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November 6, 2020

Reference No. 1909-S140

Related Reference No. 1909-W140

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Brock Road Duffins Forest Inc.  
22 Ross Shiner Lane  
Stouffville, Ontario  
L4A 0V5

Attention: Ms. Alison Lin

**Re: Letter of Opinion - Settlement Due to Dewatering  
Proposed Residential Development  
2055 Brock Road  
City of Pickering**

Dear Madam:

In accordance to the commented received from the City of Pickering Development Engineering, dated July 24, 2020. We provide herewith our assessment.

## **Background**

To facilitate the construction of the proposed residential development, dewatering is required to depress the groundwater for excavation. The purpose of this letter is to comment on the potential settlement concerns due to dewatering activity for the proposed residential development.

## **Dewatering and Zone of Influence Data**

Based on the Hydrogeological Report prepared by our office, the maximum dewatering drawdown is 5.8 m, and the maximum zone of influence will be 11.4 m.

## **Nearest Structures**

A cursory review indicates that the surrounding area consists of private residences and the Pickering Islamic Centre. The estimated distance between the boundary of the proposed development and the nearest structures ranges from 13.4 m (private residences) and 27.2 m (Pickering Islamic Centre), which is beyond the expected ZOI of 11.4 m.



### Discussion of Ground Settlement

Based on the borehole information, the area within the proposed development consists of a layer of earth fill and scattered surficial sand layers, overlying a silty clay and glacial till deposit. The consistency of the silty clay, as inferred by the 'N' values, is very soft to firm in consistency. The glacial till beneath the clay deposit is compact to very dense in relative density. It is subject to settlement due to increase in the effective stress or external loading.

Since the existing residences are the Pickering Islamic Centre is located outside of the ZOI, the structures are not expected to be impacted by any dewatering that occurs within the subject property as they are located beyond the ZOI specified in the hydrogeological report.

Nevertheless, control points should be installed near the site boundaries. They must be monitored regularly by a qualified surveyor during dewatering and construction stages. A pre-construction survey is strongly recommended for the structures in the adjacent properties prior to the dewatering and excavation activities at the site. Our office can provide further advice or undertake the pre-construction survey as necessary.

We trust this Letter Report satisfies your present requirements; however, should any queries arise, please feel free to contact this office.

Yours truly,  
SOIL ENGINEERS LTD.

Kelvin Hung, P.Eng.  
KH/BL:dd



Bernard Lee, P.Eng.



- c. Soil Engineers Ltd. (Oshawa)  
Attn: Mr. Raymond Wong, Branch Manager