



re: Geotechnical Design Summary Details
Proposed Building Addition
1250 and 1252 Wellington Street West – Ottawa, Ontario

to: Domicile Developments Inc – Mr. Rick Morris – rick@domicile.ca

date: September 12, 2022

file: PG5972-MEMO.02

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to provide geotechnical design summary details for the aforementioned project. The following memorandum should be read in conjunction with the current Geotechnical Investigation Report (Paterson Group Report PG5972-1 Revision 1 dated March 15, 2022).

Grading Plan Review

Paterson reviewed the following grading plan prepared by LRL Engineering for the aforementioned developments:

- ❑ Grading and Drainage Plan – Proposed Addition to Mixed Use Building, 1252 Wellington St., Ottawa, ON. – Project No. 210883 – Drawing No. C301 – Review 1, dated March 16, 2022.

Generally, the subsurface profile consists of fill underlain by a layer of silty sand followed by silty clay deposit. It is anticipated that the proposed building addition will be founded on conventional spread footings placed on an undisturbed, very dense to dense silty sand bearing surface. Due to the presence of the silty clay deposit below the proposed building addition, a permissible grade raise restriction of **2.0 m** was provided in our geotechnical report based on the shear strength and consistency of the underlying silty clay.

Based on our review of the aforementioned grading plan, the proposed grades are within the permissible grade raise restriction provided. Therefore, the proposed grading plan is considered acceptable from a geotechnical perspective and no lightweight fill or other considerations to accommodate the proposed grades are required at this time.

Bearing Resistance Values for Foundation Design

Conventional spread footings and underpinning panels placed on an undisturbed, very dense to dense silty sand bearing surface can be designed using a bearing resistance value at serviceability limit states (SLS) of **150 kPa** and a factored bearing resistance value at ultimate limit states (ULS) of **225 kPa**.



Provisions should be carried to proof-roll the silty sand subgrade using heavy vibratory compaction equipment where the subgrade is encountered in a relatively loose state and prior to the construction of footings. Proof-rolling of the existing sand deposit should be reviewed and approved by Paterson personnel prior to the construction of footings, if considered.

Strip footings, up to 2 m wide, and pad footings, up to 4 m wide placed on an undisturbed, stiff grey silty clay bearing surface can be designed using a bearing resistance value at SLS of **150 kPa** and a factored bearing resistance value at ULS of **225 kPa**.

An undisturbed soil bearing surface consists of a surface from which all topsoil and deleterious materials, such as loose, frozen or disturbed soil, whether in situ or not, have been removed, in the dry, prior to the placement of concrete for footings.

A geotechnical resistance factor of 0.5 was applied to the reported bearing resistance value at ULS. The bearing resistance value at SLS will be subjected to potential postconstruction total and differential settlements of 25 and 20 mm, respectively.

Site Servicing Plan Review

Paterson reviewed the following site servicing plan prepared by LRL Engineering:

- Servicing Plan – Proposed Addition to Mixed Use Building, 1252 Wellington St., Ottawa, On. – Project No. 2108 33 – Drawing No. C401 – Revision 1, dated March 16, 2022.

From a geotechnical perspective, the relevant recommendations including adequate frost protection of services, foundation, pipe bedding and backfill provided by Paterson in the aforementioned geotechnical investigation report have been incorporated satisfactorily into the above noted plans.

We trust that this information is satisfactory for your immediate requirements.

Best Regards,

Paterson Group Inc.

Drew Petahtegoose, B.Eng.



David J. Gilbert, P.Eng.

