



**re: Geotechnical Responses to City Comments
Proposed Residential Development
1592 Tenth Line Road – Ottawa**
to: Oligo Group – Mr. Ketan Dhawan – ketan.dhawan@olicobuilders.com
date: December 18, 2023
file: PG5632-MEMO.02

Further to your request, Paterson Group (Paterson) prepared the current memorandum to provide responses to the City of Ottawa review comments in the letter dated November 15, 2023 (File No. D07-12-21-0084) for the proposed development to be located at the aforementioned site. This memo should be read in conjunction with the updated Geotechnical Investigation Group (Paterson Group Report PG5632-1 Revision 3 dated December 18, 2023).

Geotechnical Comment Responses

Comment B1: *Noted that the geotechnical report discusses potential underpinning as well as shoring in order to ensure the adjacent property and structure are protected. Discussion should also be provided related to protection of City sewer and water infrastructure within 1088 parcel to the north and adjacent City ROWs. The geotechnical report should also discuss potential impacts to adjacent structures and ROWs due to short-term and long-term groundwater lowering. Also please discuss City's tree planting guidelines for trees in clay soils in the tree planting section.*

Response: Based on Paterson's review of the available drawings, the proposed excavation will not extend within the lateral support zone of the nearby City of Ottawa sewer and/or water infrastructure. This is discussed in Section 6.3 of the updated Geotechnical Investigation Report.

Further, based on the proposed underside of footing (USF) elevation, the building excavation will not extend below the static groundwater table. Therefore, lowering of the groundwater table is not anticipated as part of the proposed development, and accordingly, there will be no impacts to adjacent structures or ROWs due to dewatering. This is included in Section 6.4 of the updated Geotechnical Investigation Report, under the sub-heading "Review of Potential Impacts to Neighbouring Structures and Infrastructure".

Also, Section 6.7 of the updated Geotechnical Investigation Report now discusses the City of Ottawa's "Tree Planting in Sensitive Marine Clay Soils – 2017 Guidelines".





City (Nov. 2023): Related to the proximity of the excavation to the adjacent dwelling at 417 Phoenix Crescent, note that Building Code Services (BCS) will require the following prior to issuance of building permit for excavation/shoring/foundation:

- Detailed shoring system design to be submitted and reviewed, including outline of proposed building and all relevant shoring information corresponding to the geotechnical report, full building structural drawing, architectural drawings for below grade levels. Tie backs to be shown if used (on City and/or private property). If tie backs extending onto City and/or private property, BCS will require demonstration of a legal encroachment agreement between the City and/or private property owner. If all work is to occur within the proponent's site, BCS will require design and comment from P.Eng.
- Detailed construction information relating to proposed and adjacent structures to confirm whether underpinning is required. Detailed underpinning design to be submitted if needed.
- Pre and post construction study of the neighbouring properties to ensure no damage is incurred as a result of the proposed development.

Please include a constructability section in the geotechnical report that outlines these detailed requirements that will need to be satisfied for building permit stage. A condition will be included in the site plan agreement which will identify that prior to building permit application these requirements are to be satisfied and details submitted to BCS satisfaction. Please provide owner acknowledgement.

Response: Acknowledged, the shoring design, specific underpinning requirements, and pre/post construction surveys will be submitted to the City of Ottawa for approval at the building permit stage.

Under Section 6.3 of the updated Geotechnical Investigation Report, referenced above, a constructability sub-section has been added that outlines the detailed requirements which will need to be satisfied in order to obtain the building permit.

Comment B2: *Please provide a signed and sealed memo from the retained geotechnical consultant confirming that the most recent grading, servicing, landscaping design drawings are in conformance with the geotechnical recommendations provided in the geotechnical report.*

Response: Paterson has reviewed the most recent grading and servicing plans for the proposed development:

- Site Grading Plan – File No. 522677, Revision 3 dated June 2023 and prepared by Tatham Engineering.



- Site Servicing Plan – File No. 522677, Revision 3 dated June 2023 and prepared by Tatham Engineering.

Based on our review, the current grading and servicing plans are in conformance with the recommendations in the Geotechnical Investigation Report. Accordingly, no lightweight fill is required to accommodate the proposed grading at the subject site, nor is insulation required to protect the proposed servicing pipes from the effects of frost action.

City (Nov. 2023): Response to comment noted, however please provide the typical memo. Additionally:

- **Regarding underpinning in Section 6.3 of the geotechnical report, it is indicated that the proposed dwelling will have footings that extend roughly 3m below ground surface, however looking at the proposed USF of 84.55, and the existing grades along the southern property limit (on average 88.26), it seems that the footings will be roughly 3.70 meters below existing grade. This would put the proposed excavation within a 1:1 zone of influence based on an existing footing depth of 2.0m for the existing dwelling and a minimum 1.0m horizontal separation between the proposed and existing building. Please revise this section of the report as necessary.**
- **Please also confirm short-term and long-term groundwater lowering assumption made in section 6.5 of the report. Section 6.5 indicates that the building excavation will not extend below the static groundwater table, however section 4.3 estimates long term groundwater elevation between 3-4m below ground. Building footings are proposed within that range at roughly 3.7 m.**
- **Please also add a section in the report to discuss constructability (given close proximity to proposed foundation wall) and suitability of stormwater storage tank proposed for this site as it relates to the geotechnical parameters. Include cross-section and make recommendations related to adequate cover, etc.**

Response: As requested, a dedicated memo has been prepared for the Grading & Servicing Plan Review, please refer to Paterson Group Memo PG5632-MEMO.03 dated December 18, 2023.

Section 6.3 has been updated to address specific considerations for the neighbouring building foundation at 417 Phoenix Avenue, including recommendations for temporary shoring or underpinning. Section 6.5 has also been updated to reflect the current underside of footing (USF) elevation. As noted above, the “Constructability” sub-section has been added that outlines the detailed requirements which will need to be satisfied in order to obtain the building permit.



This sub-section also states that there are no issues with the proposed storage tank, from a geotechnical perspective, although insulation will be needed. The insulation details are shown on the cross-section sketch which is provided in Appendix 1 of the updated Geotechnical Investigation Report, referenced above.

We trust that the current submission meets your immediate requirements.

Best Regards,

Paterson Group Inc.

Scott S. Dennis, P.Eng.

