

re: **Response to Engineering Comments**
 Wateridge Village Residential Development - Block 22
 1400 Hemlock Road - Ottawa

to: Mattamy Homes - **Mr. Conor Sutherland** - Conor.Sutherland@mattamycorp.com

to: DSEL - **Ms. Jennifer Ailey** - JAiley@dsel.ca

date: September 10, 2020

file: PG5345-MEMO.07

Further to your request, Paterson Group (Paterson) prepared the current memorandum to address the City of Ottawa engineering comments issued for the subject site. The following memorandum should be read in conjunction with our geotechnical Report PG5345-1 Revision 1 dated September 10, 2020.

Comments - Geotechnical Investigation

Item 38: *Provide the site address 1400 Hemlock Road [Block 22] on the cover sheet.*

Response: The geotechnical report cover sheet, body and relevant attachments have been revised accordingly. Please refer to our geotechnical Report PG5345-1 Revision 1 dated September 10, 2020.

Item 39: *Please update the Grading Plan Review PG5345-MEMO.02 dated May 15, 2020 to include a date for the grading plan prepared by DSEL that was reviewed by Paterson Group as it is listed as undated.*

Response: The latest grading plan review is forthcoming as DSEL's latest grading plans were not available for our review at the time of issuing this memorandum. However, reference should be made to the latest grading plan review completed for the subject site (PG5345-MEMO.02 dated May 15, 2020). Based on our review of the previous grading, significant grade raise exceedances are not anticipated and the proposed grades are acceptable from a geotechnical perspective. Our updated grading plan review memo will be circulated, once the new grading is available.

Item 40: *Please review the LID practices proposed by DSEL and provide discussion and recommendations (in the report) pertaining to the design from a geotechnical perspective (low permeability soil, groundwater conditions, locations, etc.) to support implementation. Will placement of such infiltration system within the parking area lead to differential settlement causing pavement structure distress and failure thus requiring frequent repairs?*

Response: The proposed LID practices and oversized perforated pipe system locations are acceptable from a geotechnical perspective. Based on the soils encountered throughout the subject site, the subgrade below the proposed services will consist of either a very stiff to stiff brown silty clay and/or compact glacial till. Therefore, long-term distresses and associated differential settlements to the overlying pavement structures are not anticipated as part of the systems implementation.

Item 41: *Please document the elevation difference between the bottom of the storage media of the oversized perforated pipe systems and the seasonally high groundwater elevation for the site. The bottom of the storage media is required to be minimum of 1m below the seasonally high groundwater table per Ministry requirements. Provide a memo that confirms this requirement can and is being achieved based on a review of the proposed LID practices for this site.*

Response: Based on our review of the current servicing plans (Drawing No. 04 - Site Servicing Plan, Project No. 17-948, Revision 11 dated June 23, 2020, prepared by DSEL), the lowest elevation of the bottom of the proposed storage media is approximately 87.5 m. Based on our findings in the geotechnical report and existing borehole coverage, the current long-term seasonally high groundwater table is estimated between an elevation of 86.5 to 85.5 m. However, it should be noted that a 0.5 m of post-development groundwater lowering will occur within the vicinity of the subject site. Therefore the post-development long-term groundwater table is estimated at an elevation of 86.0 to 85.0 m.

Based on the available information, the elevation of the base of the storage media at 87.5 m conforms to having 1 m of separation from the seasonally high groundwater table. Therefore, the design of the infiltration system is acceptable from a geotechnical perspective.

Item 42: *Please refer to the Wateridge Phase 1B Developer's Checklist dated October 22, 2019 for geotechnical and infiltration testing requirements to be met for the implementation of LID within this subdivision. We require site specific analysis and recommendations to support a development proposal. An accurate/specific infiltration rate (not theoretical infiltration rate) of the soil profile within Block 22 is required to be determined based on in-situ testing determined by a qualified soils specialist or a hydrogeologist per the MOECP SWM Planning & Design Manual (March 2003) and provided to DSEL to be able to accurately size and design the proposed LID system to meet the infiltration targets for this site.*

Response: Site specific permeameter testing has been complete to provide design infiltration rates and may be referred to under Subsection 4.4 of our revised geotechnical Report PG5345-1 Revision 1 dated September 10, 2020.

Item 42: *Permissible grade raise areas, Drawing PG5345-3, has not been included in Appendix 2.*

Response: The latest revision to our geotechnical report has been updated to omit this attachment and reference. The area of the subject site is underlain by a deposit of silty clay and is subject to the permissible grade raise restrictions provided in our geotechnical Report PG5345-1 Revision 1 dated September 10, 2020 . The permissible grade raise restriction provided in the geotechnical report will apply for the entire site and is not limited to specific zones.

We trust that this information satisfies your requirements.

Paterson Group Inc.



Drew Petahtegoose, B.Eng.



Faisal I. Abou-Seido, P.Eng.

Paterson Group

Head Office and Laboratory
154 Colonnade Road South
Ottawa - Ontario - K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

Northern Office and Laboratory
63 Gibson Street
North Bay - Ontario - P1B 8Z4
Tel: (705) 472-5331 Fax: (705) 472-2334

St. Lawrence Office
993 Princess Street
Kingston - Ontario - K7L 1H3
Tel: (613) 542-7381