PATERSON GROUP

memorandum

re: **Grading and Site Servicing Plan Review**
Proposed Self Storage Development
75 Michael Cowpland Drive – Ottawa, Ontario

to: Huntington Properties – **Mr. Mathieu Desjardins –** mdesjardins@huntingtonproperties.ca

to: IBI Group – **Ms. Amy Zhuang** – Amy.Zhuang@ibigroup.com

date: December 21, 2023

file: PG3798-MEMO.02 Revision 4

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to document our review of the grading and servicing plans, and to provide associated recommendations from a geotechnical perspective for the aforementioned project. The following memorandum should be read in conjunction with the current Geotechnical Investigation Report Paterson Group Report PG3798-2 Revision 3, dated November 23, 2022.

Site Servicing Plan Review

Paterson reviewed the following site servicing plans prepared by IBI Group for the aforementioned development:

- ❒ General Plan of Services – Project No. 135470, Sheet No. C-001, Revision 7, dated December 20, 2023.
- ❒ Cross Sections – Project No. 135470, Sheet No. C-011, Revision 7, dated December 20, 2023.

Based on our review of the above noted site service plans, the majority of the design details are considered to be acceptable from a geotechnical perspective. All proposed service pipes are sufficiently covered by adequate soil cover with no frost protection required.

Thickened Edge Slab Lateral Support Zone Lowering and Foundation Insulation

Upon discussions with the design team, the proposed thickened edge slabs are now proposed to be placed on vertical, concrete in-filled trenches where adjacent service pipes are proposed with the lateral support zone of the proposed structures. These trenches would lower the lateral support zone of the slabs below the service trenches ensuring that the proposed buildings are protected should future excavation be required for the proposed services for maintenance purposes.

Due to the anticipated depth and proximity of the proposed service pipes to the proposed thickened edge slab footprints, it is expected the lateral support zones for the proposed structures will be negatively impacted by the service installation works. Further, future maintenance that could be considered throughout the proposed service alignments would require trenches that would impact the proposed buildings lateral support zones. Based on this, it is recommended to lower the lateral support zones for thickened edge footings located adjacent to impacting service alignments. This may be accomplished by sub-excavating a near-vertical trench located directly below the overlying footing footprint and in-filled with minimum 17 MPa lean-concrete.

It is recommended the near-vertical trenches extend a minimum of 150 mm horizontally beyond the overlying footing footprint. Based on our review, the lean-concrete trench detail has been incorporated satisfactorily into the above-noted site servicing plans. The recommended perimeter thickened-edge slab foundation insulation detail is depicted below for the proposed storage structures and has been incorporated satisfactorily in the above-noted site servicing plans. The placement of the lean-concrete trench and rigid insulation should be reviewed and approved by Paterson personnel at the time of construction.

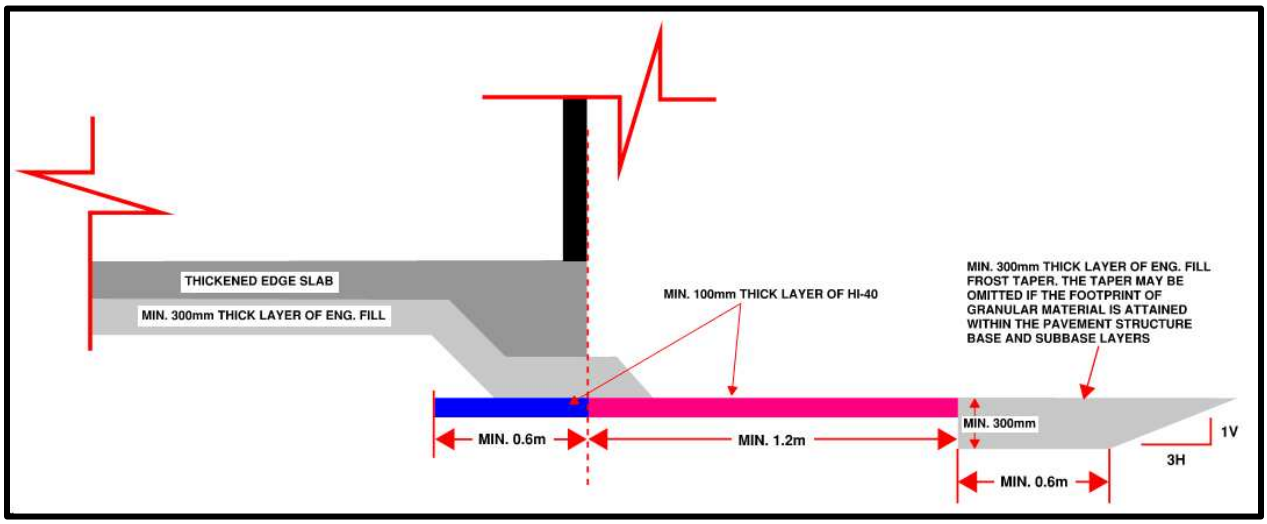


Figure 1 - Proposed Thickened Edge Slab Foundation Insulation Detail

Stormtech Underground Storage Tanks

Paterson reviewed the locations and founding depths for the proposed Stormtech Underground Storage MC-3500 units to be located throughout the subject site. Based on our review of the subsurface profile and associated geotechnical information for the subject site, the stormwater chambers will be founded upon a native, in-situ, stiff brown silty clay layer. Further, it is expected the proposed tank inverts will be located above the seasonally high groundwater table throughout the subject site. Based on this, it is not anticipated localized dewatering of the groundwater table will take place throughout the subject site by the implementation of the proposed tanks. Therefore, the location and depths of the proposed tanks considered acceptable from a geotechnical perspective.

Grading Plan Review

Paterson reviewed the following grading plans prepared by IBI Group for the aforementioned development:

- ❒ Grading Plan – Project No. 135470, Sheet No. C-200, Revision 7, dated December 20, 2023.

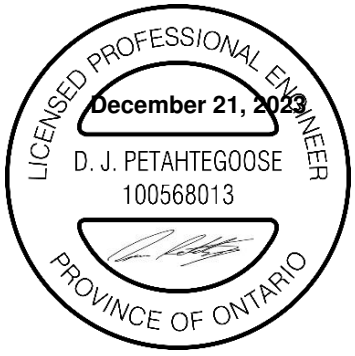
Based on our review of the aforementioned grading plan, the proposed grades around the proposed buildings and throughout the subject site are within the permissible grade raise restriction provided. Based on this, since grade raises are within our recommended grade raise restriction no lightweight fill will be required to accommodate the proposed grading. Therefore, the proposed grading is considered acceptable from a geotechnical perspective.

We trust that this information satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Drew Petahtegoose, P.Eng.



Faisal I. Abou-Seido, P.Eng.