

GROUND ENGINEERING CONSULTANTS LTD.

CIVIL & GEOENVIRONMENTAL ENGINEERS

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FILE: GE-1-6168

June 26, 2019

Ms. Nancy Sykora
670 Aldersgate Street
Moose Jaw, Saskatchewan
S6H 6A4

Dear Ms. Sykora:

**SUBJECT: GEOTECHNICAL INSPECTION
LOT 3, BLOCK 1, PLAN 95MJ10540
670 ALDERSGATE STREET
MOOSE JAW, SASKATCHEWAN**

1.0 INTRODUCTION

On June 20, 2019, you verbally requested that we inspect the above captioned property. The purpose of the inspection was to provide a geotechnical engineering opinion on the proposed re-development of the property insofar as the long term stability of the site is concerned.

The property is located within the s2 (Low to Moderate Risk) Slump Hazard Overlay District of the City of Moose Jaw's Zoning Bylaw. Therefore, new developments may be permitted at City of Moose Jaw Council's discretion, subject to the receipt of a favourable Geotechnical Report that authorizes the specific proposed development (City of Moose Jaw Zoning Bylaw, Section 10.3). It is understood that your proposed re-development includes demolition and re-construction of the existing wooden deck located along the north side of the house. This letter summarizes our observations, analysis and recommendations with respect to the long term stability of this property.

A MEMBER FIRM OF THE ASSOCIATION OF CONSULTING ENGINEERING COMPANIES SASKATCHEWAN

· SOIL MECHANICS AND FOUNDATION CONSULTANTS · SITE INVESTIGATIONS · FOUNDATION DESIGN · SPECIFICATIONS
· CONSTRUCTION SUPERVISION · INSPECTION AND LABORATORY TESTING SERVICES · SOILS · CONCRETE · ASPHALT
· PAVEMENT DESIGN AND EVALUATION · SLOPE STABILITY · REPORTS · SEEPAGE CONTROL BARRIERS FOR MUNICIPAL
AND INDUSTRIAL WASTE CONTAINMENT · ENVIRONMENTAL SITE ASSESSMENTS

2.0 SITE INVESTIGATION

Our field inspection was conducted with you on June 25, 2019. The following observations were made during our inspection:

1. This study area is located at the top of the north and east valley wall of the Moose Jaw River Valley. The property on the north side of Alderstgate Street, approximately 80 to 110 metres west of Seventh Avenue South East.
2. The property is developed with a single storey house with a full basement. There is an attached garage, with a loft above, at the west side of the building.
3. The former deck (recently demolished) is located at the north side of the house. The proposed new deck will be in the same location and will cover an area of 28 feet by 20 feet which is approximately 4 feet wider than the previous deck. The proposed deck will be approximately 4'-8" above ground and be attached to the north side of the house.
4. The area of the proposed deck is relatively flat, with a slight slope to the north, away from the building. The remainder of the yard (north of the deck) slopes to the north and west, towards the Moose Jaw River valley and the adjacent River Park Drive.
5. The south portion of the lot (up to the north side of the house) is relatively flat. The west portion of the property slopes down gently towards the Moose Jaw River Valley.
6. River Park Drive runs along the north side of the property. The slope in the north portion of the property consists of an excavated slope which was completed during construction of the adjacent roadway. The slope is grass covered with occasional trees. The slope angle is very consistent and no indications of slope instability were noted in this area during our inspection.
7. There are a number of trees in the yard and adjacent properties. The trees are generally vertical and no indications of lateral displacement or tilting, which may be a sign of historical slope instability, were noted.
8. The Moose Jaw River runs in a generally north-south direction, roughly 160 metres to the west of the subject property.

3.0 AIR PHOTO REVIEW

The valley slopes were investigated by means of air photo interpretation utilizing air photographs taken in 1947, 1963, 1974, 1993 and 1996 in addition to the field inspection. Satellite imagery

available for the area between 2000 and the present was also reviewed through online mapping resources (Google Earth, ISC, etc.).

An examination of air photos indicates that the valley slopes in this area of Moose Jaw consist of large slump blocks which have been subjected to erosion from the Moose Jaw River. Numerous slope failures are present throughout the Moose Jaw area as a result of erosion at the base of the Valley Wall. Indications of slope failures are evident to the west of the subject property (roughly 110 metres west of the site). However, the risk of retrogressive landsliding back to the subject property is considered to be low. There were no indications of active or historical landslides noted on the subject property during our air photo review.

3.0 CONCLUSION AND DEVELOPMENT RECOMMENDATIONS

In our opinion, the potential for instability along this portion of the valley wall is considered to be low. The proposed deck will not substantially impact the existing slope conditions and will not result in any appreciable change in risk to existing developments. Therefore, it is recommended that the proposed development be allowed to proceed insofar as slope stability is concerned.

To reduce the potential for problems associated with slope instability, the following development guidelines are recommended:

1. It is understood that the new deck will be constructed at approximately the same location and elevation as the former deck. Any significant changes to the scope of the proposed development should be reviewed by this office prior to approval and/or construction.
2. The extent of any required surface grading should be kept to a minimum. The maximum allowable depth of cut recommended is 1.5 metres and the maximum allowable depth of fill is 1.0 metres. Finished slope angles should not exceed 4 horizontal to 1 vertical, unless additional structural reinforcement is provided (i.e. – retaining walls or reinforced slopes).

3. Landscaping should ensure that positive surface drainage is maintained on the property. Existing vegetation should be disturbed as little as possible and exposed soil should be protected with surface cover as soon as possible to prevent erosion.
4. Care should be taken to prevent excess moisture within the soil at all times. Excessive lawn watering should be avoided.

4.0 CLOSURE

We trust this letter satisfies your present requirements. If you have any questions or require additional information, please call our office.

Yours very truly
Ground Engineering Consultants Ltd.



Paul Walsh, P. Eng.

PW:pw

Distribution:

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