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June 17, 2020
File: 17932

Attention: Coeur Chen

Re: Preliminary Geotechnical Report: Proposed Mixed-Use 32-Storey High Rise
5163-5187 Joyce Street, Vancouver, BC

1.0 INTRODUCTION

GeoPacific understands that 1128587 BC Ltd. requires a preliminary geotechnical report for rezoning purposes for the above referenced site. Based on the preliminary design drawings, we understand that the proposed development will consist of 32-storey high rise over five below grade parking levels.

This report has been prepared exclusively for 1128587 BC Ltd. for their use and for the use of others on their development team. This report provides recommendations for the design and construction of the proposed development based on the expected soil and groundwater conditions at the site.

GeoPacific have carried out numerous geotechnical investigations in this vicinity,most notably at 5050 Joyce Street as well as the Joyce-Collingwood Skytrain upgrade. It is considered that at this stage the work from these sites is sufficient for the completion of this preliminary report, however we recommend that we complete a site specific investigation to confirm subsurface conditions on a more detailed level once the detailed design is underway. The design recommendations in this report are also based on preliminary information provided and therefore are likely to change should the design change.

2.0 SITE DESCRIPTION

The development site is comprised of two contiguous lots. The site is located at 5187-5163 Joyce Street. The site is bounded by mixed-use developments to the south and north, municipal lane to the west, and Joyce Street to the east.

3.0 SUBSURFACE CONDITIONS

3.1 Soil Conditions

According to "Surficial Geology – Vancouver (MAP 1486A)" published by Geological Survey of Canada, this region is understood to be underlain by Vashon Drift and Capilano sediments.

We anticipate the subsurface conditions on site to consist of asphalt followed by compact sand and gravel and silty sand to approximate depth of 3.0 m, followed by dense GLACIAL TILL to approximate depth of 13 m, overlying dense sand to gravelly sand.

3.2 Groundwater Conditions

Based on our experience in the area, the static groundwater table is expected to be encountered at 22 m depth. We expect inflows from perched ground water within the sandy units. The ground water level is expected to vary seasonally with higher levels following periods of extended rainfall.

We expect, based on the monitoring well data, the static groundwater level will be below the excavation depth for the parkade.

4.0 DISCUSSIONS

GeoPacific understands that the proposed new development will consist of 32-storey high rise over five below grade parking levels which we assume would extend close to the property line. We assume herein that finished exterior grades will be maintained at or near existing grades within the building areas.

Based on the likely footing elevations, the subsurface conditions at underside of foundation are expected to be dense sand and sand and gravel (we anticipate the excavation depth for the 5 levels underground parking will range from 15 to 20 meters below existing grades). We expect that the structure could be founded on conventional strip and pad foundation on the dense sand and sand and gravel at relatively high bearing pressures (no ground improvement is required).

We also expect that the below grade parking would be constructed at or near the property lines on all sides and thus, shoring will be required to support the sides of the excavation.

The subsurface soils underneath the founding level are not expected to be prone to liquefaction or other forms of ground softening under the design earthquake defined under the 2019 Vancouver Building Bylaw.

Some light to moderate but persistent groundwater seepage is expected from permeable layers. We do not envision the requirement for any special water proofing treatments on the foundation walls, provided a fully drained cavity can be constructed between the shoring wall and the perimeter foundation wall.

We confirm, from a geotechnical point of view, that the proposed redevelopment is feasible, provided the recommendations outlined in this geotechnical report are incorporated into the overall design.

5.0 CLOSURE

This report has been prepared exclusively for our client: "1128587 BC Ltd.", for the purpose of providing geotechnical recommendations for rezoning purposes for the design and construction of the proposed development described herein. This report remains the property of GeoPacific Consultants Ltd. and unauthorized use of, or duplication of this report is prohibited.

We are pleased to be of assistance to you on this project and we trust that our recommendations are both helpful and sufficient for your current purposes. If you would like further details or would like clarification of any of the above, please do not hesitate to contact GeoPacific.

For
GeoPacific Consultants Ltd

Reviewed by:



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