



# PATERSON GROUP

February 4, 2026

**PH5176-LET.01**

**Minto Communities**

180 Kent Street – Suite 200  
Ottawa, Ontario  
K1P 0B6

Attention: **Kevin Harper**

Subject: **Water Budget Assessment**  
Proposed Residential Development  
3265 Jockvale Road, Ottawa, Ontario

**Consulting Engineers**

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Geotechnical Engineering  
Environmental Engineering  
Hydrogeology  
Materials Testing  
Building Science  
Rural Development Design  
Temporary Shoring Design  
Retaining Wall Design  
Noise and Vibration Studies  
Energy and Sustainability  
Temporary Shoring Design  
Pile Dynamic Analysis and Testing

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## INTRODUCTION

Further to your request, Paterson Group (Paterson) has completed a Water Budget Assessment in support of the stormwater management strategy for the proposed residential development located at 3265 Jockvale Road, in the City of Ottawa, Ontario (hereinafter referred to as the “subject site”). Please refer to Drawing PH5176-1 - Site Plan for the approximate site location.

The area that was considered for the water budget assessment has a footprint of approximately 101,239 m<sup>2</sup>. The majority of the subject site is currently vacant and covered with shrubs or mature trees. The northeast corner of the subject site consists of an industrial building with paved/gravel parking areas. A paved/gravel road runs through the center of the subject site.

The shallow subsoils within the western and northern portions of the subject site generally consisted of topsoil overlying a glacial till deposit with a silty sand matrix. The shallow subsoils within the southeastern portion of the subject site generally consisted of a hard to very stiff silty clay.

During the most recent field investigation completed at the subject site by Paterson, groundwater levels were measured between 0.72 and 6.71 m below ground surface (bgs).

A detailed description of the subject site can be found in the most recent PG5636-3 Paterson Group Report which should be read in conjunction with this report.



## WATER BUDGET ASSESMENT

The Thornthwaite and Mather (1957) method was used to assess pre and post-development site conditions based on Table 3.1 of the Ministry of the Environment’s (MOE) 2003 Stormwater Management Planning and Design Manual and hydrologic/climatic data provided by Environment Canada's Engineering Climate Services Unit (EC-ECS).

Shallow unsaturated soils within the study area generally consisted of topsoil overlying a glacial till deposit with a silty sand matrix or a hard to very stiff silty clay, dependent on the location across the subject site. The above noted calculations were carried out for a fine sandy loam, clay loam or silt loam soil, dependent on the location across the subject site and pre or post development conditions.

Given that the location of the subject site is within the City of Ottawa, climatic data was obtained from the climate station located at the McDonald-Cartier International Airport covering the period of January 1939 to December 2022. The information was provided by EC-ECS and is attached to this report.

Table 1, below, displays the soil types present within the study area and their associated water holding capacities (WHC) as well as the actual evapotranspiration (AE) and surplus data. The EC-ECS monthly/annual water budget data used in this assessment is attached to this report.

<b>Table 1 - Site Specific Water Surplus Information</b>			
<b>Land Use Unit</b>	<b>Water Holding Capacity (mm)</b>	<b>Actual Evapotranspiration (mm/year)</b>	<b>Surplus Water (mm/year)</b>
Impervious Surfaces	N/A	*144	759
Urban Lawns / Shallow Rooted Crops (Fine Sandy Loam)	75	525	378
Urban Lawns / Shallow Rooted Crops (Silt Loam)	125	562	341
Pasture and Shrubs (Fine Sandy Loam)	150	574	329
Pasture and Shrubs (Clay Loam)	250	600	304
Mature Forests (Fine Sandy Loam)	300	605	298
Mature Forests (Clay Loam)	400	609	292

Table reproduced using WHC values from the MOE 2003 Stormwater Management Planning and Design Manual and modelling data from Environment Canada’s Engineering Climate Services Unit.  
\*Value based on evaporation information for urban areas (16% of precipitation) included in the Eastern Ontario Water Resources Management Study prepared by CH2M HILL Canada Limited (March 30, 2001).



## Infiltration Factors

In order to partition the surplus water values for the various materials into infiltration and runoff, various factors must be considered. The MOE 2003 Stormwater Management Planning and Design Manual lists three main factors that contribute to surface water infiltration rates.

The first factor is topography, which is broken down further into three sections: flat and average slope, rolling land and hilly land. Flat and average slope provides the greatest potential for infiltration and has the largest infiltration factor applied to it (0.3), while the other two have progressively lower infiltration factors (rolling land is 0.2 and hilly land is 0.1).

The second factor is soil, which is also broken down further into three sections: tight impervious clay, medium combinations of clay and loam and open sandy loam. Open sandy loam provides the greatest potential for infiltration (infiltration factor of 0.4) while the other two have progressively lower potential for infiltration to occur (infiltration factor for medium combinations of clay and loam is 0.2 and for tight impervious clay is 0.1).

The final factor the MOE manual uses to partition infiltration from runoff is land cover. It is broken down into two sections: open fields/cultivated lands and woodlands. Woodlands have greater infiltration potential and an infiltration factor of 0.2. Open fields and cultivated lands have lower potential with an infiltration factor of 0.1. A summary of the MOE manual's descriptors and their associated infiltration factors is shown below in Table 2.

<b>Table 2 - MOE (2003) Infiltration Factors</b>	
<b>Description of Area/Development Site</b>	<b>Value of Infiltration Factor</b>
<b>Topography</b>	
Flat and average slope (<0.6 m/km)	0.30
Rolling land (slope of 2.8-3.8 m/km)	0.20
Hilly land (slope of 28-47 m/km)	0.10
<b>Soil</b>	
Tight impervious clay	0.10
Medium combinations of clay and loam	0.20
Open sandy loam	0.40
<b>Cover</b>	
Open fields/cultivated lands	0.10
Woodlands	0.20
Table reproduced from MOE (2003) - Stormwater Management Planning and Design Manual.	

The topography of the subject site was classified as being between hilly land and rolling land and was assigned a pre-development topography infiltration factor of 0.15 for the fine sandy loam and clay loam soils. Under post-development conditions without mitigation, the topography infiltration factor of 0.15 was assigned to the Urban Lawns (Silt Loam). Under post-development conditions with mitigation, the slope of the site is anticipated to be reduced to promote additional infiltration. Therefore, a post-development



topography infiltration factor of 0.2 was assigned. An infiltration factor of 0 was assigned to the impervious surfaces due to its negligible infiltration capacity.

The soils within the study area generally consisted of topsoil overlying a glacial till deposit with a silty sand matrix or a hard to very stiff silty clay. Therefore, a pre-development soil infiltration factor of 0.3 and 0.15 was given for the fine sandy loam and clay loam materials analysed on the property, respectively. Under post-development conditions without mitigation, a soil infiltration factor of 0.25 was given for Urban Lawns (Silt Loam). Under post-development conditions with mitigation, soils with higher infiltration potential are anticipated to be used and were assigned a soil Infiltration factor of 0.3 for the Urban Lawns (Fine Sandy Loam). An infiltration factor of 0 was assigned to the impervious surfaces due to its negligible infiltration capacity.

The vegetation cover at the subject site generally consisted of pasture and shrubs or mature trees. Under post-development conditions (with and without mitigation), the land cover will largely change to landscaped areas (Urban Lawns) or impervious surfaces. A vegetation infiltration factor of 0.1 was assigned to all pre- and post-development materials and 0 for the impervious surfaces, with the exception of the pre-development tree covered areas which were assigned a vegetation infiltration factor of 0.2.

It is important to note that the water budget analysis for the subject site does not consider any potential infiltration of impervious surfaces (100% runoff was taken as a conservative approach). In reality, some portion of surface water that lands on impervious surfaces infiltrates (asphalt is not 100% impervious) or is diverted to grassed areas where additional infiltration may occur. As such, the impervious surface runoff volumes should be considered a conservative estimate and not expected to definitively represent existing conditions.

The infiltration factors noted above are displayed within the water budget calculations in Tables 3-5 attached to this report.

### **Pre-Development Water Budget**

The pre-development water budget analysis conducted for the study area determined that an estimated 15,186,064 L/year of surplus water currently infiltrates the surface soils. The remaining estimated 21,511,585 L/year of surplus leaves the site as runoff.

Details of the pre-development water budget analyses are presented in Table 3 attached to this report.

### **Post-Development Water Budget Assessment - No Mitigation**

The post-development water budget analysis without mitigation determined that an estimated 5,389,658 L/year of surplus water will infiltrate the surface soils and approximately 58,237,390 L/year will leave the site as runoff. These values equate to an



approximate 65% decrease in infiltration and 171% increase in runoff when compared to the pre-development water budget.

### **Post-Development Water Budget Assessment - Mitigation**

The post-development water budget analysis with mitigation determined that an estimated 8,983,751 L/year of surplus water will infiltrate the surface soils and approximately 52,764,899 L/year will leave the site as runoff. These values equate to an approximate 41% decrease in infiltration and 145% increase in runoff when compared to the pre-development water budget.

Below are the assumptions used in the assessment based on discussions with the design team.

- ❑ The medium density blocks were considered to be 15% pervious areas classified as Urban Lawns / Shallow Rooted Crops (Silt Loam or Fine Sandy Loam) and 85% impervious areas.
- ❑ The residential housing blocks were considered to be 30% pervious areas classified as Urban Lawns / Shallow Rooted Crops (Silt Loam or Fine Sandy Loam) and 70% impervious areas.
- ❑ An estimated 8,000 m<sup>2</sup> of roofs for the non-back-to-back townhouses will be directed to rear yards. This area (8,000 m<sup>2</sup>) is subtracted from the Impervious Surfaces footprint and added to the Urban Lawns footprint for the mitigation calculations.
- ❑ The soil infiltration factor increased from 0.25 (Silt Loam) to 0.3 (Fine Sandy Loam) for Urban Lawns as the result of using topsoil with higher infiltration potential for the mitigation calculations.
- ❑ Topography Infiltration factor increased from 0.15 to 0.2 for Urban Lawns as the result of reduced grading for the mitigation calculations.

Details of the post-development water budget analyses are presented in Tables 4 and 5 attached to this report.





## CONCLUSIONS

As previously discussed, surficial soils at the subject site generally consisted of topsoil overlying a glacial till deposit with a silty sand matrix or a hard to very stiff silty clay.

As noted above, the results of the water budget analyses completed at the subject site indicated that an estimated 15,186,064 L/year of infiltration and 21,511,585 L/year of surface runoff are occurring under pre-development conditions. Under post-development conditions, it is expected that there will be an approximate 65% infiltration deficit and a 171% increase in runoff prior to implementing mitigation measures.

As discussed above, the stormwater management design team is anticipated to implement mitigation measures to address post-development changes to the site's water budget. These mitigation measures include reduced lot grading, using topsoil with higher infiltration potential and connecting roof leads to lawns. By implementing these measures, the post development infiltration deficit and runoff increase will be reduced from 65 to 41% and 171 to 145%, respectively.

The information presented in this report is intended to support the stormwater management strategy while aligning with the Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) framework and City of Ottawa Technical Bulletin IWSTB-2024-04. Based on discussions with the design team, it is Paterson's understanding that the City's standard right-of-way (ROW) cross sections for local roads do not accommodate infiltration/exfiltration Low Impact Development (LID) systems and that the proposed 22 m collector road cannot accommodate LIDs in addition to the other infrastructure requirements. Therefore, based on the current concept plans available at the time of report preparation, it is anticipated that stormwater will be managed by implementing the mitigation measures noted above while tying into the existing stormwater management infrastructure for the surrounding area.



## STATEMENT OF LIMITATIONS

The client should be aware that any information pertaining to soils and all test hole logs are furnished as a matter of general information only, and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those of the test holes.

A review of this nature is a limited sampling of a site. The recommendations are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around the test locations. Should any conditions at the site be encountered which differ from those at the test locations, we request notification immediately in order to permit reassessment of our recommendations.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than Minto Communities or their agent(s) is not authorized without review by Paterson Group for the applicability of our recommendations to the altered use of the report.

We trust that the current submission satisfies your immediate requirements.

Best Regards,

**Paterson Group Inc.**

Oliver Blume, P.Geo.



### Attachments:

- Drawing PH5176 - Site Plan
- Drawing PH5176 - Pre-Development Terrain Composition Plan
- Drawing PH5176 - Post-Development Terrain Composition Plan
- Table 3 - Pre-Development Annual Water Budget Calculations
- Table 4 - Post-Development Annual Water Budget Calculations
- Table 5 - Post-Development Annual Water Budget Calculations with Mitigation
- Environment Canada's Engineering Climate Services Water Budget Data
- Soil Profile and Test Data Sheets
- Drawing PG5636-15 Test Hole Location Plan





**LEGEND:**  
 PROPERTY BOUNDARY

SCALE: 1:2000

**PATERSON GROUP**  
 9 AURIGA DRIVE  
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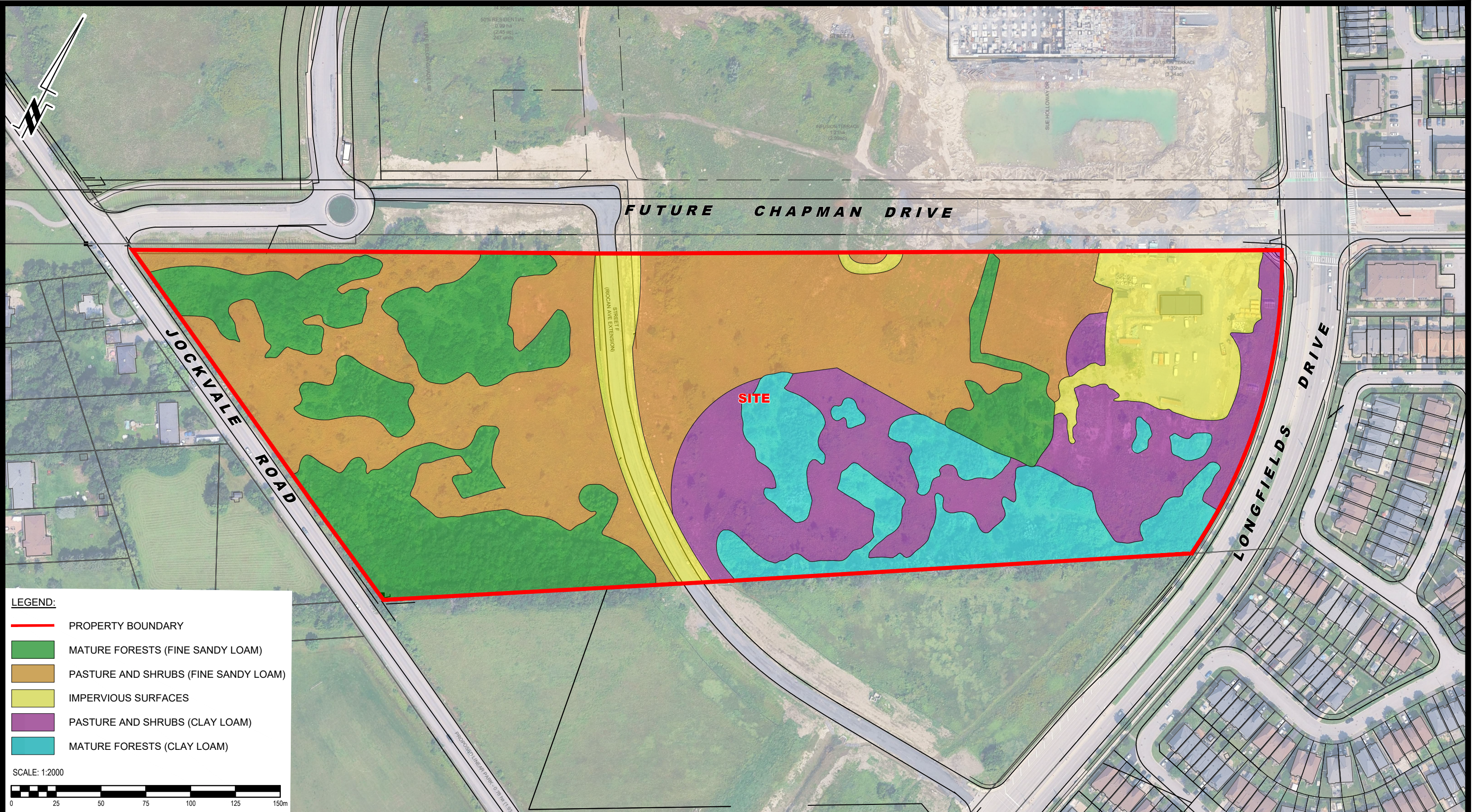
NO.	REVISIONS	DATE	INITIAL

**MINTO COMMUNITIES  
 WATER BUDGET ASSESSMENT  
 PROPOSED RESIDENTIAL DEVELOPMENT**

**OTTAWA, 3265 JOCKVALE ROAD - BARRHAVEN TOWN CENTRE STAGE 2 ONTARIO**

Title: **SITE PLAN**

Scale:	1:2000	Date:	02/2026
Drawn by:	GK	Report No.:	PH5176-LET.01
Checked by:	OB	Dwg. No.:	<b>PH5176-1</b>
Approved by:	OB	Revision No.:	



**LEGEND:**

- PROPERTY BOUNDARY
- MATURE FORESTS (FINE SANDY LOAM)
- PASTURE AND SHRUBS (FINE SANDY LOAM)
- IMPERVIOUS SURFACES
- PASTURE AND SHRUBS (CLAY LOAM)
- MATURE FORESTS (CLAY LOAM)

SCALE: 1:2000

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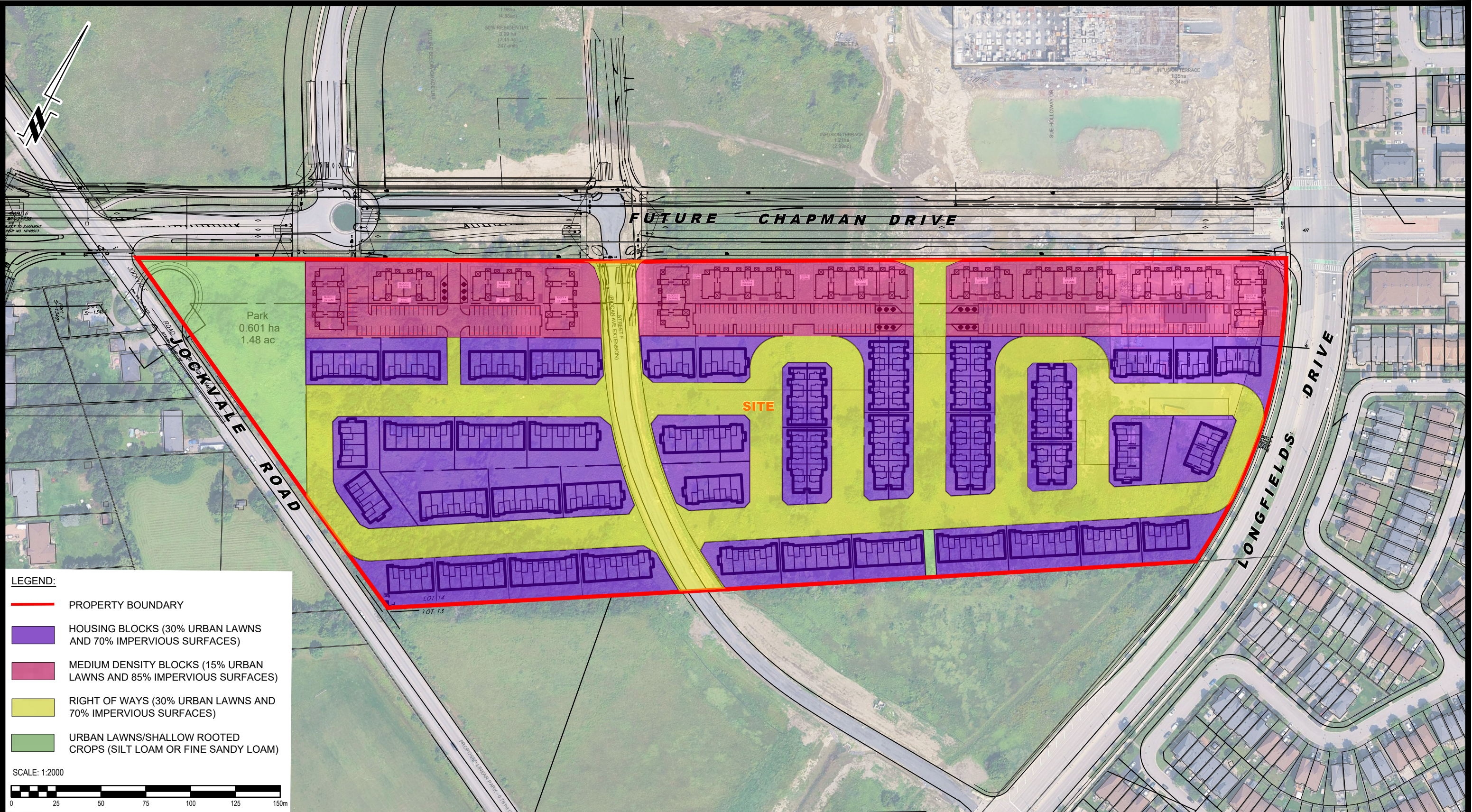
NO.	REVISIONS	DATE	INITIAL

**MINTO COMMUNITIES  
 WATER BUDGET ASSESSMENT  
 PROPOSED RESIDENTIAL DEVELOPMENT**

**OTTAWA, 3265 JOCKVALE ROAD - BARRHAVEN TOWN CENTRE STAGE 2 ONTARIO**

**Title:**  
**PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN**

Scale:	1:2000	Date:	02/2026
Drawn by:	GK	Report No.:	PH5176-LET.01
Checked by:	OB	Dwg. No.:	<b>PH5176-2</b>
Approved by:	OB	Revision No.:	



**LEGEND:**

- PROPERTY BOUNDARY
- HOUSING BLOCKS (30% URBAN LAWNS AND 70% IMPERVIOUS SURFACES)
- MEDIUM DENSITY BLOCKS (15% URBAN LAWNS AND 85% IMPERVIOUS SURFACES)
- RIGHT OF WAYS (30% URBAN LAWNS AND 70% IMPERVIOUS SURFACES)
- URBAN LAWNS/SHALLOW ROOTED CROPS (SILT LOAM OR FINE SANDY LOAM)

SCALE: 1:2000

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NO.	REVISIONS	DATE	INITIAL

**MINTO COMMUNITIES  
 WATER BUDGET ASSESSMENT  
 PROPOSED RESIDENTIAL DEVELOPMENT**

**OTTAWA, 3265 JOCKVALE ROAD - BARRHAVEN TOWN CENTRE STAGE 2 ONTARIO**

**Title:  
 POST-DEVELOPMENT TERRAIN COMPOSITION PLAN**

Scale:	1:2000	Date:	02/2026
Drawn by:	GK	Report No.:	PH5176-LET.01
Checked by:	OB	Dwg. No.:	<b>PH5176-3</b>
Approved by:	OB	Revision No.:	

Table 3 - Pre-Development Annual Water Budget Calculations

Land Use Unit	Area (m <sup>2</sup> )	Water Surplus (mm)	Topography Factor	Soil Factor	Vegetation Factor	Infiltration Factor	Runoff Factor	Total Infiltration (mm/year)	Total Infiltration (L/year)	Total Runoff (mm/year)	Total Runoff (L/year)
Impervious Surfaces	11,679	759	0	0	0	0	1	0	0	759	8,864,543
Pasture and Shrubs (Fine Sandy Loam)	38,008	329	0.15	0.3	0.1	0.55	0.45	181	6,877,526	148	5,627,067
Pasture and Shrubs (Clay Loam)	11,746	304	0.15	0.15	0.1	0.4	0.6	122	1,428,331	182	2,142,496
Mature Forests (Fine Sandy Loam)	22,402	298	0.15	0.3	0.2	0.65	0.35	194	4,339,244	104	2,336,516
Mature Forests (Clay Loam)	17,404	292	0.15	0.15	0.2	0.5	0.5	146	2,540,964	146	2,540,964
<b>Total</b>	<b>101,239</b>								<b>15,186,064</b>		<b>21,511,585</b>

Table 4 - Post-Development Annual Water Budget Calculations

Land Use Unit	Area (m <sup>2</sup> )	Water Surplus (mm)	Topography Factor	Soil Factor	Vegetation Factor	Infiltration Factor	Runoff Factor	Total Infiltration (mm/year)	Total Infiltration (L/year)	Total Runoff (mm/year)	Total Runoff (L/year)
Impervious Surfaces	69,628	759	0	0	0	0	1	0	0	759	52,847,732
Urban Lawns / Shallow Rooted Crops (Silt Loam)	31,611	341	0.15	0.25	0.1	0.5	0.5	171	5,389,658	171	5,389,658
<b>Totals</b>	<b>101,239</b>								<b>5,389,658</b>		<b>58,237,390</b>
<b>Difference (L/year)</b>									<b>-9,796,407</b>		<b>36,725,804</b>
<b>Percentage Variation</b>									<b>-65%</b>		<b>171%</b>

Table 5 - Post-Development Annual Water Budget Calculations With Mitigation

Land Use Unit	Area (m <sup>2</sup> )	Water Surplus (mm)	Topography Factor	Soil Factor	Vegetation Factor	Infiltration Factor	Runoff Factor	Total Infiltration (mm/year)	Total Infiltration (L/year)	Total Runoff (mm/year)	Total Runoff (L/year)
Impervious Surfaces	61,628	759	0	0	0	0	1	0	0	759	46,775,732
Urban Lawns / Shallow Rooted Crops (Fine Sandy Loam)	39,611	378	0.2	0.3	0.1	0.6	0.4	227	8,983,751	151	5,989,167
<b>Totals</b>	<b>101,239</b>								<b>8,983,751</b>		<b>52,764,899</b>
<b>Difference (L/year)</b>									<b>-6,202,313</b>		<b>31,253,314</b>
<b>Percentage Variation</b>									<b>-41%</b>		<b>145%</b>

Ottawa Intl A WATER BUDGET MEANS FOR THE PERIOD 1939-2022 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY... 75 MM HEAT INDEX... 36.77  
 LONG... 75.67 LOWER ZONE..... 45 MM A..... 1.081

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	62	12	14	0	0	0	25	82	74	294
28- 2	-9.0	56	11	16	1	1	0	26	111	74	350
31- 3	-2.8	65	31	77	6	6	0	103	67	75	416
30- 4	5.7	73	68	72	31	31	0	110	0	75	489
31- 5	13.1	75	75	0	80	80	0	14	0	56	565
30- 6	18.3	85	85	0	116	107	-9	4	0	30	650
31- 7	20.9	88	88	0	136	104	-32	3	0	11	738
31- 8	19.7	85	85	0	118	84	-34	1	0	11	823
30- 9	14.8	82	82	0	75	65	-10	3	0	25	906
31-10	8.3	77	77	0	37	36	-1	14	0	52	78
30-11	1.3	76	59	8	10	10	0	38	9	71	154
31-12	-6.8	79	27	15	1	1	0	37	46	74	233
AVE	6.0 TTL	904	700	202	611	525	-86	378			

Ottawa Intl A STANDARD DEVIATIONS FOR THE PERIOD 1939-2022 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	2.9	26	15	17	1	1	0	28	44	3	59
28- 2	2.6	26	14	25	1	1	0	34	59	3	63
31- 3	2.6	28	22	48	5	5	0	55	87	0	70
30- 4	1.8	32	32	88	9	9	0	88	2	1	79
31- 5	1.8	34	34	2	12	12	0	24	0	22	94
30- 6	1.2	37	37	0	8	17	18	16	0	29	104
31- 7	1.2	44	44	0	8	31	33	16	0	22	116
31- 8	1.3	39	39	0	9	29	31	4	0	22	127
30- 9	1.4	39	39	0	8	16	16	15	0	29	131
31-10	1.5	37	37	1	7	7	2	21	0	27	37
30-11	1.8	27	27	8	4	4	0	31	13	12	45
31-12	3.0	30	22	14	1	1	0	30	34	4	54

Ottawa Intl A WATER BUDGET MEANS FOR THE PERIOD 1939-2022 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...125 MM HEAT INDEX... 36.77  
 LONG... 75.67 LOWER ZONE..... 75 MM A..... 1.081

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	62	12	14	0	0	0	22	82	121	294
28- 2	-9.0	56	11	16	1	1	0	26	111	122	350
31- 3	-2.8	65	31	77	6	6	0	100	67	125	416
30- 4	5.7	73	68	72	31	31	0	109	0	125	489
31- 5	13.1	75	75	0	80	80	0	14	0	106	565
30- 6	18.3	85	85	0	116	115	-1	4	0	72	650
31- 7	20.9	88	88	0	136	122	-15	3	0	35	738
31- 8	19.7	85	85	0	118	93	-25	1	0	27	823
30- 9	14.8	82	82	0	75	67	-9	2	0	40	906
31-10	8.3	77	77	0	37	36	-1	7	0	74	78
30-11	1.3	76	59	8	10	10	0	24	9	107	154
31-12	-6.8	79	27	15	1	1	0	29	46	119	233
AVE	6.0 TTL	904	700	202	611	562	-51	341			

Ottawa Intl A STANDARD DEVIATIONS FOR THE PERIOD 1939-2022 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	2.9	26	15	17	1	1	0	29	44	13	59
28- 2	2.6	26	14	25	1	1	0	34	59	12	63
31- 3	2.6	28	22	48	5	5	0	54	87	3	70
30- 4	1.8	32	32	88	9	9	0	88	2	1	79
31- 5	1.8	34	34	2	12	12	0	24	0	22	94
30- 6	1.2	37	37	0	8	9	4	16	0	39	104
31- 7	1.2	44	44	0	8	23	25	16	0	37	116
31- 8	1.3	39	39	0	9	26	27	4	0	37	127
30- 9	1.4	39	39	0	8	15	14	12	0	42	131
31-10	1.5	37	37	1	7	7	2	18	0	41	37
30-11	1.8	27	27	8	4	4	0	30	13	27	45
31-12	3.0	30	22	14	1	1	0	29	34	15	54

Ottawa Intl A WATER BUDGET MEANS FOR THE PERIOD 1939-2022 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...150 MM HEAT INDEX... 36.77  
 LONG... 75.67 LOWER ZONE..... 90 MM A..... 1.081

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	62	12	14	0	0	0	21	82	143	294
28- 2	-9.0	56	11	16	1	1	0	24	111	145	350
31- 3	-2.8	65	31	77	6	6	0	99	67	149	416
30- 4	5.7	73	68	72	31	31	0	109	0	150	489
31- 5	13.1	75	75	0	80	80	0	14	0	131	565
30- 6	18.3	85	85	0	116	116	0	4	0	96	650
31- 7	20.9	88	88	0	136	127	-9	3	0	54	738
31- 8	19.7	85	85	0	118	98	-20	1	0	40	823
30- 9	14.8	82	82	0	75	68	-8	2	0	53	906
31-10	8.3	77	77	0	37	36	-1	7	0	87	78
30-11	1.3	76	59	8	10	10	0	20	9	124	154
31-12	-6.8	79	27	15	1	1	0	25	46	140	233
AVE	6.0 TTL	904	700	202	611	574	-38	329			

Ottawa Intl A STANDARD DEVIATIONS FOR THE PERIOD 1939-2022 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	2.9	26	15	17	1	1	0	29	44	18	59
28- 2	2.6	26	14	25	1	1	0	34	59	17	63
31- 3	2.6	28	22	48	5	5	0	53	87	5	70
30- 4	1.8	32	32	88	9	9	0	88	2	1	79
31- 5	1.8	34	34	2	12	12	0	24	0	22	94
30- 6	1.2	37	37	0	8	8	1	16	0	41	104
31- 7	1.2	44	44	0	8	19	20	16	0	43	116
31- 8	1.3	39	39	0	9	22	24	4	0	44	127
30- 9	1.4	39	39	0	8	14	13	12	0	48	131
31-10	1.5	37	37	1	7	7	2	17	0	46	37
30-11	1.8	27	27	8	4	4	0	28	13	33	45
31-12	3.0	30	22	14	1	1	0	29	34	21	54

Ottawa Intl A WATER BUDGET MEANS FOR THE PERIOD 1939-2022 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...250 MM HEAT INDEX... 36.77  
 LONG... 75.67 LOWER ZONE.....150 MM A..... 1.081

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	62	12	14	0	0	0	18	82	231	294
28- 2	-9.0	56	11	16	1	1	0	22	111	236	350
31- 3	-2.8	65	31	77	6	6	0	92	67	247	416
30- 4	5.7	73	68	72	31	31	0	107	0	250	489
31- 5	13.1	75	75	0	80	80	0	14	0	231	565
30- 6	18.3	85	85	0	116	116	0	4	0	195	650
31- 7	20.9	88	88	0	136	135	-1	3	0	146	738
31- 8	19.7	85	85	0	118	111	-7	1	0	119	823
30- 9	14.8	82	82	0	75	72	-4	2	0	127	906
31-10	8.3	77	77	0	37	37	0	6	0	162	78
30-11	1.3	76	59	8	10	10	0	16	9	203	154
31-12	-6.8	79	27	15	1	1	0	19	46	225	233
AVE	6.0 TTL	904	700	202	611	600	-12	304			

Ottawa Intl A STANDARD DEVIATIONS FOR THE PERIOD 1939-2022 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	2.9	26	15	17	1	1	0	27	44	35	59
28- 2	2.6	26	14	25	1	1	0	33	59	32	63
31- 3	2.6	28	22	48	5	5	0	54	87	12	70
30- 4	1.8	32	32	88	9	9	0	86	2	1	79
31- 5	1.8	34	34	2	12	12	0	24	0	22	94
30- 6	1.2	37	37	0	8	8	0	16	0	42	104
31- 7	1.2	44	44	0	8	9	5	16	0	53	116
31- 8	1.3	39	39	0	9	13	14	4	0	61	127
30- 9	1.4	39	39	0	8	10	8	12	0	66	131
31-10	1.5	37	37	1	7	7	1	17	0	62	37
30-11	1.8	27	27	8	4	4	0	27	13	51	45
31-12	3.0	30	22	14	1	1	0	28	34	38	54

Ottawa Intl A WATER BUDGET MEANS FOR THE PERIOD 1939-2022 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...300 MM HEAT INDEX... 36.77  
 LONG... 75.67 LOWER ZONE.....180 MM A..... 1.081

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	62	12	14	0	0	0	17	82	277	294
28- 2	-9.0	56	11	16	1	1	0	21	111	283	350
31- 3	-2.8	65	31	77	6	6	0	91	67	296	416
30- 4	5.7	73	68	72	31	31	0	105	0	300	489
31- 5	13.1	75	75	0	80	80	0	14	0	281	565
30- 6	18.3	85	85	0	116	116	0	4	0	245	650
31- 7	20.9	88	88	0	136	136	0	3	0	195	738
31- 8	19.7	85	85	0	118	114	-4	1	0	165	823
30- 9	14.8	82	82	0	75	73	-2	2	0	172	906
31-10	8.3	77	77	0	37	37	0	6	0	207	78
30-11	1.3	76	59	8	10	10	0	16	9	248	154
31-12	-6.8	79	27	15	1	1	0	18	46	271	233
AVE	6.0 TTL	904	700	202	611	605	-6	298			

Ottawa Intl A STANDARD DEVIATIONS FOR THE PERIOD 1939-2022 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	2.9	26	15	17	1	1	0	27	44	40	59
28- 2	2.6	26	14	25	1	1	0	33	59	38	63
31- 3	2.6	28	22	48	5	5	0	55	87	16	70
30- 4	1.8	32	32	88	9	9	0	85	2	1	79
31- 5	1.8	34	34	2	12	12	0	24	0	22	94
30- 6	1.2	37	37	0	8	8	0	16	0	42	104
31- 7	1.2	44	44	0	8	8	2	16	0	55	116
31- 8	1.3	39	39	0	9	11	10	4	0	66	127
30- 9	1.4	39	39	0	8	9	6	12	0	71	131
31-10	1.5	37	37	1	7	7	1	17	0	67	37
30-11	1.8	27	27	8	4	4	0	27	13	56	45
31-12	3.0	30	22	14	1	1	0	28	34	43	54

Ottawa Intl A WATER BUDGET MEANS FOR THE PERIOD 1939-2022 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...400 MM HEAT INDEX... 36.77  
 LONG... 75.67 LOWER ZONE.....240 MM A..... 1.081

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	62	12	14	0	0	0	16	82	374	294
28- 2	-9.0	56	11	16	1	1	0	20	111	380	350
31- 3	-2.8	65	31	77	6	6	0	89	67	394	416
30- 4	5.7	73	68	72	31	31	0	104	0	400	489
31- 5	13.1	75	75	0	80	80	0	14	0	381	565
30- 6	18.3	85	85	0	116	116	0	4	0	345	650
31- 7	20.9	88	88	0	136	136	0	3	0	294	738
31- 8	19.7	85	85	0	118	117	-1	1	0	262	823
30- 9	14.8	82	82	0	75	74	-1	2	0	268	906
31-10	8.3	77	77	0	37	37	0	6	0	302	78
30-11	1.3	76	59	8	10	10	0	16	9	343	154
31-12	-6.8	79	27	15	1	1	0	17	46	367	233
AVE	6.0 TTL	904	700	202	611	609	-2	292			

Ottawa Intl A STANDARD DEVIATIONS FOR THE PERIOD 1939-2022 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	2.9	26	15	17	1	1	0	27	44	48	59
28- 2	2.6	26	14	25	1	1	0	33	59	45	63
31- 3	2.6	28	22	48	5	5	0	56	87	22	70
30- 4	1.8	32	32	88	9	9	0	85	2	1	79
31- 5	1.8	34	34	2	12	12	0	24	0	22	94
30- 6	1.2	37	37	0	8	8	0	16	0	42	104
31- 7	1.2	44	44	0	8	8	0	16	0	56	116
31- 8	1.3	39	39	0	9	8	5	4	0	70	127
30- 9	1.4	39	39	0	8	8	3	12	0	77	131
31-10	1.5	37	37	1	7	7	0	17	0	72	37
30-11	1.8	27	27	8	4	4	0	27	13	62	45
31-12	3.0	30	22	14	1	1	0	28	34	50	54

DATUM Geodetic

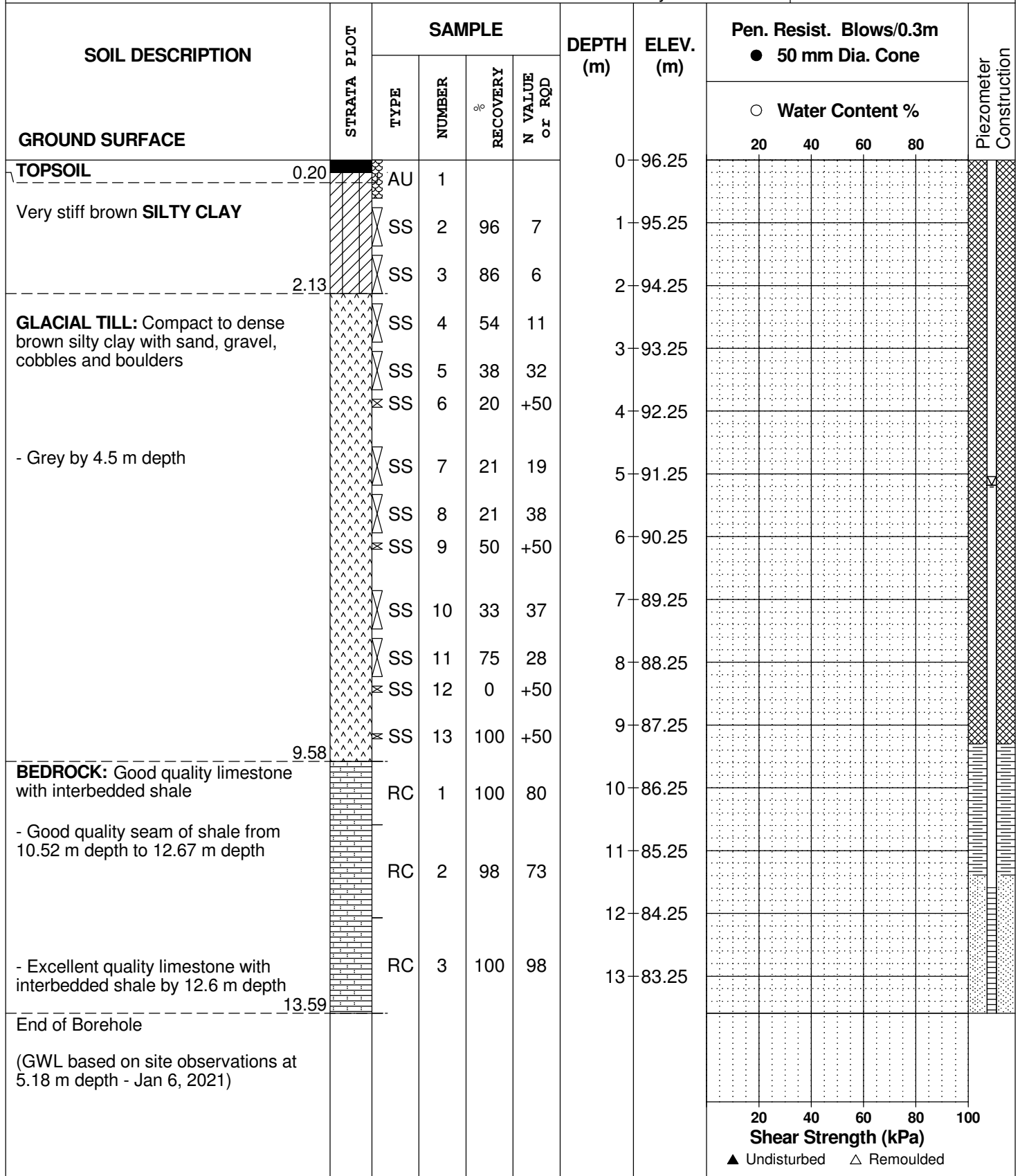
REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 6

FILE NO. **PG5636**

HOLE NO. **BH 1-21**



20 40 60 80 100  
**Shear Strength (kPa)**  
▲ Undisturbed    △ Remoulded

DATUM Geodetic

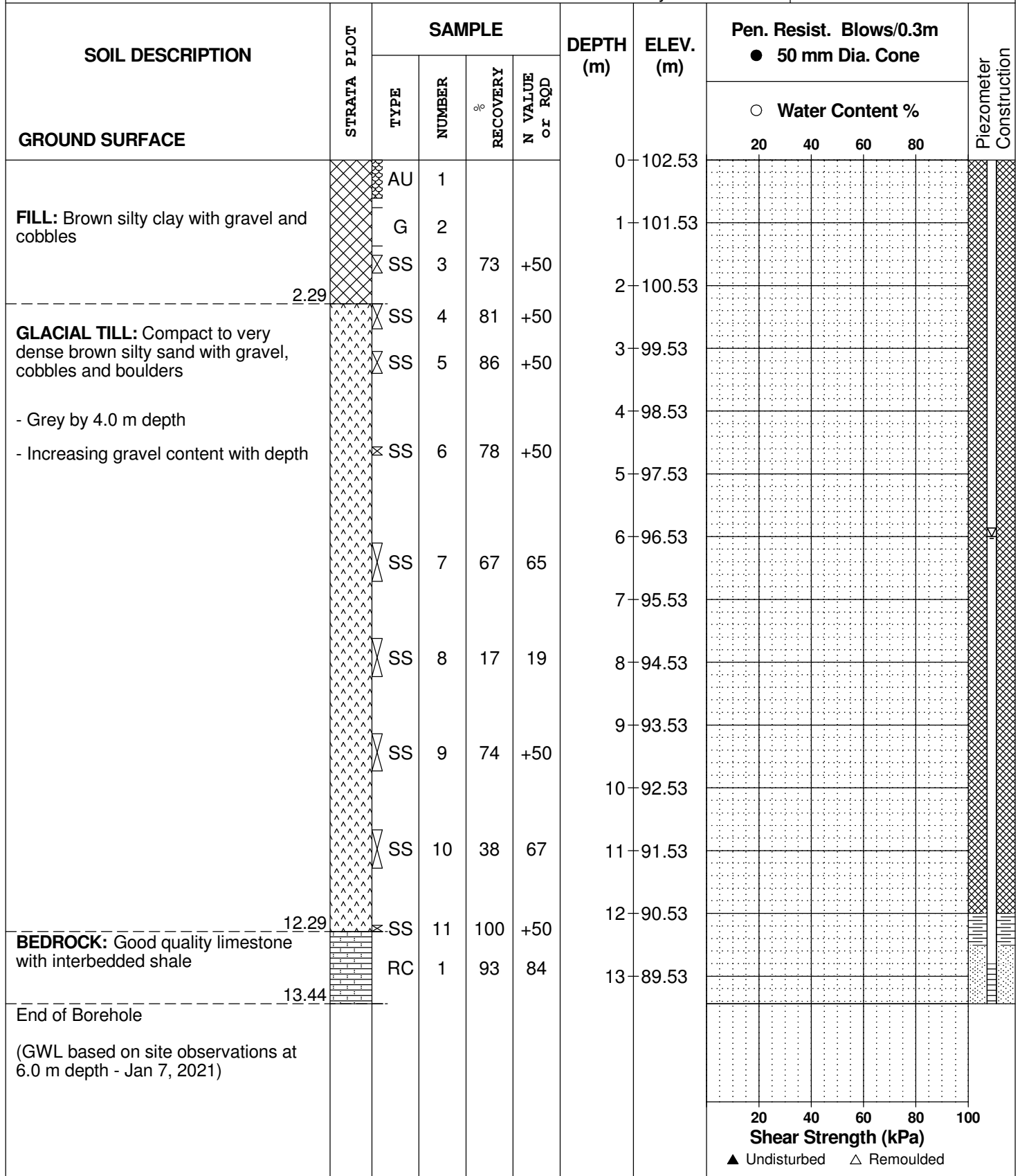
REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 7

FILE NO. **PG5636**

HOLE NO. **BH 2-21**





## SOIL PROFILE AND TEST DATA

Geotechnical Investigation  
Mixed-Use Commercial and Residential Development  
3265 Jockvale Road - Ottawa, Ontario

DATUM Geodetic

FILE NO. **PG5636**

REMARKS

HOLE NO. **BH 4-21**

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 8

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80		
<b>GROUND SURFACE</b>													
<b>TOPSOIL</b> FILL: Clayey sand with gravel and organics	0.23	AU	1			0	97.70						
	1.37	SS	2	67	7	1	96.70						
<b>GLACIAL TILL:</b> Compact to dense brown clayey silty sand with gravel, cobbles and boulders		SS	3	46	7	2	95.70						
		SS	4	0	+50								
		SS	5	75	21	3	94.70						
		SS	6	71	13	4	93.70						
		SS	7	45	20	5	92.70						
End of Borehole  Practical refusal to augering at 5.21 m depth  (GWL based on site observations at 1.52 m depth - Jan 8, 2021)	5.21												

20 40 60 80 100  
**Shear Strength (kPa)**  
▲ Undisturbed    △ Remoulded

DATUM Geodetic

FILE NO. **PG5636**

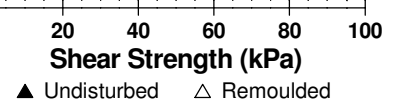
REMARKS

HOLE NO. **BH 5-21**

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 8

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
GROUND SURFACE								20	40	60	80		
<b>FILL:</b> Brown silty sand, organics, gravel and scrap metal	0.38	AU	1			0	100.19						
<b>GLACIAL TILL:</b> Very dense brown silty sand, with gravel, cobbles and boulders, some clay		SS	2	63	51	1	99.19						
		SS	3	96	52	2	98.19						
		SS	4	91	+50								
End of Borehole  Practical refusal to augering @ 2.74 m depth  (GWL based on site observations at 2.29 m depth - Jan 5, 2021)	2.74												



DATUM Geodetic

FILE NO. **PG5636**

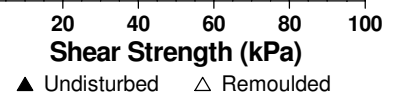
REMARKS

HOLE NO. **BH 6-21**

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 8

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80		
<b>GROUND SURFACE</b>													
Very stiff brown <b>SILTY CLAY</b> some organics		AU	1			0	94.11						
		SS	2	83	10	1	93.11						
		SS	3	100	7	2	92.11						
<b>GLACIAL TILL:</b> Compact grey clayey silty sand, with gravel, cobbles and boulders		SS	4	100	5	3	91.11						
		SS	5	44	+50	3	91.11						
		SS	6	72	13	4	90.11						
		SS	7	13	15	5	89.11						
		SS	8	58	16	6	88.11						
End of Borehole													
(GWL based on site observations at 3.20 m depth - Jan 8, 2021)													



DATUM Geodetic

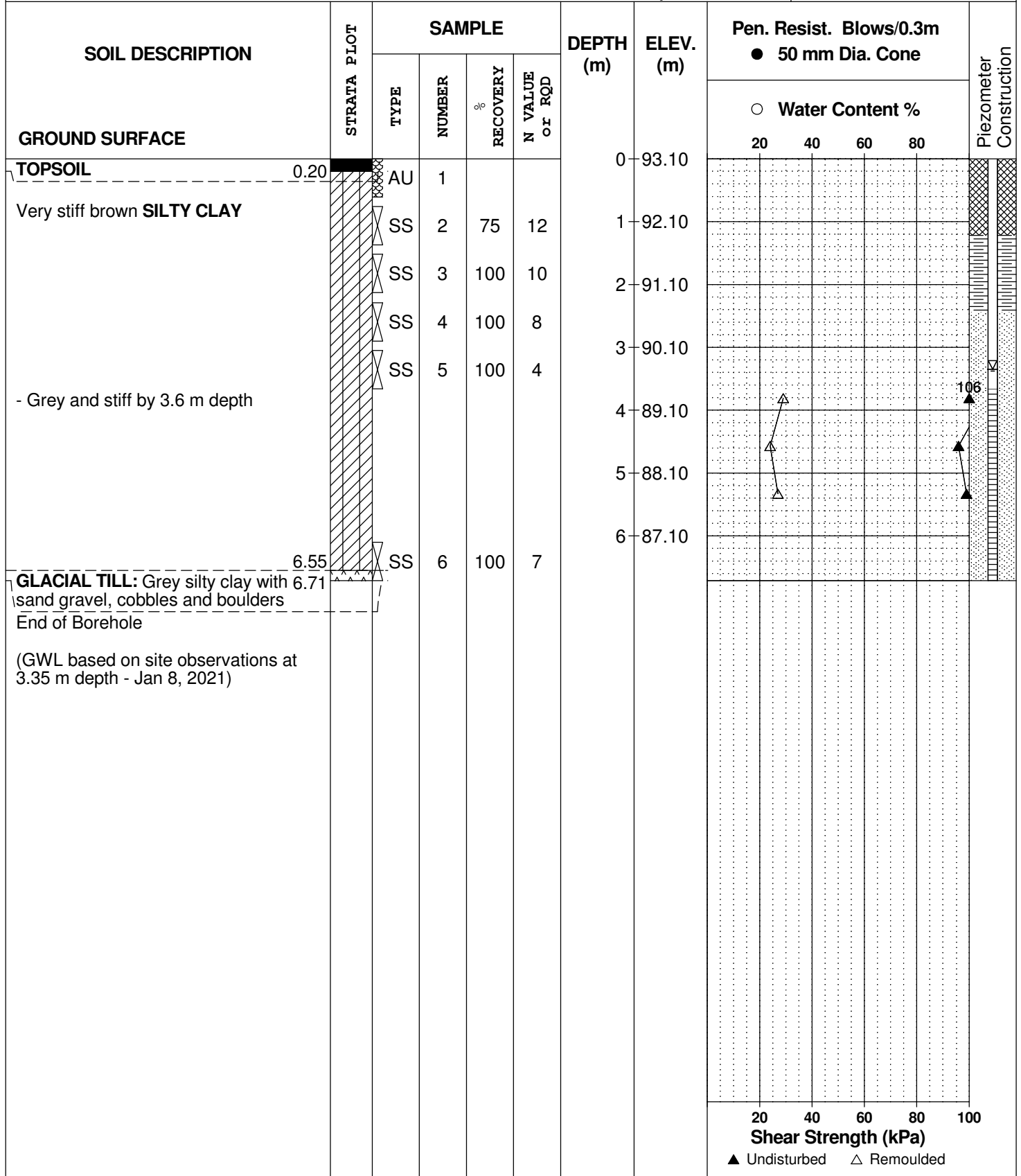
FILE NO. **PG5636**

REMARKS

HOLE NO. **BH 7-21**

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 8



## SOIL PROFILE AND TEST DATA

Geotechnical Investigation  
Mixed-Use Commercial and Residential Development  
3265 Jockvale Road - Ottawa, Ontario

DATUM Geodetic

FILE NO. **PG5636**

REMARKS

HOLE NO. **BH 8-21**

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 8

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80	
<b>GROUND SURFACE</b>												
TOPSOIL	0.08	AU	1			0	95.91					
<b>GLACIAL TILL:</b> Compact to very dense brown silty sand some clay, gravel, cobbles and boulders		SS	2	58	22	1	94.91					
		SS	3	38	29	2	93.91					
		SS	4	100	+50							
		SS	5	0	+50	3	92.91					
End of Borehole	3.15											
Practical refusal to augering at 3.15 m depth  (GWL based on site observations at 3.05 m depth - Jan 8, 2021)												

20 40 60 80 100  
**Shear Strength (kPa)**  
▲ Undisturbed    △ Remoulded



DATUM Geodetic

REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 11

FILE NO. PG5636

HOLE NO. BH11-21

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
GROUND SURFACE								20	40	60	80		
TOPSOIL	0.13	AU	1			0	98.05						
<b>GLACIAL TILL:</b> Compact to very dense brown silty clay with sand, gravel, cobbles and boulders  - Moisture increased in recovered samples by 4.9 m depth  - Becoming grey by 6.4 m depth		SS	2	75	41	1	97.05						
		SS	3	80	+50	2	96.05						
		SS	4	50	+50	3	95.05						
		SS	5	54	37	4	94.05						
		SS	6	63	39	5	93.05						
		SS	7	54	37	6	92.05						
		SS	8	67	40								
		SS	9	75	+50								
	End of Borehole	6.68											
Practical refusal to augering at 6.68 m depth  (GWL based on site observations at 4.57 m depth - Jan 11, 2021)													
								20	40	60	80	100	
<b>Shear Strength (kPa)</b> ▲ Undisturbed    △ Remoulded													

## SOIL PROFILE AND TEST DATA

Geotechnical Investigation  
Mixed-Use Commercial and Residential Development  
3265 Jockvale Road - Ottawa, Ontario

DATUM Geodetic

FILE NO. **PG5636**

REMARKS

HOLE NO. **BH12A-21**

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 6

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80		
GROUND SURFACE													
TOPSOIL	0.23	AU	1			0	99.40						
GLACIAL TILL: Compact to very dense brown silty sand with gravel, cobbles and boulders, trace clay		SS	2	79	28	1	98.40						
	2.13	SS	3	63	63	2	97.40						
End of Borehole													
Mechanical fault with drilling equipment required this test hole to be terminated at a depth of 2.13 m.													

20 40 60 80 100  
Shear Strength (kPa)  
▲ Undisturbed    △ Remoulded



## SOIL PROFILE AND TEST DATA

Geotechnical Investigation  
Mixed-Use Commercial and Residential Development  
3265 Jockvale Road - Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2021 January 20

FILE NO. **PG5636**

HOLE NO. **BH13-21**

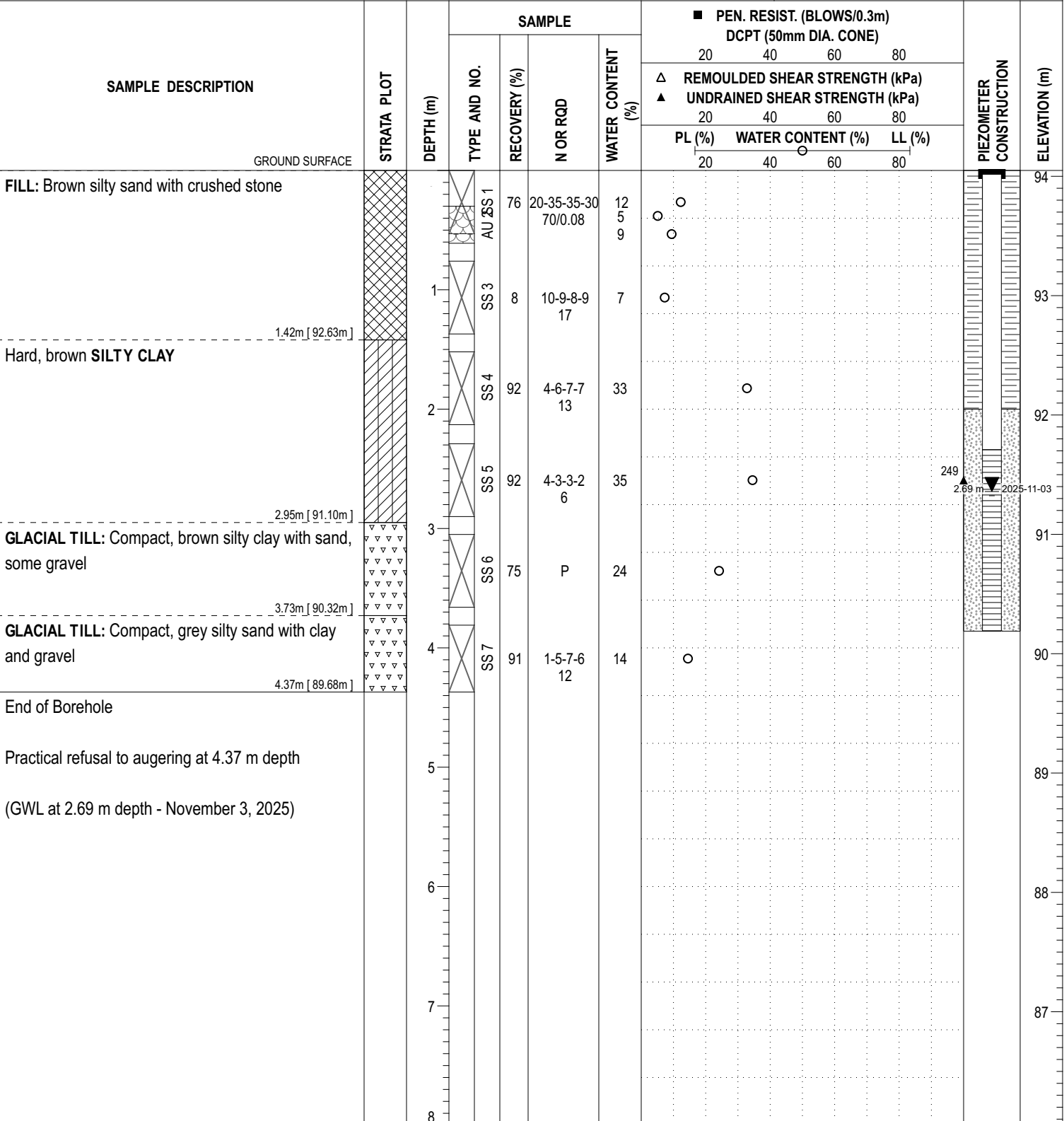
SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80		
GROUND SURFACE													
TOPSOIL	0.20	AU	1			0	99.66						
GLACIAL TILL: Compact brown silty sand with gravel, cobbles and boulders		SS	2	58	32	1	98.66						
		SS	3	63	48	2	97.66						
		SS	4	88	42	3	96.66						
		SS	5	17	+50	4	95.66						
		SS	6	21	+50	4	95.66						
		SS	7	0	+50								
End of Borehole	4.72												
Practical refusal to augering at 4.72m depth  (GWL based on site observations at 4.42 m depth - Jan 21, 2021)													
								20	40	60	80	100	
								<b>Shear Strength (kPa)</b>					
								▲ Undisturbed    △ Remoulded					

**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364808.98      **NORTHING:** 5014462.06      **ELEVATION:** 94.05

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 20, 2025      **HOLE NO.:** BH 1-25



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P:/AutoCAD Drawings/Test Hole Data Files/PG5636/data/sqlite 2025-11-13, 09:04 Paterson\_Template.MR

**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364816.84      **NORTHING:** 5014513.88      **ELEVATION:** 95.01

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 20, 2025      **HOLE NO.:** BH 2-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
FILL: Brown silty sand with crushed stone		0.94m [94.07m]	AU SS 1	70	33-50-/-/ 50/0.1	17					95	
- Some clay by 0.7 m depth						3						
End of Borehole		1	SS 3	100	11-41-21-25 62	14					94	
Practical refusal to augering at 0.94 m depth		2									93	
		3									92	
		4									91	
		5									90	
		6									89	
		7									88	
		8										

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P:/AutoCAD Drawings/Test Hole Data Files/PG5636/data/sqlite 2025-11-13, 09:04 Paterson\_Template.MR

**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364657.70      **NORTHING:** 5014399.64      **ELEVATION:** 95.01

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 20, 2025      **HOLE NO.:** BH 2A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
FILL: Brown silty sand with crushed stone		0	AU SS 1	100	21-45-27-16 72	6	○				95	
- Some clay by 0.7 m depth		0.7										
1.30m [93.71m]		1	SS 3	89	8-50-/-/ 50/0.08	13	○				94	
End of Borehole		1.30									93.71	
Practical refusal to augering at 1.30 m depth		2									93	
(GWL at 1.29 m depth - November 3, 2025)		1.29									93.71	
		3									92	
		4									91	
		5									90	
		6									89	
		7									88	
		8									87	

DISCLAIMER: THE DATA PRESENTED IN THIS SHEET IS THE PROPERTY OF PATERSON GROUP AND THE CLIENT FOR WHOM IT WAS PRODUCED. THIS SHEET SHOULD BE READ IN CONJUNCTION WITH ITS CORRESPONDING REPORT. PATERSON GROUP IS NOT RESPONSIBLE FOR THE UNAUTHORIZED USE OF THIS DATA.

P:/AutoCAD Drawings/Test Hole Data Files/PG5636/data/sqlite 2025-11-13, 09:04 Paterson\_Template.MR

**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364628.51      **NORTHING:** 5014327.09      **ELEVATION:** 95.12

**PROJECT:** Proposed Residential Development      **FILE NO. :** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 21, 2025      **HOLE NO. :** BH 3-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
TOPSOIL: with organics 0.08m [95.04m] Compact, brown SILTY SAND, trace clay			AU 1			15				95		
0.69m [94.43m] Stiff, brown SILTY CLAY, trace gravel		1	SS 2	67	2-6-8-31 14	28				94		
1.45m [93.67m] Compact, brown SILTY SAND, with gravel  - Some clay and cobbles by 2.3 m depth		2	SS 3	67	30-14-12-13 26	13				93		
2.97m [92.15m] GLACIAL TILL: Loose to compact, brown silty clay with gravel, cobbles and boulders, some sand		3	SS 4	67	11-5-13-7 18	17				92		
		4	SS 5	100	4-3-3-3 6	12				91		
		5	SS 6	71	1-2-1-1 3	11				90		
		6	SS 7	63	3-2-1-1 3	15				89		
		7	SS 8	29	3-6-4-4 10	18				88		
		8	SS 9	58	2-3-5-5 8	11				88		
End of Borehole		7										
Practical refusal to augering at 6.71 m depth		7										

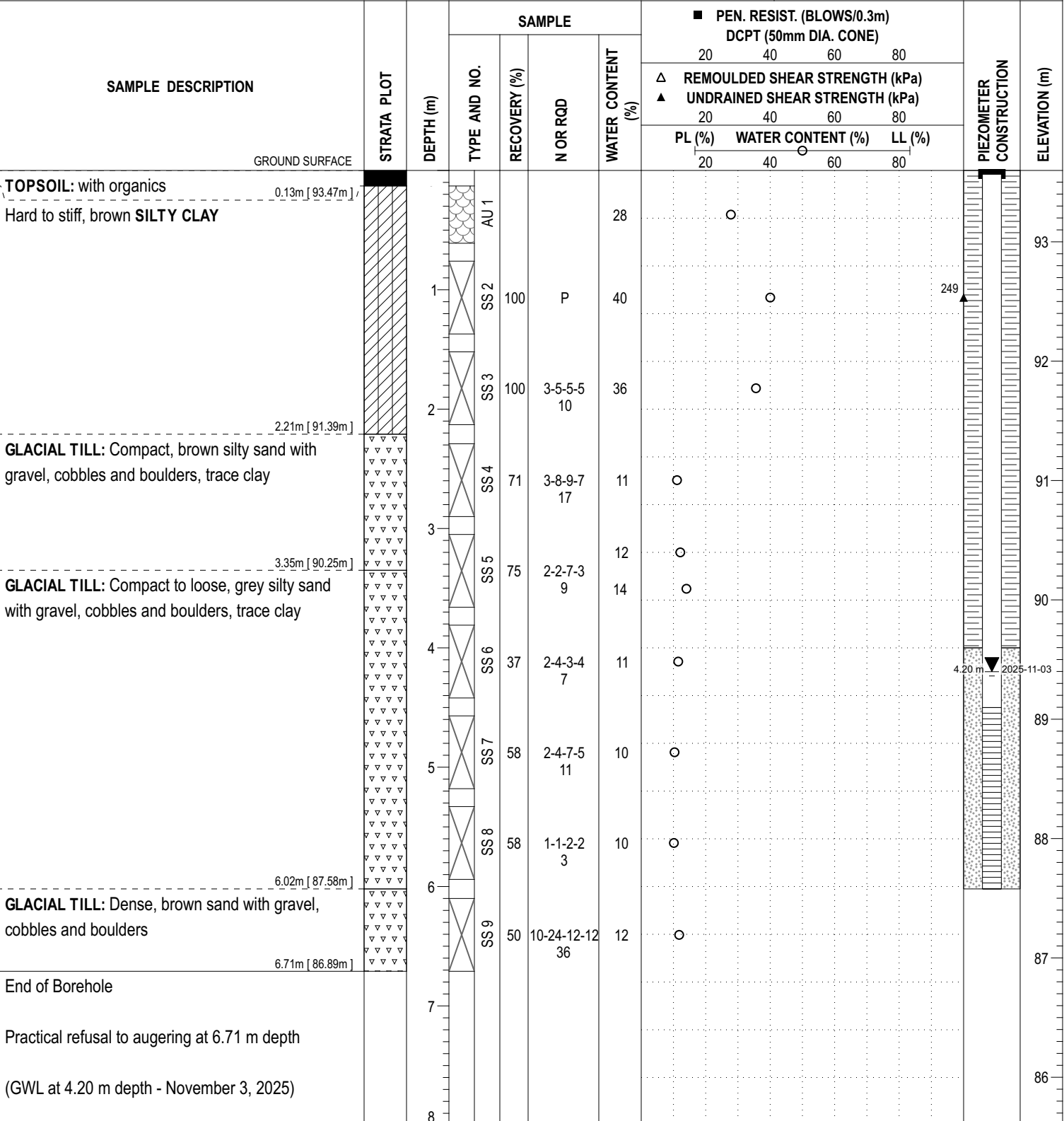
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COORD. SYS.: MTM ZONE 9      EASTING: 364661.57      NORTHING: 5014277.17      ELEVATION: 93.60

PROJECT: Proposed Residential Development      FILE NO.: **PG5636**

ADVANCED BY: CME-55 Low Clearance Drill      HOLE NO.: **BH 4-25**

REMARKS:      DATE: October 21, 2025



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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364781.27      **NORTHING:** 5014362.16      **ELEVATION:** 92.39

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 21, 2025      **HOLE NO.:** BH 5-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE			WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD		20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
							20	40	60			80
GROUND SURFACE												
TOPSOIL: with organics Stiff, brown SILTY CLAY		0.08m [92.31m]	SS 1	83	1-3-7-6 10	35		○			92	
			SS 2	100	3-5-7-6 12	40		○			91	
			SS 3	100	1-3-17-17 20	35		○			90	
GLACIAL TILL: Compact, brown silty sand with gravel, cobbles and boulders, some clay		1.80m [90.59m]	SS 4	46	2-8-7-5 15	18	○				89	
End of Borehole Practical refusal to augering at 3.0 m depth (GWL at 1.82 m depth - November 3, 2025)		3.00m [89.39m]									88	
											87	
											86	
											85	

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364775.25      **NORTHING:** 5014401.57      **ELEVATION:** 93.44

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 21, 2025      **HOLE NO.:** BH 6-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
FILL: Coarse granular, crushed stone and blast rock 0.46m [ 92.98m ]	[Cross-hatch pattern]	0.46	AU 1			8	○			93		
GLACIAL TILL: Compact, brown silty sand with gravel, cobbles and boulders 1.55m [ 91.89m ]	[Triangle pattern]	1.01	SS 2	50	7-8-11-12 19	10	○			92		
End of Borehole Practical refusal to augering at 1.55 m depth (GWL at 0.72 m depth - November 3, 2025)		1.55								91		
		2								90		
		3								89		
		4								88		
		5								87		
		6								86		
		7								85		
		8								84		

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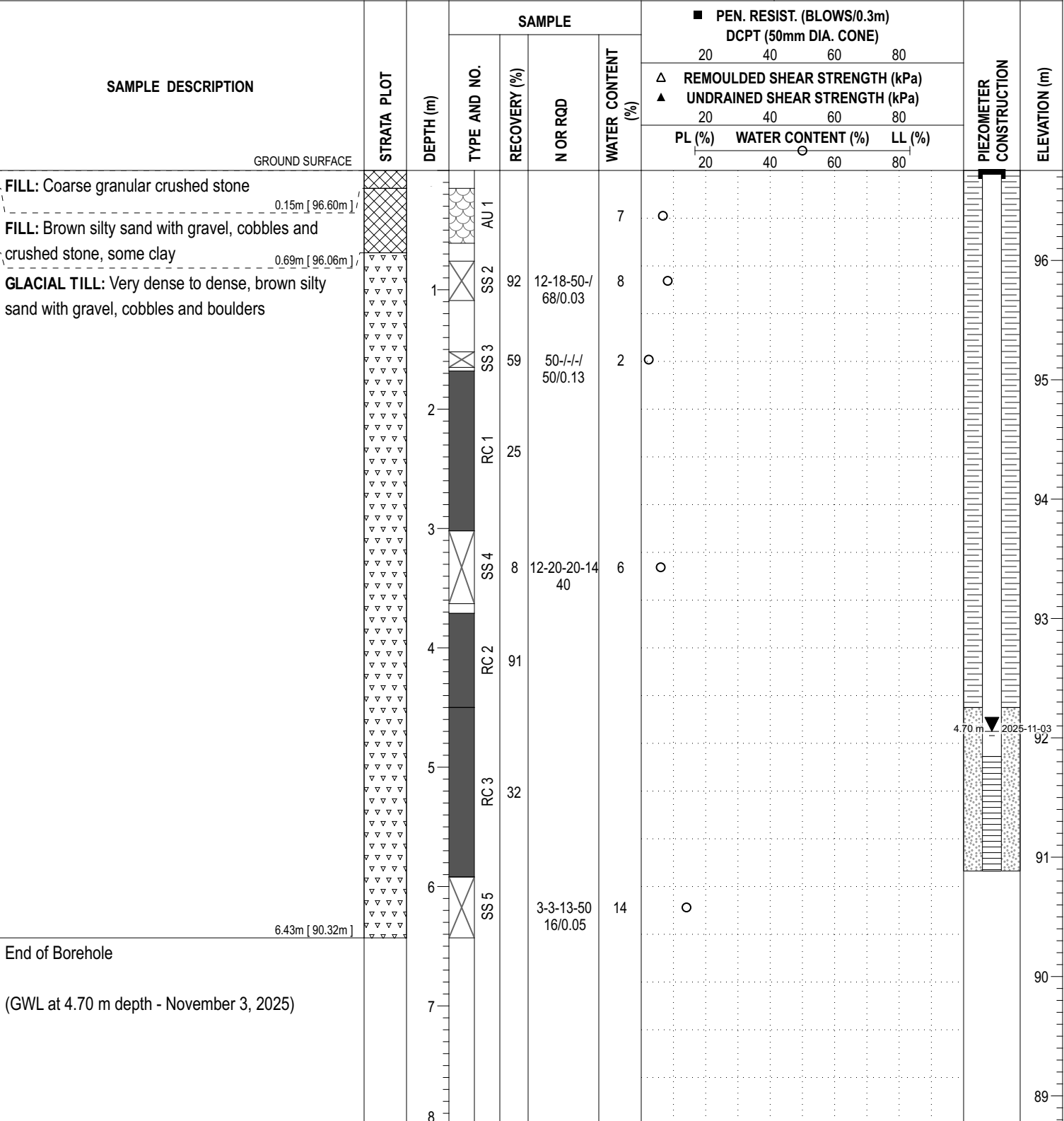
P:/AutoCAD Drawings/Test Hole Data Files/PG5636/data/sqlite 2025-11-13 09:04 Paterson\_Template.MR

COORD. SYS.: MTM ZONE 9      EASTING: 364667.11      NORTHING: 5014454.49      ELEVATION: 96.75

PROJECT: Proposed Residential Development      FILE NO.: **PG5636**

ADVANCED BY: CME-55 Low Clearance Drill      HOLE NO.: **BH 7-25**

REMARKS:      DATE: October 22, 2025



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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364518.57      **NORTHING:** 5014379.67      **ELEVATION:** 98.12

**PROJECT:** Proposed Residential Development      **FILE NO. :** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 22, 2025      **HOLE NO. :** BH 8-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
FILL: Brown silty clay, some gravel, trace sand		0.69m [97.43m]	AU 1			16	○			98		
GLACIAL TILL: Very dense to compact, brown silty sand with gravel, cobbles and boulders		1	SS 2	82	5-12-50-/ 62/0.13	9	○			97		
		2	SS 3	87	10-42-50-/ 92/0.08	6	○			96		
		3	SS 4	67	16-42-29-31 71	6	○			95		
		4	SS 5	67	5-18-29-20 47	8	○			94		
		5	SS 6	46	6-30-16-20 46	8	○			93		
		6	SS 7	63	6-20-7-11 27	8	○			92		
		7	SS 8	100	4-16-15-18 31	8	○			91		
		8	SS 9	84	4-18-48-50 66/0.03	8	○			90		
End of Borehole		6.58m [91.54m]										
(GWL at 5.84 m depth - November 3, 2025)												

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364544.29      **NORTHING:** 5014341.79      **ELEVATION:** 97.55

**PROJECT:** Proposed Residential Development      **FILE NO. :** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 22, 2025      **HOLE NO. :** BH 9-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			MONITORING WELL CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△	REMOULDED SHEAR STRENGTH (kPa)				△
			PL (%)		WATER CONTENT (%)		LL (%)					
GROUND SURFACE												
FILL: Brown silty sand with gravel and cobbles		0.69m [96.86m]	AU 1			12					97	
GLACIAL TILL: Very dense to compact, brown silty sand with gravel, cobbles and boulders		1	SS 2	100	5-22-39-39 61	6					96	
		2	SS 3	100	6-36-50-/ 86/0.13	6					95	
		3	SS 4	79	7-48-20-14 68	8					94	
		4	SS 5	100	10-23-22-21 45	9					93	
		5	SS 6	100	10-32-22-23 54	7					92	
		6	SS 7	75	12-15-12-16 27	9					91	
		7	SS 8	71	12-26-45-45 71	7					90	
		8	SS 9	46	3-18-32-22 50	10					89	
End of Borehole		6.71m [90.84m]									88	
(GWL at 6.71 m depth - November 3, 2025)											87	

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364682.64      **NORTHING:** 5014398.59      **ELEVATION:** 97.22

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 21, 2025      **HOLE NO.:** BH10-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
TOPSOIL: with organics 0.13m [97.09m]										97		
Compact to dense, brown SILTY SAND with gravel and cobbles 0.94m [96.28m]			AU 1			10	○					
End of Borehole		1	SS 2	29	31-50 +/- 50/0.03	5	○					
Practical refusal to augering at 0.94 m depth		1										
		2										
		3										
		4										
		5										
		6										
		7										
		8										

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364666.71      **NORTHING:** 5014395.56      **ELEVATION:** 97.22

**PROJECT:** Proposed Residential Development      **FILE NO. :** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 21, 2025      **HOLE NO. :** BH10A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				■ PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
							20	40	60			80
GROUND SURFACE												
TOPSOIL: with organics		0.13m [97.09m]									97	
Brown SILTY SAND with gravel and cobbles		0.61m [96.61m]									96	
End of Borehole											95	
Practical refusal to augering at 0.61 m depth											94	
		1									93	
		2									92	
		3									91	
		4									90	
		5										
		6										
		7										
		8										

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364657.70      **NORTHING:** 5014399.64      **ELEVATION:** 97.84

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 21, 2025      **HOLE NO.:** BH10B-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				■ PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
									20			40
GROUND SURFACE												
TOPSOIL: with organics 0.13m [97.71m]		0.13	AU 1								97.71	
Compact, brown SILTY SAND with gravel and cobbles 0.69m [97.15m]		0.69				8	○				97.15	
GLACIAL TILL: Very dense, brown silty sand with gravel, cobbles and boulders 1.50m [96.34m]		1.50	SS 2	100	12-29-40-45 69	7	○				96.34	
End of Borehole												
Practical refusal to augering at 1.5 m depth												

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COORD. SYS.: MTM ZONE 9      EASTING: 364723.32      NORTHING: 5014396.49      ELEVATION: 96.68

PROJECT: Proposed Residential Development      FILE NO.: **PG5636**

ADVANCED BY: CME-55 Low Clearance Drill      HOLE NO.: **BH11-25**

REMARKS:      DATE: October 23, 2025

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			MONITORING WELL CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
									20			40
GROUND SURFACE												
TOPSOIL: with organics Brown SILTY SAND, trace gravel		0.13m [96.55m]	AU 1			5	○					
GLACIAL TILL: Very dense to compact, brown silty sand with gravel, cobbles and boulders		0.69m [95.99m]	SS 2							96		
			SS 3	67	7-50-/-/ 50/0.08	6	○			95		
			SS 4	100	50-/-/ 50/0.03					94		
- Trace clay by 3.0 m depth			SS 5	100	5-12-15-14 27	8	○			93		
			SS 6	4	9-26-34-31 60	7	○					
			SS 7	100	6-18-21-16 39	8	○					
- Greyish brown by 5.3 m depth			SS 8	100	8-10-18-21 28	8	○			91		
End of Borehole		5.99m [90.69m]								6.20m		
Practical refusal to augering at 5.99 m depth										90		
(BH Dry on - November 3, 2025)										89		

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364517.59      **NORTHING:** 5014270.68      **ELEVATION:** 98.31

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 23, 2025      **HOLE NO.:** BH12-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
TOPSOIL: with organics, trace gravel 0.28m [98.03m]		0.28	AU 1			16	○			98		
GLACIAL TILL: Very dense, brown silty sand with gravel, cobbles and boulders 1.27m [97.04m]		1.27	SS 2	100	6-24-50-/ 74/0.13	7	○			97		
End of Borehole Practical refusal to augering at 1.27 m depth												

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COORD. SYS.: MTM ZONE 9      EASTING: 364515.55      NORTHING: 5014267.66      ELEVATION: 98.31

PROJECT: Proposed Residential Development      FILE NO. : PG5636

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:      DATE: October 23, 2025      HOLE NO. : BH12A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			MONITORING WELL CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
OVERBURDEN: Refer BH 12-25 for soil profile		0									98	
		1									97	
GLACIAL TILL: Very dense to compact, brown silty sand with gravel, cobbles and boulders		1.52m [96.79m]	SS 1	86	9-50-50-100/0.05	7	○				96	
		2	SS 2	100	9-20-39-50/59/0.05	7	○				95	
		3	RC 1	73							94	
		4	RC 2	19							93	
		5	SS 3	58	11-15-22-19/37	13	○				92	
		6	SS 4	25	16-14-13-14/27	9	○				91	
		6.71m [91.60m]	SS 5	21	3-15-25-12/40	9	○				90	
End of Borehole (GWL at 5.12 m depth - November 3, 2025)		7									89	
		8									88	

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364452.65      **NORTHING:** 5014268.33      **ELEVATION:** 100.96

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 23, 2025      **HOLE NO.:** BH13-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
									20			40
GROUND SURFACE												
TOPSOIL: with organics 0.30m [100.66m]												
FILL: Brown silty clay, trace gravel 0.69m [100.27m]			AU 1			20						
FILL: Compact, brown silty sand with gravel and cobbles, trace organics and clay 1.68m [99.28m]		1	SS 2	54	5-13-17-14 30	20					100	
GLACIAL TILL: Dense to very dense, brown silty sand with gravel, cobbles and boulders 2.69m [98.27m]		2	SS 3	95	4-13-33-50 46/0.08	13					99	
			SS 4	63	20-50-/-/ 50/0.05	8					99	
End of Borehole		3				5					98	
Practical refusal to augering at 2.69 m depth (GWL at 2.39 m depth - November 3, 2025)		4									97	
		5									96	
		6									95	
		7									94	
		8									93	

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**COORD. SYS.:** MTM ZONE 9      **EASTING:** 364495.54      **NORTHING:** 5014224.42      **ELEVATION:** 99.74

**PROJECT:** Proposed Residential Development      **FILE NO.:** PG5636

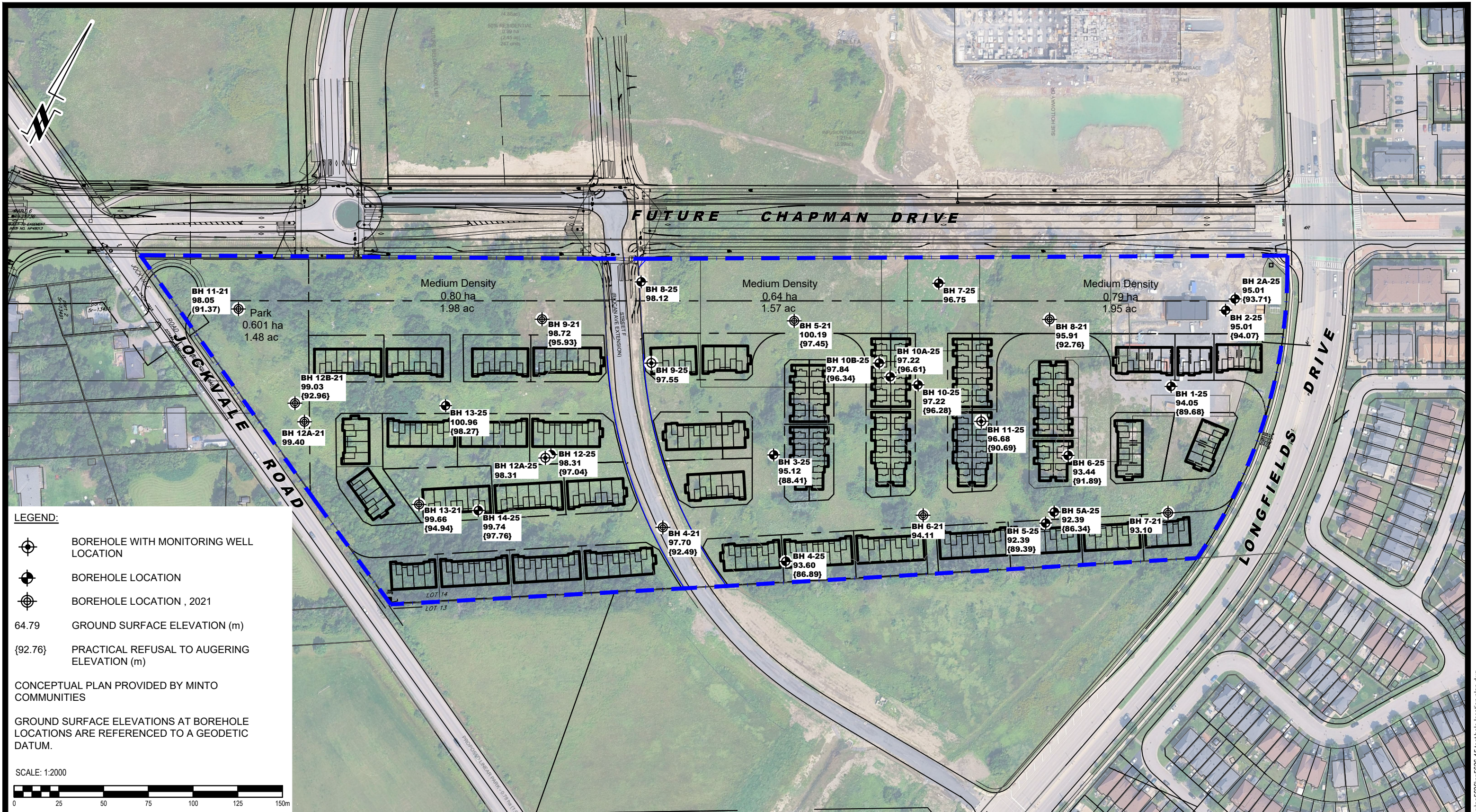
**ADVANCED BY:** CME-55 Low Clearance Drill

**REMARKS:**      **DATE:** October 23, 2025      **HOLE NO.:** BH14-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE				PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE)			PIEZOMETER CONSTRUCTION	ELEVATION (m)	
			TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	20	40	60			80
							△ REMOULDED SHEAR STRENGTH (kPa)	▲ UNDRAINED SHEAR STRENGTH (kPa)	PL (%)			WATER CONTENT (%)
GROUND SURFACE												
TOPSOIL: with organics 0.15m [99.59m]	[Pattern]		SS 1	75	2-2-4-6 6	10	○					
FILL: Loose, Brown silty sand with gravel 0.30m [99.44m]	[Pattern]					10	○					
GLACIAL TILL: Compact to very dense, brown silty sand with gravel, cobbles and boulders	[Pattern]	1	SS 2	75	5-26-43-44 69	6	○			99		
			SS 3	33	11-50-/-/ 50/0.08	5	○			98		
End of Borehole 1.98m [97.76m]		2										
Practical refusal to augering at 1.98 m depth (GWL at 1.63 m depth - November 3, 2025)		3								97		
		4								96		
		5								95		
		6								94		
		7								93		
		8								92		

DISCLAIMER: THE DATA PRESENTED IN THIS SHEET IS THE PROPERTY OF PATERSON GROUP AND THE CLIENT FOR WHOM IT WAS PRODUCED. THIS SHEET SHOULD BE READ IN CONJUNCTION WITH ITS CORRESPONDING REPORT. PATERSON GROUP IS NOT RESPONSIBLE FOR THE UNAUTHORIZED USE OF THIS DATA.

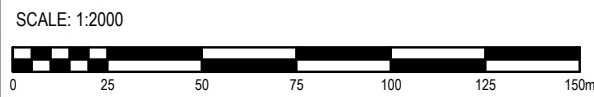
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- LEGEND:**
- BOREHOLE WITH MONITORING WELL LOCATION
  - BOREHOLE LOCATION
  - BOREHOLE LOCATION, 2021
  - 64.79 GROUND SURFACE ELEVATION (m)
  - {92.76} PRACTICAL REFUSAL TO AUGERING ELEVATION (m)

CONCEPTUAL PLAN PROVIDED BY MINTO COMMUNITIES

GROUND SURFACE ELEVATIONS AT BOREHOLE LOCATIONS ARE REFERENCED TO A GEODETIC DATUM.



**PATERSON GROUP**  
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NO.	REVISIONS	DATE	INITIAL

**MINTO COMMUNITIES  
 GEOTECHNICAL INVESTIGATION  
 PROPOSED RESIDENTIAL DEVELOPMENT**

**OTTAWA, 3265 JOCKVALE ROAD - BARRHAVEN TOWN CENTRE STAGE 2 ONTARIO**

Title: **TEST HOLE LOCATION PLAN**

Scale:	1:2000	Date:	11/2025
Drawn by:	GK	Report No.:	PG5636-3
Checked by:	YZ	Dwg. No.:	<b>PG5636-15</b>
Approved by:	DP	Revision No.:	