PATERSON GROUP

Groundwater Impact Assessment

Proposed Residential Development

2028 Merivale Road
Ottawa, Ontario

Prepared for Olympia Homes

Report PH5035-REP.01
dated April 16, 2025

Table of Contents

Appendices

1.0 INTRODUCTION

Paterson Group (Paterson) was commissioned by Olympia Homes to complete a groundwater impact assessment (GIA) for the proposed residential development located at 2028 Merivale Road in the City of Ottawa, Ontario (Refer to Paterson Drawing PH5035-1 - Site Plan in Appendix 1).

The following report has been prepared specifically and solely for the aforementioned project described herein. It contains a hydrogeological review and assessments pertaining to the proposed development as it is understood by Paterson at the time of writing this report.

1.1 Proposed Development

Based on available drawings and information at the time of report preparation, the proposed development will consist of 10 (ten) single home dwellings with one basement level. The proposed development will also include driveways, access lanes and landscaped areas. For the purpose of this study, it has been conservatively assumed the single home dwellings will have a maximum excavation depth of 4 m bgs. It is anticipated the proposed development will be municipally serviced.

2.0 BACKGROUND INFORMATION

The field program in support of the proposed development was carried out by Paterson on March 17, 2025. During that time, a total of three (3) boreholes were advanced across the subject site to a maximum sampling depth of 6.7 m below ground surface (bgs). The borehole locations were distributed in a manner to provide general coverage of the subject site. Borehole information can be found in Appendix 2 of this report. The approximate locations of the boreholes are presented on drawing PG7470-1 - Test Hole Location Plan included in Appendix 2.

3.0 SITE CONDITIONS

The subject site was previously occupied by a residential dwelling and laneway within the eastern portion of the subject site, while the western portion of the site was comprised of mature trees. At the time of the field investigation, the residential dwelling has been demolished, and the trees have been cleared in order to accommodate the proposed residential development.

The subject site is generally bordered to the north by Cassone Court and residential dwellings, to the east by Merivale Road, to the south and west by residential dwellings. The ground surface across the subject site is relatively flat with an elevation difference of approximately 1 m.

3.1 Geology

Generally, the soil profiles at the borehole locations consist of fill material underlain by silty clay to clayey silt followed by silty sand to sandy silt. Specific details of the soil profile at each borehole location within the subject site are presented on the borehole logs included in Appendix 2.

According to surficial mapping prepared by the Ontario Geological Survey (OGS, MRD128-Revised) the subject site is in an area where the surficial geology consists of deltaic and estuarine deposits of medium- to fine-grained sand. This information is consistent with the results of Paterson's geotechnical field investigation. The surficial mapping is presented on drawing PH5035-2 - Surficial Geology Plan included in Appendix 1.

Fill Material

Fill material was encountered at all borehole locations. The fill generally consists of silty sand with varying amounts of gravel, clay, organics and topsoil to a maximum depth of 2.2 m bgs.

Silty Clay

A very stiff to stiff brown silty clay crust was observed in all boreholes underlying the fill material to a maximum depth of 4.4 m bgs.

Silty Sand

A very dense to compact brown to grey silty sand to sandy silt deposit was encountered underlying the silty clay to maximum depth of 6.7 m bgs. It should be noted that a thin discontinuous layer of silty sand was noted above the silty clay at select borehole locations.

Bedrock

Available geological mapping provided by the Ontario Geological Survey (OGS, MRD 219) has noted the subject site to consist of interbedded sandstone and dolostone of the March formation with a drift thickness of 10 to 15 m bgs. The bedrock geology is presented on drawing PH5035-3 - Bedrock Geology Plan included in Appendix 1.

Based on the geotechnical investigation completed at the subject site, bedrock removal is not anticipated for the construction of the proposed development

Karst Features

The term “karst” refers to a geologic formation characterized by the dissolution of carbonate bedrock, such as limestone or dolostone. For karstification to occur, precipitation must be able to infiltrate the top of the bedrock and enlarge previously existing joints and bedding planes through the process of dissolution. Based on available mapping by the Ontario Geological Survey (OGS, GRS005), there is no inferred, potential or known karstification in the subject area.

3.2 Hydrogeology

Existing Aquifer Systems

Aquifer systems may be defined as a geological media, either overburden soils or fractured bedrock, which permit the movement of groundwater under hydraulic gradients. Based on the well records within the subject area, the majority of the water supply wells have been noted to be accessing the bedrock aquifer.

Bedrock aquifer mapping, provided by Natural Resources Canada Urban Geology of the National Capital Region mapping, was reviewed as part of this assessment. Using this tool, it was found that the subject site primarily accesses the March and Oxford formation aquifer systems.

Potable water supply wells mapped by the MECP within a 500 m radius of the subject site have been noted to be primarily accessing the bedrock aquifer, extending to depths ranging from 12.2 to 65.2 m bgs. Water bearing fractures were encountered at depths ranging from 9.8 to 59.7 m bgs. Bedrock was encountered between 2.4 to 32.9 m bgs.

Groundwater Levels

Groundwater was observed in the monitoring wells installed in the overburden at the borehole locations. Based on a review of the water well records, groundwater is also present in the bedrock at depth.

Groundwater levels in the overburden at the subject site were measured between 1.6 and 2.4 m bgs following the completion of the geotechnical field investigation as indicated on the Soil Profile and Test Data sheets attached to the current report. In addition to the groundwater level measurements taken during the geotechnical investigation, the monitoring wells were outfitted with Van Essen Instrument Mini-Diver Water Level Logger on March 21, 2025, to accurately monitor fluctuations in the groundwater levels. The Mini-Divers were programmed to continuously measure and record groundwater levels throughout the subject site at a rate of 1 reading every 24 hours for a maximum period of 12 months.

While groundwater infiltration from the silty clay deposit is expected to be negligible, the potential exists for a moderate amount of groundwater inflow through the silty sand to sandy silt layer, depending on the compaction and composition of the deposit at a given location. It is anticipated that pumping from open sumps will be sufficient to control groundwater influx through the sides of the excavations. It should be noted that groundwater levels can fluctuate seasonally and with precipitation events. Therefore, groundwater levels could vary at the time of construction.

Hydraulic Gradients

Vertical hydraulic gradients were not measured at the subject site as the previous studies completed did not warrant the installation of monitoring well nests.

With respect to horizontal hydraulic gradients, due to the nature of the water levels obtained from field work conducted at the site (monitoring wells), the absolute direction of horizontal hydraulic gradients was not determined. However, using the available data from the groundwater monitoring program, it was possible to approximate the horizontal hydraulic gradients in the overburden material given that the horizontal hydraulic gradient between any 2 points is the slope of the hydraulic head between those points:

$$i=h_2-h_1/L$$

Where: i = horizontal gradient
h = water level (m bgs)
L = horizontal distance between test hole locations

Using the above noted formula and observed groundwater levels at the time of the geotechnical investigation, the horizontal hydraulic gradient has been calculated to be approximately 0.03 towards the north. Shallow groundwater flow in the vicinity of the subject site is expected to reflect local topography. Regional groundwater flow in the overburden and bedrock is considered to be in an easterly direction, towards the Rideau River.

Hydraulic Conductivity

The hydraulic conductivity values for the overburden material were conservatively estimated based on experience at similar sites and published values. Hydraulic conductivity for silty sand to sandy silt generally ranges from 1×10^{-4} to 1×10^{-6} m/sec and is dependent on the level of compaction. Hydraulic conductivity for brown to grey silty clay generally ranges from 1×10^{-7} to 1×10^{-12} m/sec and is dependent on the moisture level and consistency of the material.

Groundwater Recharge and Discharge

In general, groundwater will follow the path of least resistance from areas of higher hydraulic head to areas of lower hydraulic head. While upward and downward hydraulic gradients may be indicative of discharge and recharge respectively, other factors must be considered.

Based on the Source Protection Information Atlas mapping provided by the MECP, the subject site has been noted to be located in a significant groundwater recharge area. However, based on the site specific field observations, the silty clay overburden is generally considered to act as a confining layer. It is our interpretation that groundwater will generally flow laterally through the underlying silty sand material, as opposed to vertically through the soils with lower hydraulic conductivity such as the silty clay. As such, the volume of recharge occuring within the site boundaries is expected to be minimal.

With regards to discharge zones, neither the topographical nor geological conditions are suitable for large scale discharge to occur at the subject site.

4.0 POTENTIAL IMPACTS

4.1 Adverse Effects on Neighbouring Water Wells

A search of the Ontario Water Well Records database indicates there are several private wells within 500 m of the site as depicted on drawing PH5035-4 - MECP Water Well Location Plan included in Appendix 1. As previously noted, the wells within the subject area are primarily accessing the bedrock aquifer, extending to depths ranging from 12.2 to 65.2 m bgs. Water bearing fractures were encountered at depths ranging from 9.8 to 59.7 m bgs. Bedrock was encountered between 2.4 to 32.9 m bgs.

While the subject well has been noted to be screened in the bedrock aquifer system, any water takings related to the proposed development will occur within the shallow overburden aquifer. Furthermore, water takings at the subject site are expected to be short term in duration, given the nature of the proposed development. Given the potential depth of excavation and the short-term nature of the water takings, it is not expected that any of the water takings will negatively affect the water quantity and/or quality of the nearby well user.

However, in order to determine potential impacts to nearby well users for the purpose of this study, conservative theoretical radii of influence have been calculated based on the saturated material encountered on site.

These calculations were completed based on Sichardt (1992) using the equation:

$R = 3000*\Delta h(k^{0.5})$

R = radius of influence (m)
Δh = thickness of drawdown within the aquifer (m)
k = hydraulic conductivity (m/sec)

For the purposes of completing the calculations, the following assumptions were made:

- k = 1 x 10^{-4} m/s for silty sand and 1 x 10^{-7} m/s for silty clay
- Δh = 0.5 m for silty sand, 2.5 m for silty clay

Using the above equation and assumptions, the following radii of influence will develop as a steady state condition, extending from the edge of the excavation, in the area of the subject site. A factor of safety has been applied to the calculated radius of influence for the purpose of this review.

- R = 2.5 m (5 m factored) for silty clay
- R = 15 m (30 m) for silty sand to sandy silt

Given the hydrogeological characteristics of the subject site, and nature of the proposed development, no long-term groundwater monitoring program is required.

Due to the proximity of nearby well users, a baseline water quality sampling program has been recommended to be completed prior to commencing construction on site as a precautionary measure. The premise of the program is to obtain groundwater quality information from the water supply wells in the vicinity of the proposed development prior to the project commencing. This ensures that all parties involved (developer, homeowners, and City of Ottawa) are protected should a concern arise during or after construction.

Baseline Water Sampling Program

Based on the lack of municipal servicing within the subject area and the estimated radius of influence that may develop as a result of the water takings, it is recommended that privately serviced lots within 30 m of the subject site be included in the Baseline Groundwater Monitoring Program. The following municipal addresses proposed to be included in the Baseline Groundwater Monitoring Program consist of the following;

- 3 Miriam Avenue
- 5 Miriam Avenue
- 43 Pineglen Crescent
- 45 Pineglen Crescent
- 47 Pineglen Crescent
- 49 Pineglen Crescent
- 51 Pineglen Crescent
- 2023 Merivale Road
- 2027 Merivale Road
- 2032 Merivale Road

The homeowners of the aforementioned properties will be invited to participate in the baseline sampling program by providing a registered letter delivered by Canada Post followed by two visits. In the instance where the homeowner does not respond to the registered letter, a daytime visit with a second contact letter outlining the proposed sampling program will be left at the property for future sampling. The following visit will be completed in the evening with a second contact letter if the homeowner is still not available. If interested, the homeowner will be interviewed for the purpose of obtaining baseline water quality information followed by the collection and submission of a raw water sample.

The parameters that are being analyzed as part of the sampling program consist of the "Subdivision Water Quality Package" offered by Eurofins Environmental Testing Canada Inc. This package includes; alkalinity, bacteria, colour, conductivity, pH, hardness, IC anions, NH_3, TKN, DOC, phenols, sulphide, trace metals (as listed in City of Ottawa's Hydrogeological and Terrain Analysis Guidelines), Tannin & Lignin, TDS and turbidity.

A draft copy of the registered letter has been included in Appendix 3 and will be submitted to the City of Ottawa for review prior to commencement of the baseline water quality sampling program outlined above.

4.2 Adverse Effects on Adjacent Structures

Existing structures adjacent to the subject site include the residential dwellings. The distance from the building excavations where dewatering will take place to the existing residential dwellings have been noted to be approximately 10 m or greater.

While the adjacent structures are anticipated to be founded on either silty clay or silty sand to sandy silt, the majority of the groundwater infiltration is expected to occur within the silty sand to sandy silt with minimal compressibility. Furthermore, adjacent structures founded on silty clay are located outside the factored theoretical radius of influence of 5 m, as per Section 4.1. Lastly, water takings are expected to be short term in duration, given the nature of the development. As such, any effects related to ground surface settlement due to the water taking activities during construction are expected to be negligible.

4.3 Soil, Surface Water and Groundwater

A search of the MECP Brownfields Environmental Site Registry was conducted as part of this assessment. No recorded Brownfield sites were identified within 500 m of the subject site.

All excess soils generated by construction activities that will be transported on-site or off-site should be handled as per Ontario Regulation 406/19: On-Site and Excess Soil Management.

With respect to surface water features, there are none located within the theoretical radius of influence of the proposed excavations. The nearest surface water feature is Black Rapids Creek located approximately 500 m south of the subject site.

It is expected that a multi-barrier approach (such as hay bales, geosocks, silt fencing, etc.) to a non-frozen, well vegetated area will be utilized in order to promote re-infiltration.

The water that is pumped from the excavations must be managed in an appropriate manner. The contractor may be required to implement a water management and treatment program to dispose of the pumped water. It is expected the water will be discharged to overland. Further treatment may be required should the discharge not meet the required guidelines.

4.4 Adjacent Permits to Take Water

A search of the MECP Permit to Take Water database provided no active PTTW within a 500 m radius of the subject site. Therefore, the risk of cumulative impacts resulting from multiple PTTW in proximity to each other is considered negligible.

A search of the MECP Environmental Activity and Sector Registry (EASR) database provided no active EASRs within a 500 m radius of the subject site. Therefore, the risk of cumulative impacts resulting from multiple EASRs in proximity to the subject site is considered negligible.

4.5 Existing Servicing

The existing supply well previously servicing the residential dwelling will be required to be properly decommissioned by a licensed well contractor as per O.Reg. 903 prior to construction. Additionally, recent monitoring wells that have been installed in support of future studies at the subject site must also be decommissioned by a licensed well contractor.

5.0 RECOMMENDATIONS

Further testing and site preparation is recommended for the detailed hydrogeological assessment. The following aspects of the program should be performed prior to commencing construction for the proposed residential development:

- ❑ All existing wells within the proposed development should be properly decommissioned as per O.Reg. 903 prior to construction, if they are not intended to be maintained in accordance with the regulation.

- ❑ A baseline water sampling program is recommended prior to commencing construction on site consisting of municipal address; 3 Miriam Avenue, 5 Miriam Avenue, 43 Pineglen Crescent, 45 Pineglen Crescent, 47 Pineglen Crescent, 49 Pineglen Crescent, 51 Pineglen Crescent, 2023 Merivale Road, 2027 Merivale Road, 2032 Merivale Road

- ❑ Prior to and during site development, it is recommended that construction best management practices with respect to fuels and chemical handling, spill prevention, and erosion and sediment control be followed.

- ❑ For any water taking of volumes greater than 50,000 L/day, an active Environmental Activity and Sector Registration (EASR) or a Permit to Take Water (PTTW) is required from the MECP, dependant on dewatering requirements.

6.0 STATEMENT OF LIMITATIONS

The recommendations provided in this report are in accordance with our present understanding of the project.

A hydrogeological 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 Olympia Homes 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.

Paterson Group Inc.

Nicholas Zulinski, P.Geo., géo.

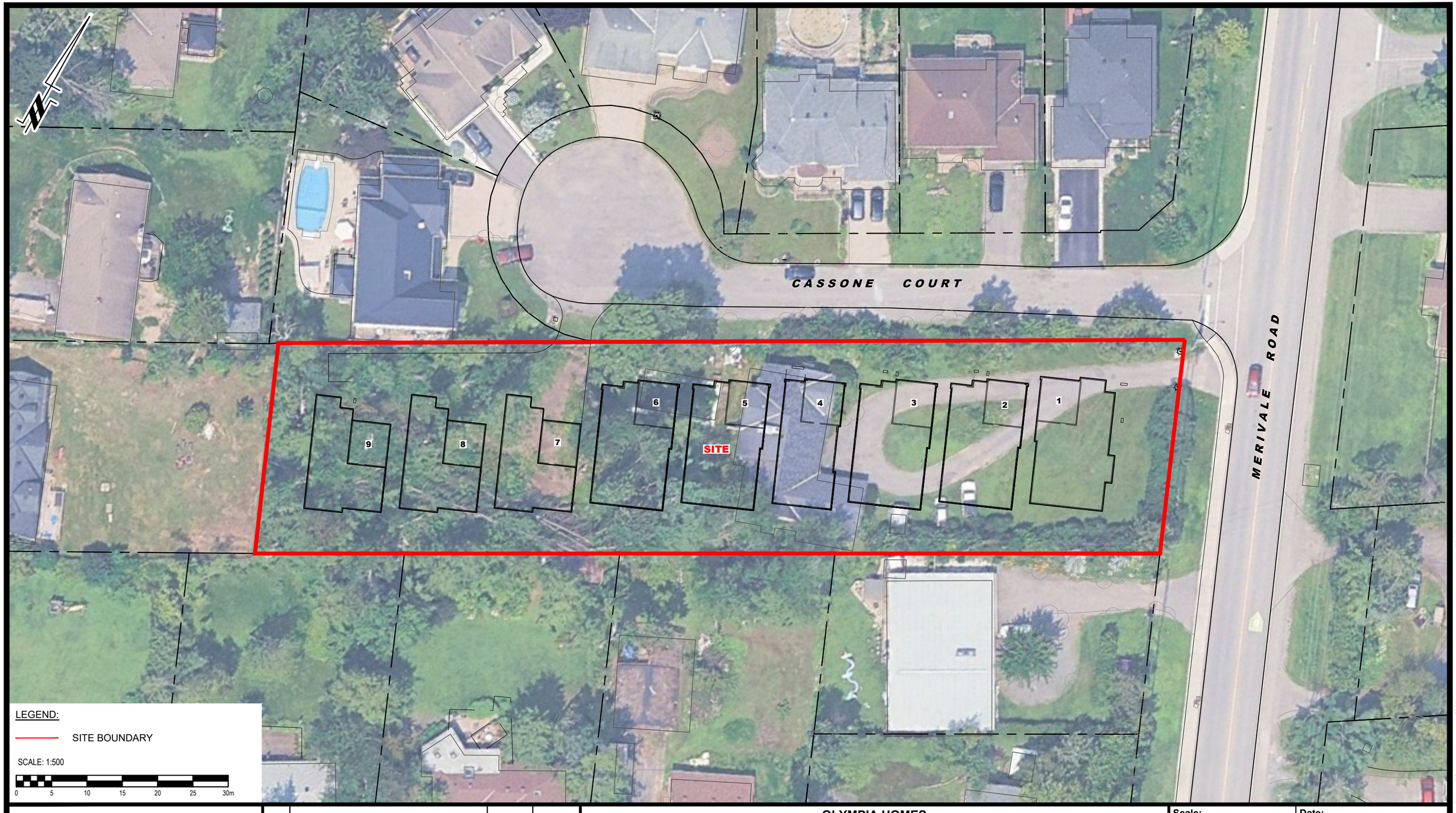
APPENDIX 1

DRAWING PH5035-1 - SITE PLAN

DRAWING PH5035-2 - SURFICIAL GEOLOGY PLAN

DRAWING PH5035-3 - BEDROCK GEOLOGY PLAN

DRAWING PH5035-4 - MECP WATER WELL LOCATION PLAN



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OTTAWA, ON
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NO.	REVISIONS	DATE	INITIAL

OLYMPIA HOMES
GROUND WATER IMPACT ASSESSMENT
PROPOSED RESIDENTIAL DEVELOPMENT
2028 MERIVALE ROAD
OTTAWA, ONTARIO

Title:
SITE PLAN

Scale: 1:500	Date: 04/2025
Drawn by: ZS	Report No.: PH5035-1
Checked by: NZ	Dwg. No.: PH5035-1
Approved by: NZ	Revision No.:

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NO.	REVISIONS	DATE	INITIAL

OLYMPIA HOMES
GROUND WATER IMPACT ASSESSMENT
PROPOSED RESIDENTIAL DEVELOPMENT
2028 MERIVALE ROAD
OTTAWA, ONTARIO

Title:
SURFICIAL GEOLOGY PLAN

Scale: 1:500	Date: 04/2025
Drawn by: ZS	Report No.: PH5035-1
Checked by: NZ	Dwg. No.: PH5035-2
Approved by: NZ	Revision No.:

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NO.	REVISIONS	DATE	INITIAL

OLYMPIA HOMES
GROUND WATER IMPACT ASSESSMENT
PROPOSED RESIDENTIAL DEVELOPMENT
2028 MERIVALE ROAD
OTTAWA, ONTARIO

Title:
BEDROCK GEOLOGY PLAN

Scale: 1:500	Date: 04/2025
Drawn by: ZS	Report No.: PH5035-1
Checked by: NZ	Dwg. No.: PH5035-3
Approved by: NZ	Revision No.:

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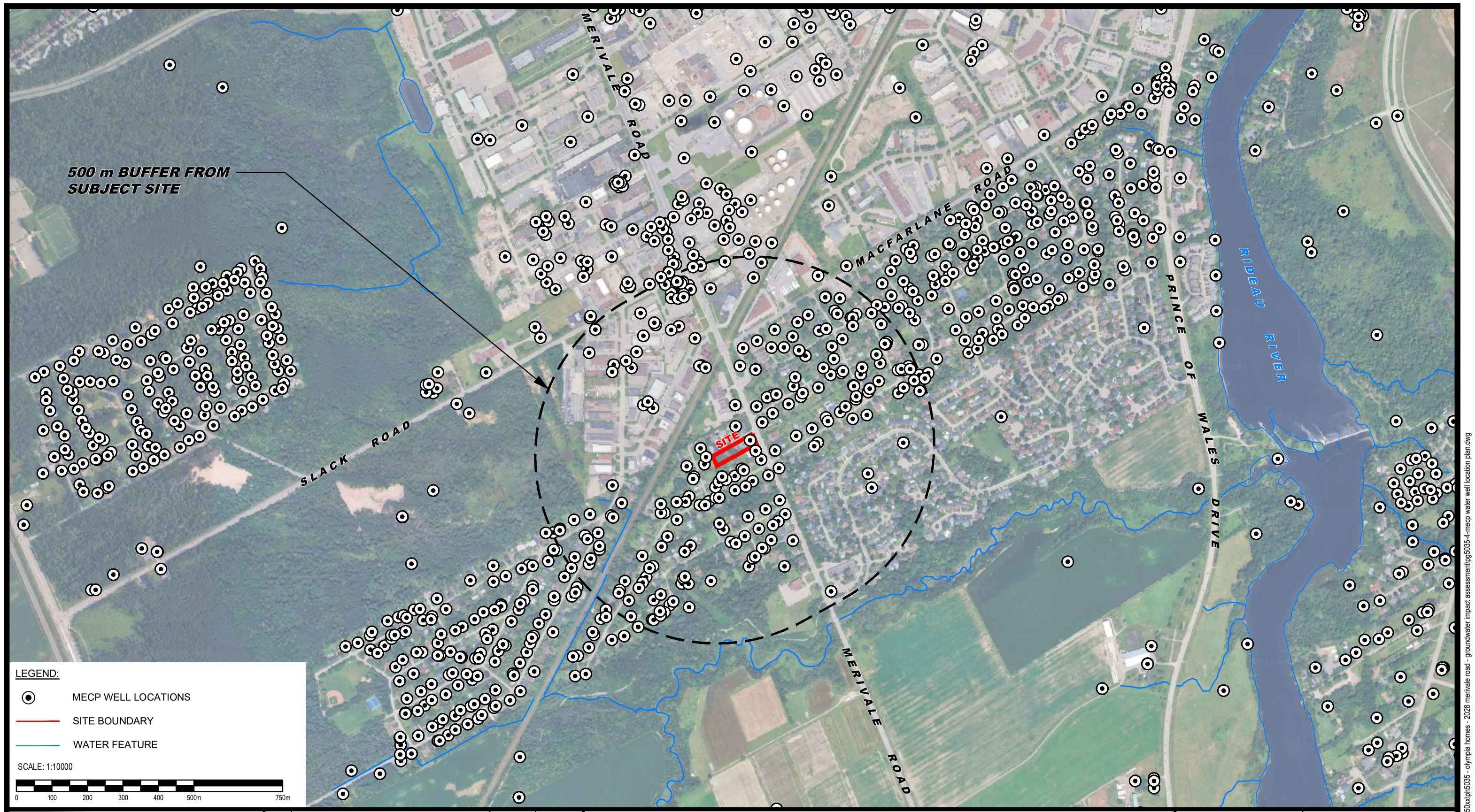

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NO.	REVISIONS	DATE	INITIAL

OLYMPIA HOMES
GROUND WATER IMPACT ASSESSMENT
PROPOSED RESIDENTIAL DEVELOPMENT
2028 MERIVALE ROAD
OTTAWA, ONTARIO

Title:
MECP WATER WELL LOCATION PLAN

Scale: 1:10000	Date: 04/2025
Drawn by: ZS	Report No.: PH5035-1
Checked by: NZ	Dwg. No.: PH5035-4
Approved by: NZ	Revision No.:

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APPENDIX 2

PG7470 - SOIL PROFILE AND TEST DATA SHEETS

PG7470-1 - TEST HOLE LOCATION PLAN

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

2028 Merivale Road, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 366105.99 **NORTHING:** 5020437.28 **ELEVATION:** 92.97

PROJECT: Proposed Development

ADVANCED BY: CME-55 Low Clearance Drill

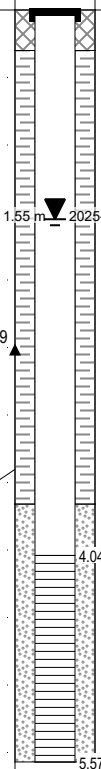
REMARKS:

DATE: March 17, 2025

FILE NO. : PG7470

HOLE NO. : BH1-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
FILL: Loose, brown silty sand with gravel, trace topsoil 0.05m [92.92m]			AU 1						
FILL: Loose, brown silty fine sand 0.91m [92.06m]									
Compact, brown **SILTY CLAY** to **SILTY SAND**, trace clay 1.45m [91.52m]		1	SS 2	100	4-5-5-5 10				92
Very stiff, brown **SILTY CLAY**		2	SS 3	100	2-3-4-4 7				91
- Stiff, with orange brown sand seam by 3.0 m depth		3	SS 4	100	P		30		90
4.42m [88.55m]		4	SS 5	100	1-2-3-4 5		24	72	89
Compact, grey **SILTY SAND** to **SANDY SILT**		5	SS 6	42	4-7-8-6 15				88
6.71m [86.26m]		6	SS 7	42	4-7-7-7 14				87
End of Borehole		7	SS 8	50	2-3-6-6 9				86
(GWL at 1.55 m depth - March 21, 2025)		8							85
		9							84
		10							83



SOIL PROFILE AND TEST DATA

Geotechnical Investigation

2028 Merivale Road, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 366175.38 **NORTHING:** 5020470.89 **ELEVATION:** 93.63

PROJECT: Proposed Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: March 17, 2025

FILE NO. : PG7470

HOLE NO. : BH2-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
FILL: Loose, brown silty sand, some gravel, trace topsoil			AU 1						
1.45m [92.18m]		1	SS 2	50	3-3-2-2 5				93
FILL: Loose, brown silty sand, trace clay									
2.21m [91.42m]		2	SS 3	50	2-2-2-2 4				92
Very stiff, brown **SILTY CLAY**, trace sand			SS 4	100	2-3-2-3 5		23 57	2.41 m 2025-03-21	91
3.73m [89.90m]		3	SS 5	100	P		△30 139		
Compact to dense, brown **SILTY SAND** to **SANDY SILT**		4	SS 6	67	5-14-18-16 32			4.14m	90
- Dense to very dense below 4.57 m depth		5	SS 7	67	13-20-23-24 43				89
- Grey by 5.94 m depth		6	SS 8	42	8-14-14-15 28			5.66m	88
6.71m [86.92m]			SS 9	42	6-14-13-13 27				87
End of Borehole		7							
(GWL at 2.41 m depth - March 21, 2025)		8							86
		9							85
		10							84

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

2028 Merivale Road, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 366144.26 **NORTHING:** 5020434.68 **ELEVATION:** 93.85

PROJECT: Proposed Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: March 17, 2025

FILE NO. : PG7470

HOLE NO. : BH3-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									93
FILL: Loose, brown sand with gravel, trace silt, topsoil and organics		1	AU 1						
1.45m [92.40m]			SS 2	42	3-3-3-4 6				92
FILL: Compact, brown silty fine sand 1.68m [92.17m]		2	SS 3	58	3-8-7-8 15				
Compact, brown **SILTY SAND** trace clay and organics 2.21m [91.64m]			SS 4	100	3-4-3-4 7				91
Very stiff, brown **SILTY CLAY**, trace sand		3	SS 5	100	P		40 / 20	159	
- Stiff by 3.81 m depth		4	SS 6	67	P			99	90
4.27m [89.58m]									
Compact, brown **SILTY SAND** to **SANDY SILT**		5	SS 7	42	5-6-7-7 13				89
- Grey by 5.33 m depth		6	SS 8	50	6-9-10-8 19			4.32m	
6.71m [87.14m]			SS 9	67	8-10-9-9 19			5.84m	88
End of Borehole		7							87
(GWL at 2.04 m depth - March 21, 2025)		8							86
		9							85
		10							84

2.04 m 2025-03-21

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

2028 Merivale Road, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 366141.33 **NORTHING:** 5020434.47 **ELEVATION:** 93.88

PROJECT: Proposed Development

ADVANCED BY: CME-55 Low Clearance Drill

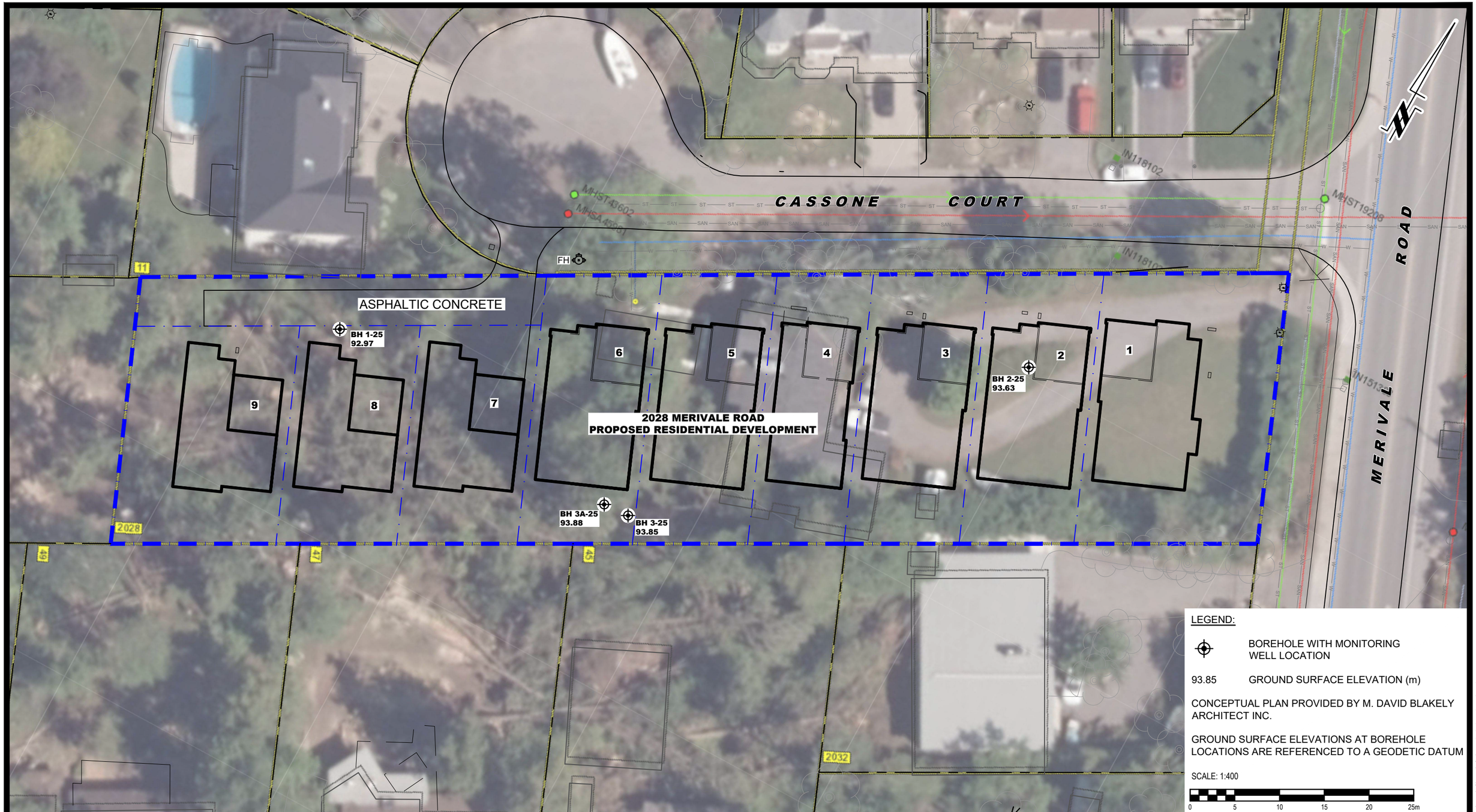
REMARKS:

DATE: March 17, 2025

FILE NO. : PG7470

HOLE NO. : BH3A-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
* Refer Soil Profile BH3-25		0									93
		1								1.74 m 2025-03-21	
		2									92
		3								2.54m	91
4.14m [89.73m]		4									90
End of Borehole										4.06m	
(GWL at 1.74 m depth - March 21, 2025)		5									89
		6									88
		7									87
		8									86
		9									85
		10									84



LEGEND:

⊕ BOREHOLE WITH MONITORING WELL LOCATION

93.85 GROUND SURFACE ELEVATION (m)

CONCEPTUAL PLAN PROVIDED BY M. DAVID BLAKELY ARCHITECT INC.

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

SCALE: 1:400

0 5 10 15 20 25m

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

OLYMPIA HOMES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2028 MERIVALE ROAD
OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:400	Date: 03/2025
Drawn by: YA	Report No.: PG7470-1
Checked by: DR	Dwg. No.: PG7470-1
Approved by: SD	Revision No.:

p:\autocad drawings\geotechnical\pg74xx\pg7470\pg7470-1-test hole location plan.dwg

11x17

APPENDIX 3

HOMEOWNER LETTER - BASELINE SAMPLING PROGRAM

PATERSON GROUP

Consulting Engineers
9 Auriga Drive
Ottawa, Ontario
K2E 7T9
Tel: (613) 226-7381

Geotechnical Engineering
Environmental Engineering
Hydrogeology
Materials Testing
Building Science
Rural Development Design
Retaining Wall Design
Noise and Vibration Studies

patersongroup.ca

[Date]

File No.: PH5035

Attention: **Owner/Occupant**

Subject: **Pre-Construction Well Survey**

Dear Owner/Occupant,

Paterson Group Inc. (Paterson), an Ottawa based Geotechnical, Environmental, and Hydrogeological Engineering Consulting Firm, is carrying out a pre-construction well survey in your area, along with a short interview. This pre-construction well survey is being completed as a requirement by the City of Ottawa prior to starting construction works for the proposed development located at 2028 Merivale Road. The sample results will be used as a baseline to provide a reference water quality in the unlikely event that construction works impact your well.

We are anticipating carrying out the well survey over a four week long period **[date].** We would like to take this opportunity to schedule an appointment to sample your well when convenient.

As part of the pre-construction well survey, we are requesting access to your property to collect a raw water sample from an untreated tap/spigot or from the pressure tank which services the property. Participants will be asked if they can provide a copy of the Well Record from when the well was installed, but water samples will be taken even if the record is not available. The program will consist of a brief interview with our field staff regarding the well history, determining the location of the well on the property and taking a water sample from an exterior tap/spigot or pressure tank should the water not be subject to any filtration or treatment measures. The entire process (interview and sampling) will take **15 to 20 minutes**. The interview can be done either in person at the time of sampling, or online using the QR code provided below, or over the phone at your convenience.

The purpose of the well survey is to protect homeowners against possible effects of construction on the adjacent properties, for which contingency plans will be in place. Well water testing includes several chemical parameters (not only bacteria), and the results will be provided to you **free of charge** (value of approximately $200).

Homeowner names, addresses with related analytical results, and contact information **will not** be released publicly by Paterson or the client. The information will be provided to the City where they have noted they will not share the report and that all personal information will remain private. If there are any questions as to how the parties will handle your information, please reach out to the appropriate person noted below.

Please direct yourself to the QR code provided below or call the undersigned to complete the aforementioned interview and schedule an appointment to sample/inspect your well by **[date]**.

Please contact City representative *Travis Smith, Senior Project Manager (613-580-2400 x16544, travis.smith@ottawa.ca)* should you require further information or if you have questions about the City's requirement for pre-construction well survey.

Best Regards,

Paterson Group Inc.

QR CODE

Paterson Signature

Questions?
Contact us at (343)-451-6198 or wellsurvey@patersongroup.ca

APPENDIX 4

M. DAVID BLAKELY ARCHITECT INC. – SITE PLAN

CITY OF OTTAWA OFFICIAL PLAN - SCHEDULE B3

NOT TO SCALE

LAND USE LEGEND

SITE INFORMATION

EXISTING ZONING : R1E (1722)
SITE AREA: 3851.32m² (0.385ha) (0.952A)
EXCEPTION 1722: MIN. LOT WIDTH 30m

R1E MIN. LOT AREA = 1390m²
R1E MAX. BUILDING HEIGHT = 8.5m per schedule 342/ 11m per R1E
R1E MIN. FRONT YARD SETBACK = 7.5m
R1E MIN. CORNER YARD SETBACK = 4.5m
R1E MIN. REAR YARD SETBACK = 12m
R1E MIN. INTERIOR SIDEYARD = 0.9m ONE SIDE/ 1.2m OTHER SIDE
R1E MAX. LOT COVERAGE = 15%

PROJECT STATISTICS

TOTAL PROPOSED DETACHED DWELLING UNITS = 9
TOTAL BUILDING AREA ON SITE =1225m²
DENSITY: 23.4 Dwelling Units per ha

LOTS 1 THRU 6 PROPOSED R1[ ]
MIN. PROPOSED FRONT YARD SETBACK = 2.0m
MIN. PROPOSED CORNER YARD SETBACK = 5.2m
MIN. REAR YARD SETBACK = 1.2m
MIN. INTERIOR SIDEYARD = 6m
MAX. LOT COVERAGE = 50%

(NOTE: LOTS 7,8 & 9 IN A PROPOSED PDU WITH R3[ ] ZONING - SEE BELOW)

D.U. No. 1 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 194m²
LOT AREA = 621.5m²

D.U.No. 2 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 186m²
LOT AREA = 388.33m²

D.U.No. 3 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 186m²
LOT AREA = 388.50m²

D.U.No. 4 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 150m²
LOT AREA = 324.60m²

D.U.No. 5 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 186m²
LOT AREA = 388.50m²

D.U.No. 6 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 186m²
LOT AREA = 388.50m²

PLANNED UNIT DEVELOPMENT ZONING BYLAW PART 5/ SECTION 131
- LOTS 7, 8 & 9 PROPOSED R3[ ] ZONING.

RE: SCHEDULE 342 PUD IS WITHIN AREA A
PUD LOT AREA = 1382.2m² (INCLUDES 16.6m² LAND AT MAILBOX)
PRIVATE WAY MIN. WIDTH = 4m
MIN. DRIVEWAY LENGTH FROM PRIVATE WAY TO GARAGE = 5.2m
MIN. PROPOSED CORNER YARD SETBACK = N/A
MIN. PROPOSED REAR YARD SETBACK = 6m
MIN. PROPOSED INTERIOR SIDEYARD = 1.2m BOTH SIDES & 6.0m
MIN. SETBACK FOR ANY WALL OF A D.U. TO A PRIVATE WAY = 1.8m

D.U.No. 7 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 153m²

D.U.No. 8 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 153m²

D.U.No. 9 - DETACHED BUNGALOW
HEIGHT = MAX. 8.5m
BUILDING AREA (Footprint) = 153m²

PARKING

PROPOSED PARKING SPACE WITHIN GARAGE
PROPOSED VISITOR PARKING ON DRIVEWAY FRONT YARD

PARKING SPACE AND VISITOR PARKING SPACE SIZE AS PER BY-LAW 2008-250 SECTION 106

SURVEYOR'S REAL PROPERTY REPORT – PART 1
TOPOGRAPHIC PLAN OF SURVEY OF
PART OF LOT 24
CONCESSION 1 (RIDEAU FRONT)
CITY OF OTTAWA
FAIRHALL, MOFFATT & WOODLAND LIMITED
ONTARIO LAND SURVEYORS
AUG 30, 2024

SITE TOPOGRAPHIC INFO

SCALE 0 20m 30m

M. David Blakely Architect Inc.
2200 Prince of Wales Dr. Suite 101 Ottawa, Ontario
Phone (613) 226-8811 Fax (613) 226-7942 k2E 6Z9

GENERAL NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS, ANY DISCREPANCY MUST BE REPORTED TO M. DAVID BLAKELY ARCHITECT INC.
2. ALL WORK AND MATERIALS TO BE IN COMPLIANCE WITH ALL CODES, REGULATIONS, & BY-LAWS
3. ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST THE PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE PLANS IN CONTRACT DOCUMENTS
4. DO NOT SCALE DRAWINGS.
5. THIS DRAWING SHALL NOT BE USED OR COPIED WITHOUT THE AUTHORIZATION OF THE ARCHITECT
6. THIS DRAWING SHALL NOT BE USED FOR PERMIT OR CONSTRUCTION UNLESS THE DRAWING BEARS THE ARCHITECT'S SEAL AND SIGNATURE

SEAL

No.	DATE	DESCRIPTION	INIT.
1.	30/01/25	FOR REVIEW	KB

REVISIONS

No.	DATE	DESCRIPTION	INIT.

REVISIONS

A - DETAIL NUMBER
B - SHEET NUMBER (DETAIL REQUIRED)
C - SHEET NUMBER (DETAIL LOCATION)

PROJECT: CASSONE COURT RESIDENTIAL INFILL PROJECT
2028 MERIVALE ROAD
OTTAWA, ONTARIO

CLIENT: PEGASUS DEVELOPMENTS

DRAWING TITLE: SITE PLAN

DATE: JAN 2025 | SCALE: 1 : 300 | SHEET No. REV No.: SP-1

DRAWN BY: KB | CHECKED: MDB