



CORPORATION OF THE CITY OF VERNON

ADVISORY PLANNING COMMITTEE

TUESDAY, DECEMBER 14, 2021 AT 4:00 P.M.

COUNCIL CHAMBERS, CITY HALL (OKANAGAN LAKE ROOM)

A G E N D A

1) **CALL TO ORDER**

2) **LAND ACKNOWLEDGEMENT**

As chair of the City of Vernon's Advisory Planning Committee (APC), and in the spirit of this gathering, I recognize the City of Vernon is located in the traditional territory of the Syilx people of the Okanagan nation.

3) **ADOPTION OF AGENDA**

4) **ADOPTION OF MINUTES**

a) November 23, 2021 (Attached)

5) **NEW BUSINESS**

- a) **DVP00537** (9261 Eastside Rd)
- b) **DVP00464** (4300 35 Avenue)

6) **INFORMATION ITEMS**

a) The Staff Liaison to provide verbal update of APC related items discussed at the last Council meeting.

7) **NEXT MEETING**

The next meeting is tentatively scheduled for **Tuesday, January 11, 2022**

8) **ADJOURNMENT**



THE CORPORATION OF THE CITY OF VERNON

MINUTES OF THE ADVISORY PLANNING COMMITTEE MEETING HELD ON WEDNESDAY, NOVEMBER 23, 2021 at 4:00 PM COUNCIL CHAMBERS (OKANAGAN LAKE ROOM)

PRESENT: VOTING
Mark Longworth, Chair
Doug Neden
Jamie Paterson
Monique Hubbs-Michiel
Phyllis Kereliuk
Lisa Briggs

NON-VOTING: Mayor Cumming

ABSENT: Don Schuster
Joshua Lunn
Harpreet Nahal
Bill Tarr

STAFF: Craig Broderick, Manager, Current Planning
Matt Faucher, Planner
Kim Flick, Director, Community Infrastructure & Development
Tracy Mueller, Committee Clerk

ORDER The Chair called the meeting to order at 4:00 PM.

**LAND
ACKNOWLEDGMENT** *As Chair of the City of Vernon's Advisory Planning Committee, and in the spirit of this gathering, I recognize the City of Vernon is located in the traditional territory of the Syilx people of the Okanagan Nation.*

ADOPTION OF AGENDA Moved by Doug Neden, seconded by Monique Hubbs-Michiel:

THAT the Advisory Planning Committee agenda of November 23, 2021, be adopted.

CARRIED.

ADOPTION OF MINUTES Moved by Monique Hubbs-Michiel, seconded by Phyllis Kereliuk:

THAT the minutes for the Advisory Planning Committee meeting of November 09, 2021 be adopted.

CARRIED.

NEW BUSINESS:

(ZON00374) REZONING APPLICATION FOR 4408 25 STREET

Matt Faucher, Current Planner, provided an overview of the application as follows:

- The Applicant is looking to downzone the site to create a future strata and rezone to an "R4" to achieve the development project plan.
- In terms of the proposed site, the subject property is located on a laneway with a similar development located to the south.
- The lands are designated as Residential Low Density in the Official Community Plan.
- The proposed R4 rezoning would provide for the proposed three (3) lot Bare Land Strata Subdivision which would include the existing single-family dwelling.

Mayor Cumming joined the meeting at 4:02 PM.

The following comments / questions were made by members of the Committee:

- The Committee requested clarification regarding laneway access. Staff, in response confirmed that primary access is off the private lane. Further, staff clarified that:
 - The properties to the south are a strata development and the road is a private strata road. The applicant for the subject application is referring to a similar arrangement but is using a public laneway.
 - The frontage of the lane would be upgraded as part of the subdivision as per bylaw standards and that both the zoning bylaw and subdivision servicing bylaw would address provisions for upgrading the street and lane.

- In terms of process, the proposed variance for setbacks would come forward for Council consideration at "Third Reading" (should the project progress to that stage). The requested variance, if applied for by the Applicant, would come back to the Advisory Planning Committee for consideration.
- Staff clarified that the property owner has the right to make an application for rezoning from R5 to R4. The proposal is reasonable and creates a different type of unit to facilitate affordable housing and is compliant with Residential Low-Density designation in the Official Community Plan.
- The Committee noted that the parking for the location is adequate based on the context of the development. Staff, in response further noted that the restrictive covenant prohibiting secondary suites was intentionally included to eliminate any potential parking concerns. If any suites are proposed, adequate parking will need to be continued.

Moved by Monique Hubbs-Michiel, and seconded by Lisa Briggs:

THAT Council support the application (ZON00374) to rezone LT 1 SEC 2 TWN 8 ODYD PL 4869 (4408 25 Street) from R5 – Fourplex Housing Residential to R4 – Small Lot Residential;

AND FURTHER, that Council’s support of ZON00374 be subject to the following:

- a) That the applicant registers a restrictive covenant on title to ensure that future lots created through subdivision will not contain dwellings with secondary suites;

AND FURTHER, that prior to final adoption of the zoning amendment bylaw, any required variance for the proposed development be evaluated by Council and approved if appropriate.

CARRIED.

INFORMATION ITEMS

- Craig Broderick, Manager, Current Planning, provided an overview of projects discussed at Council on **November 22, 2021**, as follows:
 - **DVP000502 APPLICATION #00502 –8092 OKANAGAN LANDING ROAD** - To allow the house to be on slope in excess of 30% slope. There was a 10-meter road dedication. Council debated and supported the application with a no-build no disturb covenant. And they will need to follow the requirements of a geotechnical study.
 - **DVP000532 APPLICATION #00532 – MT. FOSTHALL PLACE** - In conjunction with Mt. Fosthall Land Use Contract (LUC) there is a variance for one of the lots on Fostall Drive to be in excess of 30%. There will be a Public Input at 5:30 PM on December 13, 2021 in conjunction with the Public Hearing for LUC00024 Discharge Bylaw #5875 for Mt. Fosthall Place.

NEXT MEETING

The next meeting of the Advisory Planning Committee is tentatively scheduled for **Tuesday, December 14, 2021 at 4:00 PM.**

Moved by Doug Neden, seconded by Phyllis Kereliuk:

THAT the Advisory Planning Committee meeting of November 23, 2021 be adjourned.

CARRIED.

ADJOURNMENT

The meeting of the Advisory Planning Committee adjourned at 4:17 PM.

CERTIFIED CORRECT:

Chairperson



THE CORPORATION OF THE CITY OF VERNON REPORT TO COUNCIL

SUBMITTED BY: Michelle Austin
Current Planner

COUNCIL MEETING: REG COW I/C
COUNCIL MEETING DATE: January 10, 2021
REPORT DATE: December 9, 2021
FILE: 3090-20 (DVP00537)

SUBJECT: DEVELOPMENT VARIANCE PERMIT APPLICATION FOR 9261 EASTSIDE ROAD

PURPOSE:

To review Development Variance Permit #DVP00537 to allow construction of a single detached house on slopes 30% or greater.

RECOMMENDATION:

THAT Council approve Development Variance Permit #DVP00537 on Lot 1, Sec 10, TP 13, ODYD, Plan EPP42660 (9261 Eastside Road) by varying Zoning Bylaw #5000, Section 4.16.1 – Hillside Development Areas regulations to allow construction of buildings, structures or swimming pools on a slope of 30% or greater;

AND FURTHER that, prior to the issuance the Development Variance Permit #DVP00537, the following conditions be satisfied:

- a) That the site plan, by Hillside Design, dated December 8, 2021, be attached to and form part of DVP00537;
- b) That the house elevations, by Hillside Design, dated December 8, 2021, be attached to and form part of DVP00537;
- c) That the slope analysis, by McPherson Maddox, December 2, 2021, be attached to and form part of DVP00537;
- d) That the Geotechnical Assessment, by Cascade Geotechnical, dated October 3, 2011, be attached to and form part of DVP00537; and
- e) That the applicant provides an updated Geotechnical Assessment, to the satisfaction of Administration, based on the exact siting and house plans to be attached to and form part of DVP00537, as outlined in the report titled "Development Variance Permit Application for 9261 Eastside Road" dated December 9, 2021 and respectfully submitted by the Current Planner.

ALTERNATIVES & IMPLICATIONS:

1. THAT Council not approve Development Variance Permit #DVP00537 on Lot 1, Sec 10, TP 13, ODYD, Plan EPP42660 (9261 Eastside Road) to vary the Zoning Bylaw #5000, Section 4.16.1 – Hillside Development Areas regulations for construction of a single detached house, as outlined in the report titled "Development Variance Permit Application for 9261 Eastside Road" dated December 9, 2021 and respectfully submitted by the Current Planner.

Note: Rejecting the requested variance would prohibit the owners from building on the subject property as the proposed building location has been identified as the only suitable location to build. Both the Geotechnical Assessment and Riparian Areas Protection Regulations (RAPR) Assessment Report support the application and proposed building location.

ANALYSIS:

A. Committee Recommendations:

At its meeting of December 14, 2021, the Advisory Planning Committee passed the following resolution:

“As cited by the Committee...”

B. Rationale:

1. The subject property is located at 9261 Eastside Road, on the downhill side fronting Okanagan Lake, as shown in Figures 1 and 2.
2. The subject property is vacant. It has an existing shared access with the adjacent neighbours to the east and west (Attachment 1).
3. The parent parcel was subdivided in 2014 to create the subject property and remainder lot to the west.
4. The applicant proposes to construct a 2.5 storey walk out single detached house on a bench between the driveway and lake (Attachments 1 – 4). Photo 4 of Attachment 1 is of the building site.
5. Slopes for the entire property well exceed 30% (Attachments 1 and 5). Photos 1 – 3 of Attachment 1 show the steepness of the property, with the only level areas being the driveway and proposed building site. The slope analysis (Attachment 5) shows the slopes between the driveway and lake range from 58% to 99%. The slope is 58% through the middle of the building site from the driveway to the lake. Therefore, construction of single detached housing on this property requires a variance to Zoning Bylaw #5000, Section 4.16.1 – Hillside Development Area Regulations, which states “No construction of a building, structure or swimming pool is permitted on slopes 30% or greater”.

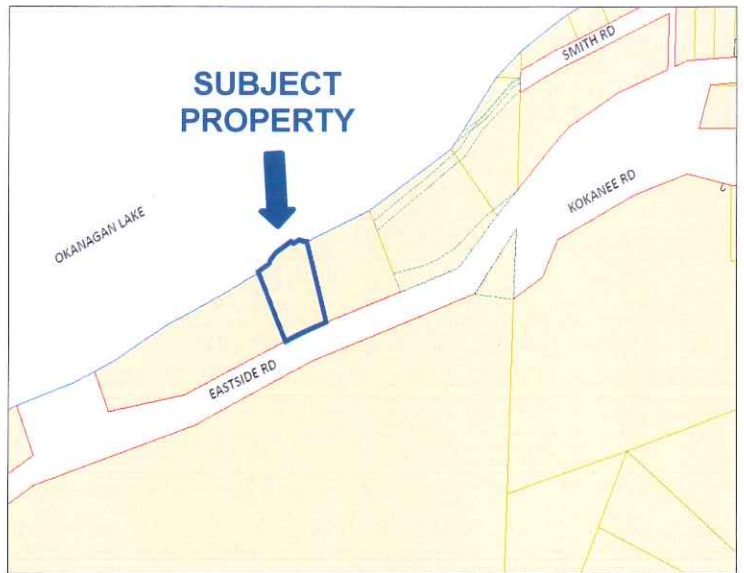


Figure 1: Location Map of Subject Property



Figure 2: Aerial Photo of Subject Property

Figure 3 shows a 3D representation of the property elevations (in grey) overlaid with slopes $\geq 30\%$ (in orange). Portions of the lot have been modified historically to create level areas including the driveways and the proposed building site.

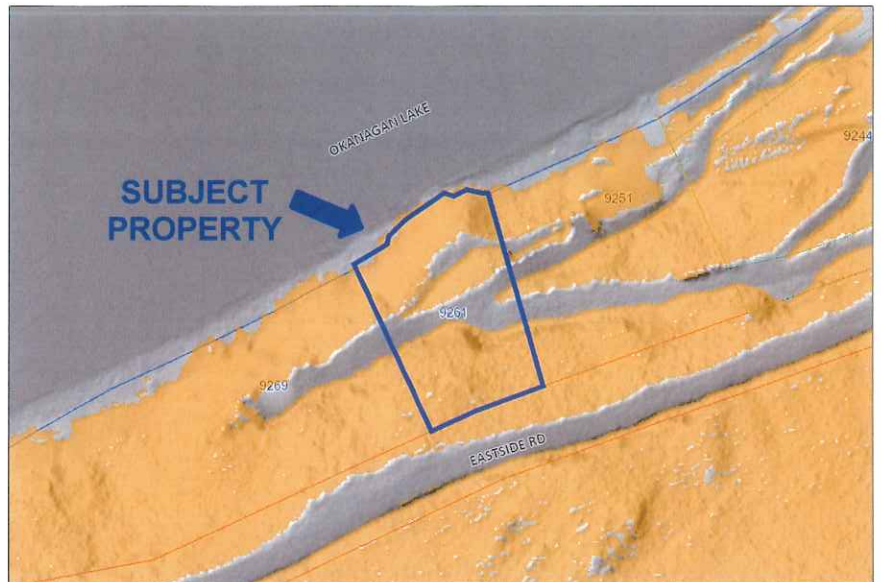


Figure 3: LiDAR with 30% Slopes

6. The applicant has provided two studies (Attachments 7 and 8) that support the application to build on slopes in excess of 30% and specifically on the proposed building site, between the common driveway and Okanagan Lake as follows:

a) The Geotechnical Assessment provided (Attachment 6) was completed in 2011 as part of the subdivision approval process to create the subject property. This Assessment stated that the proposed building site is the only area on the new lot (i.e. the subject property) suitable for building. A detailed assessment was also recommended at the time of construction based on exact siting and building plans. The same Geotechnical Engineer has been retained to carry out the detailed assessment, which was not completed at the time of writing this report.

b) A RAPR Assessment Report (Attachment 7) was completed July 30, 2021 and subsequently submitted to the Province for approval for undue hardship given the topography constraints of the property. The Assessment Report concurred with the Geotechnical Assessment that the only developable area consists primarily of the bench between the driveway and the lake. The Province approved the undue hardship case allowing a total development envelope of 433.4 m² within which all proposed development must be limited including buildings, structures, land clearing and excavation, landscaping, and stormwater management infrastructures. The Province has requested an updated report when final and complete designs of future proposed development are available. This requirement will form part of the Environmental Development Permit.

7. Administration supports the variance request for the following reasons:

a) The Geotechnical Assessment states that the proposed building site is the only area on the subject property suitable for building;

b) The RAPR Assessment Report agreed with the Geotechnical Assessment that the proposed building site is the only area on the subject property suitable for building; and

c) The Province approved the RAPR Assessment Report for undue hardship restricting development to the proposed building site.

C. Attachments:

Attachment 1 – Photos

Attachment 2 – Rationale

Attachment 3 – Site Plan

Attachment 4 – House Elevations

- Attachment 5 – Slope Analysis
- Attachment 6 – Geotechnical Assessment
- Attachment 7 – RAPR Assessment

D. Council's Strategic Plan 2019 – 2022 Goals/Action Items:

The subject application involves the following goals/action items in Council's Strategic Plan 2019 – 2022:

➤ N/A

E. Relevant Policy/Bylaws/Resolutions:

1. The following provision of Zoning Bylaw #5000, Section 4.16 – Hillside Development Areas – Development Regulations is relevant to the subject application:

➤ Section 4.16.1 – No construction of a building, structure or swimming pool is permitted on slopes 30% or greater.

BUDGET/RESOURCE IMPLICATIONS:

N/A

Prepared by:

Approved for submission to Council:

X

Signer 2

Will Pearce, CAO

Michelle Austin
Current Planner

Date: _____

X

Signer 1

Kim Flick
Director, Community Infrastructure and Development

REVIEWED WITH

- | | | |
|----------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------|
| <input type="checkbox"/> Corporate Services | <input type="checkbox"/> Operations | <input type="checkbox"/> Current Planning |
| <input type="checkbox"/> Bylaw Compliance | <input type="checkbox"/> Public Works/Airport | <input checked="" type="checkbox"/> Long Range Planning & Sustainability |
| <input type="checkbox"/> Real Estate | <input type="checkbox"/> Facilities | <input type="checkbox"/> Building & Licensing |
| <input type="checkbox"/> RCMP | <input type="checkbox"/> Utilities | <input type="checkbox"/> Engineering Development Services |
| <input type="checkbox"/> Fire & Rescue Services | <input type="checkbox"/> Recreation Services | <input type="checkbox"/> Infrastructure Management |
| <input type="checkbox"/> Human Resources | <input type="checkbox"/> Parks | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Financial Services | | <input type="checkbox"/> Economic Development & Tourism |
| <input checked="" type="checkbox"/> COMMITTEE: APC | | |
| <input type="checkbox"/> OTHER: | | |

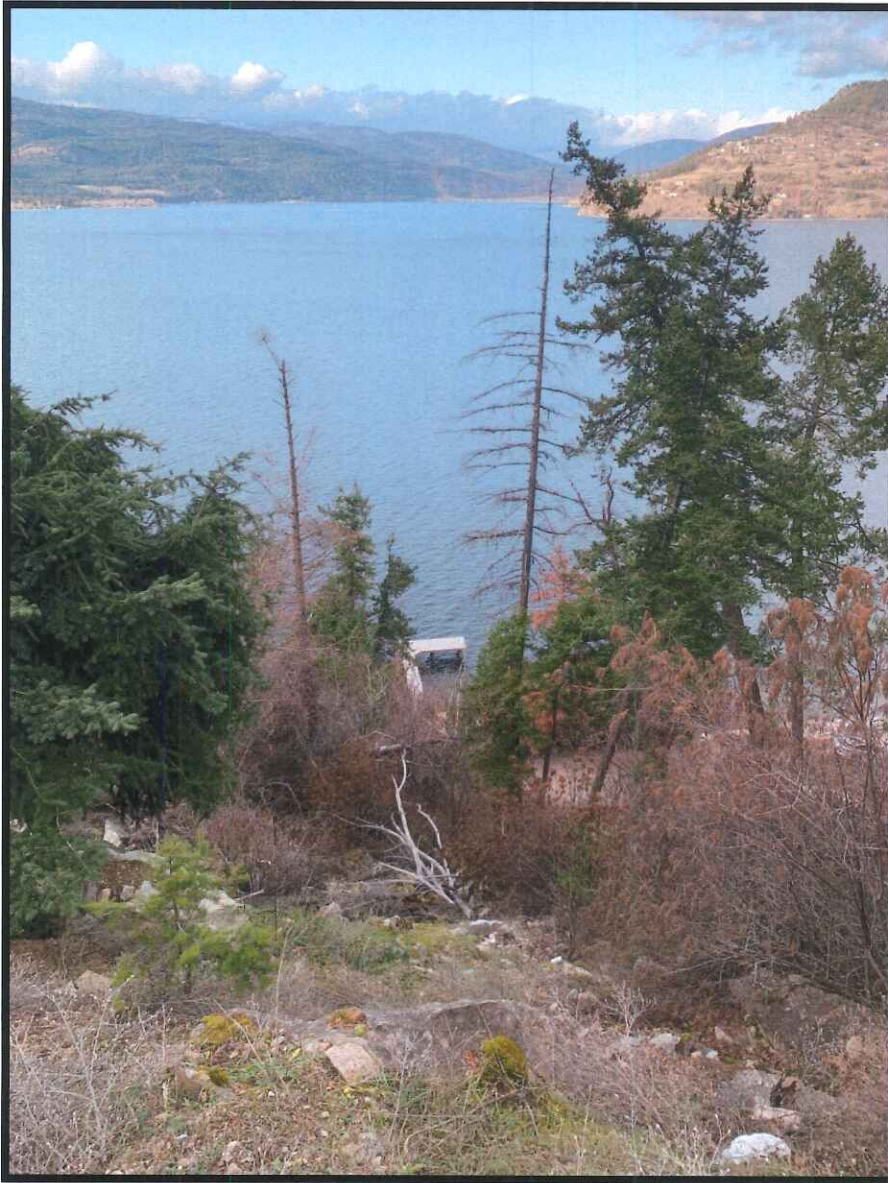


Photo 1: Photo taken from Eastside Road looking downhill with dock in background



Photo 2: Photo taken from dock looking uphill

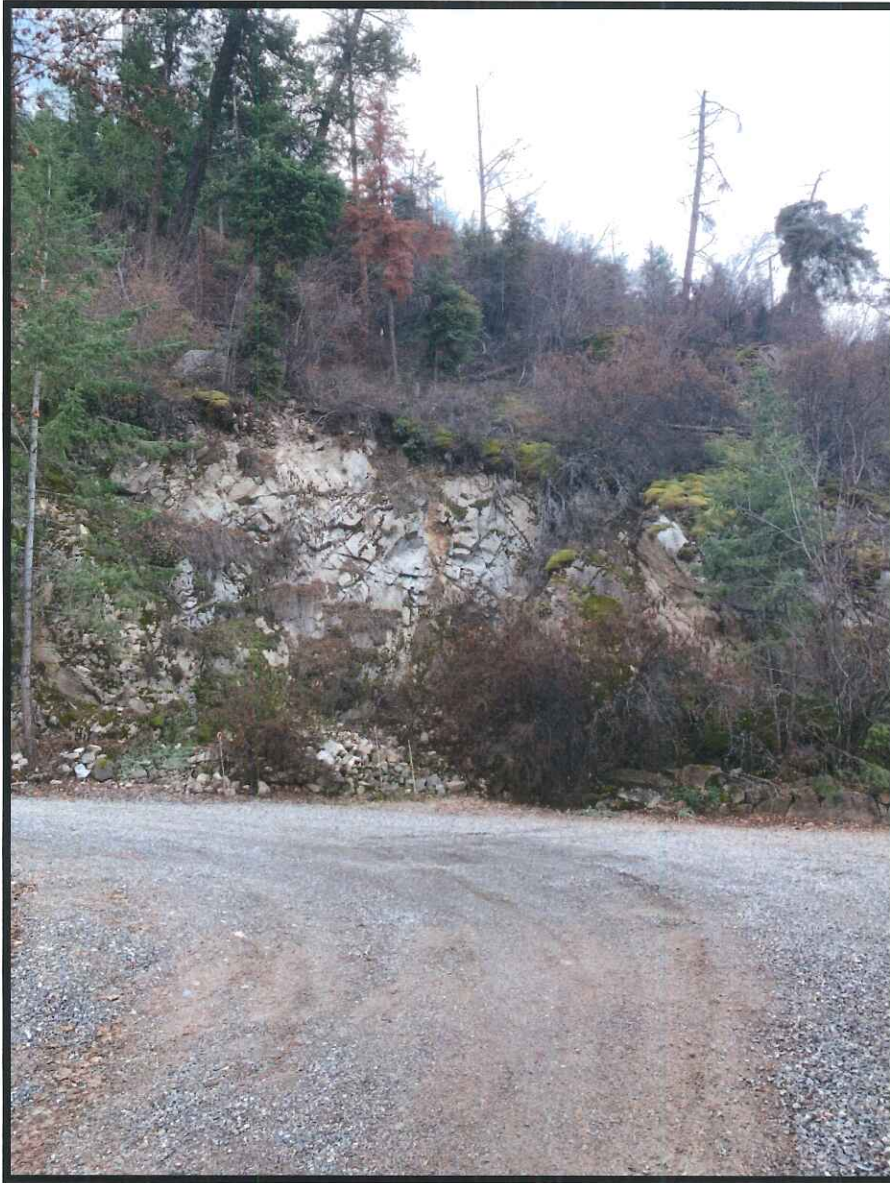


Photo 3: Photo of rock cut above driveway

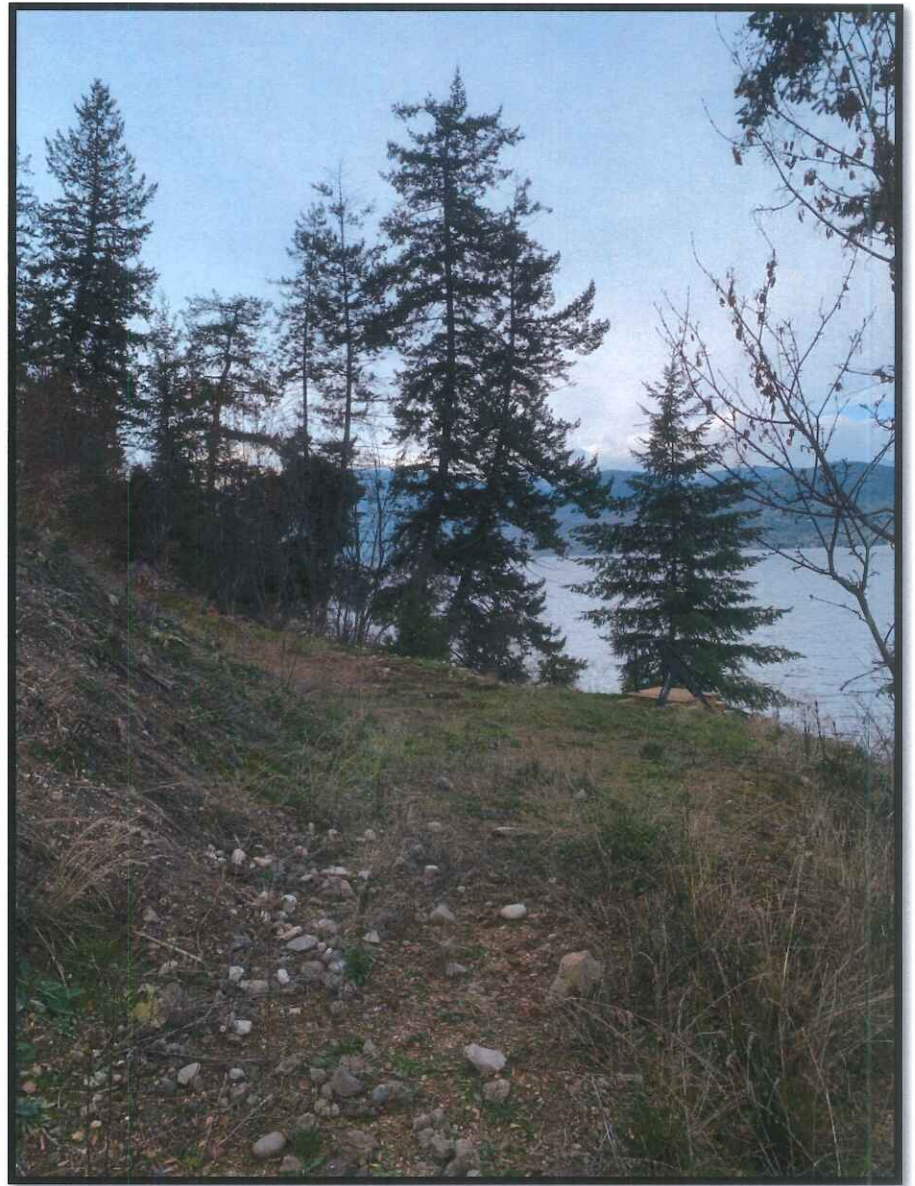
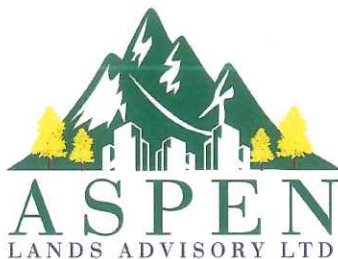


Photo 4: Photo of building site looking east



🏠 1998 Vernon Street
 Lumby, BC V0E 2G0
 ☎ 250-870-6261
 ✉ James@AspenLands.ca
 🌐 AspenLands.ca

April 25, 2021

Our File: 2021-57

Corporation of the City of Vernon
 3001 32 Ave, Vernon, BC V1T 2L8
BuildingCounter@vernon.ca

Attention: Building Official

Dear Sirs:

Re: Rationale for Variance
Construction of Single-Family Dwelling on Lot >30%
9261 Eastside Road, Vernon

Aspen Lands Advisory Ltd. is pleased to submit this Rationale for Variance in support of the construction of a single-family dwelling on 9261 Eastside Road, Vernon. The lot was recently subdivided from the parent parcel, and has slopes in excess of 30%, however is similar to the existing adjacent lots, both with single-family dwellings similar to what's proposed here.

Our Clients have building plans prepared suitable for this site. They have undertaken their RAR Assessment to ensure protection of the environmental assets of the site. The Geotechnical Assessment from the original subdivision, which identified a suitable area for this type of building, noted no indications of slope instability.

Our rationale is that appropriate plans and works overseen by qualified professionals will address the concerns with construction on a steep lot, but is consistent with best practices. We appreciate your consideration of our variance request.



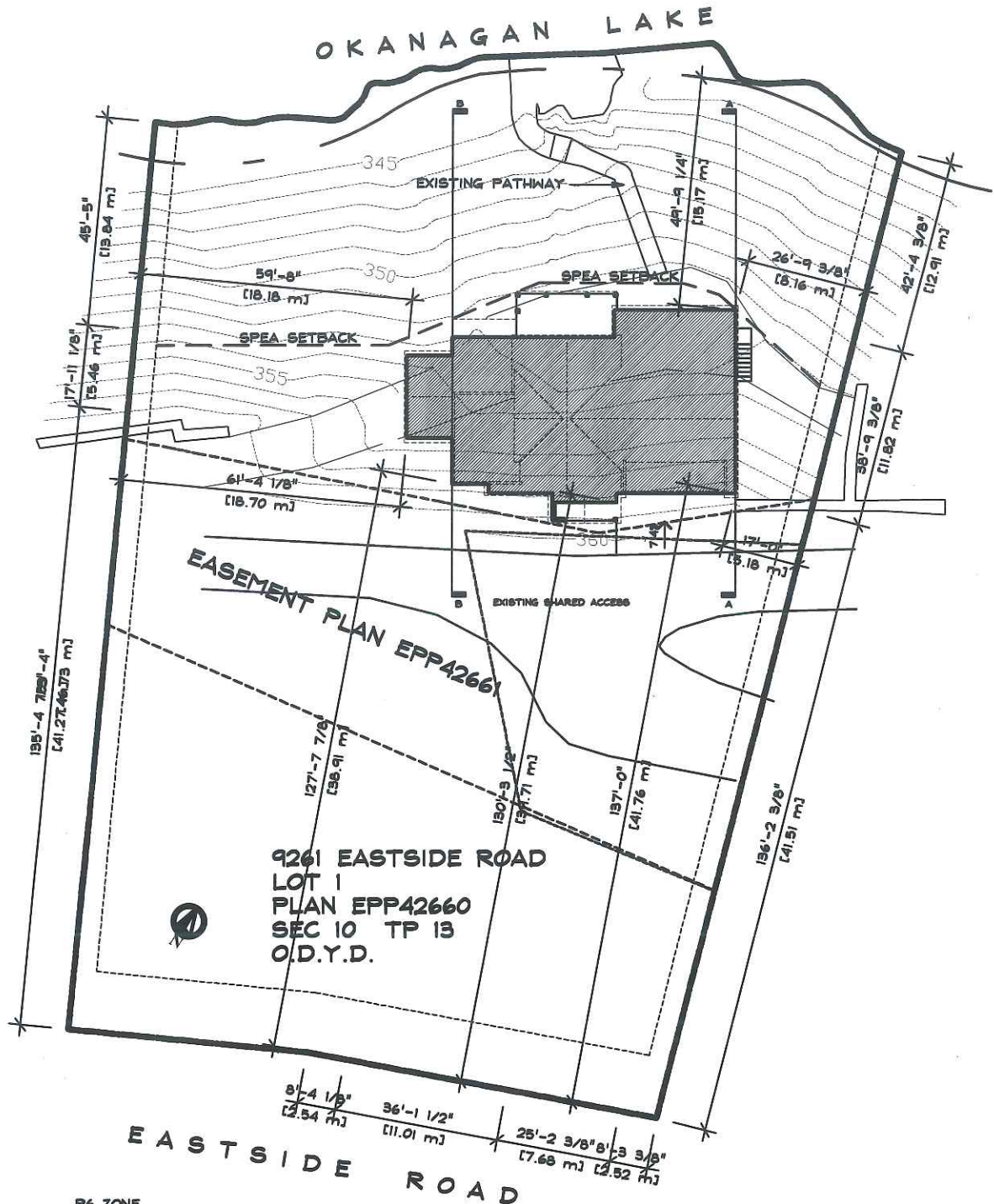
Yours truly,

ASPEN LANDS ADVISORY LTD.

James Kay

James B. Kay, P.Eng
 Principal/Project Manager

CC: Anne & Kobie Brandt



R6 ZONE
 LOT AREA: 31984.465 SQ.FT. / 2971.957 SQ.M.
 LOT COVERAGE: 2462 SQ.FT. / 228.72 SQ.M. (7.7%)
 HARDSCAPE LOT COVERAGE: 2743 SQ.FT. / 254.82 SQ.M. (8.6%)
 MAX. BUILDING HEIGHT: 10.0 m
 FRONT YARD SETBACK: 4.0 m
 SIDE YARD SETBACK: 1.5 m
 REAR YARD SETBACK: 7.5 m

THE BRANDT RESIDENCE

HILLSIDE DESIGN & DRAFTING INC

Dated: December 9, 2021



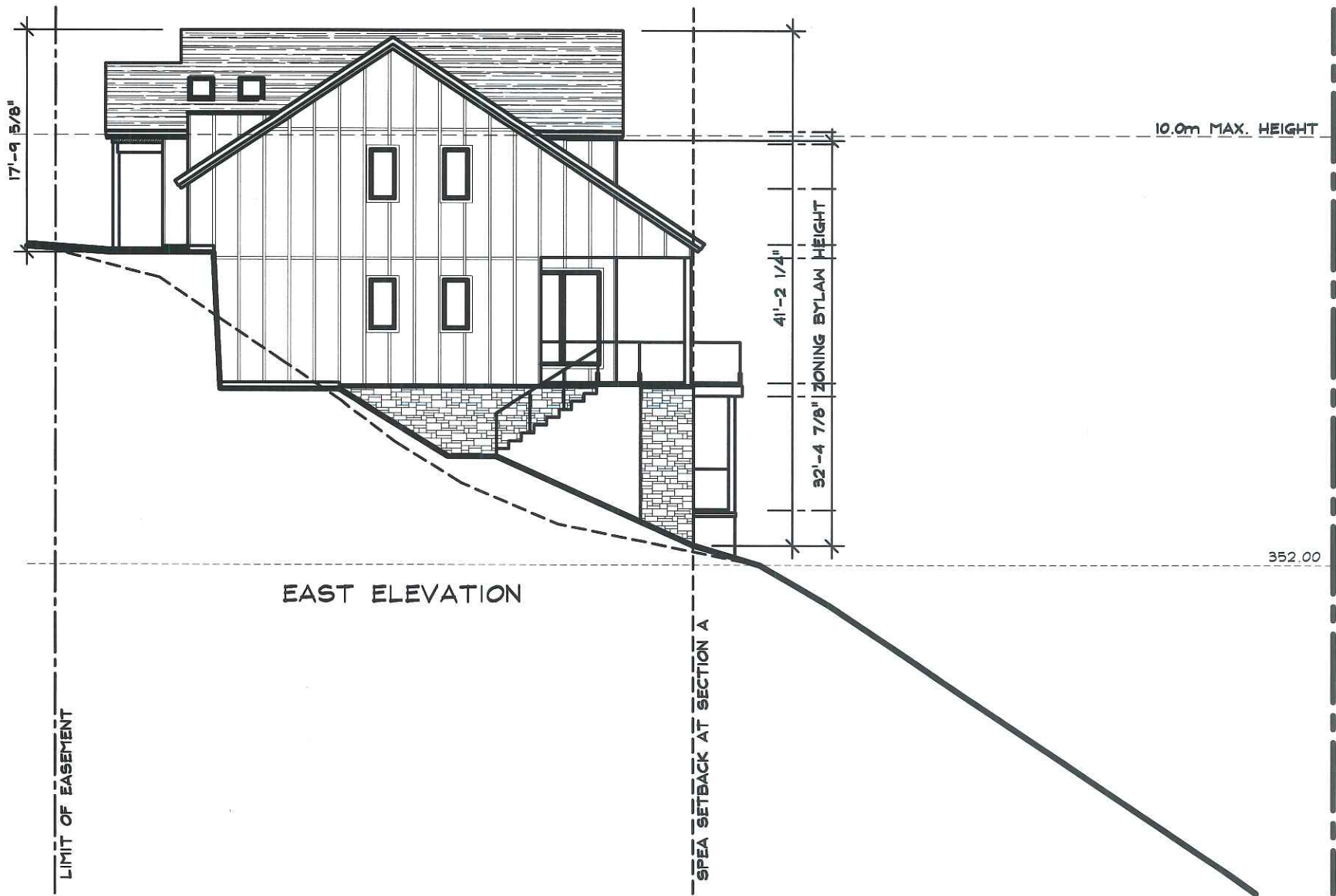
SOUTH ELEVATION

THE BRANDT RESIDENCE

HILLSIDE DESIGN & DRAFTING INC

December 9, 2021

Attachment 4



THE BRANDT RESIDENCE
 HILLSIDE DESIGN & DRAFTING INC

December 9, 2021

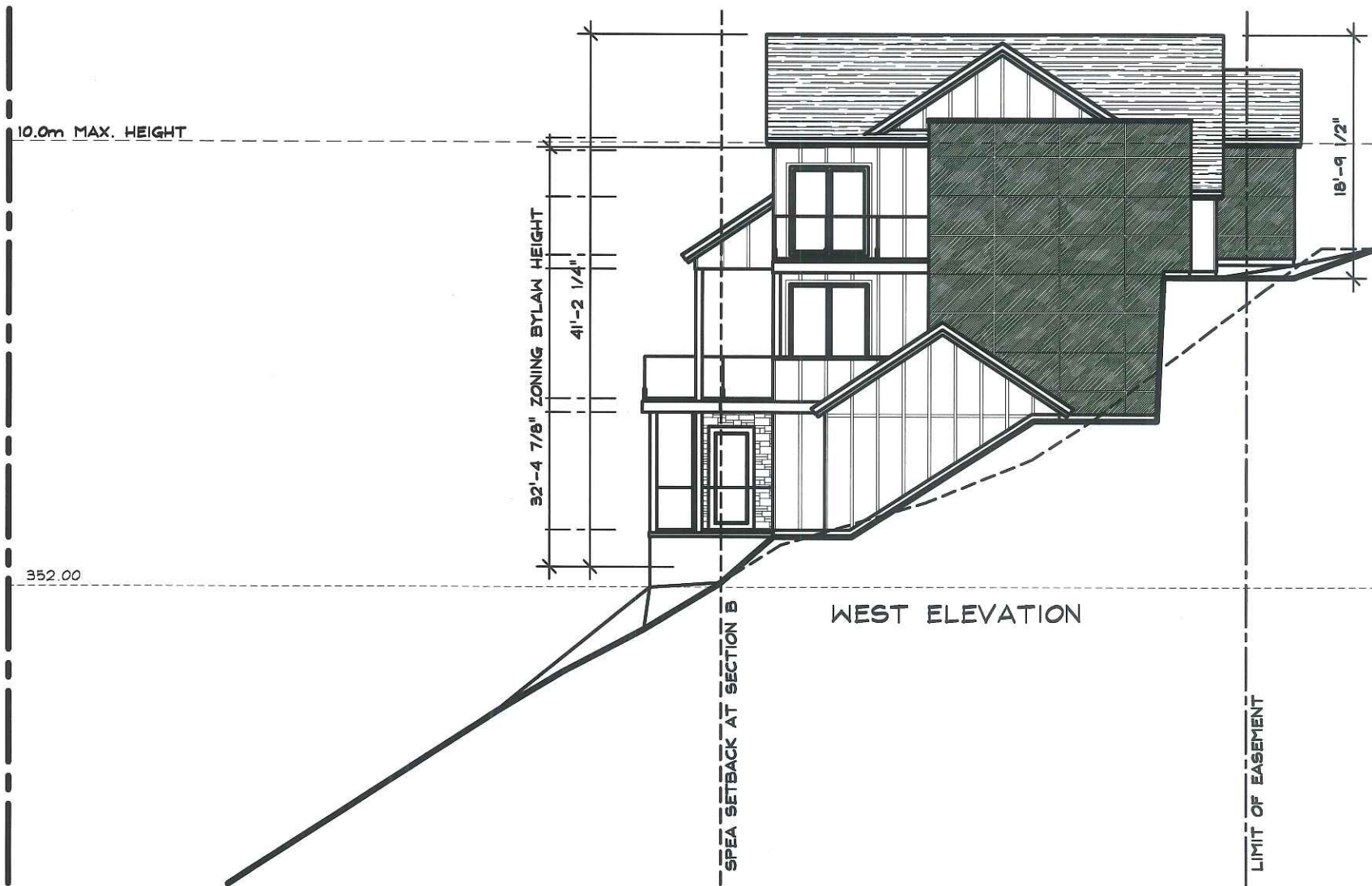


NORTH ELEVATION

THE BRANDT RESIDENCE

HILLSIDE DESIGN & DRAFTING INC

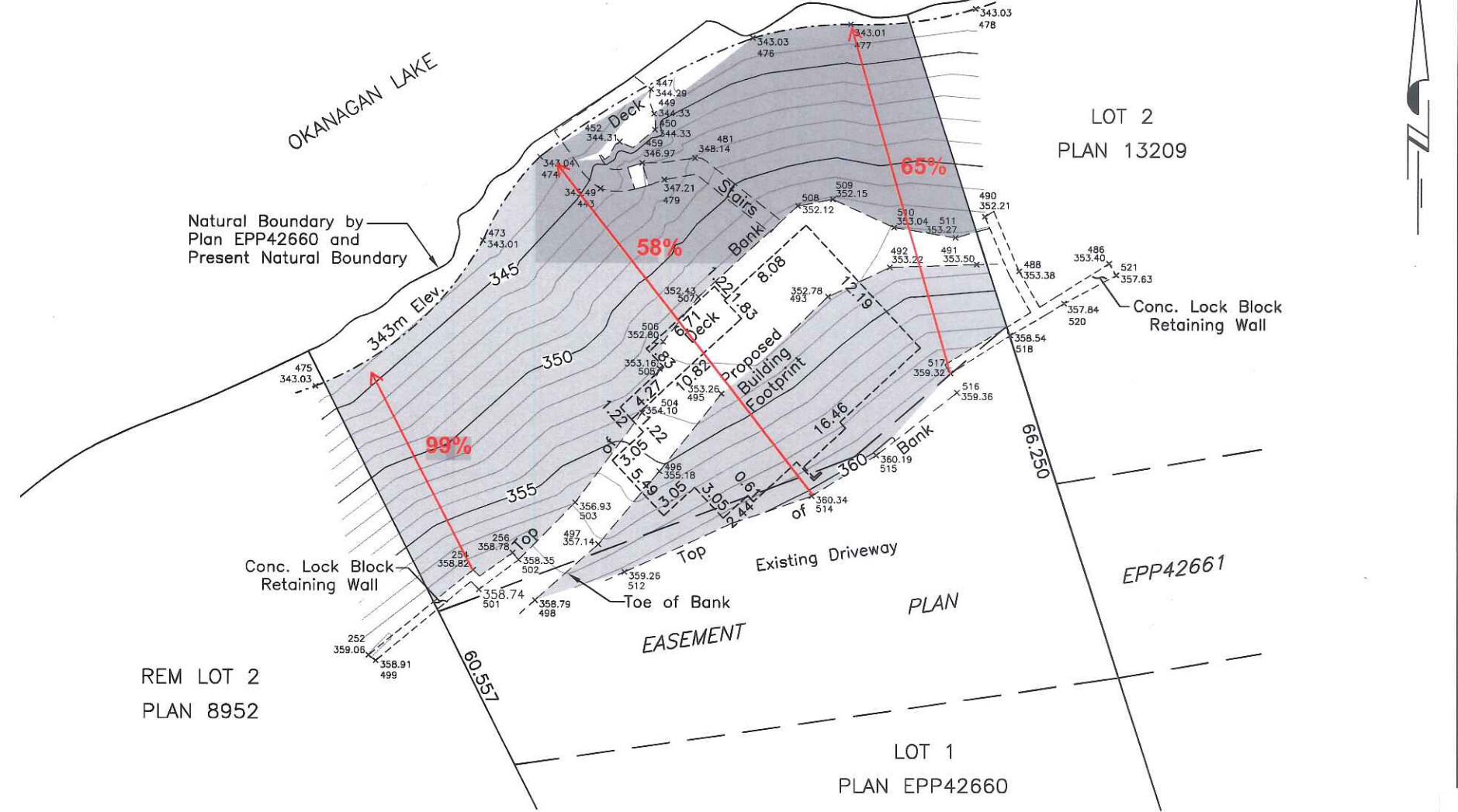
December 9, 2021



THE BRANDT RESIDENCE
 HILLSIDE DESIGN & DRAFTING INC

December 9, 2021

ALL DISTANCES ARE IN METRES.
 ELEVATIONS ARE IN METRES, CGVD28 DATUM.
 CONTOUR INTERVAL IS 5m.



LEGEND:
 x denotes spot elevation
 [shaded box] denotes slope >30%

SITE PLAN SHOWING AREAS
 EXCEEDING 30% SLOPE ON
 PART OF LOT 1, PLAN EPP42660,
 SEC 10, TP 13, ODYD

SCALE: 1 : 400	OUR FILE: R11185
DATE: 2 Dec 2021	DRAWN: KDG

Brandt
McPherson Maddox
 Land Surveying
 3500 - 30th Street
 Vernon, BC V1T 5E8
 Telephone: (250) 542-4343

111850T00

Attachment 5

Cascade

Geotechnical Ltd.

201 - 1889 Spall Road
Kelowna, BC, V1Y 4R2
Phone: 250-878-6446
Fax: 250-762-8073

CGL File No: J11-0705

October 3, 2011

9269 Eastside Road
Vernon, B.C.
V1H 1K5

Attention: Ron & Jude Mohr

Subject: Geotechnical Assessment
9269 Eastside Road
Vernon, B.C.

1.0 INTRODUCTION

Cascade Geotechnical Ltd. (Cascade) understands that you are considering subdividing the lot located at 9269 Eastside Road, in Vernon, B.C. The property is legally described as Lot 2, Plan 8952, Section 10, Township 13, ODYD. We have carried a geotechnical assessment of the lot, and this report presents the results of our assessment and provides general recommendations for development of the lot.

2.0 PROPOSED DEVELOPMENT

The subject lot is located at 9269 Eastside Road, approximately 6.5 kms southwest of the Vernon airport. The lot is approximately 1.1733 ha in area and is situated between Eastside Road to the south and Okanagan Lake to the north. We understand the proposed development will include subdividing the property into two lots. The new lot will be located in the east end of the lot and will be accessed by the existing common driveway. We also understand that development in the new lot will consist of a two storey house with a walkout basement. The house will be constructed between the common driveway and Okanagan Lake.

3.0 GEOTECHNICAL ASSESSMENT

On September 16, 2011, Cascade visited the site to observe the site conditions and terrain. The following site conditions were noted:

- The area of the new lot being proposed for future construction is located at the entrance to the lot and immediately downslope of the existing common access driveway. This is the only area on the new lot suitable for building.

-
- The area is characterized by shallow bedrock overlain with colluvium, or exposed bedrock. No indications of slope instability, such as tension cracks, sloughing or seepage were observed.
 - The driveway serving the subject property was partially constructed by blasting into a bedrock bluff located on the slope leading to Eastside Road. The slope below the common driveway is constructed from this blast rock.
 - Between the driveway and Okanagan Lake there is a bench area which has been designated as the future building site. A shed is presently located on this bench.
 - The blast rock fill has been graded to about 100% from the driveway down to the bench area. It will be possible to cut into the fill leading up to the driveway to enlarge the buildable area of the bench.
 - The crest of the bench area is close to the 15 m offset line for the no-built area of the shoreline. From the crest, the toe of the blast rock fill extends further down the slope towards Okanagan Lake.

4.0 DISCUSSION AND RECOMMENDATIONS

The proposed development is understood to consist of a two storey house with a walkout basement. The site conditions in the proposed subdivided area generally consisted of a bench area constructed of blast rock fill, over shallow or exposed bedrock. No indications of slope instability were observed. Based on our understanding of the proposed development and the existing site conditions, we believe the construction of a house in the proposed subdivided lot to be feasible, the construction of a house can be achieved while maintaining the existing blast rock fillslope leading down to Okanagan Lake, and without affecting the stability of the slope.

Detailed recommendations for site preparation, excavation, drainage, and foundation design would be based on the exact location of the house, and the depth at which natural ground or bedrock is encountered during construction. Cascade can provide recommendations for construction of the house after the review of building plans and during construction.

5.0 CLOSURE

We trust that you will find our recommendations sufficient at this time. If you require any additional details please do not hesitate to contact us.

Yours truly,
CASCADE GEOTECHNICAL LTD.

Prepared by:



Ron Campbell

Ron Campbell, P.Eng.
Geotechnical Engineer

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Protection Regulation: Assessment Report

Please refer to submission instructions and assessment report guidelines when completing this report.

Date

I. Primary QEP Information

First Name	Gisele	Middle Name	Marthe
Last Name	Rehe		
Designation	P.Ag	Company	Associated Environmental
Registration #	3117	Email	reheg@ae.ca
Address	200-2800 29 th Street		
City	Vernon	Postal/Zip	V1T 9P9
Prov/state	BC	Country	Canada
		Phone #	250-545-3672

II. Secondary QEP Information (use Form 2 for other QEPs)

First Name	Heather	Middle Name	
Last Name	Taylor		
Designation	P.Ag., R.P.Bio	Company	Associated Environmental
Registration #	2812, 3304	Email	reheg@ae.ca
Address	200-2800 29 th Street		
City	Vernon	Postal/Zip	V1T 9P9
Prov/state	BC	Country	Canada
		Phone #	250-545-3672

III. Developer Information

First Name	Ron	Middle Name	
Last Name	Mohr		
Company	Property owners		
Phone #	250-549-3339	Email	rondmohr@hotmail.com
Address	9269 Eastside Road		
City	Vernon	Postal/Zip	V1H 1K5
Prov/state	BC	Country	Canada

IV. Development Information

Development Type	Condition of sale, define development setbacks		
Area of Development (ha)	0.023	Riparian Length (m)	45 m
Lot Area (ha)	0.297	Nature of Development	Sale of property, future development of house
Proposed Start Date	1June21	Proposed End Date	1June22

V. Location of Proposed Development

Street Address (or nearest town)	9261 Eastside Road, Vernon, BC V1H 1K5		
Local Government	City of Vernon	City	Vernon
Stream Name	Okanagan Lake		
Legal Description (PID)	029-435-803	Region	Okanagan
Stream/River Type	Lake	DFO Area	8
Watershed Code	310		
Latitude	50	12	47
Longitude	119	24	07

Completion of Database Information includes the Form 2 for the Additional QEPs, if needed. Insert that form immediately after this page.

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Section 1. Description of Fisheries Resources Values and a Description of the Development proposal

(Provide as a minimum: Species present, type of fish habitat present, description of current riparian vegetation condition, connectivity to downstream habitats, nature of development, specific activities proposed, timelines)

This Riparian Areas Protection Regulation (RAPR) report was prepared for 9261 Eastside Road, Vernon, BC (PID 029-435-803, Legal Description: Lot 2, Plan 8952, Section 10, Township 13, Osoyoos Division of Yale District "the Property"). The Property is located within the City of Vernon and is subject to the Riparian Areas Protection Regulation (RAPR) as the Property is adjacent to Okanagan Lake (Figure 1).

STREAMSIDE PROTECTION AND ENHANCEMENT AREA

A site visit to assess the riparian area and determine the Streamside Protection and Enhancement Area (SPEA) was completed on April 27, 2021 by Gisele Rehe, P.Ag., of Associated. As described in the following assessment report, key points for this development include the following:

- The calculated SPEA is 30 m from the high-water mark (HWM) of Okanagan Lake (Figure 1).
- Future development on the Property will occur inside the SPEA (Figure 1) and the Property is subject to undue hardship (as detailed below).

PROPERTY OVERVIEW

The area northwest of the common driveway was previously cleared and covered with blast rock when Eastside Road was established (with blasting and bulldozing) in the 1960s. The terrain on the property is steep and rocky, with a combination of exposed bedrock bluffs and undisturbed forested vegetation. The shrub dominated sub-canopy is densely vegetated and looks highly productive. Sub-canopy species within the RAA include paper birch, (*Betula papyrifera*), Douglas maple (*Acer glabrum*), red alder (*Alnus rubra*), saskatoon (*Amelanchier alnifolia*), pin cherry (*Prunus pensylvanica*), ocean spray (*Holodiscus discolor*), mock orange (*Philadelphus lewisii*) and rose (*Rosa sp.*) (Photos 1-2).

The proposed development envelope (Photo 3) on the southeast end of the property borders the common driveway (providing access to neighbouring properties) and faces Okanagan Lake to the northwest. This proposed development envelope extends upslope (south) of the existing flat building pad and was found to be developable (Maddox, 2011). The area between the lake and the proposed development envelope comprises of a 50% grade and is moderately vegetated. Within this area, there is an existing raised wooded staircase and landing. The structure was built in 1985 and is categorized as grandfathered structure with the City of Vernon¹. There are privately owned properties on the west and east sides of the property. The area between the common driveway and the building area is steep but can be developed up towards the common

¹ Email communication on April 9, 2021 between Jing Niu (City of Vernon) and Patrick Tobin (FLNR) confirms grand-fathered structures. Email forwarded by Ron Mohr to Associated on July 27, 2021.

driveway. The forest health looks to be good within the SPEA. The building platform is 220 m² and makes up the majority of the only developable area, due to steep slopes and legal restrictions with the City of Vernon.

The property owner is applying for undue hardship under Division 2, Section 11.2 and Section 11.3 of RAPR. Under Section 11.2, the site was created by subdivision in 2011, in accordance with the laws in force in BC at the time the site was created. Under Section 11.3, the developable area of the site (due to steep slopes (cliffs) and City of Vernon legal restrictions) is less than the allowable footprint for the site. The area of human disturbance on the site is less than 70% of the area of the site, so the allowable footprint is 30% of the area. With the total area being 2970 m² (0.287 ha), 30% of this area is 891 m². Taking 891 m² and subtracting the total developable area of 48.4 m², the calculated area of encroachment into the SPEA is 842.6 m². The total development area (385 m²) plus the developable area (48.4 m²) is 433.4 m² which does not exceed the encroachment allotment of 842.6 m².

FISH AND FISH HABITAT

Okanagan Lake forms the north boundary of the property. Resident fish species of Okanagan Lake include (but are not limited to) rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), bull trout (*Salvelinus confluentus*), lake trout (*Salvelinus namaycush*), redbelt shiner (*Richardsonius balteatus*), prickly sculpin (*Cottus asper*), pumpkinseed (*Lepomis gibbosus*), and burbot (*Lota lota*)².

Shore spawning kokanee occur in Okanagan Lake, and have a history of spawning along the property shoreline; therefore, it is recognized as critical spawning habitat, and is mapped as a "Black Zone" by the Okanagan Region Large Lakes Foreshore Protocol.

The HWM is predominantly large angular rock, and the foreshore is comprised of large gravel (Photo 4). There is mature riparian vegetation along the HWM but because of the steepness within the SPEA, there is no suitable cover for fish habitat values. The proposed sale for future development within the building area does not pose the risk of creating harmful alteration, disturbance, or destruction (HADD), as discussed below.

PROPOSED DEVELOPMENT

The property has a pending sale. The new property owners intend to build a 0.023 ha house within the total development envelope and developable area as indicated in Figure 1. For future development to be approved, an updated report will be required with the final designs shown on the site plan as being within the total development envelope and developable area. A geotechnical assessment was completed in 2011. The geotechnical assessment found that the only area suitable for building was within the area located at the entrance (existing driveway) to the lot and immediately downslope of the existing common access driveway. This is the only area on the new lot suitable for building (Maddox 2011). Adjacent to the common driveway (southeast area of property), there is an insurmountable rock face about 10 meters high stopping access from the easement side of the property and a 10 metre drop off from Eastside road towards the property line. Aside from the geotechnical aspect (cliffs), there is no access to the southern half of the property. The portion of the property at the top of the common driveway (undevelopable area

² Fish Inventories Data Series (FIDQ). 2021. Available at <http://a100.gov.bc.ca/pub/fidq/infoSingleWaterbody.do> Accessed April 26, 2021.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

in Figure 1) was refused access by the City of Vernon (from Eastside Road), because the current driveway access requirements could not be met (City of Vernon mapping 2021). This report is in support of identifying the legal and natural restrictions for development. Future development is restricted to the total development envelope of 385m² plus the developable area of 48.4 m² for total development not to exceed 433.4 m². The stormwater management and sediment /erosion control infrastructure are included in the 433.4 m².

An environmental review of the Riparian Assessment Area (RAA), which is the area within 30 m of the high-water mark (HWM – 343 m a.s.l.) has been considered in terms of three key zones of sensitivity (ZOS).

- Shade ZOS (30 m due south of HWM)
- Large Woody Debris ZOS (15 m from HWM)
- Litter fall ZOS (15 m from HWM)

It was determined that although the proposed building area is within the shade ZOS, future development within the building envelope would not be expected to cause a HADD to fish habitat, as long as future development is outside of the large woody debris ZOS and litter fall ZOS (15 m from the HWM). The steepness of the property removes the functionality of the trees to provide shade in the development area (Photo 5). Because of the slope, hillside provides more shade than the trees do. The proposed buildable area within the building area (Figure 1) extends southwest towards the existing driveway.

In accordance with Section 10.2 of RAPR, the proposed development is subject to undue hardship as development:

- will not occur in the SPEA, other than in the area of the SPEA that is already an area of human disturbance.
- will be situated and designed so as to minimize any encroachment into the SPEA and,
- will not result in a HADD in the SPEA that protect the life processes of protected fish.

MITIGATION MEASURES

If development of the property is to proceed, the following mitigation measures will be followed to ensure protection of both the SPEA and Okanagan Lake:

- A Qualified Environmental Professional (QEP) will visit the site prior to construction, once during construction, and once post-construction;
- The QEP will explain the importance of the SPEA and associated protection measures to all construction personnel prior to construction;
- Silt fence will be installed between the northern edge of the development envelope to prevent the movement of sediment between the development envelope and Okanagan Lake;
- Exposed surfaces will be covered at the end of the work day if rainfall is forecast, to prevent sediment-laden runoff from entering the Okanagan Lake;
- The installation of deck posts will avoid damage to tree roots;
- Ground disturbance will be avoided during periods of heavy rainfall;
- Machinery will be inspected to confirm that it is clean, in good working order, and free of leaks;
- Refuelling and servicing of machinery will not be conducted on the Property; and Fuel and/or harmful liquids will be stored at least 30 m from the high-water mark of Okanagan Lake.

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FORM 1

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Section 2. Results of Riparian Assessment (SPEA width)

Attach or insert the Form 3 or Form 4 assessment form(s). Use enough duplicates of the form to produce a complete riparian area assessment for the proposed development

This section intentionally blank

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Results of Detailed Riparian Assessment

Refer to Section 3 of Technical Manual

Date: 2021-July-30
REVISED

Description of Water bodies involved (number, type)

Lake, Okanagan

Stream	
Wetland	
Lake	X
Ditch	
Number of reaches	
Reach #	

Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

	Channel Width(m)	Gradient (%)
starting point upstream		
downstream		
Total: minus high /low mean		
Channel Type	R/P	C/P S/P

I, Gisele Rehe hereby certify that:

a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*;

b) I am qualified to carry out this part of the assessment of the development proposal made by the developer Ron Mohr ;

c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

Site Potential Vegetation Type (SPVT)

	Yes	No	
SPVT Polygons		X	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes
			<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and</p> <p>d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.</p>
Polygon No:	1		Method employed if other than TR
SPVT Type	LC	SH	

FORM 1

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Polygon No:	1	LC	SH	TR	Method employed if other than TR
SPVT Type					
Polygon No:	NA				Method employed if other than TR
SPVT Type			X		

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	NA	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)	15					
Litter fall and insect drop ZOS (m)	15					
Shade ZOS (m) max	30	South bank	Yes	X	No	
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)					
Ditch Fish Bearing	Yes	No	If non-fish bearing insert no fish bearing status report		X	
SPEA maximum	30	(For ditch use table3-7)				

Segment No:		If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)						
Litter fall and insect drop ZOS (m)						
Shade ZOS (m) max		South bank	Yes		No	
SPEA maximum		(For ditch use table3-7)				

Segment No:		If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)						
Litter fall and insect drop ZOS (m)						
Shade ZOS (m) max		South bank	Yes		No	
SPEA maximum		(For ditch use table3-7)				

Comments

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 3. Site Plan

Insert jpg file below

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PROJECT NO.: 2021-8868
 DATE: July 2021
 DRAWN BY: BdJ

FIGURE 1: SITE PLAN

Ron Mohr
 9261 Eastside Road RAPR

FORM 1

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Section 4. Measures to Protect and Maintain the SPEA

This section is required for detailed assessments. Attach text or document files, as need, for each element discussed in Part 4 of the RAPR. It is suggested that documents be converted to PDF *before* inserting into the assessment report. Use your "return" button on your keyboard after each line. You must address and sign off each measure. If a specific measure is not being recommended a justification must be provided.

1. Danger Trees	No danger trees have been assessed at this time and there is no plan to remove trees within the 30 m SPEA. If danger trees are identified, by a qualified professional to assess danger trees, they will be removed in accordance with the RAPR.
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
2. Windthrow	The building area (project footprint) has been previously cleared of trees and no trees will be removed within the SPEA for the proposed works.
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
3. Slope Stability	<p>On September 16, 2011, Cascade visited the site to observe the site conditions and terrain. The following site conditions were noted:</p> <ul style="list-style-type: none"> • The area of the new lot being proposed for future construction is located at the entrance to the lot and immediately downslope of the existing common access driveway. This is the only area on the new lot suitable for building. Assessment attached and photos 6 & 7.
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
4. Protection of Trees	No trees within the riparian area will be removed. The protection of trees and tree roots will be upheld within the SPEA.
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p>	

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<p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
<p>5. Encroachment</p>	<p>The proposed development will encroach into the SPEA. However, development will only take place within the proposed building area and will not reduce shade along the foreshore contributing to a HADD.</p>
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
<p>6. Sediment and Erosion Control</p>	<p>Silt fence will be installed between the northern edge of the development envelope to prevent the movement of sediment between the development envelope and Okanagan Lake.</p>
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
<p>7. Stormwater Management</p>	<p>Any development proposed on this site will be designed to direct roof run-off to the ground via a gutter system leading to a small dry well and/or a rock pit. Run-off will not be permitted to be discharged to Okanagan Lake. Stormwater infrastructure within the SPEA is to be accounted for in the Encroachment Allotment.</p>
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
<p>8. Floodplain Concerns (highly mobile channel)</p>	<p>The proposed area of development within the building area is approximately 343 m a.s.l., which is 10 m in elevation above the defined high-water mark (343 m) for Okanagan Lake.</p> <p>In addition, future development will comply with Policy Section F of the Vernon Official Community Plan to build outside of the 1:200 year floodplain of provide sufficient flood proofing.</p>
<p>I, <u>Gisele Rehe</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Mohr</u>;</p>	

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- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

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FORM 1

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Section 5. Environmental Monitoring

Attach text or document files explaining the monitoring regimen Use your "return" button on your keyboard after each line. It is suggested that all document be converted to PDF *before* inserting into the PDF version of the assessment report. Include actions required, monitoring schedule, communications plan, and requirement for a post development report.

Before development commences, a QEP will be retained as the project environmental monitor to monitor that mitigation measures are followed and documented accordingly.

Upon approval of an accepted updated RAPR report with final designs (within the total development envelope and developable area), future development will be monitored pre-construction, mid-construction and post-construction.

A post-development/construction report will be prepared to summarize the degree of compliance with the measures listed above, and to document that water resources and riparian vegetation within the SPEA were protected during construction. The post-development/construction report will be made available upon request.

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Section 6. Photos

Provide a description of what the photo is depicting, and where it is in relation to the site plan.



Photo 1 – Riparian vegetation along foreshore facing southeast.



Photo 2- Riparian vegetation foreshore facing east up to building area.

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Photo 3 – Building area and facing driveway. Proposed building area extend upslope (south) of flat building pad.



Photo 4 – The substrate along foreshore is composed of large angular rock and large gravels.

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Photo 5 – The steepness along the ZOS remove the functionality of the trees to provide shade in the development area.



Photo 6 – Extremely sloped areas of property.



Photo 7- South sloped areas of property found to be undevelopable due to 10 m cliff facings.

Section 7. Professional Opinion

Qualified Environmental Professional opinion on the development proposal's riparian assessment.

Date

1. I/We Gisele Rehe, P.Ag. and Heather Taylor, P.Ag., R.P.Bio

Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.)

hereby certify that:

- a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*;
- b) I am/We are qualified to carry out the assessment of the proposal made by the developer Ron Mohr, which proposal is described in section 3 of this Assessment Report (the "development proposal"),
- c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and

FORM 1

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- d) In carrying out my/our assessment of the development proposal, I have/We have followed the specifications of the Riparian Areas Protection Regulation and assessment methodology set out in the minister's manual; AND
2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:
- a) the site of the proposed development is subject to undue hardship, (if applicable, indicate N/A otherwise) and
 - b) the proposed development will meet the **riparian protection standard** if the development proceeds as proposed in the report and complies with the measures, if any, recommended in the report.

[NOTE: "Qualified Environmental Professional" means an individual as described in section 21 of the Riparian Areas Protection Regulation.]

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FORM 1

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Submission Instructions Riparian Areas Protection Regulation – Qualified Environmental Professional – Assessment Report RAR-QEP-AR

Forms you will need to complete are

- Form 1 which has the database information, the description of the fisheries resources, development site plan, measures to protect and maintain the SPEA, and environmental monitoring.
- Form 2, if more QEPs are part of the project team.
- Either Form 3 the detailed assessment form(s) or Form 4 simple assessment form(s) which is for the results of the riparian assessment (SPEA width). Use enough copies of the form to complete the assessment of the site.
- Form 5 is the photo form(s). Duplicate for additional photos.

NB: Refer to Part 4 of the RAPR and the Technical Manual for detailed instructions on the information required for completing the Assessment Report.

A complete Riparian Assessment Report based on the template forms must be converted to a *single* Portable Document Format PDF file prior to uploading onto the Notification System.

The Assessment Report must be submitted complete with all information specified and posted to the notification system to be reviewed by the province. Upon approval notification will be provided to the local government.

Tips for working with MS Word Template Forms

Using the forms

- Before beginning, print a hard copy of the form and the guidance files for reference
- Open the template
- Enter data into the shaded fields on the form
- Use TAB to move from one field to another; SHIFT-TAB to go in reverse
- Text and digital photos may be inserted from other applications
- The amount of text that can be entered in each box is limited and cannot be changed by the user; boxes with date information, for example, require input like: yyyy-mm-dd.

Saving the completed form

- Assign name to the completed form
- Save a word document (*.doc file)
- Do not overwrite the Template (*.dot file) with your completed form
- If you do overwrite the template, you can download a new copy from this web site

CGL File No: J11-0705

October 3, 2011

9269 Eastside Road
Vernon, B.C.
V1H 1K5

Attention: Ron & Jude Mohr

Subject: Geotechnical Assessment
9269 Eastside Road
Vernon, B.C.

1.0 INTRODUCTION

Cascade Geotechnical Ltd. (Cascade) understands that you are considering subdividing the lot located at 9269 Eastside Road, in Vernon, B.C. The property is legally described as Lot 2, Plan 8952, Section 10, Township 13, ODYD. We have carried a geotechnical assessment of the lot, and this report presents the results of our assessment and provides general recommendations for development of the lot.

2.0 PROPOSED DEVELOPMENT

The subject lot is located at 9269 Eastside Road, approximately 6.5 kms southwest of the Vernon airport. The lot is approximately 1.1733 ha in area and is situated between Eastside Road to the south and Okanagan Lake to the north. We understand the proposed development will include subdividing the property into two lots. The new lot will be located in the east end of the lot and will be accessed by the existing common driveway. We also understand that development in the new lot will consist of a two storey house with a walkout basement. The house will be constructed between the common driveway and Okanagan Lake.

3.0 GEOTECHNICAL ASSESSMENT

On September 16, 2011, Cascade visited the site to observe the site conditions and terrain. The following site conditions were noted:

- The area of the new lot being proposed for future construction is located at the entrance to the lot and immediately downslope of the existing common access driveway. This is the only area on the new lot suitable for building.

- The area is characterized by shallow bedrock overlain with colluvium, or exposed bedrock. No indications of slope instability, such as tension cracks, sloughing or seepage were observed.
- The driveway serving the subject property was partially constructed by blasting into a bedrock bluff located on the slope leading to Eastside Road. The slope below the common driveway is constructed from this blast rock.
- Between the driveway and Okanagan Lake there is a bench area which has been designated as the future building site. A shed is presently located on this bench.
- The blast rock fill has been graded to about 100% from the driveway down to the bench area. It will be possible to cut into the fill leading up to the driveway to enlarge the buildable area of the bench.
- The crest of the bench area is close to the 15 m offset line for the no-built area of the shoreline. From the crest, the toe of the blast rock fill extends further down the slope towards Okanagan Lake.

4.0 DISCUSSION AND RECOMMENDATIONS

The proposed development is understood to consist of a two storey house with a walkout basement. The site conditions in the proposed subdivided area generally consisted of a bench area constructed of blast rock fill, over shallow or exposed bedrock. No indications of slope instability were observed. Based on our understanding of the proposed development and the existing site conditions, we believe the construction of a house in the proposed subdivided lot to be feasible, the construction of a house can be achieved while maintaining the existing blast rock fill slope leading down to Okanagan Lake, and without affecting the stability of the slope.

Detailed recommendations for site preparation, excavation, drainage, and foundation design would be based on the exact location of the house, and the depth at which natural ground or bedrock is encountered during construction. Cascade can provide recommendations for construction of the house after the review of building plans and during construction.

5.0 CLOSURE

We trust that you will find our recommendations sufficient at this time. If you require any additional details please do not hesitate to contact us.

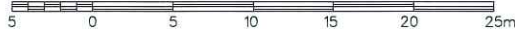
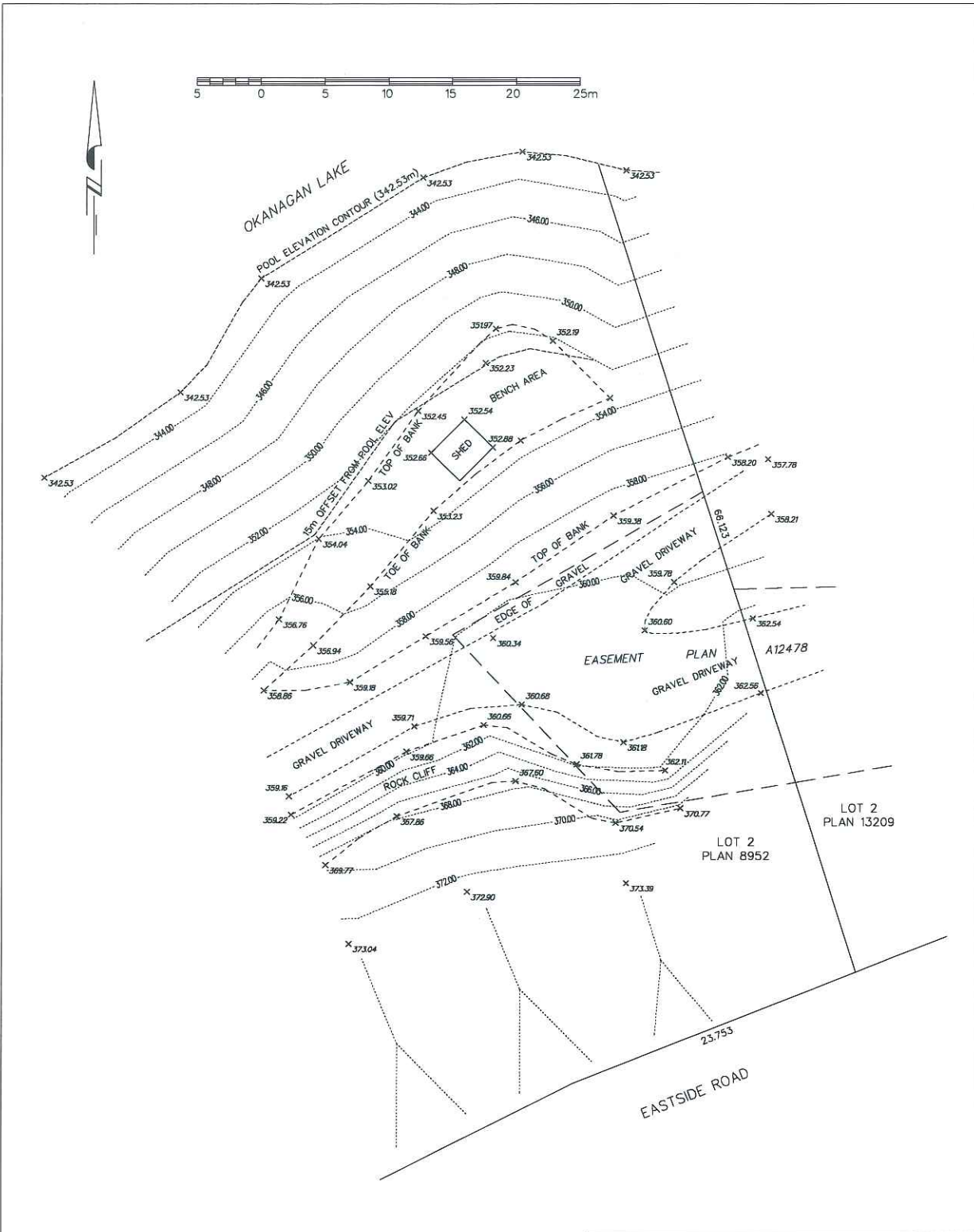
Yours truly,
CASCADE GEOTECHNICAL LTD.

Prepared by:



Ron Campbell

Ron Campbell, P.Eng.
Geotechnical Engineer



NOTES

- Distances are in metres.
- Elevations are in metres.
- Geodetic datum.
- Contour interval 2.0 m

LEGEND

x 360.00 denotes spot elevation

SITE PLAN OF PART OF LOT 2,
PLAN 8952, SEC 10, TP 13, ODYD

SCALE: 1 : 300	OUR FILE: R9219
DATE: 7 Sept 2011	DRAWN: RB

Mohr

WILLIAM E. MADDOX
B. C. Land Surveyor
 3500 - 30th Street, Vernon, B. C. V1T 5E8

92190T00



On-Table
Supplemental Information
DVP00537

P (604) 439 0922
F (604) 439 9189
geopacific.ca
201-1889 Spall Road
Kelowna, B.C. V1Y 4R2

Anne and Kobie Brandt
6475 Wellington Avenue
West Vancouver, B.C.
V7W 2H7

December 9, 2021
File:20127

Attention: Anne and Kobie Brandt

**Re: Geotechnical Assessment Application: Proposed Residential Development
9261 Eastside Road, Vernon, B.C.**

1.0 INTRODUCTION

GeoPacific Consultants Ltd. (GeoPacific) understands that a new single-family residential home is proposed for the above referenced site.

GeoPacific, formerly Cascade Geotechnical Ltd, produced a Geotechnical Assessment letter dated October 2, 2011, for the subdivision of the subject property. The City of Vernon has requested that a letter be prepared with updated recommendations for construction of the residence. In preparing this letter, we have reviewed McPherson Maddox Land Surveying's site plan, dated December 2, 2021, and the architectural drawings of the proposed residence, prepared by Hillside Design & Drafting Inc in an e-mail dated December 8, 2021.

This report has been prepared exclusively for Anne and Kobie Brandt, their design and construction team, and the City of Vernon. No other use is permitted without written consent from GeoPacific.

2.0 SITE DESCRIPTION

GeoPacific conducted a preliminary site review of the above referenced site on September 7, 2021. The property is located on the north side of Eastside Road, is irregular in shape, and with an elevation increase of approximately 30 m from Okanagan Lake to Eastside Road. Access is provided from an easement from the neighbouring properties to the east. We understand that the proposed single-family residence will be sited on an existing level bench and built into the slope leading upwards to the existing easement.

3.0 FIELD INVESTIGATION

On October 5, 2021, a geotechnical review was completed and limited to determining the soil conditions of the existing level bench. Two test pits were excavated using a Hitachi 180 Excavator provided by the client. The excavation of the test pit was supervised in the field by a representative from GeoPacific. The test pit was excavated to an approximate depth of 2 m below existing ground elevation.

4.0 SUBSURFACE CONDITIONS

Based on observations during the site visit, the surficial geology of the property generally consists of a thin veneer of soil overlying bedrock. Based on published bedrock geology mapping by Okulitch (2013) the bedrock consists of Jurassic to Paleogene monzonite, hornblende and/or biotite and may include granitoids of the Nelson Plutonic Suite.

The soil profile encountered at the test pit locations can generally be described as uncontrolled blast rock fill overlaying in-situ bedrock

No seepage was observed at the time of the site visit. Exposed bedrock outcrops were observed on site, and groundwater seepage is anticipated to daylight at soil/bedrock contact zones during period of runoff. It should be noted that groundwater and overland flow conditions may fluctuate seasonally and during periods of heavy rainfall. It is anticipated that development of the residence will not alter the natural drainage characteristics of the site.

5.0 DISCUSSION AND RECOMMENDATIONS

Based on our understanding of the proposed construction and the existing subsurface conditions, from a Geotechnical perspective the site is well suited for the proposed residential development. We are of the opinion that, from a geotechnical perspective, the proposed location of the residence can be safely used for the intended purpose. For the purposes of this project, safe is defined as having less than a 2% chance in 50 years of experiencing a geotechnical hazard which would affect the proposed construction.

The following sections provide recommendations for site preparation, foundation design and compaction of engineered fill.

5.1 Site Preparation and Excavation

All organic topsoil or vegetation, fill, clay and or any loose, soft, wet, weathered or disturbed soils should be removed from within the foundation area to expose the underlying bedrock. Where the bedrock subgrade is inclined in the footing areas, the bedrock should be benched and/or levelled. The exposed subgrades, as described above, should be reviewed by a geotechnical engineer prior to placement of engineered fill or forms.

GeoPacific to review subgrade areas during stripping

5.2 Engineered Fill

If the excavation needs to be brought up to footing grade, we recommend that the fill be granular engineered fill. Granular engineered fill material should be well graded, with a maximum size of 150 millimetres and with no more than 8% passing the #200 sieve. We recommend that granular engineered fill be placed in maximum lifts of 300 millimetres and compacted to a minimum of 95% of Modified Proctor maximum dry density (MPMDD) in accordance with ASTM D1557, and within 2% of optimum moisture content. We recommend that the density of engineered fill should be determined with in-situ density tests.

GeoPacific to review all compaction work

5.3 Foundation Bearing Capacity

The building area should first be prepared as outlined above. Foundations supported on the bedrock may be designed on the basis of an serviceability Limit States (SLS) bearing pressure of 150 kPa. Foundations supported on granular engineered fill which has been compacted to a minimum of 95% of MPMDD as outlined above, may be designed on the basis of an SLS bearing pressure of 100 kPa. A factor of 1.5 can be applied to the SLS for the Ultimate Limit States (ULS) bearing pressure.

GeoPacific must review all foundation subgrade areas prior to the formwork placement.

5.4 Seismic Site Class

The site is classified as Site Class “B” according to the 2018 British Columbia Building Code (BCBC), Table 4.1.8.4.A. Peak ground accelerations on soft ground for the approximate site location is 0.062 g (National Resource Canada: 50.207740 degrees North, -119.401224 degrees West).

5.5 Building Setbacks

The footings should be set back from the crest of the slope approximately 1.5 metres when founded on bedrock. Setbacks for footings founded on soil slopes should be a minimum of 3.0 m from the crest of the slope.

GeoPacific must review the building layout and locations in advance of construction to confirm the above setbacks

5.6 Frost Protection of Footings

Footings should be founded at least 0.9 m below the final grade for frost protection. Footings bearing directly on competent bedrock do not require frost protection.

5.7 Site Drainage

Where the floor slab elevation is below ground elevation, we recommend a foundation drainage system be installed around the perimeter of the foundations. The perimeter drainage system should include a minimum 100 mm diameter perforated drainage pipe covered with a minimum 0.3 m of drain rock. The drain rock should be covered with non-woven filter fabric prior to backfilling against the foundation walls.

The foundation drainage system should discharge to a storm service connection, where available, or open discharge to bedrock. A rodent guard must be installed at the end of any perimeter drain pipe discharging to the surface of the bedrock. The elevation of the open end of the perimeter drain should be below the bottom of footing elevation.

Storm water from roof downspouts can be discharged to a storm service connection, where available, or onto splash pads directed away from the foundation and neighbouring property lines. We consider the disposal of storm water to splash pads will have no negative effect to adjacent properties.

5.8 Erosion and Sedimentation Control

To reduce the risk of erosion and sedimentation after construction on the site, exposed soil should be vegetated at the earliest opportunity.

5.9 Slab-On-Grade Floors

Site preparation for the floor slab should include a rough-in for a subfloor depressurization system to protect from soil gas ingress. The system is described in detail in Section 9.13.4. of the 2018 edition of the B.C. Building Code. Accordingly, a minimum of 100 millimetres of porous granular material, such as pea gravel, should be placed immediately below the slab, and access through the slab should be provided to allow for depressurization for all contiguous areas. A vapour barrier should be placed between the granular fill and the concrete slab to inhibit the migration of moisture and gas through the slab.

5.10 Permanent Slopes

Permanent slopes should be graded no steeper than 2.0 Horizontal (H) to 1.0 Vertical (V) for in-situ soil or compacted engineered fill.

Permanent slopes in bedrock should be graded no steeper than 0.25H:1.0V. A Geotechnical Engineer should be allowed to review the bedrock cut during construction to determine if additional requirements such as rock catchment ditching will be required.

5.11 Temporary Slopes

We expect the excavations would be sloped where possible as it is typically more economical to do so. It is anticipated that excavation for foundations would be within 3 m of existing site grades. Excavation is expected to be above the static groundwater table; however, pumps and sumps should be adequate to manage any groundwater encountered during installation of on-site utilities. All excavations should be sloped at 1H:1V without review by a professional geotechnical engineer. Alternatively, utility trenches could be shored in accordance with the latest Work Safe BC guidelines.

Any excavations exceeding 1.2 m in depth require review by a Professional Engineer prior to worker-entry, in accordance with Work Safe BC requirements.

6.0 CONSTRUCTION REVIEWS

As required for Municipal “Letters of Assurance”, GeoPacific Consultants Ltd. will carry out sufficient field reviews during construction to ensure that the geotechnical design recommendations contained within this report have been adequately communicated to the design team and to the contractors implementing the design. These field reviews are not carried out for the benefit of the contractors and therefore do not in any way effect the contractor’s obligations to perform under the terms of his/her contract.

It is the contractors’ responsibility to advise GeoPacific Consultants Ltd. (a minimum of 48 hours in advance) that a field review is required. Geotechnical field reviews are normally required at the time of the following:

1. Review of foundation subgrade prior to footing construction
2. Review of the compaction of engineered fill
3. Review of any temporary cut slopes or excavation in excess of 1.2 meters in height prior to worker-entry per Section 4.10 of this report
4. Review of footing formwork prior to placement of concrete

It is critical that these reviews are carried out to ensure that our intentions have been adequately communicated. It is also critical that contractors working on the site view this document in advance of any work being carried out so that they become familiarised with the sensitive aspects of the works proposed. It is the responsibility of the developer to notify GeoPacific Consultants Ltd. when conditions or situations not outlined within this document are encountered.

7.0 CLOSURE

This report has been prepared exclusively for Anne and Kobie Brandt for the purpose of providing geotechnical recommendations for the design and construction of the proposed residential development described herein, and can be relied upon by the client and the City of Vernon. The report remains the property of GeoPacific Consultants Ltd. and unauthorized use, or duplication of this report is prohibited.

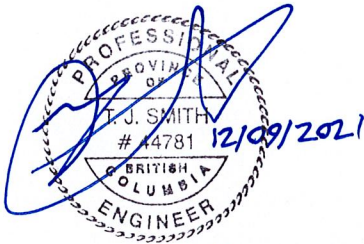
We are pleased to be of assistance to you on this project and we trust that our comments and recommendations are both helpful and sufficient for your current purposes. If you would like further details or would like clarification of any of the above, please do not hesitate to call.

For:

GeoPacific Consultants Ltd.

Prepared by:

Reviewed by:



Tyler J. Smith, P.Eng.
Geotechnical Engineer

Permit to Practice EGBC
1000782

Roberto Avendano, B.Eng., P.Eng.
Principal



THE CORPORATION OF THE CITY OF VERNON REPORT TO COUNCIL

SUBMITTED BY: Matt Faucher
Planner, Current Planning

COUNCIL MEETING: REG COW I/C
COUNCIL MEETING DATE: TBD
REPORT DATE: December 10, 2021
FILE: 3090-20 (DVP00464)

SUBJECT: DEVELOPMENT VARIANCE PERMIT APPLICATION FOR 4300 35th AVENUE

PURPOSE:

To review the Development Variance Permit Application (DVP00464) to vary building height in Zoning Bylaw #5000 in order to support the construction of a townhome development at 4300 35th Avenue.

RECOMMENDATION:

THAT Council support Development Variance Permit Application (DVP00464) to vary the following section of Zoning Bylaw #5000 to permit the construction of a townhome development on LT A DL70 ODYD PL KAP68832 Except PL KAP80911 (4300 35th Avenue):

- a) Section 9.10.6 maximum height is the lesser of 10m or 2.5 storeys to 10m or 3 storeys;

AND FURTHER, that Council’s support of DVP00464 is subject to the following:

- a) the site plan and building elevations illustrating the general siting and height of the proposed development be attached to and form part of DVP00464.

ALTERNATIVES & IMPLICATIONS:

THAT Council not support Development Variance Permit Application (DVP00464) to vary the following section of Zoning Bylaw #5000 to permit the construction of a townhome development on LT A DL70 ODYD PL KAP68832 Except PL KAP80911 (4300 35th Avenue):

- a) Section 9.10.6 maximum height is the lesser of 10m or 2.5 stories to 10m or 3 stories;

Note: Denial of the Development Variance Permit Application would restrict the height of the proposed structures to meet the existing provisions of Zoning Bylaw #5000. The applicant would be required to revise the proposal and future development on the subject property to meet the prevailing zoning provisions.

ANALYSIS:

A. Committee Recommendations:

At its meeting of December 14, 2021, the Advisory Planning Committee passed the following resolution:

“As cited by the Committee.”

B. Rationale:

1. The subject property is located at 4300 35th Avenue as shown on Figures 1 and 2. The property is approximately 76,560m² in size and located within the East Bella Vista Highlands Neighbourhood Plan Area (Turtle Mountain).
2. At its Regular Meeting of October 25, 2021, Council adopted Official Community Plan Amendment Bylaw #5470 and Rezoning Amendment Bylaw #5755. The amending bylaws realigned the boundaries of the Residential Medium Density and Parks & Open Space future land use designations, as well as rezoned the subject property from A3 – Rural Small Holdings to RM1 – Row Housing Residential. The subject application pertains to development regulations within Section 9.10.6 of Zoning Bylaw #5000. The application proposes to increase the maximum storey provision of the height regulation for principal structures from 2.5 storeys to 3 storeys in order to reduce grading and retaining requirements needed to achieve the 2.5 story height regulation.
3. The applicant proposes to construct a townhome development on the subject property with a gross density of approximately 9.91 units per acre.
4. The application proposes to vary the regulation for storeys only; the height regulation of 10m can be met. The variance request is for “Type 4” units only (~13 units). The site plan for the proposed development is illustrated in Attachment 1. Building elevations for Type 4 units are illustrated in Attachment 2.
5. Administration supports the requested variance for the following reasons:
 - a) The proposed variance would reduce the amount of grading and retaining required on the site to meet the 2.5 storey requirement.
 - b) The positioning of the proposed structures which the variance would apply to have been aligned with the slope and other proposed structures in the development to mitigate visual impacts of the Type 4 units both within the development and from adjacent properties.



Figure 1 - Property Location Map



Figure 2: Aerial Photo of Property

C. Attachments

- Attachment 1 – Site Plan
- Attachment 2 – Building Elevations

D. Council's Strategic Plan 2019 – 2022 Goals/Action Items:

The subject application involves the following goals/action items in Council's Strategic Plan 2019 – 2022:

- Increasing the number of new units in existing neighbourhoods with close proximity to services.
- Increasing attainable housing by supporting multi-family developments with close proximity to services.

E. Relevant Policy/Bylaws/Resolutions:

1. The following provisions of Zoning Bylaw #5000 RM1 – Row Housing Residential Zone are relevant to the subject application:

- Zoning Bylaw #5000:

Section 9.10.6 – Maximum height is the lesser of 10.0m or 2.5 storeys.

BUDGET/RESOURCE IMPLICATIONS:

N/A

Prepared by:

Approved for submission to Council:

X

Signer 1

Matt Faucher
Planner, Current Planning

Will Pearce, CAO

Date: _____

X

Signer 2

Kim Flick
Director, Community Infrastructure and Development

REVIEWED WITH

- | | | |
|----------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------|
| <input type="checkbox"/> Corporate Services | <input type="checkbox"/> Operations | <input checked="" type="checkbox"/> Current Planning |
| <input type="checkbox"/> Bylaw Compliance | <input type="checkbox"/> Public Works/Airport | <input checked="" type="checkbox"/> Long Range Planning & Sustainability |
| <input type="checkbox"/> Real Estate | <input type="checkbox"/> Facilities | <input checked="" type="checkbox"/> Building & Licensing |
| <input type="checkbox"/> RCMP | <input type="checkbox"/> Utilities | <input checked="" type="checkbox"/> Engineering Development Services |
| <input checked="" type="checkbox"/> Fire & Rescue Services | <input type="checkbox"/> Recreation Services | <input type="checkbox"/> Infrastructure Management |
| <input type="checkbox"/> Human Resources | <input type="checkbox"/> Parks | <input checked="" type="checkbox"/> Transportation |
| <input type="checkbox"/> Financial Services | | <input type="checkbox"/> Economic Development & Tourism |
| <input checked="" type="checkbox"/> COMMITTEE: APC (Dec 14/21) | | |
| <input type="checkbox"/> OTHER: | | |

