

A G E N D A

**THE THIRTEENTH MEETING OF THE COMMITTEE OF ADJUSTMENT
OF THE CITY OF ST. THOMAS 2021**

TELECONFERENCE

10:00 A.M.

**THURSDAY
AUGUST 26, 2021**

DISCLOSURE OF INTEREST

MINUTES

Confirmation of the minutes of the meeting held on August 12, 2021.

HEARING OF APPLICATIONS

A13/21 - JLTM Holdings Limited - 7350 Rieger Road **Pages 2-67**

Planning Report - A13/21 **Pages 68-70**

NEW BUSINESS

Next Meeting

The next meeting is scheduled to take place September 9, 2021 at 10:00 a.m.

ADJOURNMENT



PLANNING & BUILDING SERVICES DEPARTMENT

t. (519) 633.2560 f. (519) 633.6581

9 Mondamin Street
St. Thomas, Ontario, N5P 2T9

CONFIRMATION OF AN APPLICATION FOR MINOR VARIANCE

July 26, 2021

Secretary-Treasurer, Committee of Adjustment
Attention: Jon Hindley

Pursuant to By-Law 30-2015, a consultation meeting was held on March 31, 2021 with Planning staff and the applicant.

An application for a Minor Variance, regarding 7350 Rieger Road, was filed on July 23, 2021 and the required fee under Section 69 of the Planning Act has been provided.

Please contact the Planning & Building Services Department if you have any questions.

Regards,

Jim McCoomb, MCIP, RPP
Manager of Planning Services



CORPORATION OF THE CITY OF ST THOMAS
COMMITTEE OF ADJUSTMENT

Clear Form

APPLICATION FOR MINOR VARIANCE OR FOR PERMISSION

(Section 45 of the Planning Act, R.S.O. 1990, as amended)

| | | |
|-------------|--|---------------------------------------|
| OFFICE USE: | Date Application Received: <u>JUL 23 2021</u> | Consultation Date: <u>MARCH 31/21</u> |
| | Date Application Deemed Complete: <u>JUL 26 2021</u> | |

Application #: A13/21

APPLICATION IS HEREBY MADE TO:

City of St. Thomas
 545 Talbot Street
 St. Thomas ON N5P 3V7
 Tel: (519) 631-1680 ext 4125 Fax: (519) 633-9019
 Email: jhindley@stthomas.ca

Please note that in accordance with By-Law 30-2015, consultation with the Planning and Building Services Department must take place prior to the submission of an application. After consultation, the application will be filed with the Assistant Secretary-Treasurer, together with the sketch referred to in Note 1 and \$400 made payable to the City of St. Thomas. All information and materials submitted for the application shall be made available to the public, as indicated by Section 1.0.1 of the Planning Act, R.S.O. 1990.

Personal information contained on this form is collected under the authority of the Planning Act, R.S.O. 1990, as amended, and Ontario Regulation 200/96 and will be used for the purpose of processing this application.

1. Name of Owner(s) JLTM Holdings Limited - Janet Taylor
 Address 39956 Bush Line, St. Thomas

Postal Code N5P 3S9 Tel: 519-319-7032 e-mail: jltmholdings@gmail.com

2. Name of Authorized Agent (if any) _____

Address _____

Postal Code _____ Tel: _____ e-mail: _____

Note: Please specify to whom all communications should be sent: Owner Agent

3. Nature and extent of relief from the Zoning By-law applied for:
Approval for new construction of single family home with attached garage and separate pole barn

on 100 acre farm located within the City limits. 5.5.18(0)(i)(2) - Private Septic Syst

4. Reason why the proposed use cannot comply with the provisions of the Zoning By-law:

There are no City services in the area of the property.

5. Location of Land:

Concession No. _____ Lot(s) Lot 9 Registered Plan No. _____ Lot(s) _____

Reference Plan No. Range 2, East River Road Part(s) _____

Geographic/Former Township Southwold

Name of Street Rieger Road Street No. 7350

6. Dimensions of land affected:

Frontage 619m Depth 667m

Area 100 acres Width of Street 7-8m

7. Access to the subject land is by:

- a Regional Road a private road
 a Municipal road that is maintained all year
 a Municipal road that is maintained seasonally

8. Particulars of all buildings and structures on or proposed for the subject land (Specify ground floor area, gross floor area, number of storeys, width, length, height). Please specify use of existing structures.

Existing:

There are no existing structures on the property

USE farm

Proposed:

1. Single-family one-story House with basement - 70'x50' 2962 sq/ft Height 28' 2. Attached Garage - 75'x41' 3000 sq/ft (upper 1,000 sq/ft room) Height 32' 3. Pole Barn - 52'x80' 3200 sq/ft enclosed (960 sq.ft covered) Height 24'

9. Location of all buildings and structures on or proposed for the subject land (Specify distance from side, rear and front lot lines). Please specify use of proposed structure.

Existing:

None

Proposed:

In keeping with the recommended distances provided by the Slope Assessment we propose setback from the slope at 11.4m from the eastern slope and 10.7m from the southern slope. Buildings will be 15m from the road.

USE

10. Date of acquisition of subject land: January 11, 2021

11. Date of construction of all buildings and structures on subject land: _____

Construction will commence on approval by the committee.

12. Existing uses of the subject land:

farm

13. Existing uses of abutting lands:
 North: farm with single family home East: Kettle Creek Valley
 South: farm with single family home West: farm with single family home
14. Length of time the existing uses of the subject land have continued:
100+ years
15. Services available (check appropriate space or spaces):
Water:
 Municipally owned and operated piped water system Other (Specify) Southwold Township water line
Sewage Disposal:
 Municipally owned and operated sanitary sewer system Other (Specify) Engineered Septic system
Storm Drainage
 Storm sewers Other (Specify) Ditches and swales
16. Present Official Plan designation of the subject land:
Rural area, Natural Heritage and Natural Hazard
17. Present Zoning of the subject land:
R1-18
18. Has the owner previously applied for relief (minor variance) under Section 45 of the Act in respect of the subject property?
 yes no
 If the answer is yes, describe briefly (and if known, quote Application #)

19. Is the subject property the subject of a current application for a consent under Section 53 or a plan of subdivision under Section 51 of the Planning Act, 1990?
 yes no If so, state Application # and status _____

APPENDIX A – AUTHORIZATION OF OWNER

If the applicant is not the owner of the subject lands, please complete the owner authorization concerning personal information as set out below.

I, N/A., am the owner of the subject lands, and I authorize _____, to act on our behalf as the agent for the submissions required for all matters relating to the subject lands, and to provide any of my personal information that will be included in this application or collected during the planning process.

Date

Signature of Owner

APPENDIX B – ACKNOWLEDGEMENT OF LEGAL AND PLANNING FEES

In addition to the application fees listed in this application package, please note that where the City requires assistance from its solicitors or other technical or professional consultants in the processing of this application, the applicant shall be responsible for reimbursing all fees incurred by the City.

***Please note, Appendix B must be completed by the owner, not the authorized agent.**

I, Janet Taylor, am the owner of the subject lands, and I understand that further fees may be incurred by the City throughout the planning process and that I am responsible for reimbursing all fees.

July 23, 2021
Date

Janet Taylor
Signature of Owner

NOTES:

1. Each copy of this application must be accompanied by a Sketch. The Sketch need not necessarily be to scale, but dimensions must be accurate, and showing the following:
 - (a) The boundaries and dimensions of the subject land;
 - (b) The location, size and type of all existing and proposed buildings and structures on the subject land, indicating the distance of the buildings or structures from the front yard lot line, rear yard lot line and the side yard lot lines;
 - (c) The approximate location of all natural and artificial features on the subject land and on land that is adjacent to the subject land that, in the opinion of the applicant, may affect the application. Examples include buildings, driveways, swimming pools, roads, railways, drainage ditches, wells, septic tank and tile bed, and trees;
 - (d) The current uses on land that is adjacent to the subject land;
 - (e) The location, width and name of any roads within or abutting the subject land, indicating whether it is an unopened road allowance, a public traveled road, a private road or a right-of-way;
 - (f) If access to the subject land is by water only, the location of the parking and docking facilities to be used;
 - (g) The location and nature of any restrictive covenant or easement affecting the subject land;
2. The Committee of Adjustment may require that a preliminary drawing be prepared, signed and dated by an Ontario Land Surveyor.
3. If this application is signed by an agent or solicitor on behalf of an applicant, the owner's written authorization must accompany the application. If the applicant is a corporation acting without agent or solicitor, the application must be signed by an officer of the corporation and the corporation's seal (if any) must be affixed.

APPLICANT DECLARATION

By making this application, permission is hereby granted to any Municipal staff members and Municipal Planning Consultant to enter upon the premises described in this application at a reasonable time for the purpose of inspecting the property in relation to the proposed application and for distributing information concerning the same. This information is being collected pursuant to the Planning Act, Municipal Act, and Freedom of Information Act. The information contained herein will be distributed to bodies and agencies prescribed by legislation and regulation and also to interested parties.

If this application is signed by an agent or solicitor on behalf of an applicant, the owner's written authorization must accompany the application (**Appendix A**). If the applicant is a corporation acting without an agent or solicitor, the application must be signed by an officer of the corporation and the corporation's seal (if any) must be affixed.

MUNICIPAL FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

Application information is collected under the authority of the Planning Act, R.S.O. 1990, c.P.13. In accordance with that Act, it is the policy of the City of St. Thomas to provide public access to all Planning Act applications and supporting documentation submitted to the City.

I Janet Taylor, the Owner or Authorized Agent, hereby agree and acknowledge
(Print name of Owner or Authorized Agent)
that the information contained in this application and any documentation, including reports, studies and drawings, provided in support of the application, by myself, my agents, consultants and solicitors, constitutes public information and will become part of the public record. As such, and in accordance with the provisions of the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c.M. 56, I hereby consent to the City of St. Thomas making this application and its supporting documentation available to the general public, including copying and disclosing the application and its supporting documentation to any third party upon their request.

Collection of Personal Information:

Personal information on this form is collected under the authority of Section 41 of the *Planning Act*, R.S.O. 1990 and Sections 8 (1) and 10 of the *Municipal Act*, 2001, as amended, and will be used to contact the owner, applicant and/or agent regarding the Committee of Adjustment Application. Questions about this collection should be directed to the City Clerk, 545 Talbot Street, St. Thomas, Ontario, N5P 2T9 (519) 631-1680.

AFFIDAVIT OR SWORN DECLARATION

I, Janet Taylor of St. Thomas in the province of Ontario,
name of applicant City
make oath and say (or solemnly declare) that the information required under Schedule 1 of Ontario Regulation 545/06 and provided by the applicant in this application is accurate, and that the information contained in the documents that accompany this application is accurate.
Sworn (or declared) before me at the City of St. Thomas on this _____ day of _____, 20____.
City Day Month Year

Janet Taylor
Signature of Owner or Authorized Agent

July 23, 2021
Date

Crystal Marie Penney
Signature of Commissioner of Oaths, etc.

July 23, 2021
Date

FROM THE OFFICE OF THE
CITY CLERK

CITY OF ST. THOMAS

EXTRACT FROM THE COUNCIL MINUTES OF:

April 12, 2021

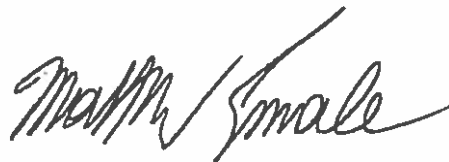
TO: Mr. J. McCoomb, Manager of Planning Services
Mr. L. Pompili, Director of Planning and Building Services
Mr. J. Lawrence, Director of Environmental Services and City Engineer

Development Proposal - To Permit a New Residence on Private Services

THAT: Report PD-22-21 relating to a proposal for a new residence on private services be received for information; and further,

THAT: Council confirm that it has no objection to an application being made to the Committee of Adjustment in support of a new residence to be constructed on private services on lands located at 7350 Reiger Road.

Carried.

A handwritten signature in black ink, appearing to read "Matt Small". The signature is written in a cursive, flowing style.



MTE Consultants
123 St. George St., London, ON N6A 3A1

July 27, 2021

MTE File No.: 49082-100

Janet Taylor
39956 Bush Line
St. Thomas, ON, N5P 3S9

Dear Janet:

RE: Issues Scoping Report and Environmental Impact Study – 7350 Rieger Road, St. Thomas

Executive Summary

The proposal is for the construction of a single residential home on an existing property at 7350 Rieger Rd, City of St. Thomas (the Subject Lands; Figure 1). In accordance with City of St. Thomas natural heritage policies, an Environmental Impact Study is required to support an application for a minor variance to the City's Zoning By-Law to permit private septic services. The Subject Lands consist of agricultural lands adjacent to forested slopes of the Kettle Creek Valley. The purpose of this report is to provide a summary of potential natural heritage considerations and evaluate potential direct and indirect impacts of site alteration on natural heritage features. Significant Valleyland was identified within the Subject Lands, as defined by municipal and provincial policy. The Adjacent Lands contain Significant Valleyland, Significant Woodland, and candidate and confirmed Significant Wildlife Habitat. Eastern Wood Pewee [SC] and Wood Thrush [SC] were both confirmed breeding within the Adjacent Lands during breeding bird surveys in 2021. No individuals of, or habitat for, species protected under the *Endangered Species Act* (ESA, 2007) were identified on or within 30m of the Subject Lands during site investigations. Avoidance and mitigation recommendations have been provided in this report and the slope stability report (EXP, 2021) to protect natural heritage features and functions on the Subject Lands and Adjacent Lands.

Introduction

MTE has been retained to complete an Environmental Impact Study for 7350 Rieger Road in the City of St. Thomas, Elgin County (the Subject Lands; Figure 1) in support of a minor variance to the City's Zoning By-Law to permit private septic services to a new single family home. The agricultural portion of the property where building is proposed (0.78ha) is herein referred to as the Subject Lands. However, the legal parcel also includes woodlands and valleylands to the east of the Subject Lands, which are referred to as the "Adjacent Lands".

A Terms of Reference was submitted to the City of St. Thomas and approved on May 5, 2021. The proposal is to develop a single family home and outbuildings, driveway and private septic on the Subject Lands. An application for a minor variance to the Zoning By-Law for R1-18 to permit private septic will be submitted to the City of St. Thomas. As stated in the STOP Policy 8.3.4., an Environmental Impact Study (EIS) is required to demonstrate that the proposed activity and/or site alteration will not have a negative impact on adjacent natural heritage features or their functions. The EIS is generally preceded by an Issues Scoping Report (ISR; Policy 8.3.4.1) to identify features of potential natural heritage significance and recommend a scope of work for an EIS. Based on the proximity of natural heritage features to the proposed building envelope on the

Engineers, Scientists, Surveyors.

Subject Lands, a combined ISR/EIS has been prepared to evaluate potential impacts and recommend appropriate avoidance, mitigation and enhancement measures to protect the natural heritage features.

This ISR/EIS provides a summary of natural heritage features, an evaluation of potential direct and indirect impacts of the proposal on these features, and recommended measures to avoid or mitigate impacts to support construction of a single family home within the Subject Lands.

Natural Heritage Policy Overview

The following provincial and municipal legislation and policies were reviewed to inform the evaluation of significant natural heritage features and assessment of potential impacts.

Planning Act

The Provincial Policy Statement (PPS; MMAH, 2020) was issued under the *Planning Act, 1990* to provide direction to regional and local municipalities regarding planning policy, ensuring that decisions made by planning authorities were consistent with provincial policy. With respect to natural heritage features and resources, the PPS defines seven natural heritage features:

- Significant wetlands and significant coastal wetlands
- Significant woodlands
- Significant valleylands
- Significant wildlife habitat (SWH)
- Significant areas of natural and scientific interest (ANSI's)
- Fish habitat, and,
- Habitat of endangered and threatened species

These features are described in the Natural Heritage Reference Manual (MNR, 2010), a technical document intended to support the PPS which also provides guidance to help assess these natural heritage features. Section 2.1.4 of the PPS states that development and site alteration are not permitted in significant wetlands or significant coastal wetlands in Ecoregion 7E, where the Subject Lands are located. Section 2.1.5 states that development and site alteration shall not be permitted in significant woodlands, significant valleylands, SWH or ANSI's unless it has been demonstrated through an EIS that there will be no negative impacts on the features or their ecological functions. Development and site alteration are not permitted in fish habitat or habitat of endangered or threatened species, except in accordance with provincial and federal legislation.

Endangered Species Act

The *Endangered Species Act, 2007* protects species listed as threatened, endangered or extirpated in Ontario from killing, harm, harassment or possession, and also protects their habitats from damage or destruction. All species are provided with general habitat protection for areas the species depend on to carry out their life processes, such as reproduction, rearing, hibernation, migration or feeding. Activities that may impact a protected species or its habitat require prior authorization from the Ministry of Environment, Conservation and Parks (MECP), unless the activities are exempt under Ontario Regulation 242/08. The provincial status of species in Ontario is determined by the Committee on the Status of Species at Risk in Ontario (COSSARO) and documented in the Species at Risk in Ontario List (SARO List).

City of St. Thomas Official Plan

The Official Plan of the City of St. Thomas includes policies that guide growth, economic development and the protection of natural heritage features across the city. With respect to Natural Heritage (Section 8), development and site alteration are not permitted within lands designated as Natural Heritage (Policy 8.3.2.3). Where development and/or site alteration is proposed on lands within 120m of an area designated as Natural Heritage on Schedule 'A' Land Use Plan, the proponent may be required to evaluate, through an ISR and/or EIS, the ecological functions of the lands proposed for development or site alteration and demonstrate that there will be no negative impacts on the natural heritage features or their ecological functions.

The Subject Lands are designated as Rural by the City of St. Thomas Official Plan (Schedule A, 2018). The Adjacent Lands to the east are designated Natural Heritage (Figure 2) and Natural Hazard, while lands to the north are Rural (Schedule A, 2018).

City of St. Thomas, Zoning By-Law (2018)

The Subject Lands are currently designated as Residential (R1-18) zone by the City of St. Thomas. This provision applies to lands that are designated as single-family residential which provides a range of single-family lot sizes and establishes minimum property development standards directly related to such lot sizes. The Adjacent Lands are zoned as Natural Heritage (NH).

Kettle Creek Conservation Authority

The Kettle Creek Conservation Authority (KCCA) regulates lands within its watershed under Ontario Regulation 181/06, pursuant to Section 28 of the *Conservation Authorities Act*. The KCCA has jurisdiction over riverine flooding and erosion hazards, wetlands and the surrounding area, and requires that landowners obtain written approval from the Authority prior to undertaking any site alteration or development within the regulation limit.

The majority of the Subject Lands (0.6ha) are within the regulation limit of the Kettle Creek Conservation Authority (KCCA). This regulation limit is associated with the Hazard Area as a result of the slope on the east of the Subject Lands. Through consultation with KCCA (Joe Gordon) it was determined that a Section 28 permit is not required for construction of the proposed buildings, however a slope stability study was pre.

Natural Heritage Features and Function

Natural heritage field studies and vegetation community classification completed in 2021 have been used to assess the Subject Lands and the Adjacent Lands for natural heritage significance with respect to the proposed future construction.

Physiography and Topography

The Subject Lands consist of table lands under agricultural use above a forested valley slope that is approximately 20m in height and an average 2H:1V gradient (EXP, 2021). Kettle Creek is located approximately 300m to the east of the proposed house location. The soil within the Subject Lands consists of sandy silt and clayey silt (EXP, 2021). The groundwater level is 6.1 to 7.6m in depth, however, the depth of the groundwater table may vary in response to climatic or seasonal conditions (EXP, 2021). A detailed engineering analysis was completed in April 2021 which concluded that the stable slope is 2.2H:1V, setting the stable top of the slope back approximately 5m (4.7m to 5.4m) from the existing top of slope (EXP, 2021; Figure 5). The stable

top of slope defines the limits of the valleyland, based on the definition in the provincial Natural Heritage Reference Manual (MNR, 2010).

Species at Risk Records

A background data review was completed to identify Species at Risk with the potential to be present in the vicinity of the Subject Lands [Table 1, below]. Data sources used for this review included the Species at Risk in Ontario (SARO) List, Natural Heritage Information Centre (NHIC), Ontario Reptile and Amphibian Atlas, and citizen science online databases such as eBird and iNaturalist.

The potential for these species or their habitats to be present on the Subject Lands was investigated during field investigations, as described below. Threatened or Endangered species and their habitats are protected by the ESA. Habitat for species of Special Concern was assessed as part of a Significant Wildlife Habitat evaluation.

Table 1: Species at Risk Potentially Present in the Vicinity of the Subject Lands

| Common Name | Scientific Name | ESA (SARO List) | S-rank (NHIC) |
|-----------------------------|----------------------------------|-----------------|---------------|
| Common Nighthawk | <i>Chordeiles minor</i> | SC | S4B |
| Eastern Wood-Pewee | <i>Contopus virens</i> | SC | S4B |
| Grasshopper Sparrow | <i>Ammodramus saviannarum</i> | SC | S4B |
| Bald Eagle | <i>Haliaeetus leucocephalus</i> | SC | S4B |
| Broad Beech Fern | <i>Phegopteris hexagonoptera</i> | SC | S3 |
| Snapping Turtle | <i>Chelydra serpentina</i> | SC | S4 |
| Eastern Ribbonsnake | <i>Thamnophis sauritus</i> | SC | S4 |
| Bank Swallow | <i>Riparia riparia</i> | THR | S4B |
| Barn Swallow | <i>Hirundo rustica</i> | THR | S5B |
| Bobolink | <i>Dolichonyx oryzivorus</i> | THR | S4B |
| Eastern Meadowlark | <i>Sturnella magna</i> | THR | S4B |
| Chimney Swift | <i>Chaetura pelagica</i> | THR | S4B |
| Eastern False Rue-aneonome | <i>Enemion biternatum</i> | THR | S2 |
| Northern Bobwhite | <i>Colinus virginianus</i> | END | S1 |
| Eastern Prickly-pear Cactus | <i>Opuntia cespitosa</i> | END | S1 |

Field Investigations

Site investigations were completed on April 22nd, May 31st and June 17th, 2021 to document existing vegetation communities, inventory plant species present within or adjacent the Subject Lands, document bird species breeding on or adjacent to the Subject Lands, identify potential habitat for Protected Species [from Table 1], and record incidental observations of wildlife on the Subject Lands. Targeted field investigations were undertaken on the Subject Lands and in natural habitat within 30m of the Subject Lands. These investigations were completed to support the

assessment of potential impacts to natural heritage features and species at risk in the context of provincial and municipal policy.

Vegetation Communities

Ecological Land Classification (ELC) surveys were completed on April 22nd and May 31st, 2021 by Will Huys, certified to complete ELC in Ontario, using protocols outlined in the Ecological Land Classification (ELC) System for Southern Ontario (Lee et al., 1998). The surveys were conducted within the area of the Subject Lands and the immediate surrounding area (treeline plus 30m). Adjacent vegetation communities beyond this 30m area were not investigated in detail.

The Subject Lands are composed of a single vegetation community (Community 1) which is recently-fallow agricultural field (Figure 2a,b). The Adjacent Lands immediately to the east (Community 2) have been classified as a Dry-Fresh Deciduous Forest (FOD) community (Figure 2a,b). Black Walnut is the dominant canopy species in this forest, along with Sugar Maple and Black Cherry. The understorey consists of Hawthorn, Tartarian Honeysuckle. The ground layer is mostly Garlic Mustard, Avens species and Black Raspberry. The community appears to be recently logged and consists of a non-native dominant groundlayer.

The vegetation surrounding the Subject Lands is predominantly forested areas to the east of the Subject Lands and Agricultural to the west. As these lands are not within the area considered for alteration, these communities were not investigated in detail.

Flora Inventory

Floristic surveys were undertaken by Will Huys on April 22nd and May 31st, 2021. The status of all plant species is based on the provincial NHIC database (MNR, 2020) and the list of vascular plants for the Carolinian Zone (Oldham, 2017).

A total of 32 vascular plant species were recorded on the Subject Lands, of which 19 or 59% are native to Ontario and 13 or 41% are introduced (Appendix A). No Protected Species and no plant species of conservation concern (SOCC) were observed on the Subject Lands during site investigations.

Breeding Bird Surveys

Breeding bird surveys were conducted by Will Huys and Melissa Cameron on the Subject Lands on May 31st and June 17th, 2021. Surveys consisted of 10-minute point counts at 2 stations in Community 2 accompanied by an area search in all vegetation communities within 30m of the Subject Lands. The highest level of breeding evidence was recorded for each species using codes from the Ontario Breeding Bird Atlas (Cadman et al. 2007). Surveys began within half an hour of sunrise and were completed by 10am.

A total of 19 species were observed in woodland Community 2. All species observed were secure (S5B) or apparently secure (S4B) breeding species in Ontario. A complete list of bird species observed is provided in Appendix B.

No Protected Species were detected during breeding bird surveys. Two SOCC were observed within the woodland:

- Eastern Wood-Pewee (Special Concern) was observed (heard) on June 17th, 2021 in the woodland/valleyland beyond the Subject Lands. Eastern Wood-Pewee is a bird of deciduous and mixed woods (Cadman et al., 2007). Suitable nesting habitat is present in woodlands on the Adjacent Lands. Eastern

Wood-Pewee is described as "still common" in Ontario (COSSARO, 2013) and, within its Canadian range, is at its most abundant in southern Ontario (COSEWIC, 2012).

- Wood Thrush (Special Concern) was observed (heard) on May 31st and June 17th, 2021. Wood Thrush is a bird of deciduous and mixed forests. Suitable nesting habitat is present in the woodlands of the Adjacent Lands. Wood Thrush is continuously distributed across southern Ontario (COSEWIC, 2013).

Bat Habitat Assessment

Candidate bat maternity roost trees are identified using guidance from the *Survey Protocol for Species at Risk within Treed Habitats: Little Brown Myotis, Northern Myotis & Tri-coloured Bat* (MNRF, 2017). This protocol involves assessing trees based on: Species, diameter at breast height (DBH), height, presence of loose/peeling bark, cavity and cavity height, decay class, open canopy, and proximity of other snags. No candidate bat maternity roost trees were observed within the Subject Lands during field investigations in 2021 (MTE, 2020a). Potential maternity roost habitat is present on the Adjacent Lands within the woodland.

Significant Wildlife Habitat

MNRF Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 7E (January 2015) use ELC ecosite codes and habitat criteria (eg. Size of ELC polygon, location of ELC polygon) to identify candidate significant wildlife habitat. A complete assessment of candidate SWH is provided in Appendix C. Where SWH (e.g. habitat use) has been confirmed through results of targeted field investigations this has been noted below.

Subject Lands

No candidate or confirmed SWH is present on the Subject Lands.

Adjacent Lands (within 120m of the Subject Lands)

Candidate and confirmed SWH was identified on the Adjacent Lands, associated with the Kettle Creek valley and forest (Community 2), as follows:

Seasonal Concentration of Animals

- Raptor Wintering Area (candidate)
- Bat Maternity Colonies (candidate)
- Reptile Hibernaculum (candidate)

Specialized Habitats of Wildlife

- Bald Eagle and Osprey Nesting, Foraging and Perching (candidate)
- Woodland Raptor Nesting Habitat (candidate)

Habitats for Species of Conservation Concern

- Special Concern and Rare Wildlife Species: Eastern Wood-Pewee (confirmed), Wood Thrush (confirmed), Bald Eagle (candidate), Broad Beech Fern (candidate)

Habitat for Threatened and Endangered Species

Habitat potential for Protected Species on the Subject Lands was evaluated using a combination of desktop review, satellite photo interpretation and field investigations. No Protected Species and no habitat for Protected Species was identified within the Subject Lands. Potential tree roosting habitat for Endangered bats (Little Brown Myotis, Northern Myotis, and Tri-coloured Bat) may be present in the woodland of the Adjacent Lands. No Protected Species and no other habitat for Protected Species were identified within the Adjacent Lands.

Project Description

The proposal is to construct a single family home with attached garage and detached barn, driveway and private septic on the Subject Lands. The single-family home will be built on the south-east side of the Subject Lands with an attached garage and pole barn will also be built on the north-west area of the Subject Lands (see Figure 3 for conceptual layout). The proponent plans to naturalize much of the remaining agricultural portions of the Subject Lands through extensive tree planting and native plant gardening.

Natural Heritage Features Summary

A summary of significant features and functions identified on the Subject Lands and Adjacent Lands, in accordance with provincial and municipal policy, is provided in Table 2, below.

Table 2: Natural Heritage Features or Functions of the Subject Lands

| Policy Category | Natural Heritage Feature | Description of Feature on the Subject Lands and Adjacent Lands (120m) |
|--|--------------------------|---|
| Provincial Policy Statement and Municipality of St. Thomas Official Plan | Significant Valleylands | <ul style="list-style-type: none"> A Significant Valleyland is present on the Subject Lands. The Significant Valleyland boundary, as defined in the NHRM (MNRF, 2010), is the stable top of slope. This is located approximately 5m back from the existing top of slope, and is within the Subject Lands (Figure 4). |
| | Significant Woodlands | <ul style="list-style-type: none"> None within the Subject Lands Significant Woodlands on the Adjacent Lands have been mapped on the St. Thomas Official Plan Schedule A and as part of the Elgin County Natural Heritage System. |

| | | |
|------------------|--|--|
| | Significant Wildlife Habitat (SWH) | <ul style="list-style-type: none"> • No candidate SWH is present on the Subject Lands. Candidate SWH is associated with the woodland on the Adjacent Lands. • Confirmed habitat for Eastern Wood-Pewee and Wood Thrush is present on the Adjacent Lands. |
| | Habitat of Threatened and Endangered Species | <ul style="list-style-type: none"> • None within the Subject Lands. • Potential habitat for three Endangered bat species is present on the Adjacent Lands; however, no suitable maternity roost trees were observed within 30m of the Subject Lands. |
| KCCA Regulations | Regulation Limit | <ul style="list-style-type: none"> • The majority of the Subject Lands are located within an area regulated by KCCA |

Potential Impacts and Mitigation Recommendations

Based on the completed site investigations and the policies reviewed, the Subject Lands contain Significant Valleyland and are located within an area regulated by KCCA. No other significant natural heritage features and no habitat for Species at Risk is present on the Subject Lands.

Natural heritage features identified within the Adjacent Lands which need to be considered with respect to construction of a single family residence on the Subject Lands are:

- Significant Valleyland
- Significant Woodland
- Significant Wildlife Habitat (candidate and confirmed)
- Habitat of Endangered or Threatened species (potential)

Significant Valleyland

Significant Valleyland is located within the Subject Lands, with the boundary defined as the stable top-of-bank (MNR, 2010). The slope stability report (EXP, 2021) recommends a setback of 6m from the stable top of slope, or approximately 11m (range 10.7m to 11.4m) from the existing top of slope; defined as the Erosion Hazard Limit (Figure 4). The following mitigation measures are recommended to avoid negative impacts to this natural heritage feature:

Recommendation 1:

Construction should be set back beyond the Erosion Hazard Limit, which is approximately 11m back from the existing top of slope or 6m from the stable top of slope (EXP, 2021).

Recommendation 2:

Sediment and erosion fencing will be installed prior to construction (where appropriate along the limits of the proposed development) to ensure that sediment from the site does not run off the Subject Lands into the adjacent Significant Valleyland.

Recommendation 3:

Regular inspections of sediment and erosion control measures will be completed to ensure proper installation and functionality.

Significant Woodland

The FOD community (Community 2; Figure 2a,b) at the edge of the Subject Lands is part of a Significant Woodland, as defined by the City of St. Thomas Natural Heritage System. The following mitigation and compensation measures are recommended to avoid negative impacts to this natural heritage feature:

Recommendation 4: In order to protect the woodland feature and its functions, the development limit should be located no closer than the dripline of the Significant Woodland. The dripline is generally located within the Erosion Hazard Limit (development setback for slope stability) except for the southeast corner where an area of Significant Woodland extends beyond the Erosion Hazard Limit (Figure 4).

Recommendation 5: Flag the limits of the Significant Woodland prior to construction to avoid inadvertent encroachment.

Recommendation 6: Areas of exposed soil following construction should be stabilized with vegetation or other suitable ground cover, avoiding plant species with the potential to invade the Significant Woodland. For information on invasive, non-native plant species in the Upper Thames watershed refer to: <http://thamesriver.on.ca/wp-content/uploads/InvasiveSpecies/Invasive-plants.pdf>

Significant Wildlife Habitat

Confirmed habitat for Eastern Wood-Pewee and Wood Thrush is present on the Adjacent Lands. The following candidate (unconfirmed) SWH is present or assumed to be present on the Adjacent Lands based on woodland size and characteristics, and proximity to Kettle Creek:

- Raptor Wintering Area (candidate)
- Bat Maternity Colonies (candidate)

- Reptile Hibernaculum (candidate)
- Bald Eagle and Osprey Nesting, Foraging and Perching (candidate)
- Woodland Raptor Nesting Habitat (candidate)
- Special Concern and Rare Wildlife Species: Bald Eagle (candidate), Broad Beech Fern (candidate)

All SWH is associated with the Significant Woodland and Significant Valleyland located to the east of the Subject Lands. Direct impacts to SWH in the adjacent woodland will be avoided as the residential home construction on the Subject Lands will not encroach onto the Adjacent Lands. Mitigation measures to avoid impacts to wildlife and wildlife habitat are recommended as follows:

Recommendation 7: Avoid vegetation clearing and site disturbance during the migratory bird breeding season (April to August 31) to ensure that no active nests will be removed or disturbed, in accordance with the Migratory Birds Convention Act and/or Regulations under that Act. If works are proposed within the breeding season, prior to any vegetation removal or ground disturbance, the area should be checked for nesting birds by a qualified professional. If there are any nesting birds, works within the nesting area should not proceed until after August 31 or the nest is confirmed inactive.

Recommendation 8: If an animal enters the work site, work at that location will stop and the animal should be permitted to leave un-harassed. If there are repeat observations of wildlife in the work area, barrier fencing (e.g. silt fence) may be used to direct wildlife away from active construction and toward natural areas.

Habitat of Endangered or Threatened Species

Based on the review of background data sources (Table 1) and results of field investigations, there is no suitable habitat for species protected under the *Endangered Species Act (2007)* within the Subject Lands. Potential habitat is present, but unconfirmed, on Adjacent Lands. Based on this, it is our opinion that the Project will avoid impacts to species protected under the *ESA (2007)*. Mitigation measures for wildlife and wildlife habitat are recommended, as noted above, with the following addition:

Recommendation 9: Any observation of a Protected Species should be reported to MECP. Protected Species should not be handled, harassed or moved unless they are in immediate danger.

Janet Taylor
July 27, 2021

Conclusion

We have evaluated the proposal to construct a single family home and outbuilding (barn) on the Subject Lands and determined that the potential impacts to natural heritage features on Adjacent Lands have been avoided and/or mitigated with the recommendations herein and in the slope stability report (EXP, 2021). Provided the above recommendations for mitigation are followed during all stages of proposed construction, no significant impacts to the adjacent natural heritage features are expected. MTE seeks comments from the City of St. Thomas and KCCA concerning the contents of this report. Formal comments may be submitted on behalf of the client to MTE. Should any clarification, questions, or additional materials be needed as part of the review of this report, do not hesitate to contact us.

Yours Truly,

MTE Consultants Inc.



Digitally signed by Victoria Schveighardt,
M.E.S.
DN: cn=Victoria Schveighardt, M.E.S., c=CA,
o=MTE Consultants Inc., ou=Biologists,
email=V.Schveighardt@mte85.com
Location: London
Date: 2021.07.26 17:36:00 -04'00'

Victoria Schveighardt, M.E.S.
Biologist
519-204-6510 ext. 2230
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Melissa Cameron,
M.Sc., M.L.A., OALA
2021.07.26 17:00:13 -
04'00'

Reviewed by:

Melissa Cameron, M.Sc., OALA
Senior Biologist
519-204-6510 ext. 2263
mcameron@mte85.com

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Figures

Figure 1 – Subject Lands

Figure 2a – Vegetation Communities

Figure 2b – Vegetation Communities (Community Photos)

Figure 3 – Conceptual Design Plan

Figure 4 – Natural Heritage Features and Development Limits



Figure 1: Subject Lands
(Elgin County Mapping 2021)



- Legend
- Kettle Creek Conservation Area (KCCA) Regulation Limit
 - Elgin County Natural Heritage System

* Locations are approximate and should be verified by survey where necessary.
Print on 41x57, Landscape Orientation
Scale 1:2000
July 2021

MTE, Project#: 49082-100





Figure 2a: Vegetation Communities
(Elgin County Mapping, 2021)



Scale 1:50,000
Key Plan

- Legend:
- 1. Agricultural (0.76ha)
 - 2. FOD Dry-Fresh Deciduous Forest (0.14ha)
 - - - Kettle Creek Conservation Area (KCCA) Regulation Limit
 - Elgin County Natural Heritage System

* Units are approximate, and should be verified by survey where necessary.
 Plan on H1X17, Landscape Orientation
 Scale 1:1000
 June 2021
 N11: Project# 49082-100





Figure 3: Site Plan
7350 Rieger Road, St. Thomas



LOCATION ON PROPERTY



LOCATION OF PROPERTY

Lot 9, Range 2
 East River Road

Natural Heritage Zone

Edge of Slope

Emergency Access Allowance

Erosion Hazard Limit

A 11.4m
 B 10.7m

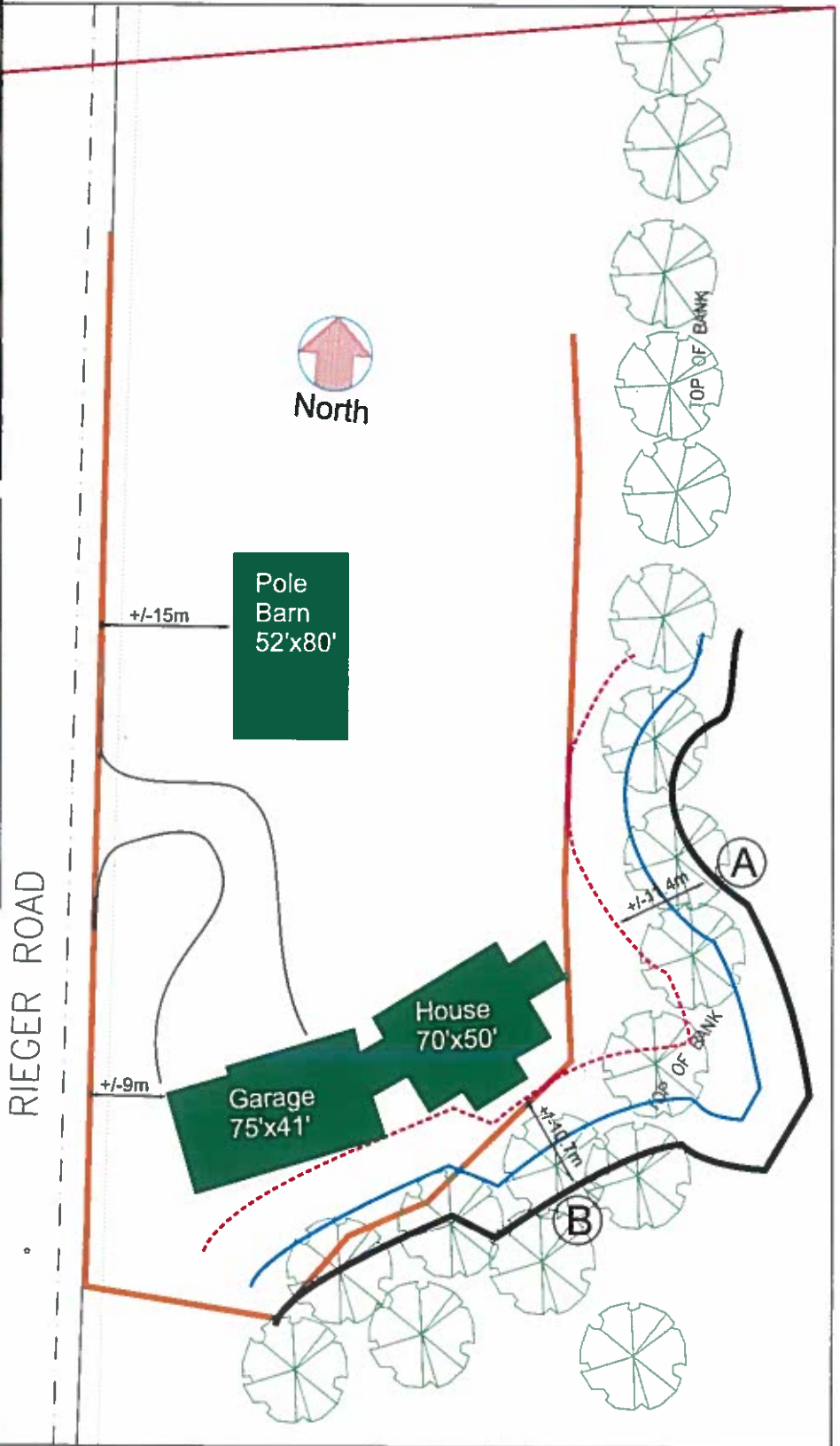




Figure 4: Natural Heritage Features and Development Limits
(Edgin County Mapping, 2021)

0 500 1,000
Scale 1:50,000
Key Plan

Legend:

- Kettle Creek Conservation Area (KCCA) Regulation Limit
- Top of Existing Slope
- Significant Valleyland / Stable Slope Setback

Development Limits:

- Erosion Hazard Limit (EXP, 2021)
- Significant Woodland

* Locations are approximate, and should be verified by survey when necessary.
Print on 11x17 Landscape Orientation
0 50 100
Scale 1:1000
July 2021 MTE Project#: 49082-100

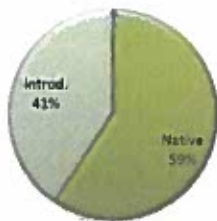
MTE

Appendix A

Plant List

| Floral Inventory | | | | | | | | | | |
|-------------------------------|-------------------------|-----|-------|---------|-------|------|-------|----|------|----------|
| Scientific Name | Common Name | CW | GRank | COSEWIC | Nrank | SARO | SRank | EL | Type | Invasive |
| <i>Acer saccharum</i> | Sugar Maple | 3.0 | G5 | | N5 | | S5 | C | TR | |
| <i>Alliaria petiolata</i> | Garlic Mustard | 0.0 | GNR | | NNA | | SE5 | IC | FO | Y |
| <i>Bromus inermis</i> | Smooth Brome | 5.0 | G5 | | NNA | | SE5 | IC | GR | Y |
| <i>Cardamine hirsuta</i> | Halry Bittercress | 3.0 | GNR | | NNA | | SE4 | IR | FO | |
| <i>Carex blanda</i> | Woodland Sedge | 0.0 | G5 | | N5 | | S5 | C | SE | |
| <i>Carya cordiformis</i> | Bittemut Hickory | 0.0 | G5 | | N5 | | S5 | C | TR | |
| <i>Cornus racemosa</i> | Gray Dogwood | 0.0 | G5 | | N5 | | S5 | X | SH | |
| <i>Crataegus crus-galli</i> | Cockspur Hawthorn | 0.0 | G5 | | N5 | | S4 | X | SH | |
| <i>Crataegus pruinosa</i> | Frosted Hawthorn | 5.0 | G5 | | N5 | | S5 | | SH | |
| <i>Elymus virginicus</i> | Virginia Wildrye | 3.0 | G5 | | N5 | | S5 | | GR | |
| <i>Erythronium americanum</i> | Yellow Trout-lily | 5.0 | G5 | | N5 | | S5 | C | FO | |
| <i>Galium aparine</i> | Cleavers | 3.0 | G5 | | N5 | | S5 | X | FO | |
| <i>Geum sp.</i> | Avens | 0.0 | | | | | | | | |
| <i>Hesperis matronalis</i> | Dame's Rocket | 3.0 | G4G5 | | NNA | | SE5 | IC | FO | Y |
| <i>Juglans nigra</i> | Black Walnut | 3.0 | G5 | | N4 | | S4? | C | TR | |
| <i>Lamium purpureum</i> | Purple Dead-nettle | 5.0 | GNR | | NNA | | SE3 | IR | FO | |
| <i>Leonurus cardiaca</i> | Common Motherwort | 5.0 | GNR | | NNA | | SE5 | IC | FO | |
| <i>Lonicera tatarica</i> | Tartarian Honeysuckle | 3.0 | GNR | | NNA | | SE5 | | SH | Y |
| <i>Malus pumila</i> | Common Apple | 5.0 | G5 | | NNA | | SE4 | IX | SH | |
| <i>Medicago lupulina</i> | Black Medic | 3.0 | GNR | | NNA | | SE5 | IC | FO | |
| <i>Monarda fistulosa</i> | Wild Bergamot | 3.0 | G5 | | N5 | | S5 | | FO | |
| <i>Parthenocissus vitacea</i> | Thicket Creeper | 3.0 | G5 | | N5 | | S5 | C | VW | |
| <i>Poa compressa</i> | Canada Bluegrass | 3.0 | GNR | | NNA | | SE5 | IC | GR | |
| <i>Prunus virginiana</i> | Choke Cherry | 3.0 | G5 | | NNR | | S5 | C | TR | |
| <i>Ranunculus abortivus</i> | Kidney-leaved Buttercup | 0.0 | G5 | | NNR | | S5 | C | FO | |
| <i>Rhamnus cathartica</i> | Common Buckthorn | 0.0 | GNR | | NNA | | SE5 | IC | SH | Y |
| <i>Rosa multiflora</i> | Multiflora Rose | 3.0 | GNR | | NNA | | SE5 | IX | SH | Y |
| <i>Rubus occidentalis</i> | Black Raspberry | 5.0 | G5 | | N5 | | S5 | X | SH | |
| <i>Solidago canadensis</i> | Canada Goldenrod | 3.0 | G5 | | N5 | | S5 | | FO | |
| <i>Taraxacum officinale</i> | Common Dandelion | 3.0 | G5 | | N5 | | SE5 | IC | FO | |
| <i>Viola sororia</i> | Woolly Blue Violet | 0.0 | G5 | | N5 | | S5 | C | FO | |
| <i>Vitis riparia</i> | Riverbank Grape | 0.0 | G5 | | N5 | | S5 | C | VW | |

| Floristic Analysis | |
|------------------------------------|-------|
| Total Spp. | 32 |
| Native | 19 |
| % Native | 59.38 |
| Introd. | 13 |
| % Introd. | 40.63 |
| Coefficient of Conservatism | |
| SUM CC | 65 |
| Mean CC (Natives) | 3.42 |
| Mean CC (All Spp.) | 2.03 |
| FQI | |
| FQI (Natives) | 14.91 |
| FQI (All Spp.) | 11.49 |
| Mean Coefficient of Wetness | |
| Natives | 1.74 |
| All Species | 2.31 |



Appendix B

Breeding Bird Summary



AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project Name: 7350 Rieger Road, St. Thomas (Taylor Property)
 Collector(s): Will Huys, Melissa Cameron

MTE File No.: 49082-100

| | Date | Start | Finish | Weather |
|---------|-----------|-------|--------|-----------------------------|
| Visit 1 | 31-May-21 | 7:00 | 7:30 | overcast, 7C, no wind, dry |
| Visit 2 | 17-Jun-21 | 6:45 | 7:20 | clear, 20C, light wind, dry |

| Species Abbr. | Species Name | Comm. 1 (Agriculture) | | | | Comm. 2 (Woodland) | | | | S Rank | ESA Status | PIF Status | Notes |
|---------------|--------------------------|-----------------------|-----|---------|-----|--------------------|-----|---------|-----|--------|------------|------------|-----------------------------------|
| | | Visit 1 | | Visit 2 | | Visit 1 | | Visit 2 | | | | | |
| | | Code | No. | Code | No. | Code | No. | Code | No. | | | | |
| WITU | Wild Turkey | | | | | SM | 1 | | | S5 | - | | |
| MODO | Mourning Dove | | | X | 1 | | | | | S5 | | | |
| RBWO | Red-bellied Woodpecker | | | | | SH | 1 | SH | 1 | S4 | - | | |
| NOFL | Northern Flicker | | | | | | | SH | 1 | S4 | | RC | |
| EAWP | Eastern Wood-Pewee | | | | | | | SM | 1 | S4 | SC | RC | distant, in valley |
| GCFL | Great Crested Flycatcher | | | | | SH | 1 | | | S4 | - | | |
| WAVI | Warbling Vireo | | | | | | | SM | 1 | S5 | | | |
| REVI | Red-eyed Vireo | | | | | | | SM | 1 | S5 | | | |
| BLJA | Blue Jay | | | | | SH | 1 | SH | 1 | S5 | | | |
| AMCR | American Crow | | | X | 3 | | | | | S5 | | | |
| BCCH | Black-capped Chickadee | | | | | SH | 1 | SH | 1 | S5 | - | | |
| HOWR | House Wren | | | | | SH | 2 | SM | 2 | S5 | | | |
| WOTH | Wood Thrush | | | | | SM | 1 | SM | 1 | S4 | SC | CC | down in valley, near toe of slope |
| AMRO | American Robin | | | | | SH | 2 | SH | 2 | S5 | | | |
| GRCA | Gray Catbird | | | | | SM | 1 | SM | 1 | S4 | | | |
| EATO | Eastern Towhee | | | | | SM | 1 | | | S4 | | RC | |
| SAVS | Savannah Sparrow | | | SM | 2 | | | | | S4 | | RC | |
| SOSP | Song Sparrow | | | | | SH/P | 4 | SM | 1 | S5 | | | |
| NOCA | Northern Cardinal | | | | | P | 3 | SH | 1 | S5 | | | |
| INBU | Indigo Bunting | | | | | | | SM | 1 | S4 | | | |
| RWBL | Red-winged Blackbird | | | | | P | 3 | | | S4 | | | |
| BHCO | Brown-headed Cowbird | | | | | SH | 1 | | | S4 | | | |
| BAOR | Baltimore Oriole | | | | | SH | 1 | | | S4 | | RC,RS | |
| AMGO | American Goldfinch | | | | | P | 2 | | | S5 | | | |

Evidence Codes:

Breeding Bird - Possible

SH=Suitable Habitat SM=Singing Male

Breeding Bird - Probable



| Species Abbr. | Species Name | Comm. 1 (Agriculture) | | | | Comm. 2 (Woodland) | | | | S Rank | ESA Status | PIF Status | Notes |
|------------------|-----------------|-----------------------|-----|---------|-----|--------------------|-----|---------|-----|-----------|---------------|---------------|-------|
| | | Visit 1 | | Visit 2 | | Visit 1 | | Visit 2 | | | | | |
| | | Code | No. | Code | No. | Code | No. | Code | No. | | | | |

T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest

Breeding Bird - Confirmed

DD=Distraction NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack

Other Wildlife Evidence

OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass

Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

Appendix C

Significant Wildlife Habitat Assessment

Appendix C – Candidate Significant Wildlife Habitat Assessment Table

Subject Lands ELCs: Agricultural

Adjacent Lands ELC's: FOD

Seasonal Concentration of Animals

| Wildlife Habitat | ELC Codes Triggers | Additional Habitat Criteria | Subject Lands Candidate SWH | Adjacent Lands Candidate SWH |
|---|--------------------------------------|--|-----------------------------|------------------------------|
| Waterfowl Stopover and Staging Areas (Terrestrial) | None Present | - Fields with spring sheet water are absent from the Subject Lands | No | No |
| Waterfowl Stopover and Staging Areas (Aquatic) | None Present | - Marsh wetlands large enough to support significant concentration of waterfowl are absent from the Subject Lands | No | No |
| Shorebird Migratory Stopover Area | None Present | - Beach areas, bars, seasonally flooded, muddy and un-vegetated shoreline habitat are absent from the Subject Lands | No | No |
| Raptor Wintering Area | FOD in combination with open uplands | - Raptors may winter in the Kettle Creek Valleyland. The forest may also be used by wintering Bald Eagle, but is not shoreline forest (i.e. >300m from Kettle Creek) | No | Candidate |
| Bat Hibernacula | None Present | - No caves, mine shafts, underground foundations present | No | No |
| Bat Maternity Colonies | FOD | - No candidate maternity roosts were observed within the Subject Lands during a tree inventory but may be present in Adjacent Lands | No | Candidate |
| Turtle Wintering Areas | None present | - Deep (>2m) permanent waterbodies are absent from the Subject Lands | No | No |
| Reptile Hibernaculum | Dry ecosite | - No burrows, rock piles, rock crevices identified on the Subject Lands | No | Candidate |
| Colonially-Nesting Bird Breeding Habitat (Bank / Cliff) | None Present | - No exposed cliffs or banks | No | No |
| Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs) | None Present | - Treed wetland is absent from the Subject Lands | No | No |
| Colonially-Nesting Bird Breeding Habitat (Ground) | None Present | - Islands or peninsulas associated with open water or in the marshy areas are absent from the Subject Lands | No | No |
| Migratory Butterfly Stopover Areas | FOD | - The Subject Lands are not located within 5km of Lake Erie or Lake Ontario | No | No |
| Land Bird Migratory Stopover Areas | FOD | - The Subject Lands are not located within 5km of Lake Erie or Lake Ontario | No | No |
| Deer Winter Congregation Areas | FOD | - Deer winter congregation areas are typically mapped by MNRF. No deer winter congregation areas are mapped within the Subject Lands or Adjacent Lands | No | No |

Rare Vegetation Communities

| Wildlife Habitat | ELC Codes Triggers | Additional Habitat Criteria | Subject Lands Candidate SWH | Adjacent Lands Candidate SWH |
|-------------------------|--------------------|--|-----------------------------|------------------------------|
| Cliffs and Talus Slopes | None Present | - No vertical cliffs with bedrock >3m in height | No | No |
| Sand Barren | None Present | - No sand barren areas >0.5ha | No | No |
| Alvar | None Present | - No alvars >0.5ha | No | No |
| Old Growth Forest | FOD | - Woodland area not >0.5ha, dominant tree species not >140 years old | No | No |
| Savannah | None Present | - No savannah habitat with 25-60% tree cover | No | No |
| Tallgrass Prairie | None Present | - No ground cover dominated by prairie grasses | No | No |
| Other Rare Vegetation | None Present | - No Provincially Rare vegetation communities | No | No |

Specialized Habitats of Wildlife considered SWH

| Wildlife Habitat | ELC Codes Triggers | Additional Habitat Criteria | Subject Lands Candidate SWH | Adjacent Lands Candidate SWH |
|---|--------------------|---|-----------------------------|------------------------------|
| Waterfowl Nesting Area | None Present | - No wetland >0.5ha or cluster of smaller wetlands are present on the Subject Lands | No | No |
| Bald Eagle and Osprey Nesting, Foraging, Perching | FOD | - Nests of Bald Eagle or Osprey were not observed within the study area. Foraging and perching habitat may be present, however the Subject Lands are >300m from the foraging habitat (Kettle Creek) | No | Candidate |
| Woodland Raptor Nesting Habitat | None Present | - Natural or conifer plantation woodlands/ forest stands >30ha with >4ha of interior habitat are absent from the Subject Lands. No raptor nests were observed within the study area | No | Candidate |
| Turtle Nesting Areas | None Present | - No exposed mineral soil adjacent to wetland | No | No |
| Springs and Seeps | None Present | - None present | No | No |
| Amphibian Breeding Habitat (Woodland) | FOD | - No wetland present within or adjacent (within 120m) to woodland | No | No |
| Amphibian Breeding Habitat (Wetlands) | None Present | - No wetland present >120m from woodland ecosites' etland >500m ² , supporting high species diversity are significant | No | No |
| Woodland Area-Sensitive Bird Breeding Habitat | FOD | - Habitat where interior forest breeding birds are breeding; large mature (>60 years old) forest stand or woodlots >30ha with interior habitat are absent from the study area | No | No |

Habitats of Species of Conservation Concern

| Wildlife Habitat | ELC Codes Triggers | Additional Habitat Criteria | Subject Lands Candidate SWH | Adjacent Lands Candidate SWH |
|--|---|--|-----------------------------|------------------------------|
| Marsh Breeding Bird Habitat | None Present | - There is no marsh habitat present within the Subject Lands to support nesting by marsh birds | No | No |
| Open Country Bird Breeding Habitat | None Present | - Natural and cultural fields >30ha are absent from the Subject Lands | No | No |
| Shrub/Early Successional Bird Breeding Habitat | None Present | - No large fields succeeding to shrub and thicket habitats >10ha in size | No | No |
| Terrestrial Crayfish | None Present | - No wetland habitat present with forest edge habitat | No | No |
| Special Concern and Rare Wildlife Species (NHIC and MNRF pre-consultation) | NHIC identified several species are potentially on or adjacent to the Subject Lands | | | |
| Common Nighthawk (SC) | | - Suitable dry forest openings are absent from the Subject Lands | No | No |
| Eastern Wood-Pewee (SC) | | - Eastern Wood-pewee was confirmed on the Adjacent Lands during breeding bird surveys | No | Confirmed |
| Wood Thrush | | - Wood Thrush was confirmed on the Adjacent Lands during breeding bird surveys | No | Confirmed |
| Grasshopper Sparrow (SC) | | - Grasshopper Sparrow was not observed on the Subject Lands during field investigations. Suitable grassland habitat is absent. | No | No |
| Bald Eagle (SC) | | - Suitable habitat for Bald Eagle (forest near river) is assumed to be present on the Adjacent Lands | No | Candidate |
| Broad Beech Fern (SC) | | - Suitable habitat for Broad Beech Fern (deciduous forest) is assumed to be present on the Adjacent Lands | No | Candidate |
| Snapping Turtle (SC) | | - Suitable open aquatic habitat for Snapping Turtle is absent from the Subject Lands and Adjacent Lands | No | No |
| Eastern Ribbonsnake (SC) | | - Suitable wetland habitat for Eastern Ribbonsnake is absent from the Subject Lands and Adjacent Lands | No | No |

Animal Movement Corridors

| Wildlife Habitat | ELC Codes Triggers* | Additional Habitat Criteria | Subject Lands Candidate SWH | Adjacent Lands Candidate SWH |
|------------------------------|---------------------|--|-----------------------------|------------------------------|
| Amphibian Movement Corridors | None Present | - Amphibian movement corridors are identified once breeding habitat is confirmed. There are no suitable movement corridors present for amphibians within the Subject Lands | No | No |



Slope Assessment

JLTM Holdings Limited

Type of Document:
Final Report

Project Name:
Slope Assessment
Rieger Road
St. Thomas, Ontario

Project Number:
LON-21005364-A0

Prepared By:
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Date Submitted:
Updated 19, 2021

EXP Services Inc. II
Project Name: Slope Assessment - Rieger Road, St. Thomas, ON
Project Number: LON-21005364-A0

Slope Assessment

JLTM Holdings Inc.

Type of Document:

Final Report

Project Name:

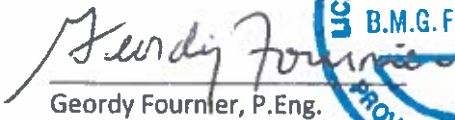
Slope Assessment
Rieger Road
St. Thomas, Ontario

Project Number:

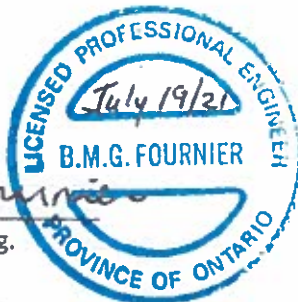
LON-21005364-A0

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July 19, 2021

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1. Introduction and Background

1.1 Introduction

EXP Services Inc. (EXP) was retained by JLTM Holdings Limited to conduct a slope stability assessment and determine the development setback associated with a proposed house on Rieger Road in St. Thomas, Ontario (Site). It is understood that the preferred location of the new house is at the top of the slope, overlooking the adjacent Kettle Creek valley.

The Site encroaches on regulated Lands of Kettle Creek Conservation Authority (KCCA) and will require approval from the conservation authority.

Based on an interpretation of the factual test hole data and a review of soil and groundwater information from a test hole advanced at the Site, EXP has provided geotechnical engineering guidelines and recommendations with regards to the development setback.

1.2 Terms of Reference

The geotechnical investigation was done in general accordance with terms outlined in EXP's emailed proposal dated March 11, 2021. Authorization to proceed was given via email by Janet Taylor of JLTM on March 12, 2021.

The purpose of the investigation was to review the conditions of the slope, assess the slope stability, and to determine the recommended development setback limits, in accordance with the Ministry of Natural Resources (MNR) Technical Guidelines.

Based on a reconnaissance site visit and a review of soil and groundwater information from a borehole advanced at the Site, EXP Services Inc. has provided geotechnical comments and recommendations on slope stability and Development Setback.

This report in no way reflects on the environmental aspects of the soil. Should specific information in this regard be needed, additional testing may be required.

Reference is made to **Appendix E** of this report, which contains further information necessary for the proper interpretation and use of this report.

2. Methodology

2.1 Field Work

A site reconnaissance survey was carried out on April 23, 2021. The survey included detailed observations such as slope vegetation, signs of previous failures, and seepage from the face of the slope.

During the Site reconnaissance, the 'Slope Stability Rating Chart', which was developed by MNR, was used to score several Site characteristics to determine the potential for slope instability. Site conditions which were reviewed include: slope height and inclination, soil stratigraphy, the presence and location of seepage zones, vegetative cover, overland drainage, and evidence of previous instability or landslide activity. The rating chart for the slope is attached in **Appendix D**.

The location where the slope stability rating chart was completed is shown on **Drawing 1**.

At the time of the investigation, the slope surface was typically well-vegetated with heavy shrubs and mature trees. There were no signs of seepage or drainage over slope, or signs of active erosion. No previous surficial sliding failures were also not observed. Selected photos of the slope are presented in **Appendix B**.

2.2 Review of Topographic Data

Topographic mapping and surveyed slope profiles of the slope at the Site were provided by AGM. The topographic mapping and surveyed slope profiles were used to prepare cross-sections and for the slope stability analyses. Using engineering judgement and technical experience, two cross-sections which are considered to be representative of the typical Site conditions, have been reviewed.

3. Site and Subsurface Conditions

3.1 Site Description

The Site is located along Reiger Road in St. Thomas, Ontario and is currently undeveloped. In general, the slope is moderately to well-vegetated with grass, shrubbery, and some mature trees. Based on topographic mapping provided by the AGM, the slope is approximately 20 m in height. Kettle Creek is located approximately 300 m to the east of the proposed house location.

3.2 Soil Stratigraphy

The detailed stratigraphy encountered in the borehole is shown on the borehole log found in **Appendix A** and summarized in the following paragraphs. It must be noted that the boundaries of the soil indicated on the borehole log are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect transition zones for geotechnical design and should not be interpreted as exact planes of geological change

Topsoil

A layer of topsoil, about 300 mm thick was encountered at surface.

It should be noted that topsoil quantities should not be established from the information provided at the borehole locations only. If required, a more detailed analysis (involving additional shallow test pits) is recommended to accurately quantify the amount of topsoil to be removed for construction purposes.

Sandy Silt

Beneath the topsoil, sandy silt was encountered to a depth of about 2.3 m below existing grade. In general, the sandy silt was noted to be brown, with traces of clay. The sandy silt is in a loose condition, based on SPT N-values of 5. The moisture content of the sandy silt is around 21 percent, indicating very moist conditions.

Clayey Silt

Beneath the sandy silt, clayey silt was encountered to borehole termination depth of 20.3 m. The clayey silt was noted to be brown and becomes grey around 3.4 m below existing grade. The clayey silt contains traces of sand with some layers of sand and wet silty sand in the upper zone. Below a depth of about 7.6 m, the clayey silt also contains traces of gravel.

In general, the clayey silt is very stiff, based on SPT N-values of 16 to 30, with a zone from about 15 to 18 m that is stiff. The moisture content of the clayey silt ranges from 12 to 16 percent.

3.3 Groundwater Conditions

Details of the groundwater conditions observed within the borehole is provided on the Borehole Log.

At completion of drilling, water was measured in the borehole at a depth of about 18.6 m below existing grade. It is assumed insufficient time was available to establish the stabilized groundwater conditions within the borehole. Based on observations during drilling, the water level may represent seepage into the borehole from the wet silty sand layer at 6.1 to 7.6 m depth. The depth to the groundwater table may vary in response to climatic or seasonal conditions, and, as such, may differ at the time of construction, with high levels in wet seasons. Capillary rise effects should also be anticipated in fine-grained soil deposits.

4. Slope Stability Assessment

To determine the erosion hazard limit (development setback) from the top of the slope, two (2) cross sections, designated as Cross-Section A-A' and B-B', were drawn from profile surveys provided by AGM. The locations of the two cross-section are shown on **Drawing 1** and the profiles are provided on **Drawing 2**.

The existing slope at each cross-section location ranges from 1.9H:1V to 2.1h:1V and the slope height is approximately 16 to 19 m.

4.1 Stable Slope Geometry

The stability of the existing slope was investigated for a number of different Factors of Safety (FOS). The various types of failures resulting include shallow depth and deep rotational failures, occasionally through the entire height of the slope. The analysis was undertaken by computer methods using the Slope/W computer program for the worst case slope profile (B-B').

The soil parameters used were conservative to build in an added safety factor for the analyses. The following table summarizes the parameters for the predominant soils which were used in EXP's evaluation of the stable slope configuration:

Table 1 – Existing Slope Soil Parameters

| Soil Type | Density (kN/m ³) | Cohesion (kPa) | Angle of Internal Friction (°) |
|------------------------|------------------------------|----------------|--------------------------------|
| Loose Sandy Silt | 17.0 | 0 | 26 |
| Very Stiff Clayey Silt | 20.5 | 10 | 28 |

The following table from the MNR Technical Guide provides guidance on how to select a minimum factor of safety based on the intended land use above or below the slope. To consider the slope to be in a stable state, a Factor of Safety (FOS) of 1.4 or greater was required from the Slope/W analyses.

Table 2 – Design Minimum Factor of Safety

| | LAND-USES | FACTOR OF SAFETY |
|---|--|------------------|
| A | PASSIVE ; no buildings near slope; farm field, bush, forest, timberland, woods, wasteland, badlands, tundra | 1.10 |
| B | LIGHT ; no habitable structures near slope; recreational parks, golf courses, buried small utilities, tile beds, barns, garages, swimming pools, sheds, satellite dishes, dog houses | 1.20 to 1.30 |
| C | ACTIVE ; habitable or occupied structures near slope; residential, commercial, and industrial buildings, retaining walls, storage/warehousing of non-hazardous substances | 1.30 to 1.50 |
| D | INFRASTRUCTURE and PUBLIC USE ; public use structures or buildings (i.e., hospitals, schools, stadiums), cemeteries, bridges, high voltage power transmission lines, towers, storage/warehousing of hazardous materials, waste management areas | 1.40 to 1.50 |

Table obtained from page 60 of MNR Technical Guide – River and Stream Systems: Erosion Hazard Limit

The worst case cross-section of the existing slope was assessed (Cross-Section B-B'). Slope/W analysis for this cross-section is shown on the attached Slope/W analyses in Appendix C.

The failures at the cross-sections consisted of shallow depth and deep rotational failures. After completing the computerized stable slope analysis, the minimum calculated factor of safety (FOS) under the existing conditions was 1.46 at Cross Section B-B'. The FOS are an indication of safe slope conditions and are summarized results are provided in the following table:

Table 3 - Summary of Slope Stability Analyses

| Cross-Section Condition | Description of Failure Mode | Computed Factor of Safety |
|-------------------------|-----------------------------|---------------------------|
| Slope Section, B-B' | Shallow Depth Failure | 1.57 |
| Slope Section, B-B' | Deep Rotational Failure | 1.46 |

Based on EXP's analyses of the existing soil and slope conditions, the existing slope at the Site has a factor of safety in excess of 1.40 for shallow, and deep rotational failure. The existing slopes evaluated are generally considered to be stable against significant rotational failure from these analyses.

4.2 Toe Erosion Allowance

The toe of the slope is located approximately 300 m away from Kettle Creek. No active erosion was observed near the base of the slope. Based on Section 3 of the MNR Technical Guide, no toe erosion allowance is required for the slopes because there is not a watercourse located within 15 m of the toe of the slope.

4.3 Stable Slope Allowance

Based on the results of the detailed engineering analysis, the stable slope line of 2.2H:1V is indicative of long-term stable slope conditions. Since the existing slope profiles at cross-sections A-A' and B-B' are somewhat steeper than stable slope line and therefore stable slope allowances of 5.4 m and 4.7 m are required at both cross sections, respectively.

4.4 Emergency Access Allowance

The Ontario Government provides planning guidelines for development adjacent to slopes. The 2014 Provincial Policy Statement (PPS) requires that an access allowance be included as part of the Erosion Hazard Limit. In accordance with PPS, a 6 to 15 m setback is required in addition to the erosion and stability setbacks, which were discussed in the previous sections. It is understood that this access allowance is required to ensure that there is a large enough safety zone for people and vehicles to enter and exit an area during an emergency, such as slope failure and flooding.

Because the subsurface conditions within the study area are generally considered to be geologically stable, we recommend that at a minimum, a planning setback of 6 m be applied to existing slope.

4.5 Erosion Hazard Limit (Development Setback)

The Erosion Hazard Limit includes, Erosion Allowance, Stable Slope Setback and Emergency Access Allowance (6 m) from a geotechnical standpoint.

The following table summarizes the three components to the recommended Erosion Hazard Limits (development setback).

Table 4 – Erosion Hazard Limits Summary

| Cross Section | Toe Erosion Allowance (m) | Stable Slope Allowance (From Top of Existing Slope, m) | Emergency Access Allowance (m) | Erosion Hazard Limit (From Top of Existing Slope, m) |
|---------------|---------------------------|--|--------------------------------|--|
| A-A' | 0.0 | 5.4 | 6.0 | 11.4 |
| B-B' | 0.0 | 4.7 | 6.0 | 10.7 |

Ultimately, the Erosion Hazard Limit also defines the development limit for the site.

The setback distance from the slope crest varies slightly along the slope, based on the overall slope height and inclination. Further, the inferred location of the Erosion Hazard Limit setback line is provided on **Drawing 1**. The proposed house partially encroaches on this recommended Erosion Hazard Limit and should be considered in the planning process.

4.6 Additional Comments

No drainage should be directed over the crest of the slope. The Site should be re-graded such that water is directed away from the slope.

Water from downspouts and perimeter weeping tile etc. should be collected in a controlled manner and directed away from the slope.

Spoils from any excavation should be removed from the Site. Excavated soils should not be placed over the table land near the crest of slope, unless the soil is placed as engineered structural fill. No net surcharge should be placed on the slope.

During construction, stockpiles of materials, supplies and construction debris should be located away from the slope crest. Additional loading from stockpiled materials should be avoided in proximity to the slope crest.

Vegetation on the slope should be maintained.

Any bare areas or cracks observed along the slope should be revegetated to a state similar to prior to construction.

A regular maintenance program should be implemented such as tree preservation, grading, and drainage control.

5. General Limitations

The information presented in this report is based on a limited investigation designed to provide information to support an assessment of the current geotechnical conditions within the subject property. The conclusions and recommendations presented in this report reflect site conditions existing at the time of the investigation. Consequently, during the future development of the property, conditions not observed during this investigation may become apparent. Should this occur, EXP should be contacted to assess the situation, and the need for additional testing and reporting. EXP has qualified personnel to provide assistance in regards to any future geotechnical and environmental issues related to this property.

Our undertaking at EXP, therefore, is to perform our work within limits prescribed by our clients, with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended in this report.

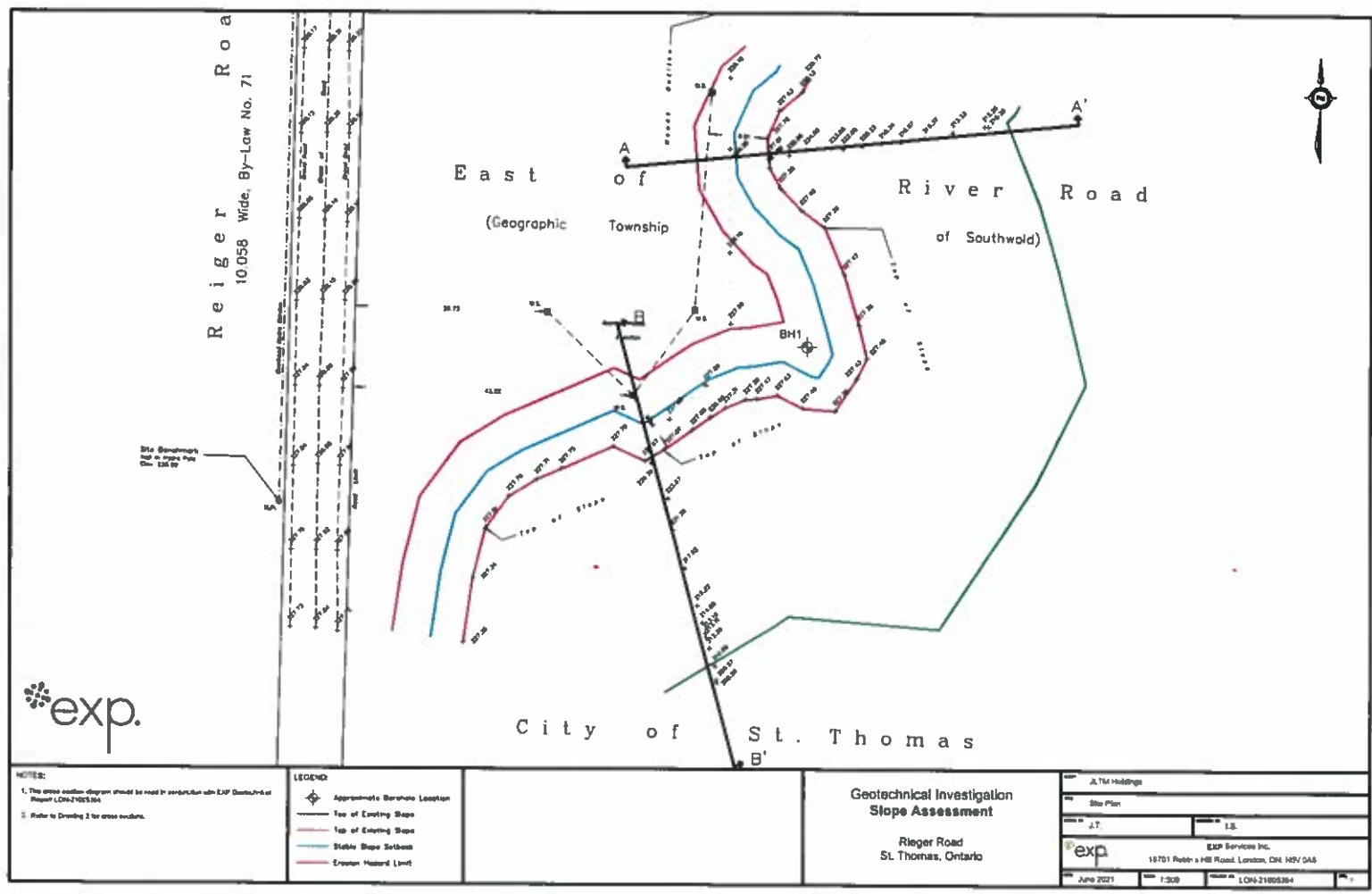
The comments given in this report are intended only for the guidance of design engineers. The number of test holes required to determine the localized underground conditions between test holes affecting construction costs, techniques, sequencing, equipment, scheduling, etc. would be much greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should in this light, decide on their own investigations, as well as their own interpretations of the factual test hole results, so that they may draw their own conclusions as to how the subsurface conditions may affect them.

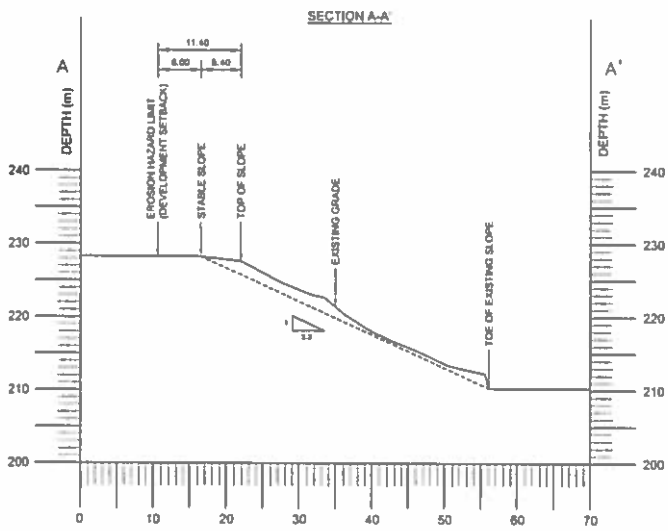
EXP should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not afforded the privilege of making this review, EXP will assume no responsibility for interpretation of the recommendations in this report

This report was prepared for the exclusive use of JLTM Holdings Limited and may not be reproduced in whole or in part, without the prior written consent of EXP, or used or relied upon in whole or in part by other parties for any purposes whatsoever. Any use which a third party makes of this report, or any part thereof, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

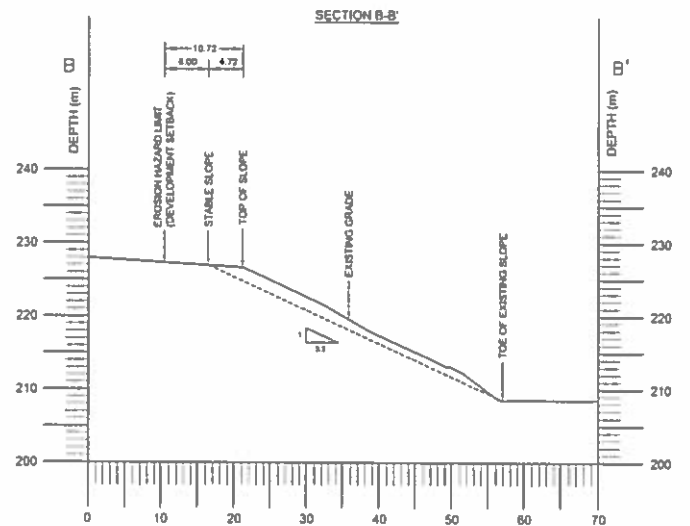
We trust that this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

Drawings





SECTION A-A'



SECTION B-B'



- NOTES:
1. The cross section diagram should be read in conjunction with EXP Service Inc. Report LDN-21000-004.
 2. Refer to Drawing 4 for cross section location.

Geotechnical Investigation
Slope Assessment

Risger Road
St. Thomas, Ontario

| | |
|---|---------------------|
| J.T.M. Holdings | |
| Sections A-A' & B-B' | |
| A.T. | L.S. |
| EXP Services Inc. 18151 Ratten's Hill Road, London, ON N5W 0A6 | |
| June 2021 | 1:200 LDN-21000-004 |

Appendix A – Borehole Log

NOTES ON SAMPLE DESCRIPTIONS

1. All descriptions included in this report follow the 'modified' Massachusetts Institute of Technology (M.I.T.) soil classification system. The laboratory grain-size analysis also follows this classification system. Others may designate the Unified Classification System as their source; a comparison of the two is shown for your information. Please note that, with the exception of those samples where the grain size analysis has been carried out, all samples are classified visually and the accuracy of the visual examination is not sufficient to differentiate between the classification systems or exact grain sizing. The M.I.T. system has been modified and the EXP classification includes a designation for cobbles above the 75 mm size and boulders above the 200 mm size.

| UNIFIED SOIL CLASSIFICATION | Fines (silt and clay) | | Sand | | | Gravel | | Cobbles | | |
|--------------------------------|-----------------------|-------|------|--------|--------|--------|--------|---------|----|----|
| | | | Fine | Medium | Coarse | Fine | Coarse | | | |
| M.I.T. SOIL CLASSIFICATION | Clay | Silt | Sand | | | Gravel | | | | |
| | | | Fine | Medium | Coarse | | | | | |
| Sieve Sizes | | | | | | | | | | |
| | | | 200 | 40 | 10 | 4 | 3/4 | | | |
| Particle Size (mm) | | 0.002 | 0.06 | 0.075 | 0.2 | 0.6 | 2.0 | 5.0 | 20 | 80 |

2. **Fill:** Where fill is designated on the borehole log, it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description therefore, may not be applicable as a general description of the site fill material. All fills should be expected to contain obstructions such as large concrete pieces or subsurface basements, floors, tanks, even though none of these obstructions may have been encountered in the borehole. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact and correct composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. The fill at this site has been monitored for the presence of methane gas and the results are recorded on the borehole logs. The monitoring process neither indicates the volume of gas that can be potentially generated or pinpoints the source of the gas. These readings are to advise of a potential or existing problem (if they exist) and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic waste that renders the material unacceptable for deposition in any but designated land fill sites; unless specifically stated, the fill on the site has not been tested for contaminants that may be considered hazardous. This testing and a potential hazard study can be carried out if you so request. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common, but not detectable using conventional geotechnical procedures.
3. **Glacial Till:** The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process, the till must be considered heterogeneous in composition and as such, may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (75 to 200 mm in diameter) or boulders (greater than 200 mm diameter) and therefore, contractors may encounter them during excavation, even if they are not indicated on the borehole logs. It should be appreciated that normal sampling equipment can not differentiate the size or type of obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited area; therefore, caution is essential when dealing with sensitive excavations or dewatering programs in till material.



BOREHOLE LOG

BH1

Sheet 1 of 1

CLIENT JLTM Holdings Limited PROJECT NO. LON- 21005364-A0
 PROJECT Slope Assessment DATUM _____
 LOCATION St. Thomas, Ontario DATES: Boring April 22, 2021 Water Level _____

| DEPTH (m bgs) | ELEVATION (m) | STRATA DESCRIPTION | STRATA PLOT | WELL LOG | SAMPLES | | | | MOISTURE CONTENT (%) | SHEAR STRENGTH | | | | | | | | | |
|------------------|------------------|--|----------------|-------------|---------|------------|------------------|-----------------------|----------------------------|----------------|---|---|---|--|--|--|--|--|--|
| | | | | | TYPE | NO. SAMPLE | RECOVERY (mm) | N VALUE (blows) | | + | S | ▲ | ■ | | | | | | |
| 0 | 0.30 | TOPSOIL - 300 mm | | | | | | | | | | | | | | | | | |
| 1 | | SANDY SILT - brown, trace clay, loose, very moist | | | SS | S1 | 400 | 5 | 21 | | | | | | | | | | |
| 2 | 2.29 | some sand layers till at 1.2 m bgs | | | SS | S2 | 300 | 5 | 22 | | | | | | | | | | |
| 3 | | CLAYEY SILT - brown, trace sand, very stiff, moist | | | SS | S3 | 450 | 21 | 14 | | | | | | | | | | |
| 4 | | sand layers at 3.2 m bgs (dry) | | | SS | S4 | 450 | 23 | 13 | | | | | | | | | | |
| 5 | | turns grey at 3.4 m bgs | | | SS | S5 | 450 | 24 | 13 | | | | | | | | | | |
| 6 | 6.10 | | | | SS | S6 | 400 | 30 | 16 | | | | | | | | | | |
| 7 | | silty sand, brown, compact, wet | | | SS | S7 | 450 | 21 | 13 | | | | | | | | | | |
| 8 | 7.62 | | | | SS | S8 | 450 | 20 | 13 | | | | | | | | | | |
| 9 | | trace gravel below 7.62 m bgs | | | SS | S9 | 450 | 20 | 12 | | | | | | | | | | |
| 10 | | | | | SS | S10 | 450 | 15 | 13 | | | | | | | | | | |
| 11 | | | | | SS | S11 | 450 | 16 | 13 | | | | | | | | | | |
| 12 | | | | | SS | S12 | 450 | 11 | 14 | | | | | | | | | | |
| 13 | | turns stiff below 15.2 m bgs | | | SS | S13 | 450 | 13 | 11 | | | | | | | | | | |
| 14 | | | | | SS | S14 | 450 | 20 | 14 | | | | | | | | | | |
| 15 | | | | | SS | S15 | 450 | 20 | 15 | | | | | | | | | | |
| 16 | | turns very stiff below 18.3 m bgs | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | |
| 20 | 20.30 | | | | | | | | | | | | | | | | | | |
| 21 | | End of Borehole at 20.3 m bgs. | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | |

NOTES

- Borehole interpretation requires assistance by EXP before the use by others. Borehole Logs must be read in conjunction with EXP Report LON-21005364-A0.
- bgs denotes below ground surface.
- Borehole caved at 19.5 m bgs and water measured near 18.6 m bgs upon the completion of drilling.

SAMPLE LEGEND

- AS Auger Sample
- SS Split Spoon
- ST Shelby Tube
- Rock Core (eg. BQ, NQ, etc.)
- VN Vane Sample

OTHER TESTS

- G Specific Gravity
- H Hydrometer
- S Sieve Analysis
- Y Unit Weight
- P Field Permeability
- K Lab Permeability
- C Consolidation
- CD Consolidated Drained Triaxial
- CU Consolidated Undrained Triaxial
- UU Unconsolidated Undrained Triaxial
- UC Unconfined Compression
- DS Direct Shear

WATER LEVELS

- ▽ Apparent
- ▽ Measured
- ▲ Artesian (see Notes)

Appendix B – Site Photographs

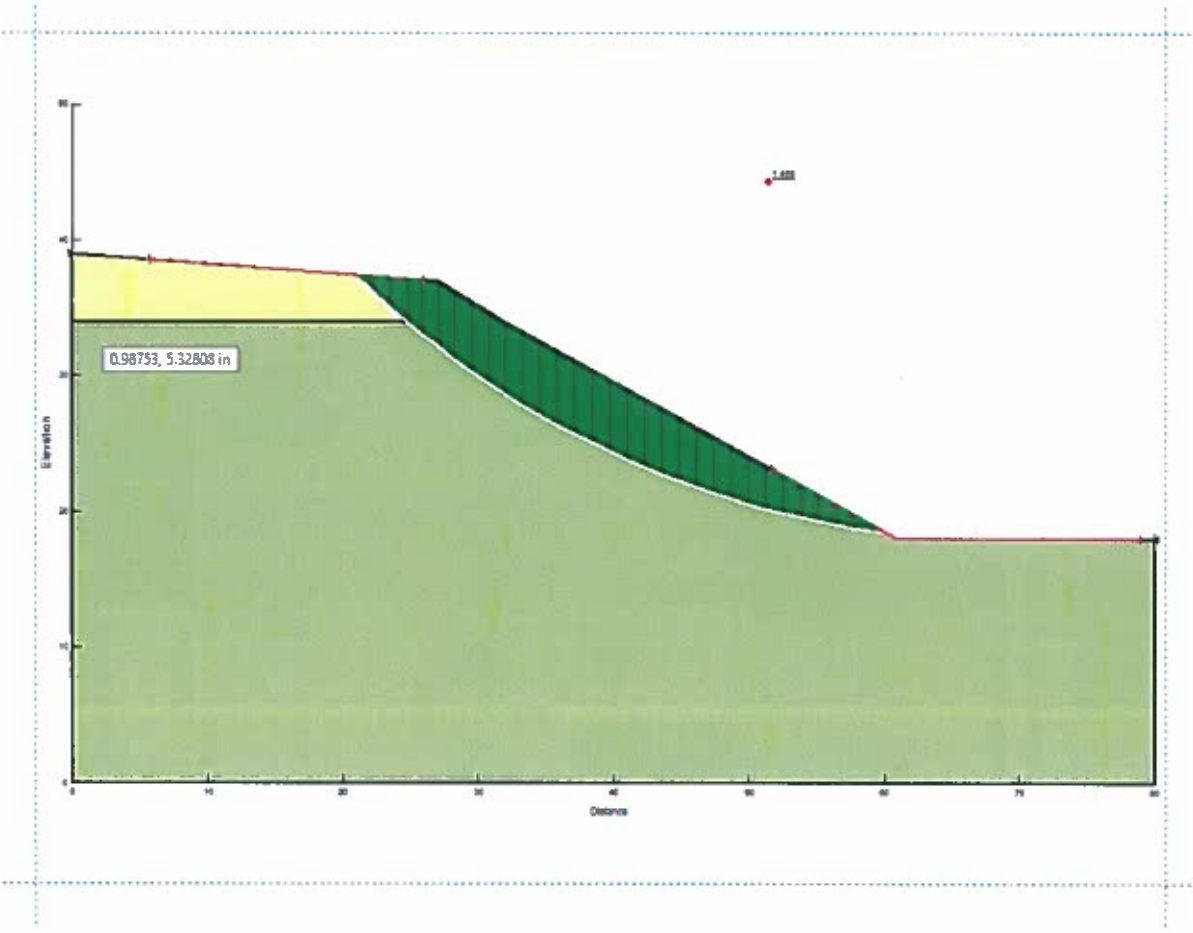


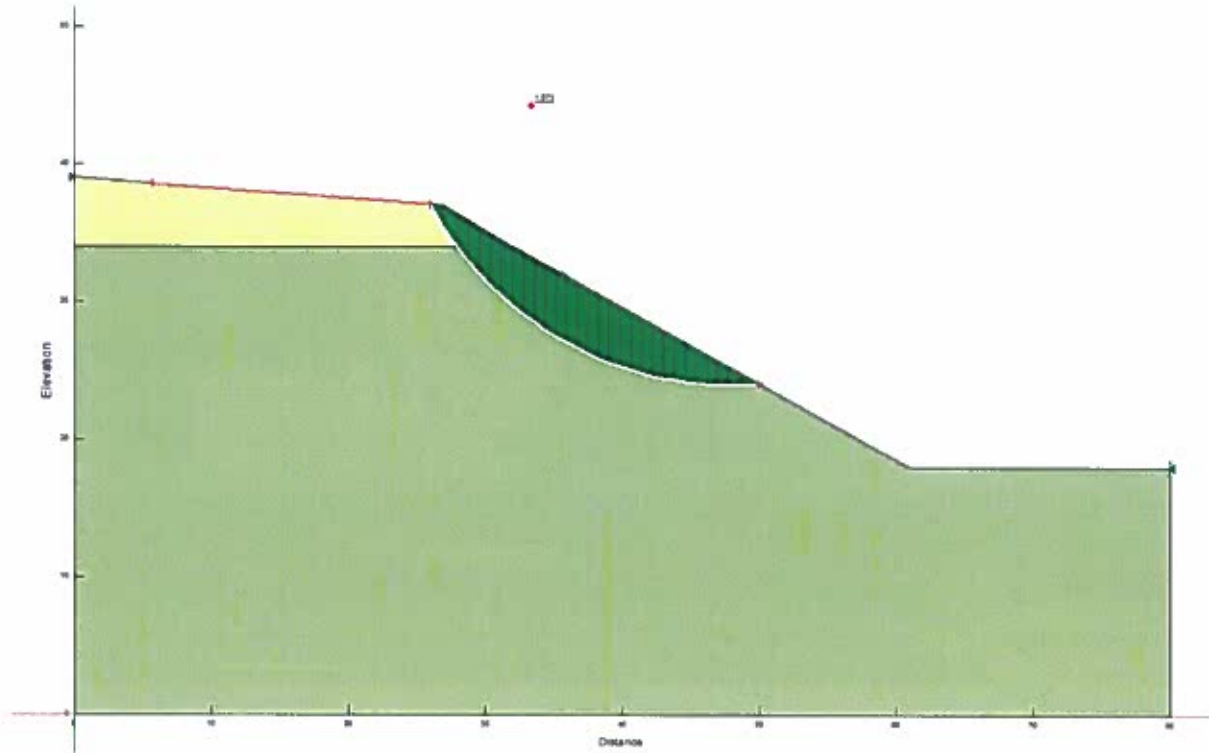
Photo 1 – Typical conditions along slope.



Photo 2 – View from top of slope.

Appendix C – Slope Stability Analyses





Appendix D – Slope Rating Chart

Slope Stability Rating Chart

Geotechnical Principles for Stable Slopes
Ontario Ministry of Natural Resources

Slope A North

| | | |
|--|---------------------------------|---------------------|
| Site Location: | Project No.: 21005364 | |
| Town/City: | Inspection Date: 4/23/21 | |
| Inspected by: D.Leech | Weather: Sunny +9c | |
| Slope Inclination | Rating Value | Slope Rating |
| degrees or less (3H:1V or flatter) | 0 | 16 |
| to 28 degrees (2H:1V to 3H:1V) | 6 | |
| degrees or more (steeper than 2H:1V) | 16 | |
| Soil Stratigraphy | | 9 |
| shale / limestone | 0 | |
| sand, gravel | 6 | |
| till | 9 | |
| clay, silt | 12 | |
| fill | 18 | |
| red clay | 24 | |
| Seepage from Slope Face | | 0 |
| none, or near bottom only | 0 | |
| near mid-slope only | 6 | |
| near crest only, or from several levels | 12 | |
| Slope Height | | 8 |
| 2 m or less | 0 | |
| 2.1 to 5 m | 2 | |
| 5.1 to 10 m | 4 | |
| more than 10 m | 8 | |
| Vegetation Cover on Slope Face | | 0 |
| well vegetated: heavy shrubs or forested with mature trees | 0 | |
| light vegetation: grass, weeds, occasional trees, shrubs | 4 | |
| no vegetation: bare | 8 | |
| Table Land Drainage | | 0 |
| table land flat, no apparent drainage over slope | 0 | |
| minor drainage over slope, no active erosion | 2 | |
| drainage over slope, active erosion, gullies | 4 | |
| Proximity of Watercourse to Slope Toe | | 0 |
| 15 m or more from slope toe | 0 | |
| Less than 15 m from slope toe | 6 | |
| Previous Landslide Activity | | 0 |
| No | 0 | |
| Yes | 6 | |
| Slope Instability Rating | | 33 |
| <p>Low Potential < 24 Site Inspection only, confirmation, report letter</p> <p>Slight Potential 25-35 Site Inspection and surveying, preliminary study, detailed report</p> <p>Moderate Potential > 35 BH Investigation, piezometers, lab tests, surveying, detailed report</p> | | |
| <p>Notes:</p> <p>Is there is a water body (stream, creek, river, pond, bay, lake) at the toe of slope? If YES - the potential for toe erosion and undercutting should be evaluated in detail.</p> | | |

| TABLE 4.2 - SLOPE STABILITY RATING CHART | | |
|---|--------------------------|--------------|
| Site Location: | File No. | |
| Property Owner: | Inspection Date: | |
| Inspected By: | Weather: | |
| 1. SLOPE INCLINATION | | |
| degrees | horiz. : vert. | |
| a) 18 or less | 3 : 1 or flatter | 0 |
| b) 18 - 26 | 2 : 1 to more than 3 : 1 | 6 |
| c) more than 26 | steeper than 2 : 1 | 16 |
| 2. SOIL STRATIGRAPHY | | |
| a) Shale, Limestone, Granite (Bedrock) | | 0 |
| b) Sand, Gravel | | 6 |
| c) Glacial Till | | 9 |
| d) Clay, Silt | | 12 |
| e) Fill | | 16 |
| f) Leda Clay | | 24 |
| 3. SEEPAGE FROM SLOPE FACE | | |
| a) None or Near bottom only | | 0 |
| b) Near mid-slope only | | 6 |
| c) Near crest only or, From several levels | | 12 |
| 4. SLOPE HEIGHT | | |
| a) 2 m or less | | 0 |
| b) 2.1 to 5 m | | 2 |
| c) 5.1 to 10 m | | 4 |
| d) more than 10 m | | 8 |
| 5. VEGETATION COVER ON SLOPE FACE | | |
| a) Well vegetated; heavy shrubs or forested with mature trees | | 0 |
| b) Light vegetation; Mostly grass, weeds, occasional trees, shrubs | | 4 |
| c) No vegetation, bare | | 8 |
| 6. TABLE LAND DRAINAGE | | |
| a) Table land flat, no apparent drainage over slope | | 0 |
| b) Minor drainage over slope, no active erosion | | 2 |
| c) Drainage over slope, active erosion, gullies | | 4 |
| 7. PROXIMITY OF WATERCOURSE TO SLOPE TOE | | |
| a) 15 metres or more from slope toe | | 0 |
| b) Less than 15 metres from slope toe | | 6 |
| 8. PREVIOUS LANDSLIDE ACTIVITY | | |
| a) No | | 0 |
| b) Yes | | 6 |
| SLOPE INSTABILITY RATING VALUES INVESTIGATION RATING SUMMARY | | TOTAL |

SUMMARY OF RATING VALUES AND RESULTING INVESTIGATION REQUIREMENTS

| | | |
|-----------------------|-------|--|
| 1. Low potential | < 24 | Site inspection only, confirmation, report letter. |
| 2. Slight potential | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. Moderate potential | > 35 | Boreholes, piezometers, lab tests, surveying, detailed report. |

NOTES:

- a) Choose only one from each category; compare total rating value with above requirements.
 b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

The Rating Chart identifies 3 levels of stability and associated investigation requirements. The three levels are:

1. Stable / Site Inspection Only

A rating of 24 or less, suggests stable slope conditions,

- no toe erosion,
- good vegetation cover
- no evidence of past instability
- no structures within (slope height) of the crest

and that no further investigation (beyond visual inspection) is needed. This should be simply confirmed through a visual site inspection and estimate of the slope configuration and slope stratigraphy and drainage (i.e. no measurements). Confirmation of the slope stability should be provided in the form of a letter (signed and sealed with A.P.E.O. stamp) from an experienced and qualified geotechnical engineer. The letter should include a summary of the site inspection observations which could be recorded on a Slope Inspection Form (see enclosed) and should clearly identify;

- slope height and inclination,
- vegetation cover on slope face,
- toe erosion, or surface erosion on slope,
- structures near slope crest or on slope,
- drainage features near slope crest, on slope face, or near slope toe.

2. Slight Potential / Site Inspection, Preliminary Study

A rating between 25-35 suggests the presence of several surface features that could create an unstable slope situation. The stability of the slope should be confirmed through a visual site inspection only, without boreholes. In addition to recording the visual observations outlined in the section above, some direct measurements of site features are required.

The slope height and inclination should be determined either with a hand inclinometer, or by 'breaking slope', or from mapping, or by surveying. As well, more information about the soil stratigraphy of the slope, should be obtained (without drilling boreholes) based on either previous or nearby subsurface investigations, or geologic mapping, or hand augering or test pits to determine shallow depth soil type(s). Measurements should be taken (by hand tape or surveying) of the locations of structures relative to the crest, and other features such as vegetation, past slide features (tension cracks, scarps, slumps, bulges, ridges), and erosion features. If available, historical

air photographs should be examined for evidence of any past instability over the long-term. Confirmation of the slope stability should be provided in the form of a detailed report (signed and sealed with A.P.E.O. stamp) from an experienced and qualified geotechnical engineer.

This report will include:

- Slope Inspection Record (Appendix)
- a Site Plan and a Slope Profile indicating the positions of the various measurements taken on site (slope crest, slope toe, location of structures relative to crest, drainage features, erosion features, vegetation cover, indicators of past instability or movements)
- photographs of the site and slope conditions
- a discussion of the site inspection and measurements taken, review of previous information
- preliminary engineering analysis of slope stability (i.e., calculation of Factor of Safety) based on the above information and measurements, but utilizing conservative soil strength parameters and groundwater conditions since boreholes were not carried out.

3. Moderate Potential / Borehole Investigation

A rating of more than 35 suggests a moderate potential for instability. This may result if the slope is either steep, high and/or has several features that could create an unstable slope situation. The stability of the slope should be assessed more precisely through topographic survey of slope configuration and boreholes for slope stratigraphy and penetration resistance tests. Piezometers must be installed in the boreholes and measurements must be taken for groundwater levels. Laboratory testing on the borehole samples must be conducted to measure Basic Index Properties (water contents, unit weights, grain size distribution, Atterberg Limits) described in Appendix D, or other properties as required.

A detailed engineering stability analysis must be conducted to determine if the Factor of Safety for the original slope conditions equals or exceeds a design minimum Factor of Safety. The analysis should be based on the information obtained from the site survey and the borehole information. Historical data such as air photographs should also be reviewed. Confirmation of the slope stability or instability (and the stable slope inclination) should be provided in the form of a detailed report (signed and sealed with A.P.E.O. stamp) from an experienced and qualified geotechnical engineer. This

Appendix E – Limitations and Use of Report

BASIS OF REPORT

This report ("Report") is based on site conditions known or inferred by the geotechnical investigation undertaken as of the date of the Report. Should changes occur which potentially impact the geotechnical condition of the site, or if construction is implemented more than one year following the date of the Report, the recommendations of EXP may require re-evaluation.

Where applicable, recommended field services are the minimum necessary to ascertain that construction is being carried out in general conformity with building code guidelines, generally accepted practices and EXP's recommendations. Any reduction in the level of services recommended will result in EXP providing qualified opinions regarding the adequacy of the work. EXP can assist design professionals or contractors retained by the Client to review applicable plans, drawings, and specifications as they relate to the Report or to conduct field reviews during construction.

Contractors contemplating work on the site are responsible for conducting an independent investigation and interpretation of the borehole results contained in the Report. The number of boreholes necessary to determine the localized underground conditions as they impact construction costs, techniques, sequencing, equipment and scheduling may be greater than those carried out for the purpose of the Report.

Classification and identification of soils, rocks, geological units, contaminant materials, building envelopment assessments, and engineering estimates are based on investigations performed in accordance with the standard of care set out below and require the exercise of judgement. As a result, even comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations or building envelope descriptions involve an inherent risk that some conditions will not be detected. All documents or records summarizing investigations are based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated. Some conditions are subject to change over time. The Report presents the conditions at the sampled points at the time of sampling. Where special concerns exist, or the Client has special considerations or requirements, these should be disclosed to EXP to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

RELIANCE ON INFORMATION PROVIDED

The evaluation and conclusions contained in the Report are based on conditions in evidence at the time of site inspections and information provided to EXP by the Client and others. The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose as communicated by the Client. EXP has relied in good faith upon such representations, information and instructions and accepts no responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of any misstatements, omissions, misrepresentation or fraudulent acts of persons providing information. Unless specifically stated otherwise, the applicability and reliability of the findings, recommendations, suggestions or opinions expressed in the Report are only valid to the extent that there has been no material alteration to or variation from any of the information provided to EXP.

STANDARD OF CARE

The Report has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment form part of the Report. This material includes, but is not limited to, the terms of reference given to EXP by the Client, communications between EXP and the Client, other reports, proposals or documents prepared by EXP for the Client in connection with the site described in the Report. In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety. EXP is not responsible for use by any party of portions of the Report.

USE OF REPORT

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report in whole or in part without the written consent of EXP. Any use of the Report, or any portion of the Report, by a third party are the sole responsibility of such third party EXP is not responsible for damages suffered by any third party resulting from unauthorized use of the Report.


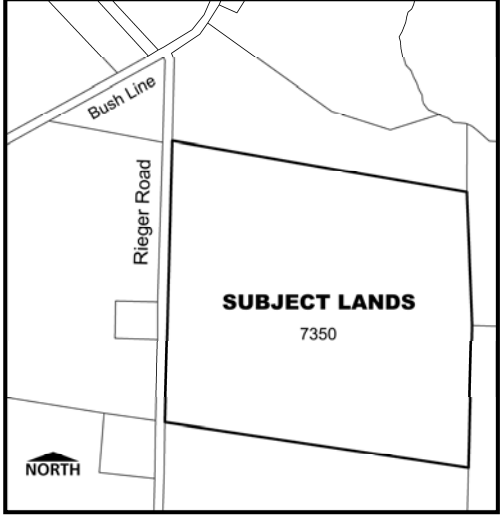
REPORT FORMAT

Where EXP has submitted both electronic file and a hard copy of the Report, or any document forming part of the Report, only the signed and sealed hard copy shall be the original documents for record and working purposes. In the event of a dispute or discrepancy, the hard copy shall govern. Electronic files transmitted by EXP have utilize specific software and hardware systems. exp makes no representation about the compatibility of these files with the Client's current or future software and hardware systems. Regardless of format, the documents described herein are EXP's instruments of professional service and shall not be altered without the written consent of EXP.

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|---|--|
|  <p>The Corporation of the City of St. Tho</p> | Report No.: COA13-2021 |
| Members of the Committee of Adjustment | Applicant: JLTM Holdings Limited - Janet Taylor |
| Location: 7350 Rieger Road, Range 2, East River Road, Lot 9 | Report Date: August 18, 2021 Meeting Date: August 26, 2021 |
| Subject: Request for a minor variance pursuant to 45(1) of the Planning Act, R.S.O, as amended | |
| Department: Planning and Building Services Department Prepared by: Steve Craig, Senior Planning Technician | Attachments: Location Plan and 2020 Aerial Photograph |
| Recommendation: That: Report COA13-2021 be received. | |
| <p>BACKGROUND: JLTM Holdings Limited is proposing to construct one single detached dwelling and one barn on the subject lands.</p> <p>REQUESTED VARIANCE:</p> <p>(i) To permit the construction of one single detached dwelling and one barn on the subject lands, on private services (septic system & ditches/swales), whereas Subsection 5.5.18(d)(2) provides that no building or structure shall be erected or used for any purposes unless the following municipal services are available to service the building or structure and the land on which it is situate: (2) a sanitary sewage system and a storm system.</p> <p>OFFICIAL PLAN:</p> <ul style="list-style-type: none"> • The subject lands are in the Rural Area designation, Natural Heritage designation and Natural Hazard designation, as shown on Schedule "A" (Land Use Plan) to the Official Plan for the City of St. Thomas. • The proposed single detached dwelling and barn are in the Rural Area designation (5.14.3), permitted uses are existing farm operations. Buildings and structures essential to the farm operation, including the farm residence, barns and other buildings supporting the farm operation are also permitted. No more than one residence shall be permitted on a parcel except where the nature of the farm operation requires additional accommodation for farm help. A severance for the additional residence shall not be permitted (5.14.3.1). • Where development and/or site alteration is proposed on lands within 120m of an area designated as Natural Heritage on Schedule "A" Land Use Plan, the proponent may be required to (8.3.3.1): <ul style="list-style-type: none"> i) prepare in accordance with the policies of subsection 8.3.4 of this Plan, an Issues Scoping Report (ISR) and an Environmental Impact Study (EIS), if warranted by the ISR, that evaluates the ecological functions of the lands proposed for development or site alteration and demonstrates that there will be no negative impacts on the natural heritage features or on their ecological functions. | <p>Location Plan:</p>  |

- Where new development and/or site alteration is proposed within 30m of a Natural Hazard designation shown on Schedule "A" - Land Use Plan the following policies shall apply (8.4.4.2):
 - The proponent shall complete a geotechnical analysis to determine the Erosion Hazard Limit. The analysis is to be prepared by a qualified professional having recognized expertise in the appropriate principles using accepted methodologies and approved by the Municipality and the Conservation Authority.
 - The Erosion Hazard Limit shall be interpreted as the correct limits of the Erosion Hazard Area and such interpretation shall not require amendment to this Plan.

ZONING BY-LAW:

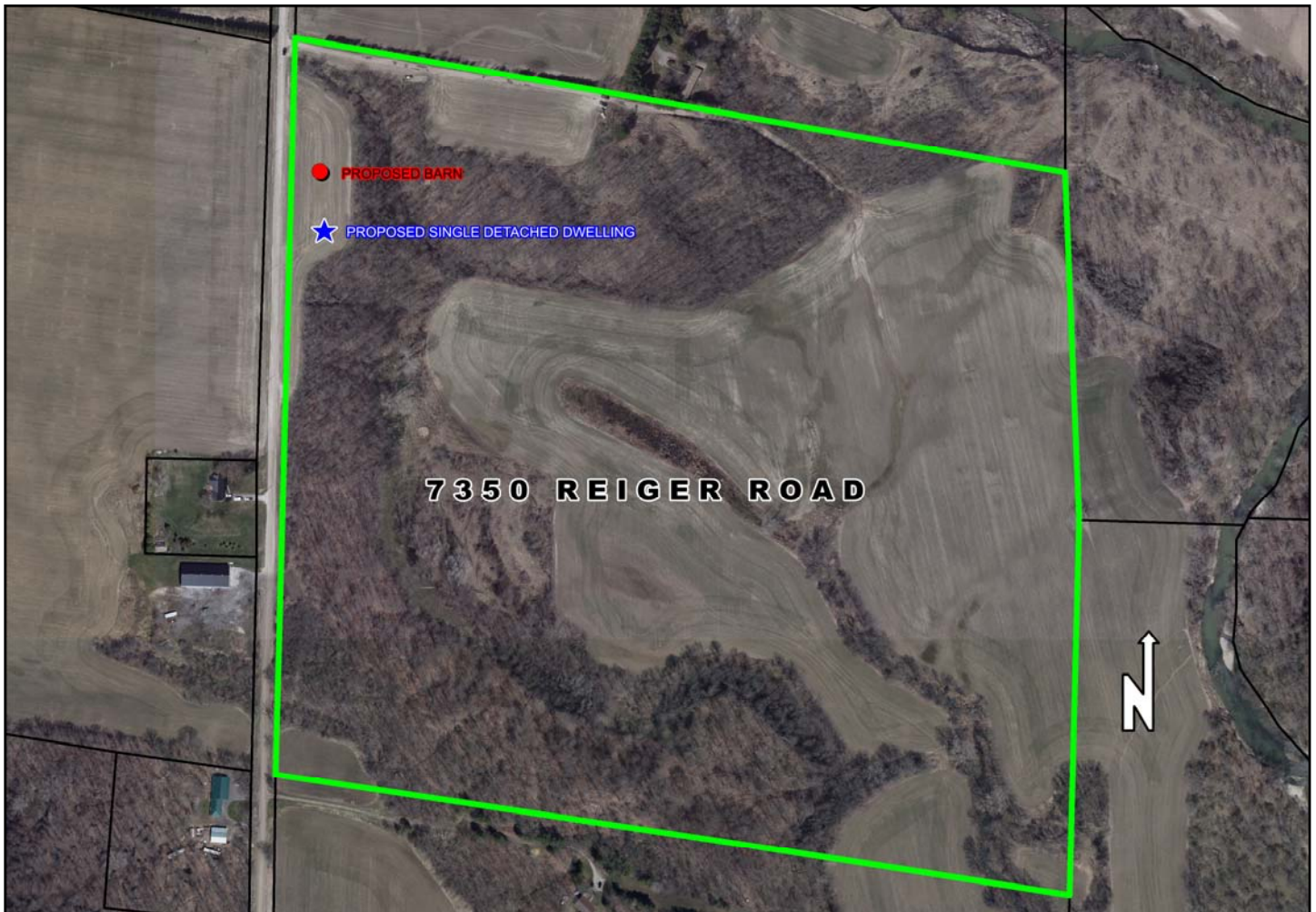
- The subject lands are in the Residential Zone One (R1-18), Residential Development Zone (R7-4), Natural Heritage Zone (NH) and Hazard Land Zone pursuant to the City of St. Thomas Zoning By-Law No. 50-88, as amended.
- The proposed single detached dwelling and barn are in the R1-18 zone, permitted uses include a single detached dwelling, home occupation, and uses accessory to the foregoing (5.5.18(b)).

LEGISLATIVE FRAMEWORK FOR A MINOR VARIANCE:

In considering this application, the Committee must have regard to the following criteria and determine whether:

- The general intent and purpose of the Official Plan will be maintained;
- The general intent and purpose of the Zoning By-Law will be maintained;
- The variance is desirable for the appropriate development or use of the land, building or structure; and
- The variance is minor in nature.

2020 AERIAL PHOTOGRAPH:



COMMENTS:

- The subject lands were brought into the City of St. Thomas as part of a mutual boundary adjustment with the Township of Southwold in 1995, subsequently Council passed a resolution to consider requests for building permits on existing vacant unserviced lots, through application to the Planning and Development Committee of City Council. On April 12, 2021, Council passed a resolution confirming that it has no objection to an application being made to the Committee of Adjustment in support of a new residence to be constructed on private services on lands located at 7350 Reiger Road.
- In accordance with the Natural Heritage policies the applicant obtained the services of MTE Consultants, the report (MTE File No.: 49082-100) confirms that provided that their recommendations for mitigation are followed during all stages of construction, no significant impacts to the adjacent natural heritage features are expected.
- In accordance with the Natural Hazard policies the applicant obtained the services of EXP Services Inc., the report (LON-21005364-A0) confirms the location of the Erosion Hazard Limit and provides recommendations (Section 4.6) for development. The Kettle Creek Conservation Authority (KCCA) are satisfied with the report and the delineation of the Erosion Hazard Limit and have no objections to the approval of the application, subject to the following comments:
 - 1) A permit from KCCA under Ontario Regulation 181/06 will be required prior to any alteration or development upon the property.
 - 2) All development, including any buildings or structures and the location of the required septic system must be located outside of the Erosion Hazard Limit as determined by EXP Services Inc.
 - 3) In review of the proposed Site Plan, it appears that the proposed dwelling and garage structure immediately about the Erosion Hazard Limit. Based on comment #2 above, we would encourage the owner to consider their long-term rear yard development interests to determine whether the proposed dwelling and garage structure need to be relocated further away from the EHL to allow for any potential future rear yard development such as a swimming pool or accessory structures to be located behind the dwelling.
- In Staff's opinion the proposed variance meets the general intent and purpose of the Official Plan and Zoning By-law, is minor in nature, and is desirable and appropriate for the use of the lands, thereby satisfying the four tests, as set out in Section 45 of the Planning Act. Therefore, planning staff recommend that minor variance application COA13-2021 be approved.
- Should the Committee of Adjustment approve minor variance application COA13-2021 staff recommend that the decision reflect that the Committee is approving the construction of one single detached dwelling and one barn on the lot, subject to the following conditions:
 - 1) the applicant obtains the services of a qualified professional to implement the recommendations for mitigation in the report (49082-100) prepared by MTE Consultants, dated July 27, 2021;
 - 2) the applicant obtains the services of a qualified professional to implement the recommendations for development in the report (LON-21005364-A0) prepared by EXP Services Inc., dated July 19, 2021;
 - 3) the applicant obtains a permit from the Kettle Creek Conservation Authority (KCCA) prior to any alteration or development on the lot; and
 - 4) the owner enters into an agreement with the City of St. Thomas requiring the connection to municipal services at such time when it becomes available.

Respectfully submitted,



Steve Craig
Senior Planning Technician