

re: **Geotechnical Review of Grading Plans
Proposed Residential Development
5618 Hazeldean Road – Abbott's Run – Block 13 – Ottawa, Ontario**

to: Minto Communities Inc. – **Erin Harrington** – eharrington@minto.com

date: October 27, 2025

file: PG7640-MEMO.02

Further to your request and authorization, Paterson Group (Paterson) has prepared the current memorandum to document our review of the available grading plans, and to provide associated recommendations from a geotechnical perspective for the aforementioned project. The present memorandum should be read in conjunction with Paterson Group Geotechnical Report PG7460-1 Revision 1 dated May 28, 2025. Relevant design information is presented in Table 1 – Summary of Design Details for the subject blocks.

The relevant design and inspection information presented in Table 1 – Summary includes the following:

- Block number
- Unit number
- Original ground surface elevation based on available ground surface elevations
- Proposed finished grade elevations
- Proposed underside of footing (USF) elevation
- Proposed finished floor elevation (FFE)
- Bearing resistance values at SLS
- Seismic Site Designation
- Maximum allowable grade raise
- Estimated engineered fill thickness required below footings
- Lightweight Fill (LWF) recommendations
- Frost protection recommendations
- Design recommendations for lateral support zone interferences

Grading Plan Review

Paterson reviewed the following grading plan prepared by DSEL for the aforementioned residential development:

- Grading Plan - Project No. 1295_Block13 - Sheet No. 14 – Revision 2, dated October 24, 2025.



Based on our review of the above-noted drawing, the proposed grades throughout the subject site are within the recommended permissible grade raise restriction of 2 m provided in the aforementioned geotechnical investigation report. Therefore, the proposed grading is considered acceptable from a geotechnical perspective such that lightweight fill (LWF) or any further measures will not be required to be taken for the proposed development. Further, sufficient soil cover has been provided to perimeter and exterior pad footings to mitigate the migration of frost within the founding subsoils.

Bearing Resistance Values for Foundation Design

Using continuously applied loads, conventional footings can be designed using the bearing resistance values presented in the following table.

Table 2 - Bearing Resistance Values		
Bearing Surface	Bearing Resistance Value at SLS (kPa)	Factored Bearing Resistance Value at ULS (kPa)
Stiff to Very Stiff Brown Silty Clay	150	300
Firm Grey Silty Clay	75	110
Note:		
<ul style="list-style-type: none">- Strip and pad footings, up to 3 and 6 m wide, respectively, can be designed using the bearing resistance values provided for an undisturbed, silty clay bearing surface.- Bearing resistance values for footing design should be confirmed on a per block basis by the Paterson personnel at the time of construction.		

An undisturbed soil bearing surface consists of a surface from which all topsoil and deleterious materials, such as loose, frozen or disturbed soil, whether in situ or not, have been removed, in the dry, prior to the placement of concrete footings. A geotechnical resistance factor of 0.5 was applied to the above noted bearing resistance values at ULS. The bearing resistance value at SLS, provided above, will be subjected to potential post-construction total and differential settlements of 25 and 20 mm, respectively.

Minor Adjustments to Lot Grading and Design Details During Construction Phase

It is anticipated that there may be minor discrepancies between the latest reviewed grading plan and the permit plot plans that will be prepared for some of the proposed blocks during the final permitting and construction phase of the proposed structures. The discrepancies are anticipated to arise due to minor changes required by the building designer to accommodate finishes such as risers and entrances to the design grading. In our experience, minor adjustments are required to the design USF elevations and occasionally finished grades surrounding the structure.



Based on Paterson's review of site-specific conditions, provided all of the following criteria are met if further adjustments to the grading plan details are made on lot/block permit plot plans (i.e., changes made to plot plans, not to the current grading plans), additional review by Paterson to ensure the permit plot plans are satisfactory from a geotechnical perspective is not considered required during the construction phase:

- Plot plan USF is not more or less than 10 cm from the design USF elevation and Paterson field personnel prepared memorandums documenting their field review of the bearing medium and bearing surfaces for the structure.
- Plot plan finished grade does not fluctuate more than 10 cm from the design finished grade.
- Plot plan finished grade remains more than 30 cm below the recommended permissible grade raise elevation.
- There is not an existing recommendation to consider lightweight fill around the perimeter and/or in the garage/front porches of the building (i.e., if Table 1 provides a recommendation for LWF, any adjustment to grading and/or founding elevations must be reviewed by Paterson if they do not conform to those noted in Table 1).
- Sufficient soil cover remains to provide protection against the migration of frost to the soil subgrade (i.e., 1.5 m below finished grade for heated structures).
- If one of these conditions is not met, it is recommended that Paterson be contacted to review the permit plot plan during the construction phase for conformance to our grading requirements from a geotechnical perspective at that time.

Should the revised founding depth be located within 1.5 m from finished grade around the building perimeter, it is recommended that Paterson review and advise on frost protection measures, such as foundation insulation, on a lot-by-lot basis when this condition exists.

Any updates to the current grading plans should be reviewed and advised upon by Paterson. However, once approved and adjustments are made on plot plans, the adjusted plot plans may not require additional review to verify adequacy to the proposed grading matrix from a geotechnical perspective provided adjustments are within the ranges noted herein. Alternatively, permit plot plans may be circulated to Paterson prior to submission to approvals to ensure the grading and design values are consistent with our recommendations for the proposed residential development. It should be noted that this portion of the memorandum is only considered applicable for the subject site.



Erin Harrington
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We trust that this information is satisfactory for your immediate requirements.

Best Regards,

Paterson Group Inc.

Nicholas F. R. Versolato, CPI, B.Eng

Drew Petahtegoose P.Eng.



Attachments:

- Table 1 – Summary of Design Details



Table 1 - Summary of Design Details																				
PG7460 - Minto Communities - Abbott's Run - Block 13																				
Block Number	Unit Number	Original GS Front	Proposed GS Front	Original GS Rear	Proposed GS Rear	Underside of Footing Elevation	Finished Floor Elevation	Bearing Resistance Value at SLS	Seismic Site Designation	Permissible Grade Raise	Above Permissible Grade Raise Front	Above Permissible Grade Raise Rear	Engineered Fill Required Below USF - Front	Engineered Fill Required Below USF - Rear	Frost Check - Front	Frost Check - Rear	Minimum Thickness LWF in Front Porch	Minimum Thickness LWF and Extents Around Structure	Frost Protection Notes	Site Servicing Lateral Support Notes (USF/Concrete Trench Depth Recommendations - Reference to be made to PG7460-MEMO.03)
		(m)	(m)	(m)	(m)	(m)	(m)	(kPa)		(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)		
BLOCK 1	Unit 1	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a	Lean concrete recommended below staircase footings (see Table 1 in above-noted memorandum for details)	
	Unit 2	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a	Lean concrete recommended below staircase footings (see Table 1 in above-noted memorandum for details)	
	Unit 3	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a	Lean concrete recommended below staircase footings (see Table 1 in above-noted memorandum for details)	
	Unit 4	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a	Lean concrete recommended below staircase footings (see Table 1 in above-noted memorandum for details)	
	Unit 5	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a		
	Unit 6	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a		
	Unit 7	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a	Lean concrete recommended below staircase footings (see Table 1 in above-noted memorandum for details)	
	Unit 8	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a	Lean concrete recommended below staircase footings (see Table 1 in above-noted memorandum for details)	
	Unit 9	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a		
	Unit 10	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a		
	Unit 11	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a		
	Unit 12	101.60	103.40	101.60	n/a	101.51	104.81	150	XD	2.00	0.00	n/a	0.21	0.21	1.89	n/a	n/a	n/a		
BLOCK 2	Unit 1	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 2	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 3	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 4	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 5	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 6	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 7	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 8	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 9	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 10	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 11	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
	Unit 12	101.70	103.53	101.70	n/a	101.64	104.94	150	XD	2.00	0.00	n/a	0.24	0.24	1.89	n/a	n/a	n/a		
BLOCK 3	Unit 1	101.75	103.69	101.75	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.35	0.35	1.89	n/a	n/a	n/a		
	Unit 2	101.75	103.69	101.75	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.35	0.35	1.89	n/a	n/a	n/a		
	Unit 3	101.80	103.69	101.80	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.30	0.30	1.89	n/a	n/a	n/a		
	Unit 4	101.80	103.69	101.80	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.30	0.30	1.89	n/a	n/a	n/a		
	Unit 5	101.90	103.69	101.90	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.20	0.20	1.89	n/a	n/a	n/a		
	Unit 6	101.90	103.69	101.90	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.20	0.20	1.89	n/a	n/a	n/a		
	Unit 7	101.90	103.69	101.90	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.20	0.20	1.89	n/a	n/a	n/a		
	Unit 8	101.90	103.69	101.90	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.20	0.20	1.89	n/a	n/a	n/a		
	Unit 9	101.80	103.69	101.80	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.30	0.30	1.89	n/a	n/a	n/a		
	Unit 10	101.80	103.69	101.80	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.30	0.30	1.89	n/a	n/a	n/a		
	Unit 11	101.75	103.69	101.75	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.35	0.35	1.89	n/a	n/a	n/a		
	Unit 12	101.75	103.69	101.75	n/a	101.80	105.10	150	XD	2.00	0.00	n/a	0.35	0.35	1.89	n/a	n/a	n/a		
BLOCK 4	Unit 1	102.20	103.91	102.20	n/a	102.02	105.32	150	XD	2.00	0.00	n/a	0.12	0.12	1.89	n/a	n/a	n/a</		