

GEOTECHNICAL FIELD REVIEW / SITE INSTRUCTION

Project No: 3770-10

Project: Geotechnical Assessment of Existing Cottage

Project Address: 934 Khenipsen Road, Duncan, BC

Date: March 26, 2021

Client: David Coulson Design Ltd.

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Distribution:

Structural – Mark Buesink – mark@buepoint.com

Site Assessment

As requested and to further our letter of July 9, 2020, we attended the referenced site on March 19, 2021, to assess the soil conditions in local test pits and review slope geometry within the area of the existing cottage. Our associated observations, comments, and recommendations are provided herein.

During this visit we reviewed the soil conditions within three test pits and collected additional geometry information to review stability conditions. The test pits were advanced by hand prior to our attendance, generally evenly spaced along the slope side portions of the cottage below the perimeter wall. Two test pits were located under the deck, while the third was located to the northwest of the deck. The test pits ranged in depth from approximately 0.7 m to 1.8 m deep. Within the test pits, rocky brown fill topsoil with root intrusions was overlaying native very dense sand and gravel, with some silt and cobbles (glacial till).

The ground surface slopes down to the southwest from the edge of the building at approximately 35 to 45 degrees from the horizontal, dropping approximately 5 m. Bedrock is exposed within the lower vertical portions of the slope, extending up approximately 3.5 m.

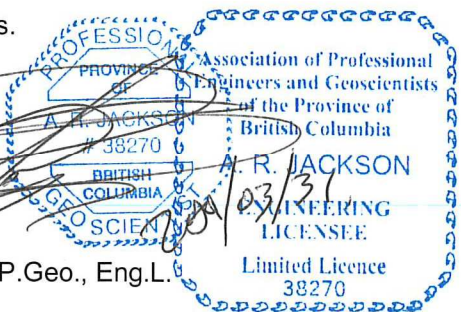

Given the very dense native soils anticipated to be present at approximately 1.8 m depth or greater, we consider that local underpinning could be extended to bear atop these soils at this minimum depth in order to mitigate the risk of catastrophic failure of the building should the slope be subject to future instability. However, the building may not be serviceable following instability but would allow for safe egress of the structure, excluding the existing deck. The test pits could potentially be expanded to serve as underpinning locations pending review by the structural consultant. The underpinning bearing atop this undisturbed native soil at a minimum depth of 1.8 m can be designed with an allowable bearing capacity of 250 kPa. The base preparations will need to be inspected and we envision that local support of the slope walls would be beneficial to retain the loose fills from sloughing into the excavations.

If there are any questions or comments with respect to the above, please contact us.

Regards,
Ryzuk Geotechnical



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