



CORPORATION OF THE CITY OF VERNON

ADVISORY PLANNING COMMITTEE

TUESDAY, MARCH 01, 2022 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) February 15, 2022 (attached)

5) NEW BUSINESS

a) DVP00531 (117 Kalamalka Lake Road)

6) INFORMATION ITEMS

7) NEXT MEETING

The next meeting is tentatively scheduled for **March 15, 2022**

8) ADJOURNMENT



THE CORPORATION OF THE CITY OF VERNON

MINUTES OF THE ADVISORY PLANNING COMMITTEE MEETING HELD ON TUESDAY, FEBRUARY 15, 2022 at 4:00 PM COUNCIL CHAMBERS (OKANAGAN LAKE ROOM)

PRESENT: VOTING
Mark Longworth, Chair
Jamie Paterson
Don Schuster
Phyllis Kereliuk
Monique Hubbs-Michiel
Harpreet Nahal
Doug Neden

NON-VOTING: Mayor Cumming

ABSENT: Joshua Lunn
Lisa Briggs

STAFF: Craig Broderick, Manager, Current Planning
Michelle Austin, Current Planner
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 J. Paterson, seconded by M. Hubbs-Michiel:

THAT the Advisory Planning Committee agenda of February 15, 2022, be adopted.

CARRIED

ADOPTION OF MINUTES Moved by P. Kereliuk, and seconded by D. Neden:

THAT the minutes for the Advisory Planning Committee meeting of December 14, 2021, be adopted.

CARRIED

NEW BUSINESS:

**DVP00546
12-40 KESTREL PLACE**

M. Austin, Current Planner, provided an overview of the application as follows:

- The subject site is located at the end of Tronson Road in the Canadian Lakeview Neighbourhood. The strata is designated as residential low density (RLD) and zoned small lot residential (R4).
- The owner proposes to construct a single detached house on the slope and to vary the front yard setback. The site plan shows an existing retaining wall and house footprint partially within a $\geq 30\%$ slope.
- Two geotechnical assessments have been completed on the subject property. The foundation will be rock bolted with vertical dowels drilled into solid rock.
- The recommendation before the Committee is that the requested variance be approved and that the relevant plans for the site, geotechnical assessments and environmental assessment be attached to the variance.

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

- The Committee asked staff, in future, to ensure they be provided with gate codes to facilitate viewing strata properties in the event that gates are locked.
- It was discussed that the geotechnical report did not accurately express the orientation of the house corners. In response, staff clarified that they requested an update to the original geotechnical report to resolve that issue. An additional geotechnical assessment was provided; however, the original assessment was not amended prior to the meeting. Both assessments are attached to the staff report.

- Staff advised they would confirm the accuracy of the house orientations, as shown on the Site Plan, and request corrections if necessary.

Moved by D. Neden, and seconded by M. Hubbs-Michiel:

THAT Council approve Development Variance Permit Application 00546 (DVP00546) on SL 12, DL 297, ODYD, Strata Plan KAS1980 (#12 – 40 Kestrel Place) by varying Zoning Bylaw #5000 as follows:

- a) Section 4.16.1 – Hillside Development Areas regulations are varied to allow construction of buildings, structures or a swimming pool on a slope of 30% or greater; and,
- b) Section 9.5.5 – R4 Small Lot Residential minimum front yard is varied from 3.5m to 3m for the construction of single detached housing.

AND FURTHER that Council's approval of Development Variance Permit DVP00546 is subject to the following:

- a) That the proposed development substantially complies with an updated Site Plan to be attached to and form part of DVP00546;
- b) That the proposed development generally complies with updated House Elevations to be attached to and form part of DVP00546;
- c) That the proposed development strictly complies with the Geotechnical Assessments, by Horizon Geotechnical, dated August 6, 2021 and February 2, 2022, to be attached to and form part of DVP00546;
- d) That the proposed development strictly complies with the Environmental Impact Assessment, by Triton Environmental Consultants, updated February 2022, to be attached to and form part of DVP00546; and
- e) That the slope analysis, by Advanced Surveying Ltd., dated January 2022, be attached to and form part of DVP00546;

as outlined in the report titled “Development Variance Permit Application for #12 – 40 Kestrel Place” dated February 9, 2022 and respectfully submitted by the Current Planner.

CARRIED

**DVP00547
8160 OKANAGAN
LANDING ROAD**

M. Austin, Planner, provided an overview of the application as follows:

- The subject property is located on the upland side of the road, not on Lakeshore. The owner is looking to construct a 12ft x 24ft inground pool.
- Staff confirmed that the backyard does not provide sufficient room to install a pool due to existing paving, access easement and steep slope.

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

- Due existing retaining walls and topography relative to the Okanagan Landing Road, the proposed pool would not be visually prominent from below (i.e. from Okanagan Landing Road).
- The Committee expressed concern regarding the permeable surface of the yard. Staff noted that the project does meet the requirements of the permeable surface under the bylaw. It works out to 41% with the existing dwelling, concrete, asphalt and covered deck.
- It was discussed that at the time of building permit, the applicant will need to provide professionally prepared drawings to further confirm the lot coverage.

Moved by D. Neden, and seconded by J. Paterson:

THAT Council approve Development Variance Permit Application 00547 (DVP00547) on Strata Lot 3, DL 6, ODYD, Strata Plan KAS3406 (8160 Okanagan Landing Road) by varying Zoning Bylaw #5000 as follows:

- a) Section 4.2.1 Swimming Pool regulations are varied to allow a swimming pool to be located in a front yard; and,

- b) Section 6.5.1.i) height limitation for fencing and hedges is increased from 1.2m to 1.5m along lot lines within front yard setbacks;

AND FURTHER that Council's approval of Development Variance Permit DVP00547 is subject to the following:

- a) That the minimum front yard is 4m from the swimming pool;
- b) That all sides open to public view shall be screened by vegetation or decorative fencing at least 1.5m in height; and,
- c) That the proposed development generally complies with the Site Plan of Proposed Pool, to be attached to and form part of DVP00547,

as outlined in the report titled "Development Variance Permit Application for 8160 Okanagan Landing Road" dated February 9, 2022 and respectfully submitted by the Current Planner.

CARRIED

**ZON00380
(8801 TAVISTOCK ROAD)**

C. Broderick, Manager, Current Planning, provided an overview of the application as follows:

- The proposed rezoning is for a site in the Adventure Bay neighbourhood which as zoned to R5-Residential in 1996 and then zoned Rh1-Low Rise Residential as part of the creation of Zoning Bylaw #5000 in 2004.
- In 2015 a Development Permit was applied for and issued and the project timeline was extended. However, the project was not completed at that time. The owner/applicant now wishes to proceed.
- Staff clarified that the application before the Committee is for proposed rezoning. The access road has been built to gravel standards and the servicing has been completed. The proposed site is proposed to have 5, semi-detached dwellings (10 units).
- The recommendation for the Committee is to support the rezoning and the designation from RH1 to RM1 to facilitate a series of 5, semi-detached dwellings (10 units).

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

- The density was questioned by the Committee; staff clarified that the request is in keeping with the Official Community Plan.
- The committee requested clarification regarding the plan and the proposed right-of-way path for members of the community to access the tennis courts as shown within the provided landscape design.
- In response, staff noted that the matter has not come up in meetings held previously with the applicants however, they will seek clarification regarding the access point and intended use.
- A suggestion was made that for safety reasons, before it comes to Council the road should be designated as a statutory right-of-way because there are currently no existing sidewalks.

Moved by H. Singh Nahal, and seconded by M. Hubbs-Michiel:

THAT Council support application ZON00380 to rezone Lot B, DL 298, Plan KAP91703, ODYD (8801 Tavistock Road) from RH1 – Low-Rise Residential to RM1 – Row Housing Residential in order to construct five, semi-detached dwellings and that a statutory right-of way be included as a condition in order to protect the common pathway on site.

CARRIED

**DVP00560
160 WHISTLER PLACE**

C. Broderick, Manager, Current Planning, provided an overview of the application as follows:

- The applicant is proposing the side setback for to be 1.5m rather than 2.5m under the current Zoning Bylaw.
- The culminative setback would be 3 metres instead of 5 metres between the semi-detached buildings. If approved, the Development Variance would be applied to the whole subdivision of eight (8) duplexes.

- Staff are recommending approval; the site has gone through and received subdivision approvals. In response to a question from the Committee, staff clarified that the larger setbacks are more applicable to larger structures (i.e., townhouses, stacked townhouses); whereas the subject site is proposed to be developed as two level, semi-detached buildings.
- It was discussed that the lower portion of the site is owned by the City as part of the ravine parcel. Once it is finalized, staff will work with the applicant to add remnant land of the subdivision to the ravine parcel.

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

- The Committee requested clarification regarding the impact on the project if the variance was not granted. Staff noted that the proposed semi-detached dwellings would need to be built on a smaller footprint to comply with the HR2 zoning (i.e., larger 2.5m setbacks).
- Concern was expressed regarding the fire rating and the type of materials used on the walls. At three metres the adjacent buildings would be very close. In response, staff clarified that the property is located within the 10-minute response area of the fire department. Within that area, the reduced setbacks are permissible.
- In terms of emergency response, staff further clarified that there is a path that is intended to be a public path and it will also serve as an emergency access/egress.
- It was discussed that part of the condition of the rezoning is that there is a covenant on title (i.e., two levels) to make the homes consistent with the homes in the rest of the Foothills. With the restriction they are asking for a concession to make the houses wider.
- The Committee requested clarification regarding the size of the developable footprint of the lot. In response staff clarified that zoning would allow for 55% in terms of footprint for buildable coverage in HR2.
- In response to a question from the Committee, staff noted that most of the Foothills area is zoned as R2 and the site is zoned HR2 – Hillside Residential.

- Staff further clarified that under the Multi-Family zone (HR2) secondary suites would not be permitted in this zone.

Moved by M. Hubbs-Michiel, and seconded by J. Paterson:

THAT Council support Development Variance Permit Application 00560 (DVP00560) to vary Section 9.16.6 of Zoning Bylaw #5000 in order to accommodate the development of the 16 lot, semi-detached subdivision at LT 1 PL EPP103234 SEC 13 TWP 8 ODYD (160 Whistler Place):

- a) Section 9.16.6 - side yard setback from 2.5m to 1.5m;

AND FURTHER, that Council's support of DVP00560 is subject to the following:

- a) the site plan illustrating the general siting and layout of the proposed development in Attachment 1, contained in the report titled "Development Variance Permit Application for 160 Whistler Place" dated be attached to and form part of DVP00560 as 'Schedule A'.

CARRIED

Before the DVP00549 904 MT GRIFFIN ROAD was discussed, Committee member Harpreet Nahal declared a potential conflict of interest and left the meeting at 4:40 PM.

**DVP00549
904 MT GRIFFIN ROAD**

C. Broderick, Manager, Current Planning, provided an overview of the application as follows:

- The application is to allow a variance to retaining wall heights along the south and west face of the walls below the home.
- The rationale behind the application is to allow portions of the wall to be in excess of the maximum of 1.2 metres.
- Staff clarified that Administration is not supportive of DVP00549 and offered alternatives for Committee consideration within the staff report. Staff advised that they had requested the applicant to consider alternative designs, this project was originally going to go to the Board of Variance; however, it was sent to the APC for consideration due to time constraints.

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

- The Committee noted that from the rear the retaining wall is not noticeable from a distance. It was discussed that the wall on the left could be viewed from across the valley but could be successfully screened with shrubs or plantings.
- Staff clarified that the bylaw maximum is 1.2 metres. The proposal before the Committee is for a 3.5-meter wall. There was no proposal for texturing, colouring or screening. Staff further noted that the land below is located in a geotechnical covenant zone and would require supervision from a geotechnical engineer.
- In response to the potential viewscape impact, staff clarified that there will be a series of homes built to the north and east and that the knoll is visible from many parts of the community.
- Concern was expressed about the slope juxtaposed with a potential future pedestrian trail / path connection below the property and the impact of a flat 3.5m (12-foot) single faced concrete wall. Concern was also expressed that monolithic walls could become a trend within the community. The visual impact of the retaining wall could be addressed with rocks, tiers, textures, etching, colours to achieve suitable alternatives that are more visually appealing.

Moved by M. Hubbs-Michiel, and seconded by D. Neden:

THAT Council support Development Variance Permit Application 00549 (DVP00549) to vary Section 6.5.11 of Zoning Bylaw #5000 in order to vary the height of a retaining wall on a residential property on LT 22 EPP96153 SEC 22 TWP 9 ODYD (904 Mt Griffin Road) and;

That measures be taken in the retaining wall design phase to minimize the visual impact of the retaining wall (i.e., use of coloured concrete, etching or texturing).

CARRIED

INFORMATION ITEMS

- a) Review of the Committee Terms of Reference (TOR) and the Bullying and Harassment Policy.
 - Staff reviewed the TOR.
 - Bullying and Harassment Policy was reviewed and signed by members of the Committee who were present.
- b) C. Broderick, Manager, Current Planning, provided a brief overview regarding some of the projects discussed at Council on **February 14, 2022**, as follows:

- **4408 25 Street (ZON00374)** - 3 Lot Subdivision and Rezoning - Public Hearing regarding 3-lot subdivision behind the Hilltop Subaru Vernon dealership. Council discussed instituting a restrictive covenant to ensure secondary suites would not be permitted; however, determined the zoning bylaw was sufficient; the project will come forward for fourth reading.
- **4300 35 Avenue (DVP00464 - Turtle Mountain)** – DVP for 3 storeys for some units was approved.

NEXT MEETING

The next meeting of the Advisory Planning Committee is tentatively scheduled for **Tuesday, March 01, 2022 at 4:00 PM.**

ADJOURNMENT

Moved by D. Neden, and seconded by P. Kereliuk:

THAT the Advisory Planning Committee meeting of February 15, 2022 be adjourned.

CARRIED

The meeting of the Advisory Planning Committee adjourned at 5:09 PM.

CERTIFIED CORRECT:

Chairperson



THE CORPORATION OF THE CITY OF VERNON REPORT TO COUNCIL

SUBMITTED BY: Matt Faucher, Current Planner

COUNCIL MEETING: REG COW I/C

COUNCIL MEETING DATE: TBD

REPORT DATE: February 25, 2022

FILE: DVP00531

SUBJECT: DEVELOPMENT VARIANCE PERMIT APPLICATION FOR 117 KALAMALKA LAKE ROAD

PURPOSE:

To review the Development Variance Permit application DVP00531 to vary Zoning Bylaw 5000 Section 4.16.1 to permit construction on slopes greater than 30% and Section 6.5.11 to vary the maximum height of a retaining wall from 1.2m to 4.0m at 117 Kalamalka Lake Road.

RECOMMENDATION:

THAT Council support Development Variance Permit application 00531 (DVP00531) to vary Zoning Bylaw 5000 on LT 1, SEC 27, TWP 9, ODYD, PL 17042 Except PL KAP78227 (117 Kalamalka Lake Road) as follows:

- a) Section 4.16.1 to allow the construction of buildings, structures and swimming pools on slopes greater than 30%;
- b) Section 6.5.11 to increase the maximum height of a retaining wall from 1.2m to 4.0m;

AND FURTHER, that Council's support of DVP00531 is subject to the following:

- a) That the site plan, building elevations and cross-sections, intended to illustrate the siting of structures, drive access and retaining wall height (Attachment 1) in the report titled "Development Variance Permit Application for 117 Kalamalka Lake Road" dated February 25, 2022 and respectfully submitted by the Current Planner, be attached to and form part of DVP00531 as Schedule 'A';
- b) That a restrictive covenant be registered on title to ensure that the recommendations of the geotechnical report are implemented at the building permit stage and that the areas that are not to be developed remain undeveloped; and
- c) That a statutory right of way over the undeveloped area be registered on the property to establish public access for a future trail connection in accordance with the Pedestrian and Bike Master Plan.

ALTERNATIVES & IMPLICATIONS:

1. THAT Council not support Development Variance Permit application 00531 (DVP00531) as outlined in the report titled "Development Variance Permit Application for 117 Kalamalka Lake Road" dated February 25, 2022 and respectfully submitted by the Current Planner to vary Zoning Bylaw 5000 on LT 1, SEC 27, TWP 9, ODYD, PL 17042 Except PL KAP78227 (117 Kalamalka Lake Road).

Note: This alternative does not support the development variance permit application and would require the applicant and owner to develop the site in compliance with Zoning Bylaw 5000.

ANALYSIS:

A. Committee Recommendations:

At its meeting of March 1, 2022, the Advisory Planning Committee passed the following resolution:

“As cited by the committee”

B. Rationale:

1. The subject property is located at 117 Kalamalka Lake Road (Figures 1, 2 and 3). The property is approximately 14,421m² (3.56 ac) in size.
2. The purpose of the application is to review a request to vary two provisions of Zoning Bylaw 5000 in order to construct two triplex buildings on the subject property.
3. The subject property is zoned R5 – Fourplex Housing Residential (Attachment 2) and the subject application pertains to development regulations within Section 4.16.1 (30% slopes) and Section 6.5.11 (maximum height of a retaining wall) of Zoning Bylaw 5000 (Attachment 3).
4. The application proposes to vary Section 4.16.1 of Zoning Bylaw 5000 in order to allow the proposed structures and access drive to be located on slopes exceeding 30% slopes. A slope analysis of the subject property is illustrated in Attachment 4.

Additionally, the application proposes to vary Section 6.5.11 of Zoning Bylaw 5000 in order to allow the construction of retaining structures to a maximum of 4m in height to support the slope post development. Cross-sections of the proposed retaining walls are illustrated in Attachment 5.

5. In support of the Development Variance Permit, the applicant retained a geotechnical engineer to review the site and plans for the proposed development. The report (Attachment 6) concludes that “the site appears adequately suited for residential development and suitable safe building sites appear possible at the proposed building locations”. The geotechnical engineer would need to be involved with the foundation design and construction at the building permit stage.

6. To ensure that the integrity of the remainder of the property is protected, it is recommended that a restrictive covenant be registered on the property title to ensure that no additional development shall occur on the remaining portions of the lands.



Figure 1 - Property Location Map



Figure 2: Aerial Photo of Property



Figure 3: Lidar Imagery of Property

7. As part of the Development Permit process, the applicant will need to satisfy all bylaw requirements, as well as access and egress requirements of Vernon Fire Rescue.
8. Master Transportation Plan, Figure 6d – Pedestrian and Bike Master Plan (Attachment 7), identifies a future trail connection from Middleton Way to Kalamalka Lake Road. Administration is requesting that a statutory right of way be established over the undeveloped area for public access to a future trail connection.
9. Administration supports the requested variance for the following reasons:
 - a) The existing lot is zoned for residential purposes (R5 – Fourplex Housing Residential Zone);
 - b) The applicant has retained a qualified geotechnical engineer to assess the site and make recommendations. A restrictive covenant is recommended to be registered on title to ensure that the geotechnical engineering requirements are implemented at the building permit stage;
 - c) A restrictive covenant is to be registered on title that would ensure that no additional development or disturbance shall occur on the remaining portions of the subject property; and
 - d) A statutory right of way is to be registered on title that would allow for pedestrian access to a future trail connecting Middleton Way to Kalamalka Lake Road in support of the Pedestrian and Bike Master Plan.

C. Attachments:

- Attachment 1 – Site plan
- Attachment 2 – R5 – Fourplex Housing Residential Zone
- Attachment 3 – Section 4.16.1 and Section 6.5.11 of Zoning Bylaw 5000
- Attachment 4 – Slope analysis
- Attachment 5 – Cross-sections of proposed retaining structures
- Attachment 6 – Geotechnical Report
- Attachment 7 – Master Transportation Plan Figure 6d – Pedestrian and Bike Master Plan

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:

- Support the creation of additional housing within the City.

E. Relevant Policy/Bylaws/Resolutions:

1. The following provision of Zoning Bylaw 5000 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.

Section 6.5.11 Retaining walls on all residential lots, except those required as a condition of subdivision approval, must not exceed a height of 1.2m measured from grade on the lower side, and must be constructed so that multiple retaining walls are spaced to provide at least a 1.2m horizontal separation between them.

BUDGET/RESOURCE IMPLICATIONS:

N/A

Prepared by:

Approved for submission to Council:

X

Signer 1
Matt Faucher, CPT
Planner

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 – March 1, 2022 | | |
| <input type="checkbox"/> OTHER: | | |

9.6 R5 : Four-plex Housing Residential

9.6.1 Purpose

The purpose is to provide a **zone** for the **development** of a maximum of four ground oriented **dwelling** units in the form of **single detached, semi-detached, duplex, three-plex or four-plex housing** on urban services. The R5c sub-zoning district allows for **care centre, major** as an additional use. The R5h sub-zoning district allows for **home based business, major** as an additional use. (*Bylaw 5467*)

9.6.2 Primary Uses⁴

- **care centre, major** (*use is only permitted with the R5c sub-zoning district*)
- **duplex housing**
- **four-plex housing**
- **group home, major**
- **semi-detached housing**
- **single detached housing**
- **three-plex housing**
- **seniors housing**

9.6.3 Secondary Uses

- **boarding rooms**
- **care centres, minor**
- **home based businesses, minor**
- **home based businesses, major** (*in single detached housing only*) (*use is only permitted with the R5h sub-zoning district*)
- **secondary suites (in single detached housing only)**
- **seniors assisted housing**
- **seniors supportive housing**

9.6.4 Subdivision Regulations

- Minimum **lot width** is 20.0m, except it is 22.0m for a **corner lot**.
- Minimum **lot depth** is 30.0m.
- Minimum **lot width** for single detached housing is 14.0m, except it is 16.0m for a **corner lot**.
- Minimum **lot area** for single detached housing is 450m².
- Minimum **lot area** is 700m², except it is 800m² for a **corner lot**, or 10,000m² if not serviced by a **community sewer system**. (*Bylaw 5339*)

9.6.5 Party Wall Subdivision Regulations

Lot Type	Minimum Lot area		Minimum Lot Width	
	interior	corner	interior	corner
Semi-Detached Housing	350m ²	400m ²	10.0m	12.0m
Three-Plex Housing	235m ²	285m ²	7.0m	9.0m
Four-Plex Housing	175m ²	225m ²	7.0m	9.0m

9.6.6 Development Regulations

- Maximum **site coverage** is 40% and together with driveways, parking areas and **impermeable surfaces** shall not exceed 50%.

- Maximum **floor space ratio** is 0.6.
- Maximum **height** is the lesser of 10.0m or 2.5 **storeys**, except it is 4.5m for **secondary buildings** and **secondary structures**.
- Minimum **front yard** is 4.0m, except it is 6.0m for a garage or **carport** to the back of curb or sidewalk for a front entry garage, or it is 0.6m to the side of the garage and 2.6m to the front building façade for side-entry garage and driveway layouts.
- Minimum **side yard** is 2.0m for a 1 or 1.5 **storey** portion of a **building** or a **secondary building or structure** and 2.5m for a 2 or 2.5 **storey** portion of a **building**, except it is 4.0m from a **flanking street** unless there is a garage accessed from the **flanking street**, it is 4.0m or it is 2.6m to the building for a side-entry garage and driveway from a flanking street and at least 6.0m from the back of curb or sidewalk. Where there is no direct vehicular access to the **rear yard** or to an attached garage or **carport**, one **side yard** shall be at least 3.0m. The minimum **side yard** setback for shared interior **party walls** shall be 0.0m. The minimum **side yard** setback for **single detached housing** is 1.5m, except it is 4.0m from a **flanking street** unless there is a garage accessed from the **flanking street**, it is 4.0m or it is 2.6m to the building for a side-entry garage and driveway from a **flanking street** and at least 6.0m from the back of curb or sidewalk.
- Minimum **rear yard** is 6.0m for a 1 or 1.5 **storey** portion of a **building** and 7.5m for a 2 or 2.5 **storey** portion of a **building**, except it is 1.0m for **secondary buildings**.
- The maximum **height** of any vertical wall element facing a **front, flanking or rear yard** (including **walkout basements**) is the lesser of 6.5m or 2.5 **storeys**, above which the **building** must be **set back** at least 1.2m.
- Maximum **density** is 30 units per gross hectare (12 units/gross acre).
- Maximum four **dwelling** units located in a **building**, with each unit having a minimum width of 6.5m. (*Bylaw 5339*)

9.6.7 Other Regulations

- In order for bareland strata **developments** to be consistent with the character of the surrounding neighborhood, the strata plan shall be considered as one **site** for defining the overall use, **density** and **site coverage**.
- The above noted **subdivision** and **development** regulations shall be applied to each strata **lot** within the strata plan.
- A minimum area of 25m² of **private open space** shall be provided per **dwelling**.
- Where **development** has access to a rear **lane**, vehicular access to the **development** is only permitted from the rear **lane**.
- For **seniors assisted housing, seniors housing and seniors supportive housing**, a safe drop-off area for patrons shall be provided on the **site**.
- For strata developments, common recreation buildings, facilities and amenities may be included in the strata plan. Recreational buildings shall be treated as **secondary buildings** for the purpose of determining the **height** and **setbacks** of the **building** as specified in each **zone**.
- For multi-unit residential housing, one **office** may be operated for the sole purpose of the management and operation of the multi-unit residential **development**.
- In addition to the regulations listed above, other regulations may apply. These include the general **development** regulations of Section 4 (secondary **development, yards**, projections into **yards**, lighting, agricultural setbacks, etc.); the specific use regulations of Section 5; the **landscaping** and fencing provisions of Section 6; and, the parking and loading regulations of Section 7.
- As per Section 4.10.2 - All **buildings** and **structures, excluding perimeter fencing (garden walls and fences)** on **lots abutting** City Roads as identified on Schedule "B" shall not be sited closer to the City Road than the setback as per the appropriate zone measured from the offset Rights of Way as illustrated on Schedule "B".
(*Bylaw 5440*)

4.15 Development Covenants

4.15.1 At the time of rezoning, prior to bylaw adoption, City Council may at its discretion require the property owner to register a covenant on the title of the property limiting the permitted uses and/or densities within the approved land use zones, so as to reflect the specific approved development plan.

4.16 Hillside Development Areas

4.16.1 Vernon's Official Community Plan (OCP) establishes Development Permit Areas (DPAs) for all areas within the City of Vernon. Vernon's Hillside Guidelines and Regulations Policy defines hillsides and provides Goals and Objectives for development of lands on hillsides and slopes under 30%. No construction of a building, structure or swimming pool is permitted on slopes 30% or greater.

4.16.2 No subdivision of land creating lots is permitted where less than 100m² of contiguous buildable area which meets all bylaw regulations herein for each lot is provided, with the exception of boundary lot adjustments.
(Bylaw 5433)

to prevent sagging and to minimize rot. Along sloping ground, the top of wood **fences** shall be horizontal with vertical drops at the posts.

6.5.6 Screening **fences** shall be opaque double-sided **construction**. Where screen **fences** are allowed or required by this Bylaw, they shall be of an opaque or a combination of opaque, translucent or lattice design.

6.5.7 No **fence** constructed at the **natural grade** in residential **zones**, shall exceed 2.0m in **height**, except where **abutting** an **agricultural** or **commercial zone** the maximum **height** is 2.4m.

6.5.8 No **fence** in a **commercial** or **industrial zone** shall exceed 2.4m.

6.5.9 **Industrial zones** are to have an opaque 2.4m high **fence** along all **property lines abutting** non-industrial **zones** and around **wrecking yards** that are visible from a **street abutting** the property.

6.5.10 No barbed wire or electrified fencing shall be allowed in any **residential, commercial, public** or **industrial zones** except:

- in RR **zone** for **use** in **livestock** enclosures; and
- in P2 **zone** where the **site** is used for **detention and correctional services**.

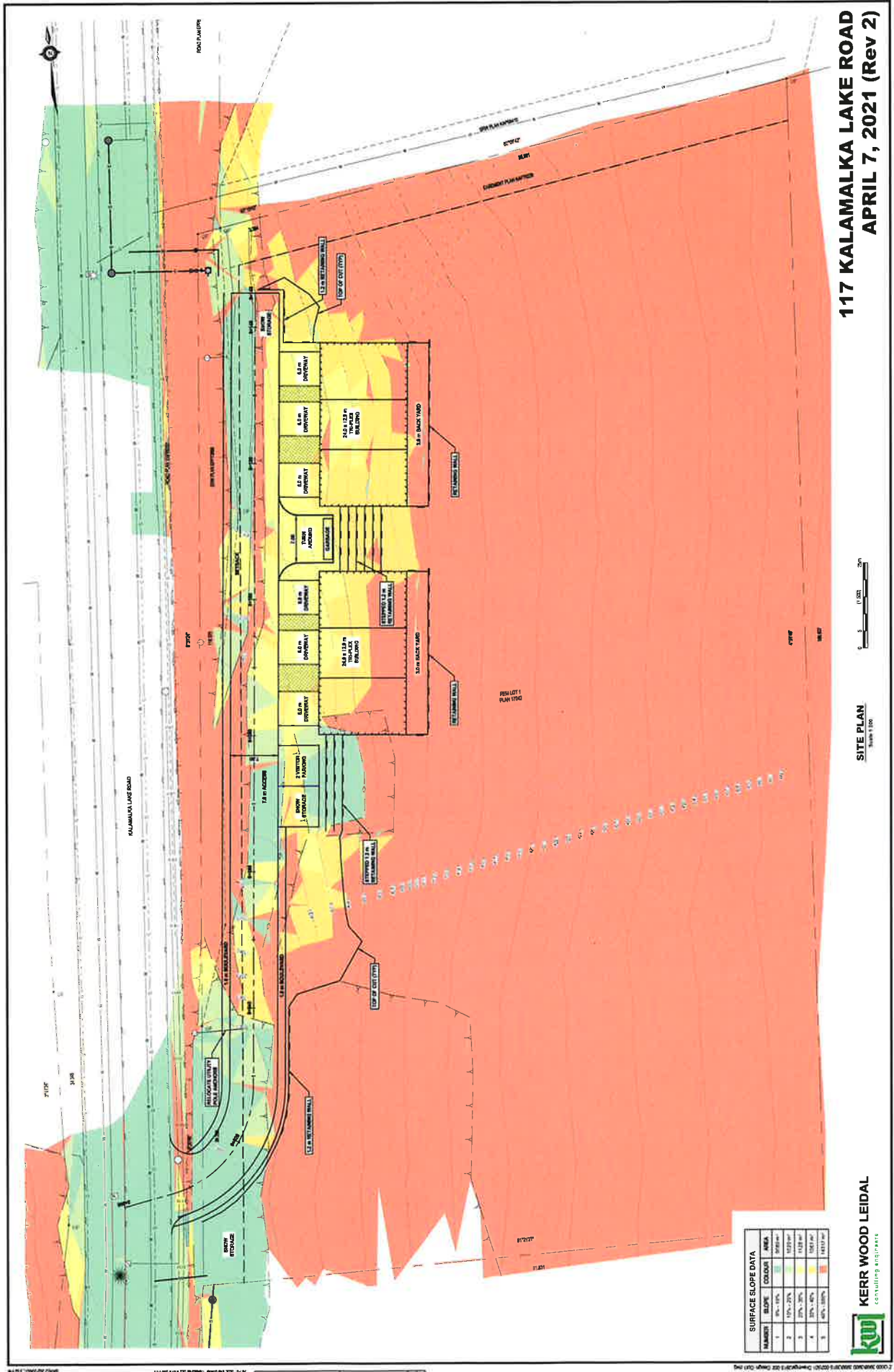
Razor wire fences shall not be permitted in any zone.

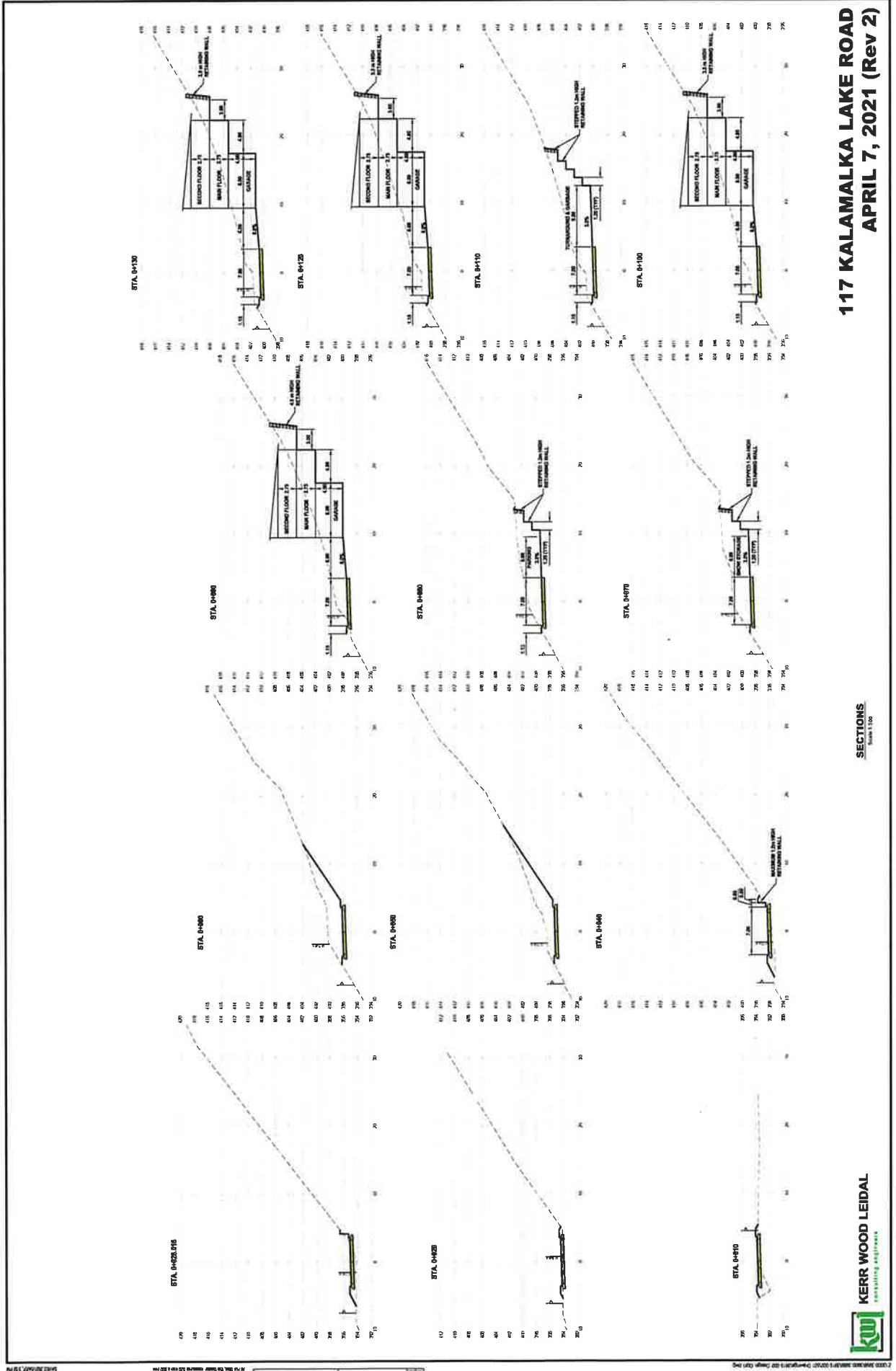
6.5.11 **Retaining walls** on all residential **lots**, except those required as a condition of **subdivision** approval, must not exceed a **height** of 1.2m measured from **grade** on the lower side, and must be constructed so that **multiple retaining walls** are spaced to provide at least a 1.2m horizontal separation between them.

6.5.12 In the case of a **retaining wall** constructed in accordance with Section 6.5.11, the combined **height** of a **fence** on top of a **retaining wall** at the **property line** or within 1.2m of the **property line** shall not exceed 2.0m, measured from **natural grade** at the **property line** (see Diagram 6.1).

6.5.13 Notwithstanding Section 6.5.11, a **retaining wall** may be higher than 1.2m, measured from **grade**, where the **natural grade** of the subject property is lower than the **abutting** property (see Diagram 6.2).

6.5.14 In the case of a **retaining wall** constructed in accordance with Section 6.5.13, the maximum **height** of a **fence**, or portion of **retaining wall** extending above the **natural grade** of the **abutting** higher property, or combination thereof, shall be 2.0m, measured from the **natural grade** of the **abutting** higher property (see Diagram 6.2).





117 KALAMALKA LAKE ROAD
APRIL 7, 2021 (Rev 2)

SECTIONS
 Scale: 1/8" = 1'-0"

KERR WOOD LEIDAL
 Consulting Engineers





MATERIALS TESTING • SOILS
CONCRETE • ASPHALT • CORING
GEOTECHNICAL ENGINEERING

#1 – 1965 MOSS COURT
KELOWNA, B.C. V1Y 9L3
250-860-6540
INFO@INTERIORTESTING.COM

Maxton Industries
Box 995, Vernon, BC V1T 6N2

December 10, 2020
Job 20.395

Attention: Mr. Brent Holomis

Dear Sir:

Re: **Preliminary Geotechnical Review
Proposed Residential Development
117 Kalamalka Lake Road
Kelowna, BC**

As requested, Interior Testing Services Ltd. (ITSL) has carried out a geotechnical investigation at the above noted address. Please find attached the following documents:

- 4 pages of site plans and cross sections for the proposed development by Kerr Wood Leidal (KWL),
- Appendix D: Landslide Assurance Assessment Statement (3 pages), and
- A copy of our 'Terms of Engagement' which governs our work and was previously signed and accepted.

1.0 INTRODUCTION

We understand that development of the roughly 3.5 acre parcel is proposed, including construction of an onsite access road, and two triplex townhome buildings. The preliminary proposed site layout is shown on the attached site plans by KWL. The property is generally currently undeveloped, with the exception of a roughed-in driveway at the approximate proposed onsite roadway location parallel to Kalamalka Lake Road.

As illustrated by the attached plans prepared by KWL, the proposed three-story, triplex buildings include two stories of walk-out basement foundation walls. Temporary cuts on the order of roughly 6 to 10 m below current site grades are expected to be required for foundation wall construction, but then the bottom roughly 6 m of the cut slope is to be backfilled (retained by the foundation wall), with the upper portion of the cut slope being

either reconstructed to match the current site grading or retained with retaining walls in the upper back yard area of the proposed triplexes and between the triplexes.

Our scope of work on this project was to review the property with respect to slope stability, rockfall hazard, erosion, and drainage to provide preliminary geotechnical comments for development and residential construction. Our report presents our findings and provides general recommendations for site preparation and foundation design.

We understand that this report may form part of your development application, and we identify the City of Vernon as authorized users of this report, also subject to the attached "Terms of Engagement."

2.0 METHODOLOGY

A desk review was carried out which included examination of aerial photographs and topographic maps of the area. The desk review provided information of the physical terrain on and surrounding the site to aid in the identification of potential geotechnical hazards and areas requiring additional review.

On December 3, 2020, a field review of the property was carried out by Ms. Jennifer Anderson, P.Eng. of our office. The property was traversed to view the existing surface soil, bedrock, and general drainage conditions and identify potential hazard areas in relation to the proposed development.

3.0 SITE CONDITIONS

The property is located on the east side of Kalamalka Lake Road below the Middleton Mountain subdivision near the south boundary of Vernon, BC. The site is characterized as a steep slope up from Kalamalka Lake Road, with roughly 50 m of grade separation across the property at inclinations on the order of 30 to 40 degrees. Above the subject site, the terrain slopes up an additional roughly 25 m at similar inclinations, before leveling off at Mt. Griffin Road where subdivision development work is underway. Within the open excavations along Mt. Griffin Road, very shallow bedrock conditions were observed below roughly 0.5 m of surface topsoil/overburden. Similar shallow bedrock conditions are expected at the east roughly half of the subject site. Groundwater is expected to be relatively deep, given the high-lying nature of the property.

The slope on and above the subject property is vegetated with sparse grasses, weeds, and bushes. With the excavation of a very small area of rock above the northeast corner of the site, bedrock outcrops were not observed at the ground surface on or above the slope.

The property is currently undeveloped, with the exception of a roughed-in driveway at the bottom, west side. Along the west side of the property, excavations into the toe of the hillside show generally dry SAND soils with variable silt and gravel content. Beyond the south side of the site, an excavation into the toe of the hillside shows bedrock below the sandy deposit. Similar sandy deposits overlying bedrock are expected at the west roughly half of the subject site.



Figure 1: Street view at northeast corner of site, on Kalamalka Lake Road



Figure 2: Street view of approx. proposed building locations, from Kalamalka Lake Road



Figure 3: Street view at southeast corner of site, on Kalamalka Lake Road

4.0 Natural Hazard Assessment

Geotechnical concerns such as rockfall, landslip and erosion have been considered as potential hazards on the site with respect to suitable safe building sites. Hazards were assessed in the field based on visible soil conditions, topography, historical slope erosion and instabilities in areas with similar soil types, surface drainage patterns, and slope characteristics.

Besides some minor raveling and surface erosion where the toe of the slope had been excavated, our reconnaissance did not encounter evidence of significant, historical or recent slope instability. The overall sloping site generally appears stable in its existing condition, and large-scale/catastrophic slippage and/or failures are not expected as result of the proposed residential development.

Upon completion of site development and foundation preparation subject to geotechnical design and field reviews, the site appears suitable for the proposed residential development and adequate for the intended purpose. In reference to Section 86 of the *Land Title Act* and Sections 488 to 491 of the *Local Government Act* (formerly Sections 919.1 and 920 as referenced on the APEGBC Appendix D form), in our opinion, the land may be used safely for the use intended, conditional to our recommendations provided within this report. At this time, we understand the City of Vernon has not provided a design level of safety for consideration. To that end, we define "safe" based on the levels of safety adopted by several municipalities in the Okanagan, including a 2% probability of failure occurring in a 50 year period (1 in 2475) for slope instability.

In accordance with the EGBC Guidelines (formerly APEGBC) for Legislated Landslide Assessments for Residential Developments, we have included an Appendix D: Landslide Assessment Assurance Statement.

3.0 Discussion of Development Considerations

While there do not appear to be significant geotechnical hazards, the sloping conditions should be expected to govern design considerations with respect to site development and residential construction on the site.

3.1 Temporary Excavations, Site Grading, and Rockfall

Prior to site grading work, the surface vegetation, topsoil and any old fill should be completely removed to expose the underlying natural soils.

For temporary excavations, we recommend conventional Worksafe BC cut slopes of 3 Horizontal to 4 Vertical (0.75H:1V) be allowed for at the east side of the proposed buildings. Bedrock may be encountered at the bottom of the temporary cut slopes, and steeper inclinations may be possible for the temporary cuts. Additional guidance regarding the temporary cut slope stability should be provided during construction, as the cuts are expected to be taller than 6 m. If raveling of the granular soils occurs, construction of a shot-crete and anchor retaining wall, or similar may become necessary.

For the natural fine-grained soils, we recommend finished soil cut and structural FILL slopes be no steeper than 1.5 Horizontal to 1 Vertical (1.5H:1V). Finished soil slopes should be vegetated by means of landscaping, hydro-seeding, or similar to reduce the potential for surface erosion. Reducing disturbance of the natural landscape as much as possible is recommended with respect to slope stability and surface erosion considerations. Engaging a biologist or landscape architect may be prudent to establish restoration planting plans for the disturbed soil slopes.

Given that bedrock outcrops were generally not observed on the uphill slope, provision for rockfall protection do not appear necessary for the site. If future development of the uphill properties results in rockfall hazard, mitigation and protection to maintain the rockfall on the uphill lands should be required as part of safe land-use for the uphill developments, as to not have negative affect on the adjoining lands.

3.2 Foundation Preparation and Road Construction

For site preparation, within the proposed driveway and building areas it is recommended that any existing surface vegetation, topsoil and FILL be completely removed to expose the underlying natural soils. Based on our site review, we anticipate this will typically involve excavation to roughly 0.5 m, although could locally be deeper at the location of the existing roughed-in roadway.

If necessary to establish the foundation levels, road subgrade, and for restoration of temporary cut slopes, placement of backfill in a structural manner is recommended. Well-graded, clean (less than 8% fines) SAND and GRAVEL structural FILL should be placed and compacted in maximum 300 mm (1 foot) lifts to at least 95% Modified Proctor Density (MPD) and within 2% of optimum moisture contents. Periodic field density tests are recommended on every second lift of fill placed to confirm adequate compaction is being achieved.

Additional care will be required to 'key' the horizontal structural FILL lifts into the natural slopes, where fills are planned over sloping grades.

In general, the onsite granular soils are expected to be suitable for re-use as compacted road subgrade fill and for re-construction of the temporary slope excavations. Further laboratory testing should be carried out to confirm suitability of the onsite soils for use as structural fill for foundation support, if required.

3.3 Preliminary Foundation Design

For foundations set on competent natural soils or suitably compacted structural FILL, an allowable bearing pressure of 150 kPa (3000 psf) may be used in design subject to the following conditions:

- a) Bearing surfaces be in a clean, dry, and well-compacted condition.
- b) Footing width be a minimum of 400 mm (16 inches).
- c) Footings be set 600 mm (24 inches) below final grade, or as per local by-law, for frost protection.
- d) Foundations be set below and behind a conventional 2H:1V plane projected up from the toe of downhill slopes.

We anticipate that the foundation retaining walls are likely to be relatively stiff and unyielding. Therefore, at-rest pressure conditions are assumed. An equivalent fluid pressure, γ_{eq} of 8.8 kN/m²/m can be used in design. To account for any surcharge

pressures, a uniform lateral pressure K_0 , of 0.45 times the estimated surcharge load should also be applied to the wall for at rest conditions. If backfill is to be compacted then compaction induced stresses should be accommodated into design.

For compaction induced stresses, a minimum tabular pressure of 20 kN/m^2 should be applied until it intersects with the lateral pressure with depth. For example, given the at-rest pressure conditions noted above of $8.8 \text{ kN/m}^2/\text{m}$, the tabular pressure of 20 kN/m^2 would be applied to a depth of 2.3 m ($20/8.8$) at which time, the lateral earth pressure distribution would increase at the rate of $8.8 \text{ kN/m}^2/\text{m}$.

For any proposed retaining walls where active pressures are expected and the top of the wall is permitted to rotate, the following design parameters can be used. An equivalent fluid pressure, γ_{eq} of $5.7 \text{ kN/m}^2/\text{m}$ and a uniform lateral pressure, K_a , of 0.29 can be used by your structural engineer.

The above noted earth pressures are based on an assumed friction angle of 34° , a unit weight of 20.0 kN/m^3 for the onsite gravelly SAND soils anticipated to be used for foundation wall backfill, and assumed drained conditions.

3.4 Groundwater and Drainage

Given the highland nature of the site, groundwater does not appear to be of significant geotechnical design concern for the proposed residential construction. If groundwater seepage is encountered during site excavation and residential construction, it is expected to be adequately addressed/redirected as necessary with conventional drainage measures. This could include a French drain installed along the toe of the excavation.

Where the proposed building slabs are below the exterior finished grades, standard perimeter footing drainage should be installed. Perimeter drainage may be directed to rock pits set within the natural soils downhill and well away from the building for disposal. Finished grades should be sloped away from the building in order to minimize infiltration of water into the backfill zone.

Roof drainage should be provided and directed to a suitable disposal location such as splash pads for gradual dissipation over the ground surface. Alternatively, roof drainage and roadway drainage could be directed to drywells designed by your civil engineer set within the natural, granular soils well-away from the building. In all cases, drainage should be directed away from fills to prevent saturation-induced settlement.

With respect to storm water drainage, for sizing of drywells and other drainage related components, a permeability coefficient of roughly 10^{-4} m/s (R.F. Craig, pg. 39) can be used for the SAND soil mixtures observed. This is based on our visual observations, and if necessary, ITSL could carry out additional testing to provide a more accurate permeability coefficient.

4.0 Conclusions & Recommendations

Based on our review, the site appears adequately suited for residential construction and suitable safe building sites appear possible at the proposed building locations shown on the attached site plan.

Further geotechnical engineering guidance and soils investigations should be provided at the time of site preparation and development with respect to foundation preparation, drainage and surface erosion, and final site grading and landscaping considerations.

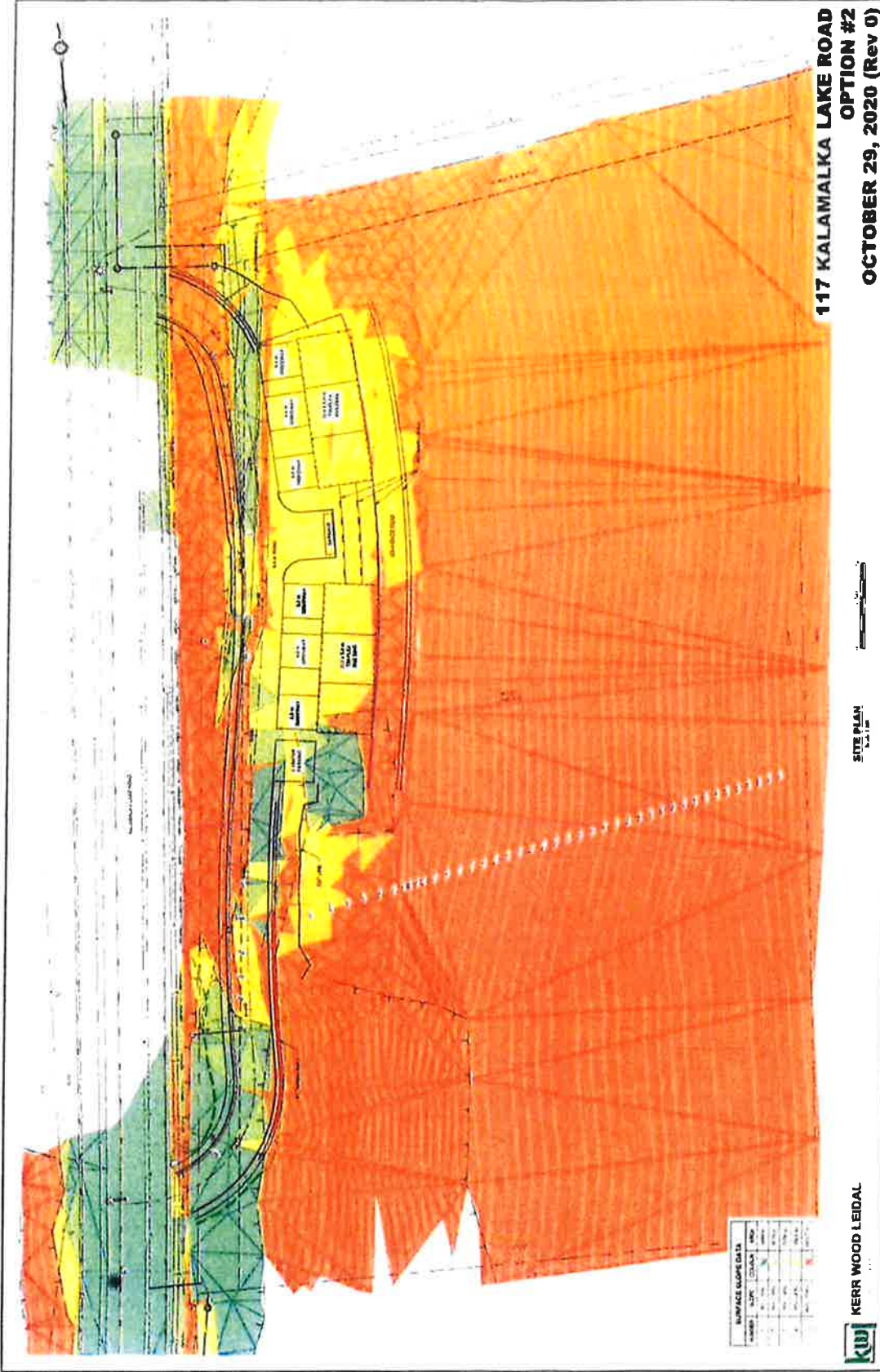
We trust this will assist you. Please call if you have any questions.

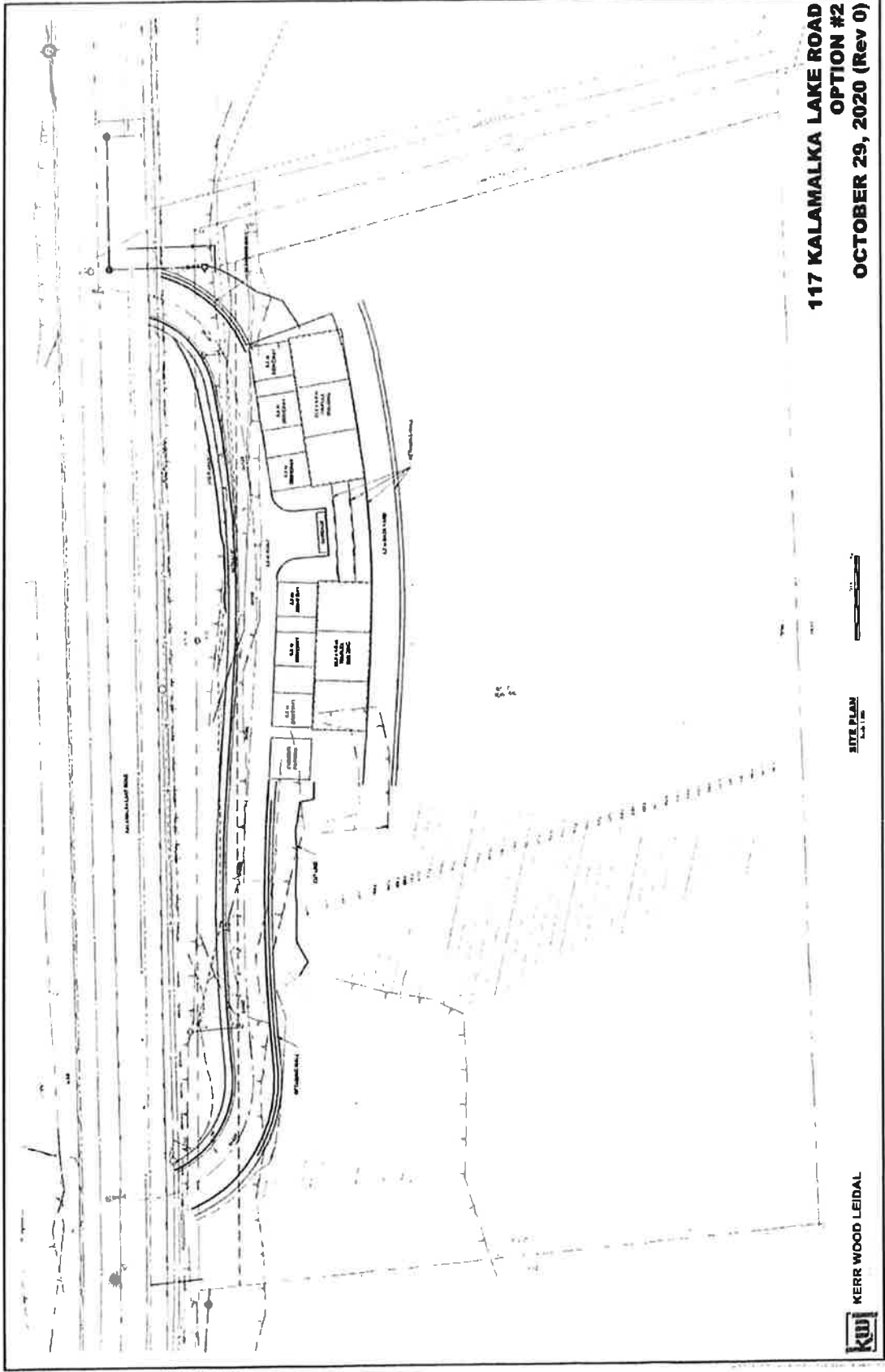
Yours truly,
Interior Testing Services Ltd.


Jennifer Anderson, P. Eng.



Peter Hanenburg, P. Eng.





**117 KALAMALKA LAKE ROAD
OPTION #2
OCTOBER 29, 2020 (Rev 0)**

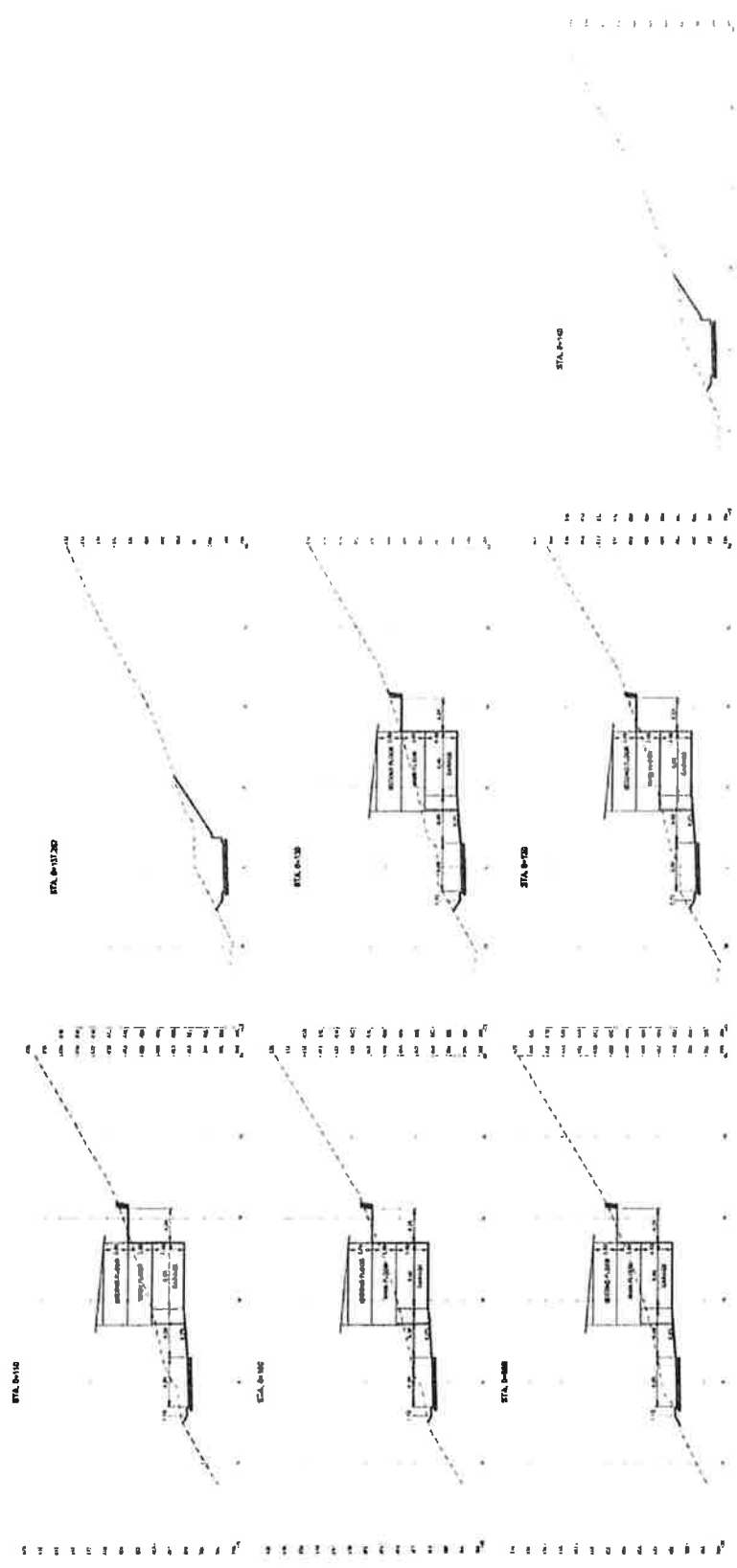


SITE PLAN
1:100

KERR WOOD LEIDAL



**117 KALAMALKA LAKE ROAD
OPTION #2
OCTOBER 21, 2020 (Rev 0)**



SITE PLAN
Scale: 1" = 100'

KW KERR WOOD LEDAL
INCORPORATED

APPENDIX D: LANDSLIDE ASSESSMENT ASSURANCE STATEMENT

Note: This Statement is to be read and completed in conjunction with the 'APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia', March 2006/Revised September 2008 ("APEGBC Guidelines") and the '2006 BC Building Code (BCBC 2006)' and is to be provided for *landslide assessments* (not floods or flood controls) for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the APEGBC Guidelines.

To: The Approving Authority

Date: DECEMBER 10, 2020

CITY OF VERNON
40: MAXTON INDUSTRIES

Jurisdiction and address

With reference to (check one):

- Land Title Act (Section 86) – Subdivision Approval
- Local Government Act (Sections 919.1 and 920) – Development Permit
- Community Charter (Section 56) – Building Permit
- Local Government Act (Section 910) – Flood Plain Bylaw Variance
- Local Government Act (Section 910) – Flood Plain Bylaw Exemption
- British Columbia Building Code 2006 sentences 4.1.8.16 (8) and 9.4 4.4.(2) (Refer to BC Building and Safety Policy Branch Information Bulletin B10-01 issued January 18, 2010)

For the Property:

117 KALAMAUKA LAKE ROAD,

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a *Qualified Professional* and is a *Professional Engineer or Professional Geoscientist*.

I have signed, sealed and dated, and thereby certified, the attached *landslide assessment* report on the Property in accordance with the *APEGBC Guidelines*. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

- 1. Collected and reviewed appropriate background information
- 2. Reviewed the proposed *residential development* on the Property
- 3. Conducted field work on and, if required, beyond the Property
- 4. Reported on the results of the field work on and, if required, beyond the Property
- 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a *landslide hazard analysis* or *landslide risk analysis* I have:
 - 6.1 reviewed and characterized, if appropriate, any *landslide* that may affect the Property
 - 6.2 estimated the *landslide hazard*
 - 6.3 identified existing and anticipated future *elements at risk* on and, if required, beyond the Property
 - 6.4 estimated the potential *consequences* to those *elements at risk*
- 7. Where the *Approving Authority* has adopted a *level of landslide safety* I have:
 - 7.1 compared the *level of landslide safety* adopted by the *Approving Authority* with the findings of my investigation
 - 7.2 made a finding on the *level of landslide safety* on the Property based on the comparison
 - 7.3 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- 8. Where the *Approving Authority* has **not** adopted a *level of landslide safety* I have:

- 8.1 described the method of *landslide hazard analysis* or *landslide risk analysis* used
- 8.2 referred to an appropriate and identified provincial, national or international guideline for *level of landslide safety*
- 8.3 compared this guideline with the findings of my investigation
- 8.4 made a finding on the *level of landslide safety* on the Property based on the comparison
- 8.5 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- 9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one

- the findings from the investigation and the adopted *level of landslide safety* (item 7.2 above)
- the appropriate and identified provincial, national or international guideline for *level of landslide safety* (item 8.4 above)

I hereby give my assurance that, based on the conditions¹¹ contained in the attached *landslide assessment report*,

Check one

- for subdivision approval, as required by the Land Title Act (Section 86), "that the land may be used safely for the use intended"

Check one

- with one or more recommended registered covenants.
- without any registered covenant.

- for a development permit, as required by the Local Government Act (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

- for a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended"

Check one

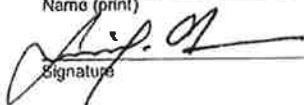
- with one or more recommended registered covenants.
- without any registered covenant.

- for flood plain bylaw variance, as required by the "Flood Hazard Area Land Use Management Guidelines" associated with the Local Government Act (Section 910), "the development may occur safely".

- for flood plain bylaw exemption, as required by the Local Government Act (Section 910), "the land may be used safely for the use intended".

JENNIFER ANDERSON, P.ENG.
Name (print)

DECEMBER 10, 2020
Date


Signature

¹¹ When seismic slope stability assessments are involved, *level of landslide safety* is considered to be a "life safety" criteria as described in the National Building Code of Canada (NBCC 2005), Commentary on Design for Seismic Effects in the User's Guide, Structural Commentaries, Part 4 of Division B. This states:

"The primary objective of seismic design is to provide an acceptable level of safety for building occupants and the general public as the building responds to strong ground motion; in other words, to minimize loss of life. This implies that, although there will likely be extensive structural and non-structural damage, during the DGM (design ground motion), there is a reasonable degree of confidence that the building will not collapse nor will its attachments break off and fall on people near the building. This performance level is termed 'extensive damage' because, although the structure may be heavily damaged and may have lost a substantial amount of its initial strength and stiffness, it retains some margin of resistance against collapse."

1965 MOSS COURT
Address
KELOWNA, BC V1Y 9L3
250 860-6540
Telephone



If the *Qualified Professional* is a member of a firm, complete the following.

I am a member of the firm INTERIOR TESTING SERVICES LTD.
and I sign this letter on behalf of the firm. (Print name of firm)

TERMS OF ENGAGEMENT

GENERAL

Interior Testing Services Ltd. (ITSL) shall render the Services performed for the Client on this Project in accordance with the following Terms of Engagement. ITSL may, at its discretion and at any stage, engage subconsultants to perform all or any part of the Services. Unless specifically agreed in writing, these Terms of Engagement shall constitute the entire Contract between ITSL and the Client.

COMPENSATION

Charges for the Services rendered will be made in accordance with ITSL's Schedule of Fees and Disbursements in effect from time to time as the Services are rendered. All Charges will be payable in Canadian Dollars. Invoices will be due and payable by the Client within thirty (30) days of the date of the invoice without hold back. Interest on overdue accounts is 12% per annum.

REPRESENTATIVES

Each party shall designate a representative who is authorized to act on behalf of that party and receive notices under this Agreement.

TERMINATION

Either party may terminate this engagement without cause upon thirty (30) days' notice in writing. On termination by either party under this paragraph, the Client shall forthwith pay ITSL its Charges for the Services performed, including all expenses and other charges incurred by ITSL for this Project.

If either party breaches this engagement, the non-defaulting party may terminate this engagement after giving seven (7) days' notice to remedy the breach. On termination by ITSL under this paragraph, the Client shall forthwith pay to ITSL its Charges for the Services performed to the date of termination, including all fees and charges for this Project.

ENVIRONMENTAL

ITSL's field investigation, laboratory testing and engineering recommendations will not address or evaluate pollution of soil or pollution of groundwater. ITSL will co-operate with the Client's environmental consultant during the field work phase of the investigation.

PROFESSIONAL RESPONSIBILITY

In performing the Services, ITSL will provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices and procedures normally provided in the performance of the Services contemplated in this engagement at the time when and the location in which the Services were performed. ITSL makes no warranty, representation or guarantee, either express or implied as to the professional services rendered under this agreement.

LIMITATION OF LIABILITY

ITSL shall not be responsible for:

- (a) the failure of a contractor, retained by the Client, to perform the work required in the Project in accordance with the applicable contract documents;
- (b) the design of or defects in equipment supplied or provided by the Client for incorporation into the Project;
- (c) any cross-contamination resulting from subsurface investigations;
- (d) any damage to subsurface structures and utilities;
- (e) any Project decisions made by the Client if the decisions were made without the advice of ITSL or contrary to or inconsistent with ITSL's advice;
- (f) any consequential loss, injury or damages suffered by the Client, including but not limited to loss of use, earnings and business interruption;
- (g) the unauthorized distribution of any confidential document or report prepared by or on behalf of ITSL for the exclusive use of the Client.

The total amount of all claims the Client may have against ITSL under this engagement, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, shall be strictly limited to the lesser of our fees or \$50,000.00.

No claim may be brought against ITSL in contract or tort more than two (2) years after the Services were completed or terminated under this engagement.

PERSONAL LIABILITY

For the purposes of the limitation of liability provisions contained in the Agreement of the parties herein, the Client expressly agrees that it has entered into this Agreement with ITSL, both on its own behalf and as agent on behalf of its employees and principals.

The Client expressly agrees that ITSL's employees and principals shall have no personal liability to the Client in respect of a claim, whether in contract, tort and/or any other cause of action in law. Accordingly, the Client expressly agrees that it will bring no proceedings and take no action in any court of law against any of ITSL's employees or principals in their personal capacity.

THIRD PARTY LIABILITY

This report was prepared by ITSL for the account of the Client. The material in it reflects the judgement and opinion of ITSL in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. ITSL accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report may not be used or relied upon by any other person unless that person is specifically named by us as a beneficiary of the Report. The Client agrees to maintain the confidentiality of the Report and reasonably protect the report from distribution to any other person.

INDEMNITY

The client shall indemnify and hold harmless ITSL from and against any costs, damages, expenses, legal fees and disbursements, expert and investigation costs, claims, liabilities, actions, causes of action and any taxes thereon arising from or related to any claim or threatened claim by any party arising from or related to the performance of the Services.

DOCUMENTS

All of the documents prepared by ITSL or on behalf of ITSL in connection with the Project are instruments of service for the execution of the Project. ITSL retains the property and copyright in these documents, whether the Project is executed or not. These documents may not be used on any other project without the prior written agreement of ITSL.

FIELD SERVICES

Where applicable, field services recommended for the Project are the minimum necessary, in the sole discretion of ITSL, to observe whether the work of a contractor retained by the Client is being carried out in general conformity with the intent of the Services.

DISPUTE RESOLUTION

If requested in writing by either the Client or ITSL, the Client and ITSL shall attempt to resolve any dispute between them arising out of or in connection with this Agreement by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a dispute cannot be settled within a period of thirty (30) calendar days with the mediator, the dispute shall be referred to and finally resolved by an arbitrator appointed by agreement of the parties.

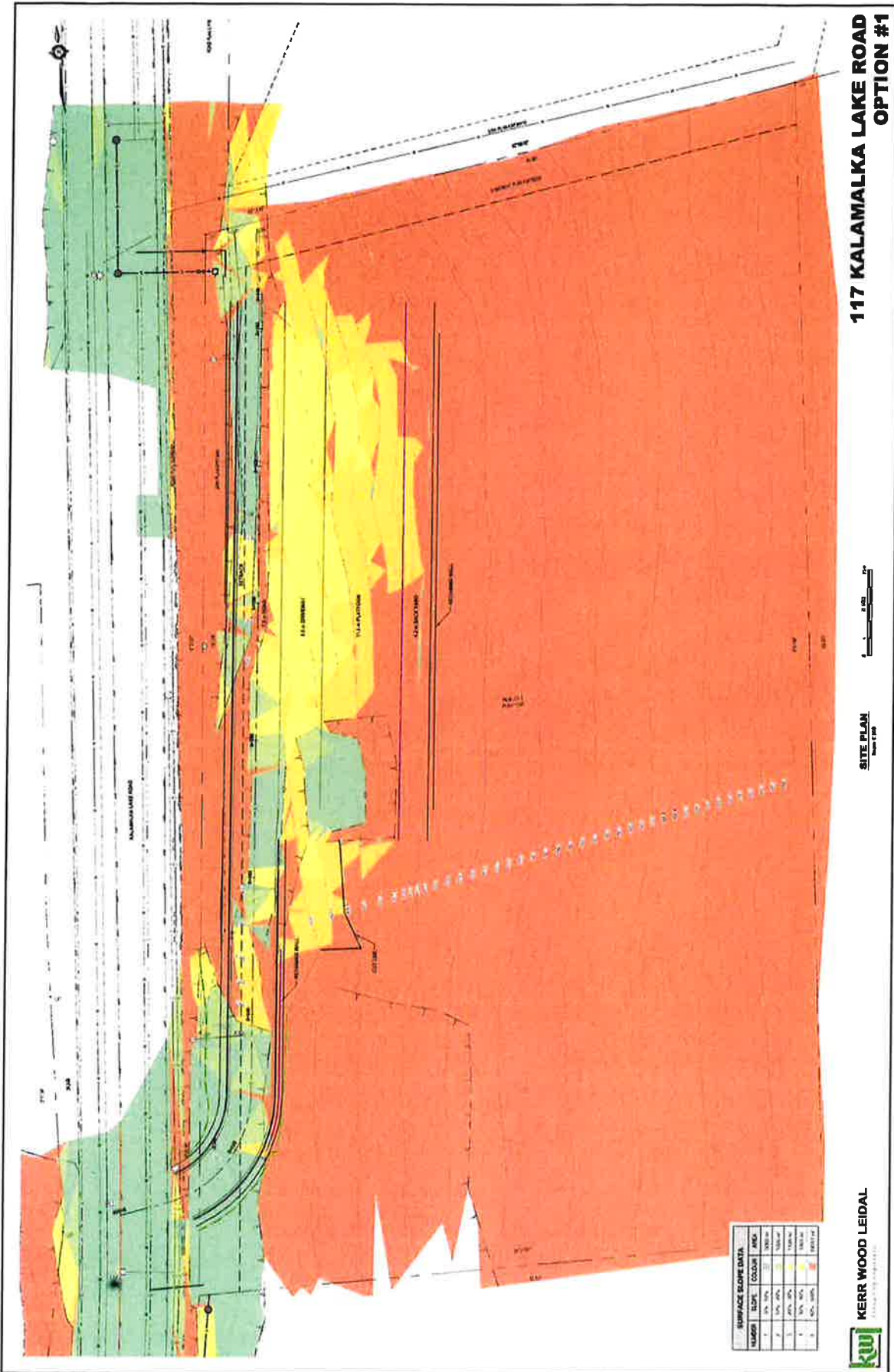
CONFIRMATION OF PROFESSIONAL LIABILITY INSURANCE

As required by by-laws of the Association of Professional Engineers and Geoscientists of British Columbia, it is required that our firm advises whether or not Professional Liability Insurance is held. It is also required that a space for you to acknowledge this information be provided.

Our professional liability insurance is not project specific for the project and should not be regarded as such. If you require insurance for your project you should purchase a project specific insurance policy directly.

Accordingly, this notice serves to advise you that ITSL carries professional liability insurance. Please sign and return a copy of this form as an indication of acceptance and agreement to the contractual force of these Terms of Engagement.

ACKNOWLEDGEMENT: _____

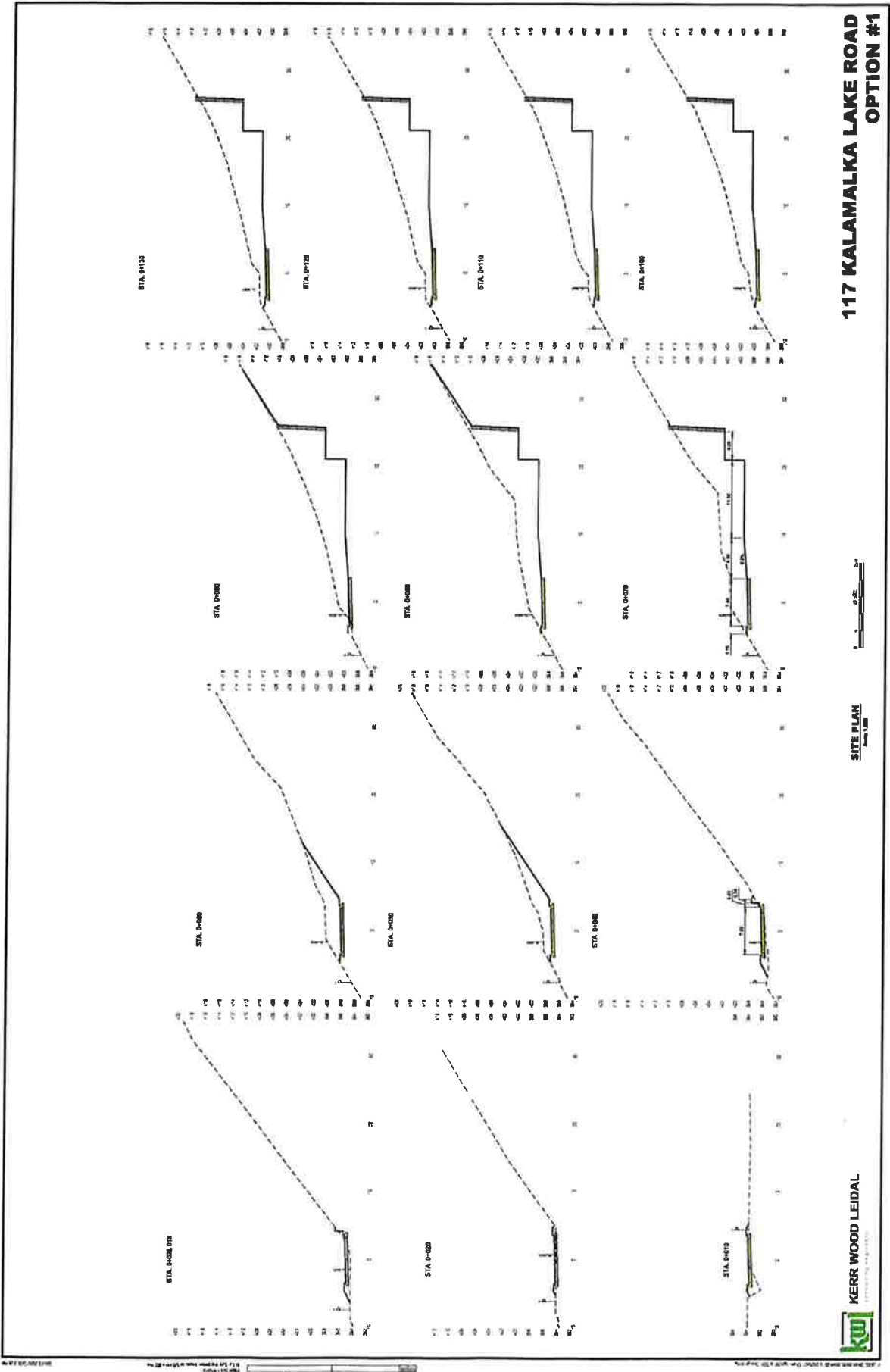


**117 KALAMALKA LAKE ROAD
OPTION #1**

SITE PLAN
Sheet 1 of 2

Kerr Wood Leidal
CONSULTING ENGINEERS

SURFACE SLOPE DATA			
NUMBER	SLOPE	COUNT	AREA
1	0% - 5%	1	1000.0
2	5% - 10%	1	1000.0
3	10% - 15%	1	1000.0
4	15% - 20%	1	1000.0
5	20% - 25%	1	1000.0
6	25% - 30%	1	1000.0
7	30% - 35%	1	1000.0
8	35% - 40%	1	1000.0
9	40% - 45%	1	1000.0
10	45% - 50%	1	1000.0
11	50% - 55%	1	1000.0
12	55% - 60%	1	1000.0
13	60% - 65%	1	1000.0
14	65% - 70%	1	1000.0
15	70% - 75%	1	1000.0
16	75% - 80%	1	1000.0
17	80% - 85%	1	1000.0
18	85% - 90%	1	1000.0
19	90% - 95%	1	1000.0
20	95% - 100%	1	1000.0



KERR WOOD LEIDAL
INCORPORATED

SITE PLAN



117 KALAMALKA LAKE ROAD
OPTION #1

**- INTERIOR -
TESTING SERVICES
- LTD. -**

MATERIALS TESTING • SOILS
CONCRETE • ASPHALT • CORING
GEOTECHNICAL ENGINEERING

#1 – 1965 MOSS COURT
KELOWNA, B.C. V1Y 9L3
250-860-6540
INFO@INTERIORTESTING.COM

Maxton Industries
Box 995, Vernon, BC V1T 6N2

February 4, 2022
Job 20.395

Attention: Mr. Brent Holomis

Dear Sir:

Re: **Additional Geotechnical Comments
Proposed Residential Development
117 Kalamalka Lake Road
Kelowna, BC**

Further to our report of December 10, 2020, Interior Testing Services Ltd. (ITSL) provides the following additional comments regarding the proposed residential development. As before, our work is governed by our attached 'Terms of Engagement' which was previously signed and accepted.

We understand that development of the roughly 3.5 acre parcel is proposed, including construction of an onsite access road, and two triplex townhome buildings. The proposed three-story, triplex buildings include two stories of walk-out basement foundation walls. Temporary cuts on the order of roughly 6 to 10 m below current site grades are expected to be required for foundation wall construction, but then the bottom roughly 6 m of the cut slope is to be backfilled (retained by the foundation wall), with the upper portion of the cut slope being either reconstructed to match the current site grading or retained with retaining walls in the upper back yard area of the proposed triplexes and between the triplexes.

In order to establish a "limit of disturbance" area, we understand additional comments are required with respect to temporary excavation cut slopes. Preliminarily, we suggest 1H:1V (45 degree) cut slopes should be practical for the temporary excavations for construction of the building foundations and retaining walls, especially considering bedrock is anticipated to be encountered within the deeper excavations. However, to allow for some conservatism when establishing the "limit of disturbance" boundary, we recommend considering a 1.25H:1V plane (38.5 degrees) for the temporary excavations.

INTERIOR TESTING SERVICES LTD.

For the proposed retaining walls within the backyard areas and between the proposed triplex buildings, additional detailed design guidance can be provided by ITSL for proposed Mechanically Stabilized Earth (MSE) or geogrid tie-back walls. Preliminarily, we recommend allowing for geogrid tie-back lengths equal to 100% of the wall height, which will aid in establishing the required excavation limits and "limits of disturbance" behind the proposed retaining walls. Alternatively, cast-in place concrete walls (designed by your structural engineer) could be constructed, which may require less depth of excavation for construction.

We trust this meets your current needs. Further geotechnical engineering guidance and soils investigations should be provided at the time of site preparation and foundation design.

We trust this will assist you. Please call if you have any questions.

Yours truly,
Interior Testing Services Ltd.
Permit to Practice No. 1001971


Jennifer Anderson, P.Eng.



Peter Hanenburg, P.Eng.

TERMS OF ENGAGEMENT

GENERAL

Interior Testing Services Ltd. (ITSL) shall render the Services performed for the Client on this Project in accordance with the following Terms of Engagement. ITSL may, at its discretion and at any stage, engage subconsultants to perform all or any part of the Services. Unless specifically agreed in writing, these Terms of Engagement shall constitute the entire Contract between ITSL and the Client.

COMPENSATION

Charges for the Services rendered will be made in accordance with ITSL's Schedule of Fees and Disbursements in effect from time to time as the Services are rendered. All Charges will be payable in Canadian Dollars. Invoices will be due and payable by the Client within thirty (30) days of the date of the invoice without hold back. Interest on overdue accounts is 18% per annum, compounded monthly (19.6%)

REPRESENTATIVES

Each party shall designate a representative who is authorized to act on behalf of that party and receive notices under this Agreement.

TERMINATION

Either party may terminate this engagement without cause upon thirty (30) days' notice in writing. On termination by either party under this paragraph, the Client shall forthwith pay ITSL its Charges for the Services performed, including all expenses and other charges incurred by ITSL for this Project.

If either party breaches this engagement, the non-defaulting party may terminate this engagement after giving seven (7) days' notice to remedy the breach. On termination by ITSL under this paragraph, the Client shall forthwith pay to ITSL its Charges for the Services performed to the date of termination, including all fees and charges for this Project.

ENVIRONMENTAL

ITSL's field investigation, laboratory testing and engineering recommendations will not address or evaluate pollution of soil or pollution of groundwater. ITSL will co-operate with the Client's environmental consultant during the field work phase of the investigation.

PROFESSIONAL RESPONSIBILITY

In performing the Services, ITSL will provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices and procedures normally provided in the performance of the Services contemplated in this engagement at the time when and the location in which the Services were performed. ITSL makes no warranty, representation or guarantee, either express or implied as to the professional services rendered under this agreement.

LIMITATION OF LIABILITY

ITSL shall not be responsible for:

- (a) the failure of a contractor, retained by the Client, to perform the work required in the Project in accordance with the applicable contract documents;
- (b) the design of or defects in equipment supplied or provided by the Client for incorporation into the Project;
- (c) any cross-contamination resulting from subsurface investigations;
- (d) any damage to subsurface structures and utilities;
- (e) any Project decisions made by the Client if the decisions were made without the advice of ITSL or contrary to or inconsistent with ITSL's advice;
- (f) any consequential loss, injury or damages suffered by the Client, including but not limited to loss of use, earnings and business interruption;
- (g) the unauthorized distribution of any confidential document or report prepared by or on behalf of ITSL for the exclusive use of the Client.

The total amount of all claims the Client may have against ITSL under this engagement, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, shall be strictly limited to the lesser of our fees or \$50,000.00.

No claim may be brought against ITSL in contract or tort more than two (2) years after the Services were completed or terminated under this engagement.

PERSONAL LIABILITY

For the purposes of the limitation of liability provisions contained in the Agreement of the parties herein, the Client expressly agrees that it has entered into this Agreement with ITSL, both on its own behalf and as agent on behalf of its employees and principals.

The Client expressly agrees that ITSL's employees and principals shall have no personal liability to the Client in respect of a claim, whether in contract, tort and/or any other cause of action in law. Accordingly, the Client expressly agrees that it will bring no proceedings and take no action in any court of law against any of ITSL's employees or principals in their personal capacity.

THIRD PARTY LIABILITY

This report was prepared by ITSL for the account of the Client. The material in it reflects the judgement and opinion of ITSL in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. ITSL accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report may not be used or relied upon by any other person unless that person is specifically named by us as a beneficiary of the Report. The Client agrees to maintain the confidentiality of the Report and reasonably protect the report from distribution to any other person.

INDEMNITY

The client shall indemnify and hold harmless ITSL from and against any costs, damages, expenses, legal fees and disbursements, expert and investigation costs, claims, liabilities, actions, causes of action and any taxes thereon arising from or related to any claim or threatened claim by any party arising from or related to the performance of the Services.

DOCUMENTS

All of the documents prepared by ITSL or on behalf of ITSL in connection with the Project are instruments of service for the execution of the Project. ITSL retains the property and copyright in these documents, whether the Project is executed or not. These documents may not be used on any other project without the prior written agreement of ITSL.

FIELD SERVICES

Where applicable, field services recommended for the Project are the minimum necessary, in the sole discretion of ITSL, to observe whether the work of a contractor retained by the Client is being carried out in general conformity with the intent of the Services.

DISPUTE RESOLUTION

If requested in writing by either the Client or ITSL, the Client and ITSL shall attempt to resolve any dispute between them arising out of or in connection with this Agreement by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a dispute cannot be settled within a period of thirty (30) calendar days with the mediator, the dispute shall be referred to and finally resolved by an arbitrator appointed by agreement of the parties.

CONFIRMATION OF PROFESSIONAL LIABILITY INSURANCE

As required by by-laws of Engineers & Geoscientists British Columbia (EGBC), it is required that our firm advises whether or not Professional Liability Insurance is held. It is also required that a space for you to acknowledge this information be provided.

Our professional liability insurance is not project specific for the project and should not be regarded as such. If you require insurance for your project you should purchase a project specific insurance policy directly.

Accordingly, this notice serves to advise you that ITSL carries professional liability insurance. Please sign and return a copy of this form as an indication of acceptance and agreement to the contractual force of these Terms of Engagement.

PRINT NAME: _____ DATE: _____

ACKNOWLEDGEMENT: _____

Pedestrian and Bike Master Plan

Figure 6d

