patersongroup memorandum

consulting engineers

re:	**Geotechnical Response to City Comments** **Proposed Residential Development** **Trailsedge Blocks 193 & 194 - Ottawa**
to:	Richcraft - **Mr. Alexander Orakwue** - aorakwue@richcraft.com
date:	May 4, 2021
file:	PG5397-MEMO.02

Paterson Group (Paterson) prepared the following memo to provide our responses to the geotechnical-related comments issued on March 9, 2021 by Ms. Sara Mashaie at the City of Ottawa. These responses should be read in conjunction with the Geotechnical Investigation Report (Paterson Group Report PG5397-1 Revision 1 dated December 9, 2020) which has been prepared for this site.

Geotechnical Investigation - Comment 1

Comment: *Provide a discussion on the decommissioning of the piezometers.*

Response: Prior to construction, the piezometers will be removed from the previously backfilled boreholes, and the holes will be subsequently backfilled with on-site, excavated soil.

Geotechnical Investigation - Comment 2

Comment: *Provide a discussion on the excavation impacts to the neighbouring properties and infrastructure, as applicable.*

Response: The proposed structures will each include 1 basement level, and based on the setbacks of the proposed buildings from the property lines, it is anticipated that sufficient space will be available for the building excavations to be sloped. As discussed in Section 6.3 of the above-noted Geotechnical Investigation Report, the excavation side slopes above the groundwater level extending to a maximum depth of 3 m should be excavated at 1H:1V or shallower.

Further, in reviewing the Site Servicing Plan (Drawing SSP-1 Revision 2 dated April 30, 2021 and prepared by Stantec), the servicing installations will extend to depths of up to approximately 3 m below the existing ground surface. As with the proposed building excavations, it is anticipated that sufficient space will be available for the servicing excavations to be sloped at 1H:1V or shallower. However, should sufficient space not be available to slope the servicing trenches, they will be supported using trench boxes.

Accordingly, provided the excavations are adequately sloped, or supported with trench boxes, in accordance with these recommendations, there will be no excavation impacts to the neighbouring properties and infrastructure.

Geotechnical Investigation - Comment 3

Comment: *Provide a discussion on the depth of services in conjunction with the Servicing and Stormwater Management Report.*

Response: Paterson has reviewed the Site Servicing Plan (Drawing SSP-1 Revision 2 dated April 30, 2021) and the Servicing and Stormwater Management Report dated April 30, 2021, both prepared by Stantec. Based on our review, the proposed services will extend to depths of up to approximately 3 m below the existing ground surface, corresponding to geodetic elevation 83.8 m.

These servicing depths have been reviewed and are considered acceptable, from a geotechnical perspective. As noted in the Geotechnical Investigation Report, to reduce long-term lowering of the groundwater level at this site, clay seals should be provided in the service trenches. The seals should be at least 1.5 m long and should extend from trench wall to trench wall. Generally, the seals should extend from the frost line and fully penetrate the bedding, subbedding and cover material. The barriers should consist of relatively dry and compactable brown silty clay placed in a maximum 225 mm thick loose lifts and compacted to a minimum of 95% of the material's SPMDD. The clay seals should be placed at the site boundaries and at strategic locations at no more than 60 m intervals in the service trenches.

Geotechnical Investigation - Comment 4

Comment: *Ensure that the latest revised landscape plan is reviewed in conjunction with tree planting restrictions and recommendations contain in the report.*

Response: The current Landscape Plan (Drawing L01 Revision 5 dated April 23, 2021 and prepared by Nak Design Strategies) was reviewed for consistency with the recommended tree planting setbacks provided in the Geotechnical Investigation Report (Paterson Group Report PG5397-1 Revision 1 dated December 9, 2020). Per this report and the City of Ottawa Tree Planting in Sensitive Marine Clay Soils (2017 Guidelines), a reduced tree planting setback of 4.5 m is applicable for small trees (less than 7.5 m mature height) and medium trees (mature height of 7.5 to 14 m) at this site.

Based on our review, small and medium trees on the Landscape Plan have been provided with a setback of 4.5 m or greater from the foundation walls of the proposed buildings.

There are shrubs located within the 4.5 m setback in certain areas, and these are considered acceptable provided the roots do not extend more than 1 m below finished grades.

Geotechnical Investigation - Comment 5

Comment: *Ensure that the latest grading plan is reviewed, and a sign-off letter is provided accordingly*.

Response: Please refer to Paterson Group Memo PG5397-MEMO.01 - Geotechnical Design Summary Details dated May 4, 2021 which documents our grading plan review for the subject site. In summary, finished grades at the site are within the 1.7 m permissible grade raise recommended in the Geotechnical Investigation Report. Therefore, the proposed grading is considered acceptable, from a geotechnical perspective, and no lightweight fill (LWF) or surcharge program is required for the proposed residential development.

We trust that this information satisfies your immediate requirements.

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