



re: Geotechnical Recommendations – Grading Plan and Site Servicing Plan Review
Proposed Multi-Storey Building
1184, 1188, and 1196 Cummings Avenue – Ottawa, ON
to: TCU Development – Mr. Dylan Desjardins – d.desjardins@tcudevcorp.com
date: September 18, 2023
file: PG6604-MEMO.02

Further to your request and authorization, Paterson Group (Paterson) prepared the following memorandum to provide a review from a geotechnical perspective for the grading and site servicing plans for the proposed multi-storey building at the aforementioned site. This memorandum should be read in conjunction with Paterson Group Report PG6604-1 Revision 1 dated July 6, 2023.

1. Grading Plan Review

Paterson reviewed the following grading plan prepared by Stantec Consultant Ltd. regarding the aforementioned site:

- Project No. 160401787 - Drawing No. GP-1 – REV #3 – Site Grading Plan – dated August 30, 2023.

Based on the available soil information, a silty clay deposit was not encountered during the geotechnical investigation completed by Paterson in 2023. Therefore, no permissible grade raise restriction is required at the subject site. Further, the aforementioned site is not subject to tree planting setback restrictions, as per 'Tree Planting in Sensitive Marine Clay Soils - 2017 Guideline' due to the absence of sensitive marine clays at the subject site.

Based on our review of the above noted drawing, it is understood that the finish floor elevation for the ground floor will be at geodetic elevation 71.8 m and that the proposed USF will be at geodetic elevation 67.9 m. Based on that, the available soil cover of 3.9m is sufficient to protect the footings against frost action. It is further understood that the anticipated excavation depth is approximately 3.9 m below proposed finish grade level. Furthermore, it is understood that the available horizontal setback between the proposed foundation wall and property limit is greater than 4m except for the north and east sides where the available horizontal setback is approximately 3.0m. Therefore, a temporary shoring system will be required to support the overburden material along the north and east sides during excavation. The shoring system may consist of soldier pile and lagging or interlocking sheet piles with tiebacks. The design of the shoring system should be completed by a specialized consultant, in accordance with the geotechnical information provided under section 6.3 of the aforementioned geotechnical investigation report.





Based on our review, the proposed grading at the subject site is considered acceptable, from a geotechnical perspective.

2. Site Servicing Plan Review

Paterson reviewed the following site servicing plan prepared by Stantec Consultant Ltd. regarding the aforementioned site:

- Project No. 160401787 - Drawing No. SSP-1 – REV #3 – Site Servicing Plan – dated August 30, 2023.

Below is a summary of our review of site servicing invert levels identified throughout the subject site:

Stormwater and Sanitary Service Pipes Invert Levels Summary

Based on our review, the invert elevations for all service pipes entering the stormwater and sanitary manhole structures throughout the subject site were observed to be located below the frost zone (approximately 1.8m below finish ground surface).

Manhole I.d.	Top of Grate Elevation (m)	Highest Invert Elevation (m)	Minimum Soil cover Present (m)	Pipe Bedding Subgrade Depth (m)
STM CB 1	71.30	69.00	2.30	2.45
STM CB 3	71.28	68.96	2.32	2.47
STM CB 13	71.30	69.06	2.24	2.39
STM MH 2	71.41	69.00	2.41	2.56
STM MH 3	71.37	68.63	2.74	2.89
STORMCEPTOR EF04	71.45	69.64	1.81	1.96
SAN MONITOR MH	71.50	68.28	3.22	3.37

In addition, all service pipes were noted to be outside the lateral support zone of the proposed footings. Therefore, and based on our review and the summary provided in Table 1, the proposed invert levels for the storm and sanitary pipes are considered acceptable from a geotechnical perspective.



300mm Storm Pipe Crossing Existing 250mm A.C. Sanitary Sewer

Based on our review of the proposed site servicing plan, it is understood that the invert level for the proposed 300mm storm pipe ranges between geodetic elevation 69.61 to 69.51m. it is further understood that the invert level for the existing 250mm AC sanitary sewer is at geodetic elevation 67.70m. Therefore, the vertical separation between the proposed storm pipe and existing sanitary pipe is approximately 1.56m. Based on our review, the proposed vertical separation between the proposed storm pipe and the existing sanitary sewer is considered acceptable from a geotechnical perspective.

Proposed 300mm Watermain Laterals Crossing Existing 600mm Concrete Storm Sewer

It is understood that three proposed 300mm watermain laterals will be crossing over the existing 600mm concrete storm sewer along Cummings Avenue. Based on our review of the site servicing plans, it is understood that the invert levels for the proposed watermain laterals and the existing 600mm concrete storm sewer are at approximate geodetic elevations 69.30m and 69.69m respectively. However, it is understood that the proposed watermain laterals will be deflected over the existing storm sewer as per the City Detail W25.2.

Existing Gas Main

It should be noted that an existing gas pipe was observed to be running along Cummings Avenue. However, the invert level for the existing gas line is not know. The location of the gas main should be coordinated prior to construction to avoid any conflicts with the proposed watermain laterals.

Conclusions

Based on our review of the above noted site servicing plans, the proposed service pipe alignments and invert levels are considered acceptable from a geotechnical perspective. We trust that the current submission meets your immediate requirements.

Best Regards,

Paterson Group Inc.

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