Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
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September 11, 2024 Reference No. 2111-S043

1334281 Ontario Limited
720 Granite Court
Pickering, Ontario
L1W 4A3

Attention: Mr. Domenic Grossi

Re: A Geotechnical Review for Potential Ground Settlement
Proposed Mid-Rise Residential Development
720 Granite Court
City of Pickering

Dear Sir:

As requested, Soil Engineers Ltd. (SEL) has performed a geotechnical review for potential settlement to the existing structures surrounding the captioned site due to short-term construction dewatering and long-term foundation drainage discharge within the subject site.

The following documents, drawings and reports are reviewed for the assessment:

- *Geotechnical Investigation Report, prepared by SEL, dated March 2023.*
- *Hydrogeological Assessment Report, prepared by SEL, dated September 2024.*
- *Architectural Drawings, prepared by onespace unlimited Inc., dated August 28, 2024*

Subsurface Conditions

Based on the borehole findings in the geotechnical report, beneath a veneer of topsoil, the site is underlain by a stratum of sandy silt till throughout the site.

The recorded groundwater elevations within the building envelope as reported in the hydrogeological assessment ranges from El. 96.16 to 98.02 m.

Estimation of Settlement Due to Dewatering

Based on the architectural drawings, it is estimated that the bottom of excavation for the proposed development is at El. 98.2 m and the base of elevator pit is at El. 97.2 m. Given the bottom of excavation and the base of elevator pit are lower than the recorded groundwater level, construction dewatering is anticipated during construction.

A review of the aerial image and drawings shows that the site is bounded by a municipal street to the south, a regional road to the east and northeast, and a railway line to the west and northwest. According to the hydrogeological report, the Zone of Influence (ZOI) due to construction dewatering is estimated to be 4.2 m. The dewatering array will likely be installed along the extent of underground structure. The extent of the ZOI is estimated and is illustrated on Drawing No. 1, enclosed.

In order to provide a dry and stable subgrade for construction, the groundwater should be lowered to at least 1.0 m below the bottom of the excavation. As such, the maximum drawdown of the groundwater is estimated to be 1.0 m. Considering that the ZOI is primarily within the property boundary and in areas extends to the existing sidewalk and boulevard, no structure will be affected from the construction dewatering. Furthermore, the ground settlement due to construction dewatering is estimated to be less than 1.0 mm for the sidewalk and is considered geotechnically acceptable. Once the dewatering system ceases operation, additional ground settlement due to construction dewatering is not anticipated.

Long Term Foundation Drainage Discharge

With the very dense sandy silt till in the subgrade below the lowest parkade level, long-term foundation drainage discharge will likely be water seepage captured in the perimeter foundation subdrains and underfloor subdrains, which can be considered minimal and would not significantly change the groundwater condition from the proposed development; thus, potential settlement due to long-term foundation drainage discharge is not anticipated.

We trust the above satisfies your requirements. Should you have any further queries, please feel free to contact this office.

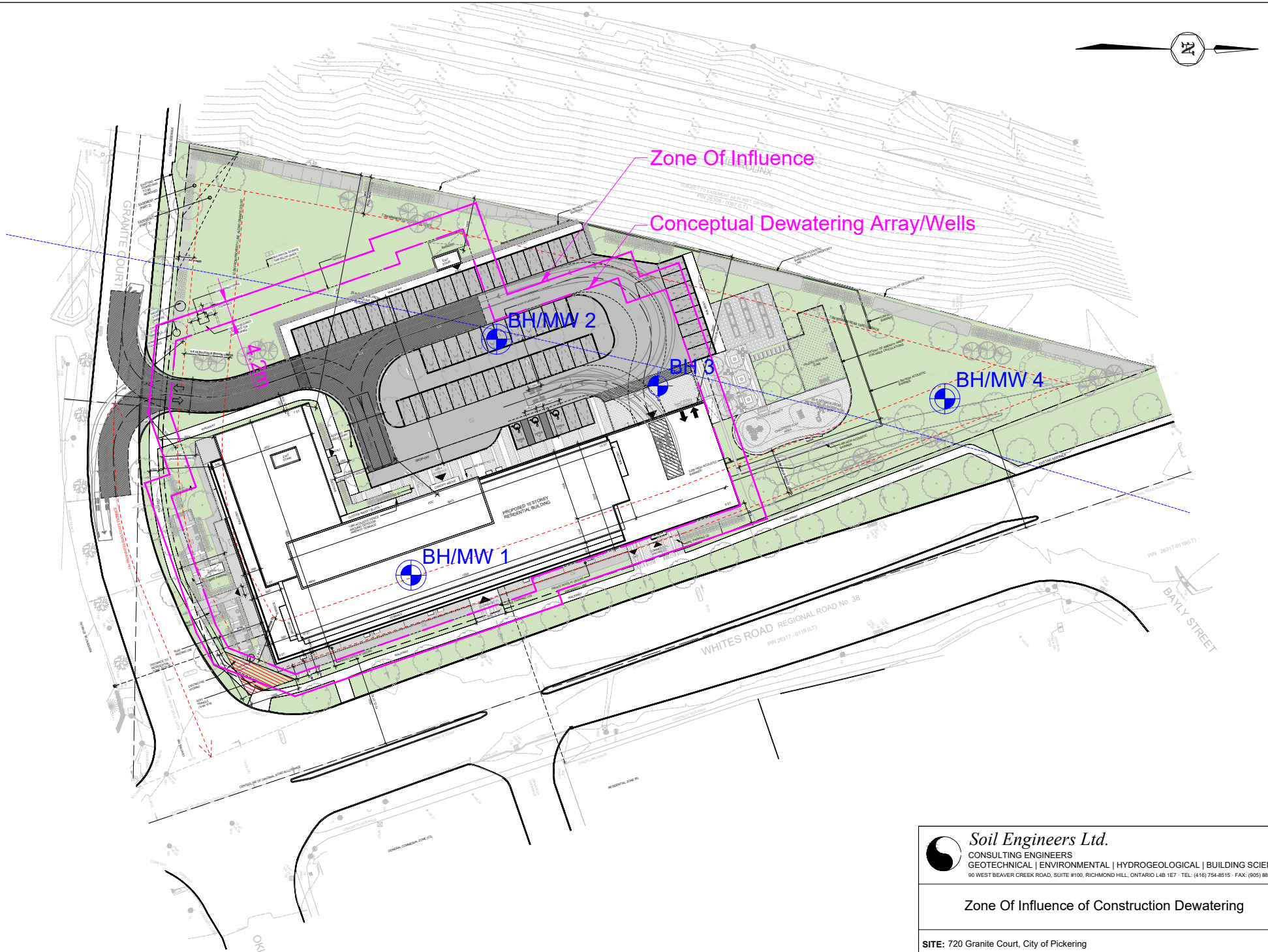
Yours truly,
SOIL ENGINEERS LTD.

Poh Fung Kwok, M.Sc.

Kin Fung Li, P.Eng.
PK/KL:dd

ENCLOSURE

Borehole Location Plan with ZOI of Construction Dewatering.....Drawing No. 1



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Zone Of Influence of Construction Dewatering

SITE: 720 Granite Court, City of Pickering			
DESIGNED BY: P.K.	**CHECKED BY:** K.L.	**DWG NO.:** 1	
SCALE: 1:1000	**REF. NO.:** 2111-S043	**DATE:** September 2024	**REV** -