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Concorde Properties
408 Tweedsmuir Avenue
Ottawa, Ontario
K1Z 5N5

Attention **Mr. Jordan Tannis**

Subject: **Confederation Line Proximity Assessment**
Proposed Residential Buildings
890 Byron Avenue and 455, 463 & 483 Sherbourne Road
Ottawa, ON

Dear Sir,

Paterson Group Inc. (Paterson) was commissioned by Concorde Properties to prepare a Confederation Line proximity assessment for the proposed development to be located at the aforementioned site. The following letter report should be read in conjunction with our Geotechnical Investigation Report (Paterson Report PG5364-1 dated June 23, 2020).

1.0 Background Information

1.1 Proposed Development

Based on current plans, it is understood that the proposed development will consist of up to four low-rise residential buildings throughout the subject site. It is further understood that each proposed structure will be provided with a partial basement level which will extend up to 2 m below the existing ground surface.

It is understood that the existing buildings will be demolished as required to accommodate the proposed structures. Based on our review, the proposed development is being considered in order increase the population density throughout the subject site while maintaining a low-rise construction methodology as opposed to considering a high-rise development similar to other developments along the LRT alignment.

From a geotechnical perspective, the proposed development will greatly resemble the existing buildings and is anticipated the future buildings will generate similar building loads and zones of influence onto the founding soils as the existing structures currently produce throughout the subject site.

1.2 Subsurface Conditions

Based on existing geotechnical information, the subsurface conditions in the immediate area of the subject site and adjacent the proposed Confederation Line West Extension alignment consist of the following:

- Existing surface grade is between an average elevation between 63 to 64 m.
- The overburden thickness is approximately 5 to 10 m.
- Practical refusal to augering has been encountered at elevations between 57.7 and 61.3 m.
- Based on geological mapping, bedrock throughout the area of the Confederation Line and subject site would consist of limestone with interbedded dolomite.

1.3 LRT and Station Location

Based on the available drawings and renderings available by the City of Ottawa, the Confederation Line will be located below ground surface along an alignment between Byron Avenue and Richmond Road. Cleary Station is anticipated to be located at grade at the intersection of Sherbourne Road and Byron Avenue. It is anticipated that the Confederation Line tracks throughout the area of Cleary Station will be installed at a depth of up to 6 m below ground surface, or an approximate geodetic elevation of 57 to 58 m. The horizontal distance between the proposed building to be located at 890 Byron Avenue and the Confederation Line and Cleary Station will be approximately 25 and 60 m, respectively. The horizontal distance between the proposed building to be located at 455 Sherbourne Road and the Confederation Line and Cleary Station will be approximately 61 and 53 m, respectively. The lowest level floor slab anticipated for the aforementioned proposed buildings is anticipated to be at an elevation of 60.5 m.

1.4 Construction Timelines

Prior to considering the impact of the proposed development onto the future Confederation Line West Extension, it should be noted that based on the available information, the proposed low-rise buildings will be constructed prior to beginning construction of the Cleary Station and associated LRT extension. Based on this, the proposed development should not be evaluated as new construction when considering its impact on the Confederation Line since the buildings will be existing prior to construction for the Confederation Line. Based on this, the proposed developments impact onto the LRT alignment throughout this area should be considered equal to the existing low to rise residential dwellings along Byron Avenue. It is recommended that the pre-construction surveys anticipated for the construction of the Confederation Line account for the future existing buildings to be located at the subject site.

2.0 Construction Precautions and Recommendations

2.1 Influence of Proposed Development on Confederation Line

Based on existing soils information and available development design details, the footings for the proposed buildings will be founded upon a compact glacial till bearing medium. Lateral loads imposed by the proposed buildings will be transferred at a 1.5H:1V zone of influence from the outside face of footings. It is further anticipated that a vertical separation of approximately 3 to 4 m will be present between the founding depth of the proposed buildings and Confederation Line infrastructure. Considering the approximately 25 to 60 m horizontal separation between the two developments, the zone of influence created by the proposed buildings footings will not impact or extend into the zone of influence or footprints of the proposed Confederation Line infrastructure.

During the recent geotechnical investigation, one borehole encountered auger refusal at an elevation of 61.3 m, or 2.8 m below existing ground surface. Due to the nature which glacial till is deposited, it is likely that the shallower refusal elevation may have occurred on a boulder, and not the bedrock surface. Should bedrock be encountered close to the bottom of the excavation for the proposed buildings, the bedrock is anticipated to be in a relatively weathered state and will be readily removed by conventional excavation techniques such as a combination of hoe-ramming and removal by a hydraulic excavator.

Based on this, only a small quantity of bedrock, if encountered, will be removed as part of the building excavation. Therefore, bedrock is not anticipated to be removed using vibration inducing techniques such as line-drilling or blasting, nor will overburden or bedrock removal activities generate vibrations which would negatively impact the in-situ soils and bedrock throughout the anticipated Confederation Line alignment.

3.0 Proximity Study Requirement

It is understood that a Level 1 Confederation Line Proximity Study is required where the proposed development is located within the City of Ottawa's Development Zone of Influence. However, from a geotechnical perspective, the subject site will not negatively impact or affect the area of or the future infrastructure associated with the future Cleary Station. Based on our review, the proposed development should be considered to have as equal of an impact as the existing structures located along Byron Avenue that are adjacent to the proposed Confederation Line alignment.

Based on our understanding of the proposed development and the future Confederation Line West Extension, a Level 1 Confederation Line Proximity Study is not considered to be required for the proposed development, from a geotechnical perspective.

We trust that this information satisfies your immediate request.

Best Regards,

Paterson Group Inc.

Drew Petahtegoose, B.Eng.

Scott S. Dennis, P.Eng.

Letter Report Distribution

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