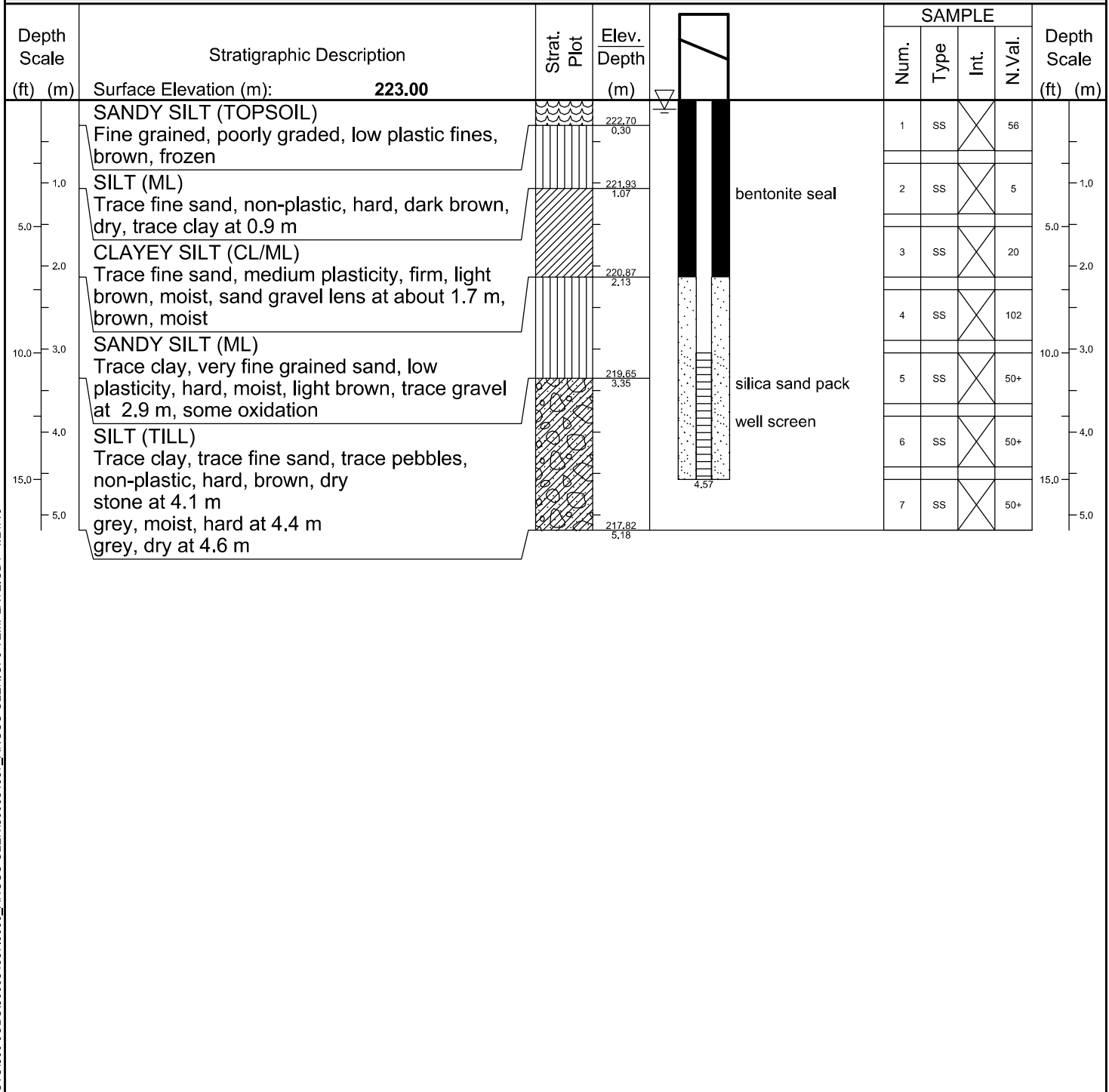
AG-MW4



R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Guelph, Ontario N1H 1C4
telephone (519) 823-4995 fax (519) 836-5477

Page 1 of 1

Client: Angus Glen Developments Inc.	Project Name: Angus Glen MESP	Logged by: I. Murphy
Project No.: 300034937	Location: Markham, ON	Ground (m amsl): 223.00
Drilling Co.: Lantech Drilling Services Inc.	Date Started: 3/2/2015	Static Water Level Depth (m): 0.11
Drilling Method: Hollow Stem Auger	Date Completed: 3/2/2015	Sand Pack Depth (m) : 2.14 - 4.57



B:\LOG GUELPH\PI\GIN\TIP\PROJECTS\3000\JOBS\300034937\0000_ANGUS GLEN\300034937_ANGUS GLEN.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE
Water found @ time of drilling Static Water Level - 6/16/2015	Pipe: 51 mm dia. PVC Screen: 51 mm dia. PVC #10 slot	AC Auger Cutting CS Continuous RC Rock Core SS Split Spoon AR Air Rotary WC Wash Cuttings

JOB NO: 1402-S061

LOG OF BOREHOLE NO: 1

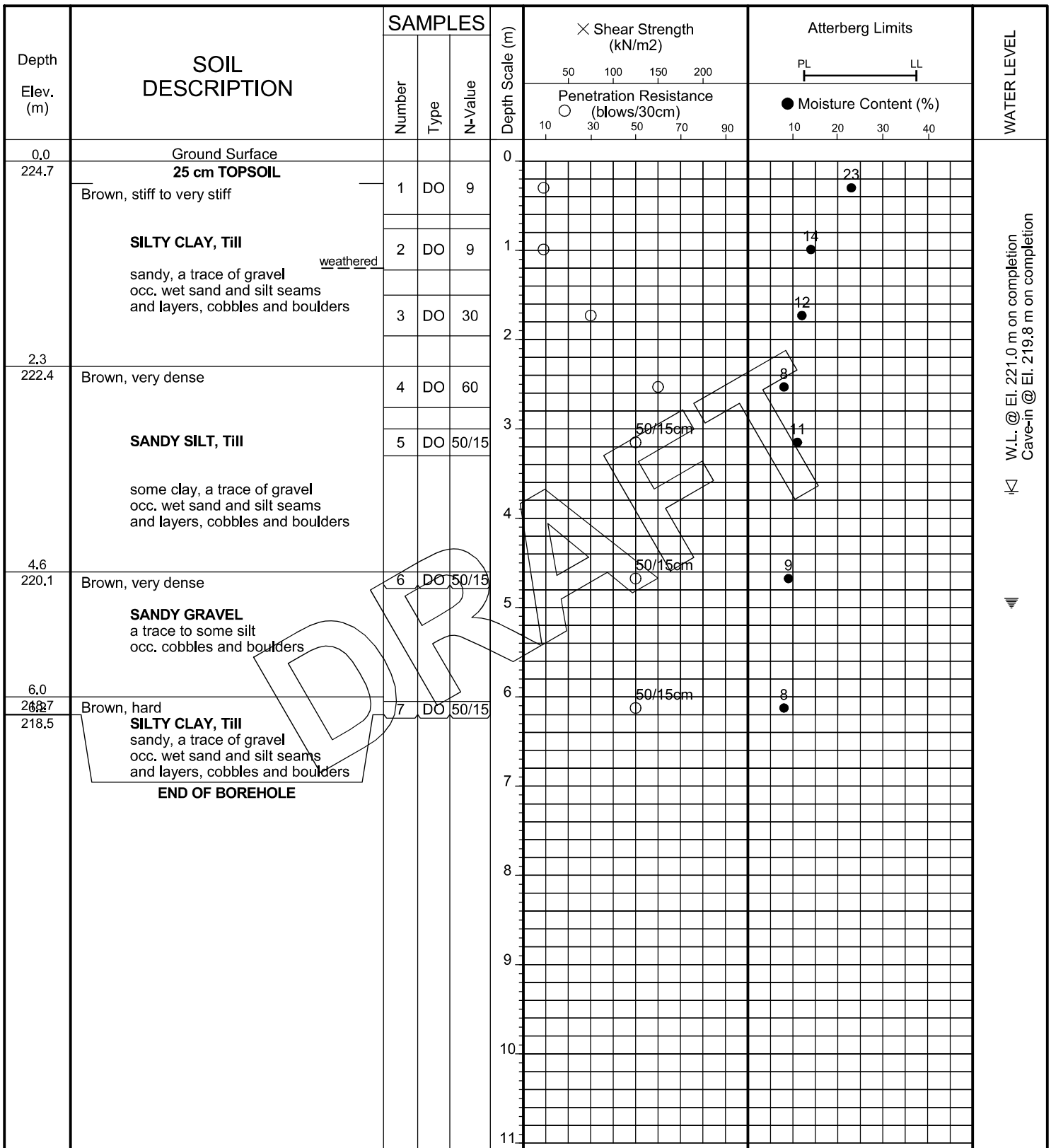
FIGURE NO: 1

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 10565 Warden Avenue, City of Markham

METHOD OF BORING: Flight-Auger

DATE: July 4, 2014



Soil Engineers Ltd.

JOB NO: 1408-S150

LOG OF BOREHOLE NO: 1

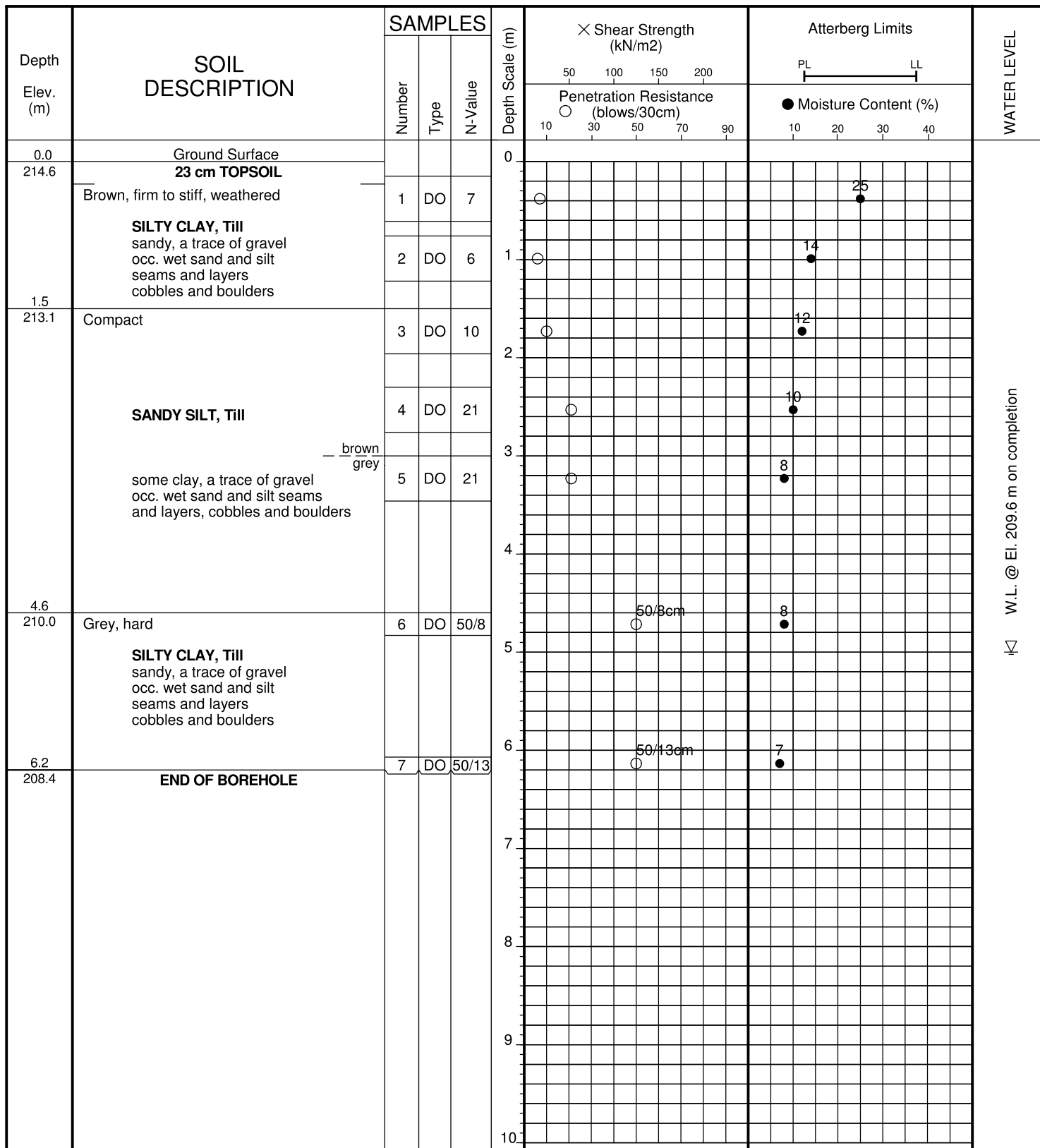
FIGURE NO: 1

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 10231 Warden Avenue, City of Markham
(Part 11 of Lot 22)

METHOD OF BORING: Flight-Auger

DATE: December 22, 2014



Soil Engineers Ltd.