



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: July 17, 2023

REPORT DATE: June 27, 2023

FILE: 3090-20 (DVP00606)

SUBJECT: DEVELOPMENT VARIANCE PERMIT APPLICATION FOR 900 MT GRIFFIN ROAD

PURPOSE:

To review Development Variance Permit application 00606 (DVP00606) to vary multiple sections of Zoning Bylaw 5000 to authorize an existing retaining wall with a fence that was constructed without required permits at 900 Mt Griffin Road.

RECOMMENDATION:

THAT Council support Development Variance Permit application 00606 (DVP00606) to vary Zoning Bylaw 5000 on LT 23, SEC 27, TWP 9, ODYD, PL EPP96153 (900 Mt Griffin Road), in the report titled "Development Variance Permit Application for 900 Mt Griffin Road" dated June 27, 2023, and respectfully submitted by the Current Planner, as follows:

- a) Section 4.15.1 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 2.19m; and
- c) Section 6.5.12 to increase the maximum combined height of a fence on top of a retaining wall at the property line or within 1.2m of the property line from 2.0m to 3.26m;

AND FURTHER, that Council's support of DVP00606 is subject to the following:

- a) That the site plan and cross-sections, intended to illustrate the siting and height of retaining structures and attached fence (Attachment 1), be attached to and form part of DVP00606 as Schedule 'A';
- b) That the Geotechnical Memorandum, prepared by Horizon Geotechnical Ltd., dated April 24, 2023 (Attachment 2), be attached to and form part of DVP00606 as Schedule 'B'; and
- c) That the aesthetic of the concrete wall be enhanced with a surface treatment that blends with the natural surrounding or screened with vegetation to the satisfaction of Administration.

ALTERNATIVES & IMPLICATIONS:

1. THAT Council not support Development Variance Permit application 00606 (DVP00606) to vary Zoning Bylaw 5000 on LT 23, SEC 27, TWP 9, ODYD, PL EPP96153 (900 Mt Griffin Road), in the report titled "Development Variance Permit Application for 900 Mt Griffin Road" dated June 27, 2023, and respectfully submitted by the Current Planner.

Note: This alternative does not support the development variance permit application and would require the applicant / owner to remove the retaining wall and fence, which is not in compliance with Zoning Bylaw 5000.

2. THAT Council support a modified version of Development Variance Permit Application 00606 (DVP00606) to vary Zoning Bylaw 5000 on LT 23, SEC 27, TWP 9, ODYD, PL EPP96153 (900 Mt Griffin Road), in the report titled "Development Variance Permit Application for 900 Mt Griffin Road" dated June 27, 2023, and respectfully submitted by the Current Planner, as follows:
 - a) Section 4.15.1 to allow the construction of buildings, structures and swimming pools on slopes greater than 30%;

AND FURTHER, that Council's support of DVP00606 is subject to the following:

- a) That the applicant is to submit an updated site plan, elevations and cross-sections demonstrating that the height and locations of the fence and retaining wall comply with the regulations contained in Zoning Bylaw 5000 to the satisfaction of Administration. The respective drawings are to be attached to and form part of DVP00606 as Schedule 'A';
- b) That the Geotechnical Memorandum, prepared by Horizon Geotechnical Ltd., dated April 24, 2023 (Attachment 2), be attached to and form part of DVP00606 as Schedule 'B'; and
- c) That the aesthetic of the concrete wall be enhanced with a surface treatment that blends with the natural surrounding or screened with vegetation to the satisfaction of Administration.

Note: This alternative would require the applicant to cut down the existing over height retaining wall to 1.2m. The combined height of a fence on top of the retaining wall would be limited to 2m. The applicant would need to adjust their plans with respect to site grading and the potential installation of a future pool.

ANALYSIS:

A. Committee Recommendations:

At its meeting of June 13, 2023, the Advisory Planning Committee passed the following resolution:

THAT the Advisory Planning Committee recommends that Council support Development Variance Permit application 00606 (DVP00606) to vary Zoning Bylaw 5000 on LT 23, SEC 27, TWP 9, ODYD, PL EPP96153 (900 Mt Griffin Road), in the report titled "Development Variance Permit Application for 900 Mt Griffin Road" dated May 30, 2023, and respectfully submitted by the Current Planner, as follows:

- a) *Section 4.15.1 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 2.19m; and*
- c) *Section 6.5.12 to increase the maximum combined height of a fence on top of a retaining wall at the property line or within 1.2m of the property line from 2.0m to 3.26m;*

AND FURTHER, that Council's support of DVP00606 is subject to the following:

- a) *That the site plan and cross-sections, intended to illustrate the siting and height of retaining structures and attached fence (Attachment 1), be attached to and form part of DVP00606 as Schedule 'A';*

- b) That the Geotechnical Memorandum, prepared by Horizon Geotechnical Ltd., dated April 24, 2023 (Attachment 2), be attached to and form part of DVP00606 as Schedule 'B'; and
- c) That the esthetics of the existing retaining wall be improved through screening and/or planting.

B. Rationale:

1. The subject property is located at 900 Mt Griffin Road (Figures 1 and 2). The property is approximately 1,132m² (0.28ac) in size. The surrounding area contains single detached residential housing and vacant land.
2. The subject property is zoned R2: Large Lot Residential (Attachment 3) and is designated as Hillside Residential (HRES) in the Official Community Plan (OCP).
3. The purpose of the application is to review a request to vary three provisions of Zoning Bylaw 5000 in order to authorize an existing combined retaining wall and fence on the subject property that was constructed without permits (see Timeline section).
4. Based on feedback received at the Advisory Planning Committee, the recommendation and alternatives have been updated to include requirements for aesthetic improvements to the façade of the retaining wall, as well as an additional alternative to allow the retaining wall to remain on the subject property, however, require that the wall be cut down to the maximum height of 1.2m as established in Zoning Bylaw 5000 and a maximum combined height of 2.0m for the fence and retaining wall.

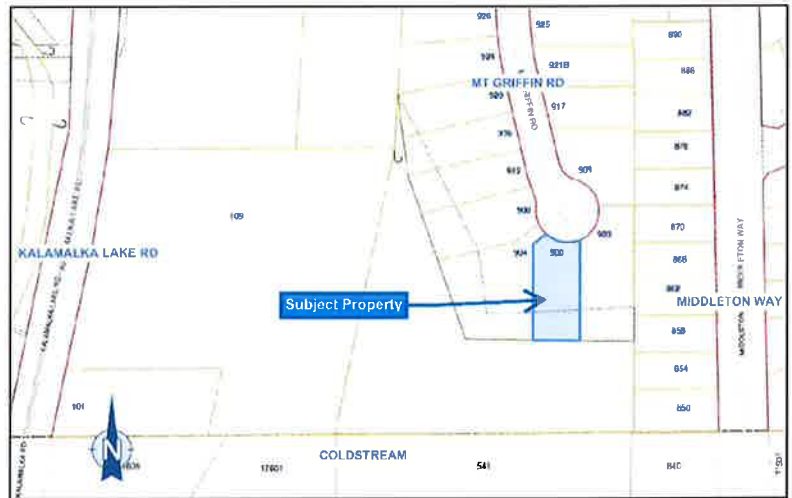


Figure 1 - Property Location Map



Figure 2: Aerial Photo of Property

5. The subject application pertains to development regulations within Section 4.15.1 (30% slopes), Section 6.5.11 (maximum height of a retaining wall) and Section 6.5.12 (maximum combined height of a retaining wall and fence) of Zoning Bylaw 5000 (Attachment 4).
6. The subject property contains slopes greater than 30% and requires approval of a variance to authorize the existing retaining wall to remain.
7. The application requests to vary Section 4.15.1 of Zoning Bylaw 5000 in order to allow the retaining wall constructed without permits to remain on slopes exceeding 30%.

8. The application also requests to vary Section 6.5.11 to increase the maximum allowable height of a retaining wall from 1.2m to 2.19m to authorize the existing retaining wall to remain on the subject property to support the future installation of a pool.
9. Additionally, the application requests to vary Section 6.5.12 to increase the maximum combined height of a retaining wall and fence from 2.0m to 3.26m to authorize a guard rail on top of the retaining wall to support the future installation of a pool. Due to the height of the retaining wall and the proposed installation of a pool, a fence/guard rail is required.

10. Timeline:

- i. June 2, 2022 – Property owner's agent submitted a Development Variance Permit (DVP) application (DVP00578) for 900 & 903 Mt Griffin Road proposing to construct tiered retaining walls extending 6.0m into the no build no disturb covenant area.
- ii. June 6, 2022 – the application was rejected by staff as the proposal contravened the no build no disturb covenant area.
- iii. June 9, 2022 – The agent advised that they would redesign the wall at approximately 8' in height and propose a placement that did not encroach into the covenant area.
- iv. June 16, 2022 – Staff advised the applicant of the submission requirements for a complete application.
- v. August 18, 2022 – Property owner submitted a DVP application (DVP00583) for 900 Mt Griffin Road proposing an approximately 6' retaining wall, plus a guard rail at the covenant line.
- vi. August 25, 2022 – Staff advised the property owner that the application was not complete and requested the applicant to submit outstanding items to proceed with the application.
- vii. September 25, 2022 – The application (DVP00583) was placed on hold pending submission of outstanding items by the property owner.
- viii. October 17, 2022 – The property owner requested to cancel the application and to refund the application fees paid.
- ix. October 19, 2022 – The property owner's agent advised that they found a "work around" to keep the retaining wall under the required maximum height of 1.2m and a DVP was no longer required.
- x. October 20, 2022 – Staff advised the agent that subsequent to a site inspection, staff observed that the retaining wall has already been constructed and exceeds the maximum height of 1.2m. Staff requested a survey of the wall with respect to the height and covenant line.
- xi. October 31, 2022 – The property owner provided a survey and stated that the wall was 1.2m in height.
- xii. November 3, 2022 – Staff reviewed the constructed retaining wall and submitted a survey. Staff identified that the property owner placed fill within the no build no disturb covenant area to reduce the height of the wall which is expressly prohibited by the covenant. The property owner was advised that the fill placed within the covenant area needed to be removed immediately and the area returned to its original state. The property owner was advised that a DVP and Building Permit would be required to allow the retaining wall to remain on the property.
- xiii. November 18, 2022 – The property owner contacted Staff to request information on how to obtain a Development Variance Permit now that an approximate 8' retaining wall was already constructed on the property.
- xiv. December 2, 2022 – Staff contacted the property owner to inform them that a Stop Work Order was going to be placed on the property for the construction of a pool (supported by the retaining wall), identify the infractions to Building Bylaw 5900 and Zoning Bylaw 5000, and provide a detailed list of requirements to rectify the unlawful construction.
- xv. January 17, 2023 – The property owner submitted a DVP application (DVP00606). Staff reviewed the application and deemed the submission incomplete. The property owner was requested to provide further information on a noted archaeological site within the subject property, as well as further details on geotechnical and site grading.
- xvi. April 11, 2023 – The property owner informed Staff that the archaeological concerns had been addressed.
- xvii. April 24, 2023 – The property owner provided Staff with the required geotechnical information.

11. The placement of retaining structures could have been established as part of the subdivision establishing the development lots on Mt Griffin Road to create a unified and consistent approach to the building platforms and retaining walls. However, this did not occur leaving the end users developing dwellings on the properties to complete this task on a case by case basis.

12. Administration supports the requested variance for the following reasons:

- a) The applicant has corrected contraventions to the no build no disturb covenant, applied for the required permits and provided the information requested; and
- b) The retaining structure is approximately 14.5m from the rear property line. The neighbouring property abutting the rear property line of the subject property (south) is undeveloped land owned by the City of Vernon. As such, the impacts of the retaining structure on neighbouring properties are minimal. From Kalamalka Lake Road, the walls are visible when looking up at the site from the District of Coldstream (Attachment 5). Due to the visual prominence of the retaining wall from Kalamalka Lake Road, Administration recommends requiring surface treatments and/or screening vegetation to be planted to improve the aesthetic of the wall when viewed from public lands.

C. Attachments:

Attachment 1 – Site plan and cross-sections

Attachment 2 – Geotechnical Memorandum, prepared by Horizon Geotechnical Ltd., dated April 24, 2023

Attachment 3 – R2: Large Lot Residential Zoning District

Attachment 4 – Subject Regulations, Zoning Bylaw 5000

Attachment 5 – Photos of retaining structure

D. Council's Strategic Plan Alignment:

- | | |
|---|--|
| <input type="checkbox"/> Governance & Organizational Excellence | <input type="checkbox"/> Livability |
| <input type="checkbox"/> Recreation, Parks & Natural Areas | <input type="checkbox"/> Vibrancy |
| <input type="checkbox"/> Environmental Leadership | <input checked="" type="checkbox"/> Not Applicable |

E. Relevant Policy/Bylaws/Resolutions:

1. The following provision of Zoning Bylaw 5000 is relevant to the subject application:

Section 4.15.1 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.

Section 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.

BUDGET/RESOURCE IMPLICATIONS:


N/A


FINANCIAL IMPLICATIONS:

- None Budget Previously Approved New Budget Request
(Finance Review Required)

Prepared by:

Approved for submission to Council:

for
X 
Matt Faucher, CPT
Planner

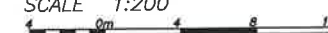
per 
Patricia Bridal, CAO
Date: July 11, 2023

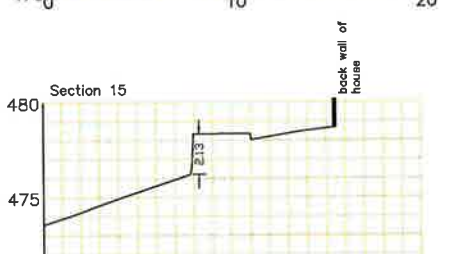
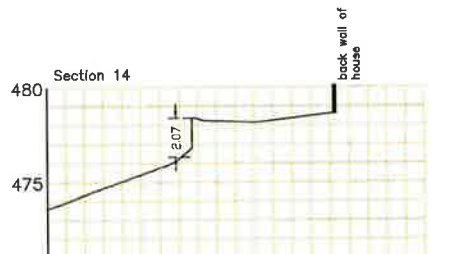
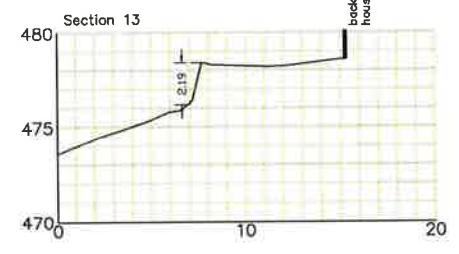
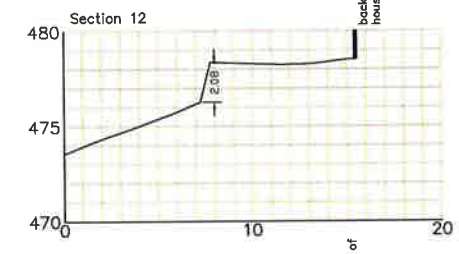
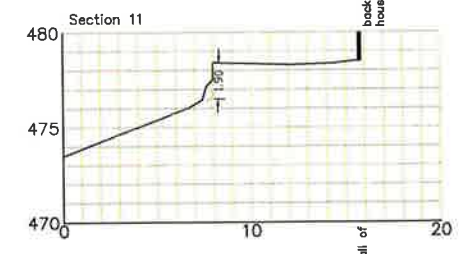
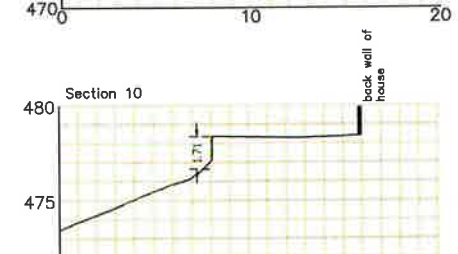
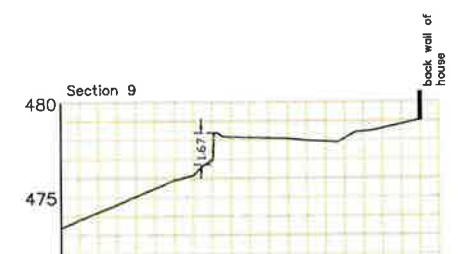
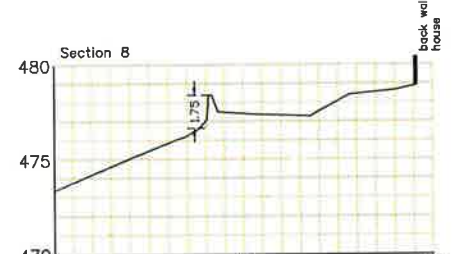
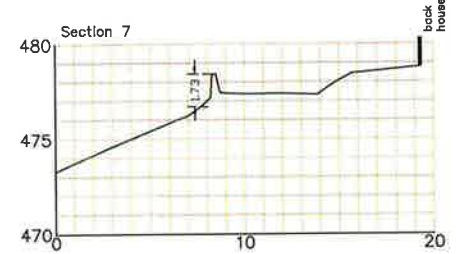
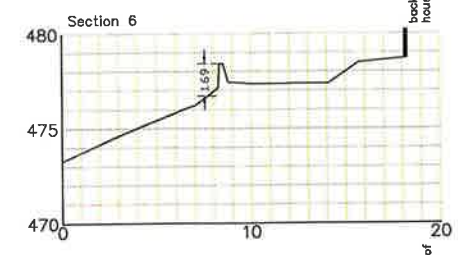
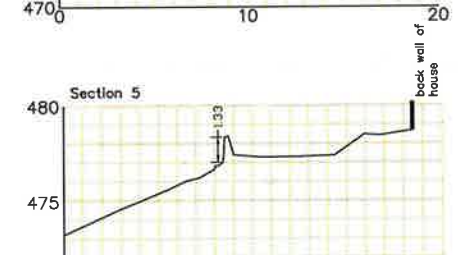
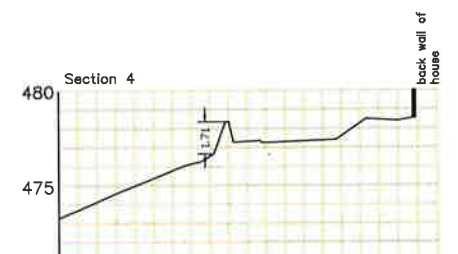
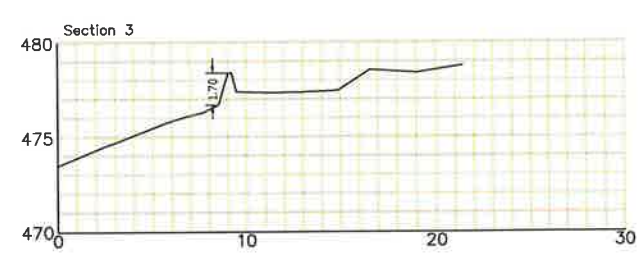
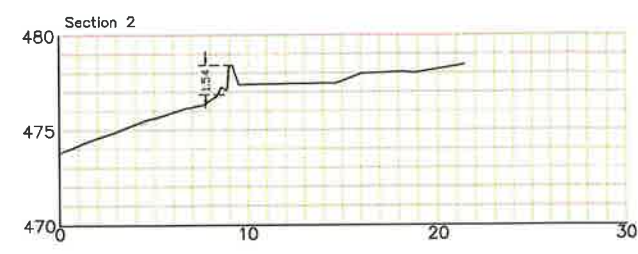
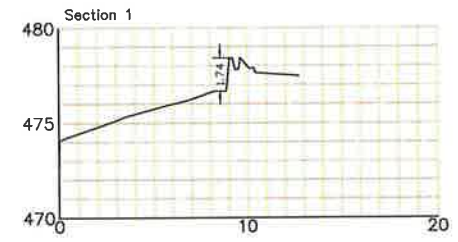
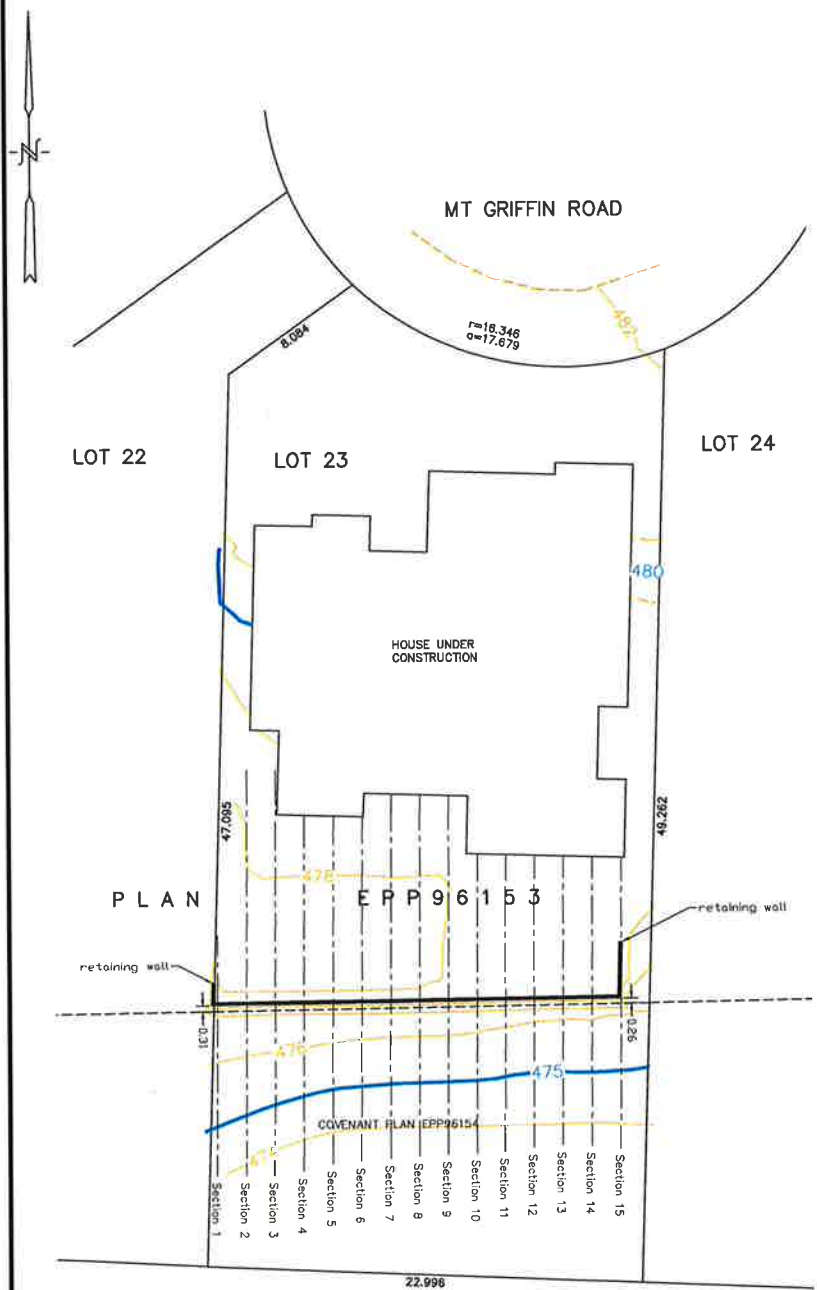
X 
Roy Nuriel
Acting General Manager, Planning

REVIEWED WITH

- | | | |
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| <input type="checkbox"/> Bylaw Compliance | <input type="checkbox"/> Public Works/Airport | <input type="checkbox"/> Long Range Planning & Sustainability |
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| <input type="checkbox"/> Financial Services | | <input type="checkbox"/> Economic Development & Tourism |
| <input checked="" type="checkbox"/> COMMITTEE: APC (June 13/23) | | |
| <input type="checkbox"/> OTHER: | | |

Client: XXXXXXXXXX
Civic address: 900 Mt Griffin Rd

SCALE 1:200

 The intended plot size of this plan is 864mm in width by 559mm in height (ANSI D) when plotted at a scale of 1:200
 Contour interval = 1m
 Elevations are shown in metres, and are based on CGVD28 (HTv2.0), and are derived from GPS observations.



This plan was prepared for design purposes and is for the exclusive use of Curtle.

Distances are shown in metres and decimals thereof.
 Parcel dimensions are derived from Plan EPP96153 and field survey.
 This plan shows horizontal ground level distances except where otherwise noted.

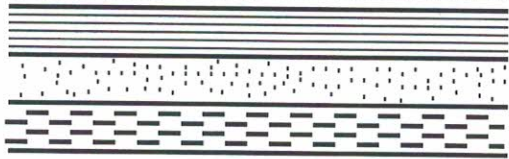
Bearings and distances are derived from field survey observations and are referred to the central meridian of UTM zone 11N, NAD83 CSRS.

This plan has been prepared based on Land Title and Survey Authority records and a field survey completed on DATE. Unregistered interests have not been included or considered.

The Certificate of Title PID 031-034-942 was searched on October 14, 2021.

Title is subject to the following non-financial charges:
 Statutory Right of Way - K816095
 Covenants - CA4959774, CA8015906
 Statutory Building Scheme - CA8015905, CA8449719

Jason R. Shortt accepts no responsibility for and hereby disclaims all obligations and liabilities for damages including, but not limited to, direct, indirect, special, and consequential damages arising out of or in connection with and direct or indirect use or reliance upon the Plan beyond its intended use.



**Chris Martin (Builder)
4152 Deroo Road
Vernon , BC V1B 3H7**

April 24, 2023

File : 23 - 7141

**RE : Development Permit Variance Application
 2.2 m Concrete Retaining Wall with Pool
 Property of [REDACTED] - Lot 23, Plan EPP 96153
 900 Mt Griffin Road B, 900 Mt Griffin Road , Vernon, BC**

- 1.) **Three pages of profile drawings File No. 30089 by Russell Short Land Surveyors are enclosed showing the exposed height of the wall and the slope below the wall ; and a landslide assessment assurance statement is enclosed that states the land may be used safely for the use intended.**
- 2.) **Design Drawings S 0.1 and S1.1 by Willerton Engineering the structural engineering company are enclosed that show the design details for the structurally reinforced concrete retaining wall and the proposed location of the swimming pool to be constructed.**
- 3.) **The structural design by Willerton Engineering confirms that the concrete retaining wall can support the addition of the proposed swimming pool .**
- 4.) **The undersigned geotechnical engineer requested weep holes be installed and confirms weep holes were installed as a precautionary measure to relieve possible water pressure behind the wall and confirms free-draining gravel was placed immediately against the wall along with good imported compacted granular backfill materials.**

Phone/Fax: (250) 548-3250
Residence: (250) 548-3251



Jerry Lay
Jerry Lay, P. Eng.
Geotechnical Engineer

Site Plan of Lot 23, Sec 27, Tp 9,
 ODYD, Plan EPP96153.

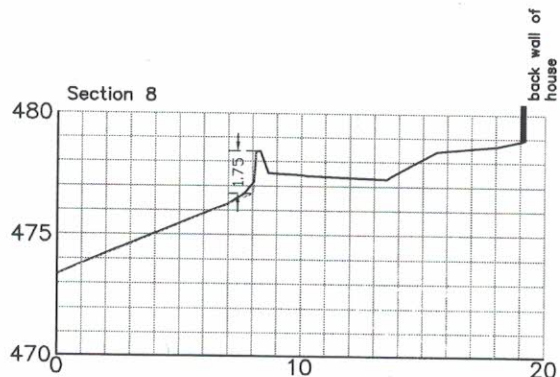
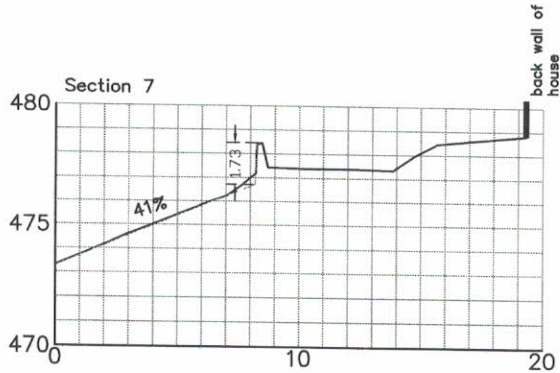
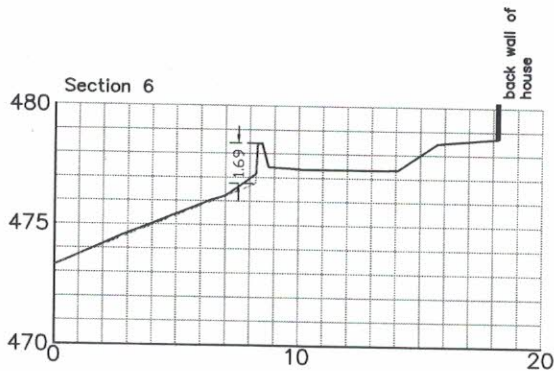
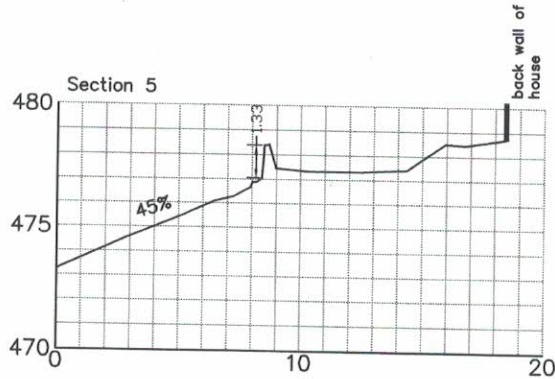
Client: [REDACTED]
 Civic address: 900 Mt Griffin Rd

SCALE 1:200



The intended plot size of this plan is 864mm in width by 559mm in height (ANSI D) when plotted at a scale of 1:200

Contour interval = 1m
 Elevations are shown in metres, and are based on CGVD28 (HTv2.0), and are derived from GPS observations.



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russell shortt
 land SURVEYORS

2801-32nd Street, Vernon, B.C. V1T 5L8
 Phone: (250)545-0511 Email: jasons@rshortt.ca

FILE: 30089

F.B. 1362 p46

Site Plan of Lot 23, Sec 27, Tp 9,
 ODYD, Plan EPP96153.

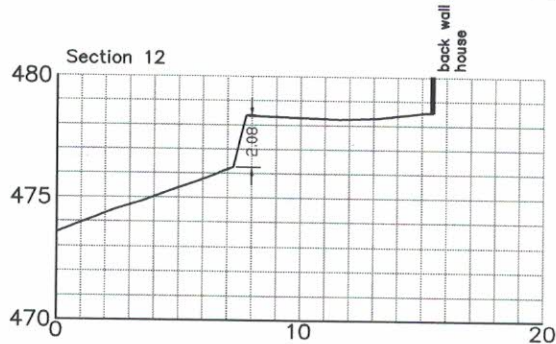
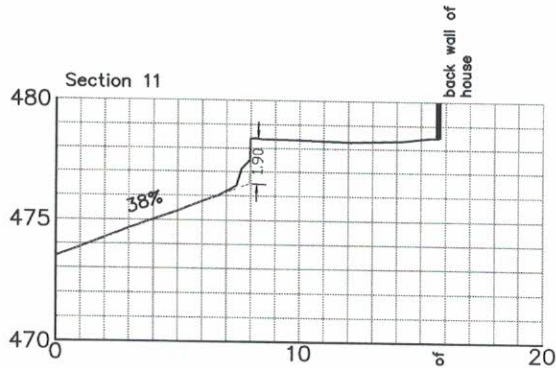
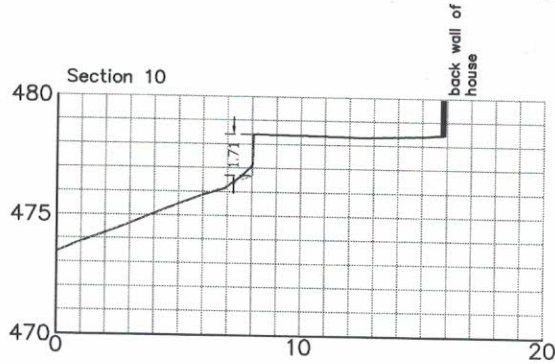
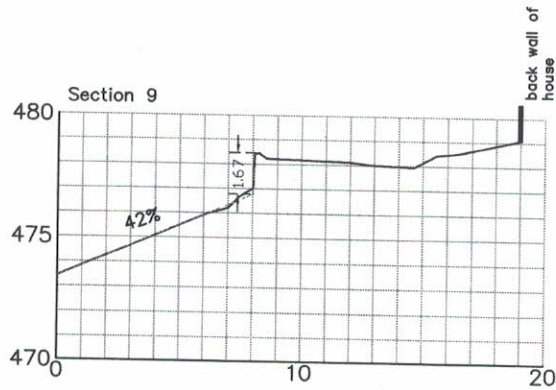
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 Civic address: 900 Mt Griffin Rd

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russell shortt

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2801-32nd Street, Vernon, B.C. V1T 5L8

Phone: (250)545-0511

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FILE: 30089

F.B. 1362 p46

Site Plan of Lot 23, Sec 27, Tp 9,
 ODYD, Plan EPP96153.

Client: [REDACTED]

Civic address: 900 Mt Griffin Rd

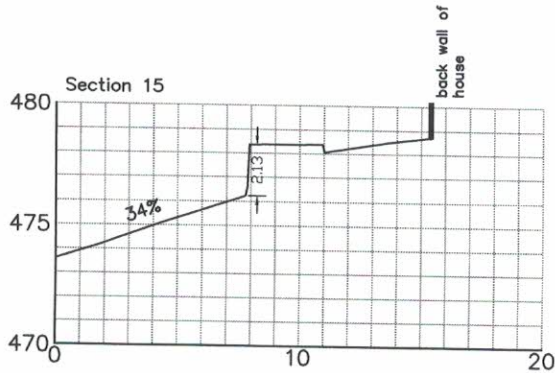
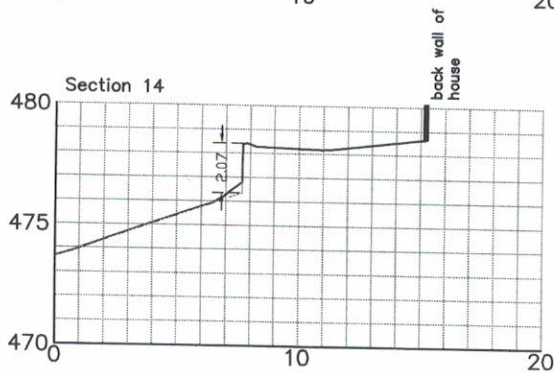
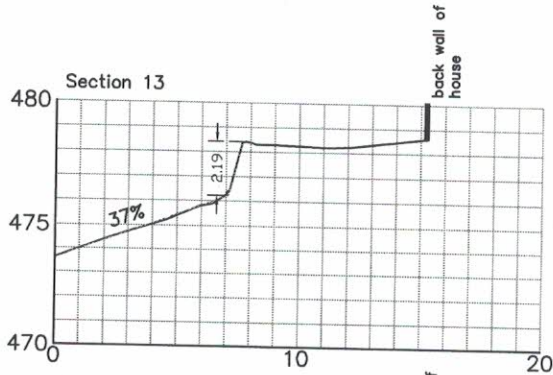
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Contour interval = 1m

Elevations are shown in metres, and are based on CGVD28 (HTv2.0), and are derived from GPS observations.



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russell shortt

land SURVEYORS

2801-32nd Street, Vernon, B.C. V1T 5L8

Phone: (250)545-0511

Email: jasons@rshortt.ca

FILE: 30089

F.B. 1362 p46

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: April 24, 2023

City of Vernon

Jurisdiction and address 3400 - 30 th Street, Vernon , BC V1T 5E6

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:

Lot 23 , Plan EPP 96153 , ODYD

Legal description and civic address of the Property

900 Mt Griffin Road , Vernon , BC

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 conditions^[1] 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".

Jerry Lay, P. Eng.

April 24 , 2023

Name (print)

Date

Signature

Horizon Geotechnical Ltd.

^[1] 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".

Address Jerry Lay, P. Eng.
14151 Oyama Road
Lake Country, BC V4V 2B8
Telephone (250) 549-0224

(Affix Professional seal here)

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

I am a member of the firm Horizon Geotechnical Ltd.
and I sign this letter on behalf of the firm. (Print name of firm)

Jlay009@gmail.com



Subject Property :
Lot 23 , Plan EPP 96153 , ODYD
900 Mt Griffin Road , Vernon , BC

CONSULTANTS

REVISIONS

NO.	DATE	DESCRIPTION
0	22/08/16	CONSTRUCTION

PROJECT

RESIDENCE
RETAINING WALL

900 MT. GRIFFIN RD.
 VERNON, B.C.

DRAWING

PROJECT NOTES
& KEY PLAN

FILE

22-102

DATE

17 August 2022

SCALE

AS NOTED

DESIGN

DAH

ENGINEER

CW

SEAL



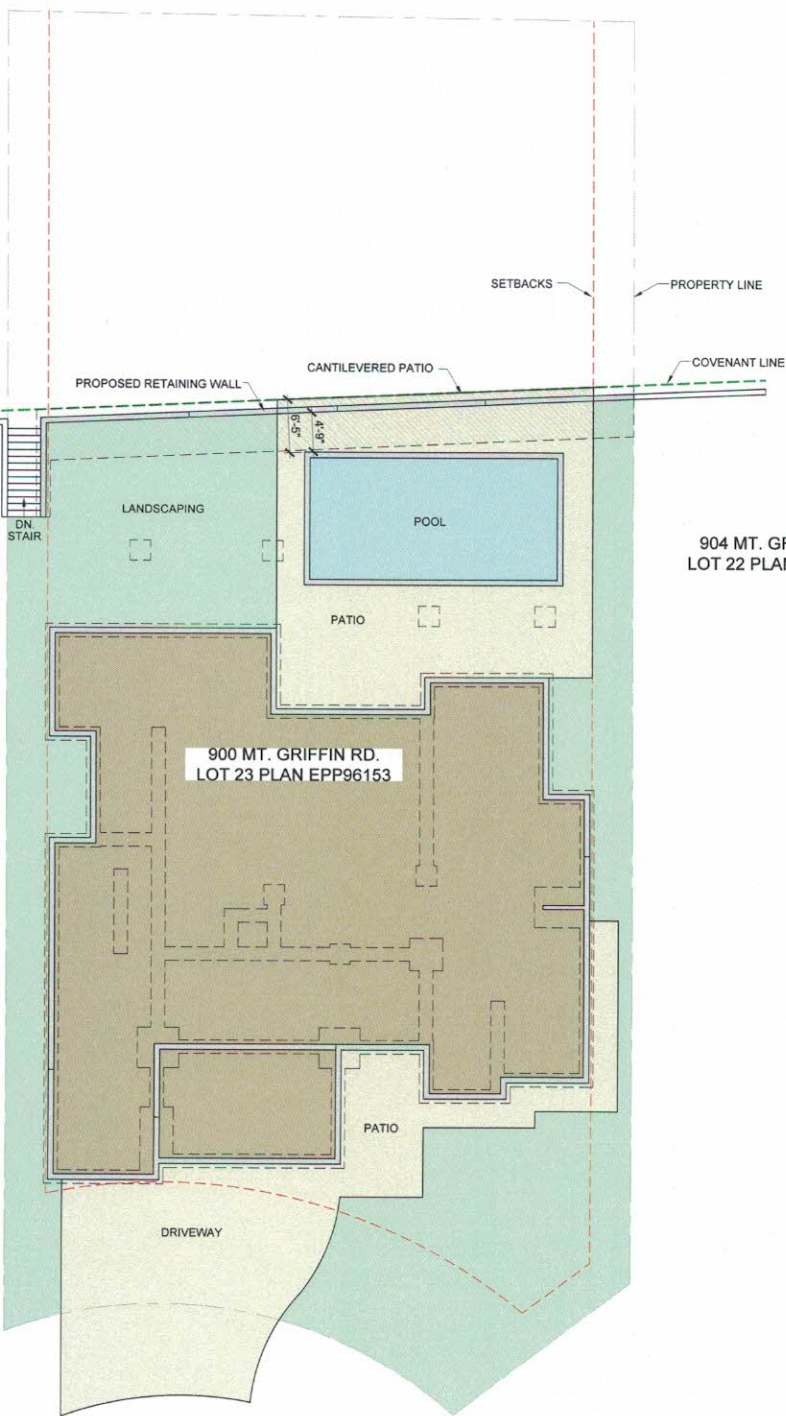
PERMIT TO PRACTICE No. 1001581

SHEET NUMBER

REV

S0.1

0



A **KEY PLAN**
 SCALE: 3/32"=1'-0"

GENERAL REQUIREMENTS

- All work shall conform to the requirements of the British Columbia Building Code (BCBC), 2018. All documents designated therein and all local codes and bylaws.
- The General Contractor shall compare and coordinate the drawings of all the disciplines and report any discrepancy to the Architect and the Engineers for assessment / clarification before proceeding with the work.
- It is assumed these drawings accurately reflect actual site conditions. This design has been reviewed for the adequacy of permanent primary structural components only. Excavation, soil mechanics, shoring and falsework components necessary for construction safety are not included and will not be reviewed by the structural engineer.
- The Contractor is responsible for the safety in and around the work site during construction, and for the design, erection and inspection of all temporary structure, formwork, falsework, shoring, etc. needed during construction as required by the Worker's Compensation Board (WCB).
- These structural drawings do not include the design of non-structural elements, including, but not limited to: handrails, snow retention, skylights, glazing systems, brick & stone veneer ties, and seismic restraint of mechanical and electrical equipment.
- The General Contractor must check his/her work and the work of his/her sub-trades before review by the Engineer.
- Where conflicts exist between structural documents, the strictest requirements, as indicated by the Structural Engineer, shall govern.
- No Structural member shall be cut or notched or otherwise reduced in strength unless approved by the Engineer.

SITE REVIEWS

- Site reviews of construction will be performed by the Engineer. The contractor shall give 24 HOURS NOTICE for request of any such reviews. These reviews will be limited to concrete reinforcing steel installation, structural steelwork & decking, reinforced masonry and rough carpentry items only. They will not include site safety, methods of construction, electrical or mechanical installations.

DESIGN CRITERIA

- Building Code
British Columbia Building Code (BCBC) 2018

FOUNDATIONS / FOUNDATION WALLS

GENERAL

- The Owner is responsible for engaging a Geotechnical Engineer.
- No review of slope stability or ground bearing conditions for this have been performed by the Structural Engineer. Such reviews, if required, shall be performed by a Geotechnical Engineer.
- Do not backfill foundation walls more than 4'-0" (1220mm) until floor construction at top and bottom is completed. Ensure free draining backfill and drainage is in place.
- Footings are to be constructed and backfilled as soon as possible following excavation to avoid softening or drying out by exposure.

DESIGN

- The design uses the following assumed values:
 - Allowable bearing pressure = 1500 psf
 - Frost depth = 2'-6"
 - Lateral soil pressure = 45 psf per foot of depth
 - Seismic Site Class D
- Willerton Engineering recommends a Geotechnical Engineer review and approve the above assumed values. All costs associated with incorrect assumptions are the responsibility of the Owner.
- Use engineering for all walls backfilled greater than 4'-0" (1200mm). Walls backfilled less than 4'-0" (1200mm) do not require engineering.

SITE PREPARATION

- The Contractor shall be responsible for maintaining any excavations in a stable condition without adversely affecting surrounding properties including services. This includes obtaining all necessary approvals for shoring and anchoring systems.
- Footings near boundaries must not be located higher or lower than footings of adjacent properties unless approved.
- Keep footings clean and free of loose material before inspection, immediately prior to pouring concrete and during pouring.
- Footings are to bear on native undisturbed soil or rock, free of all organic material with a frost protection as specified above, unless otherwise directed / supervised and approved by a Geotechnical Engineer.

TEMPORARY SHORING AND BRACING

- Temporary shoring and bracing, formwork, falsework, etc. are the responsibility of the Contractor.
- These drawings show the completed structure only and not components that may be required for construction and safety during construction.
- All work shall be carried out in accordance with WorkSafe BC (or authority having jurisdiction) requirements.

REINFORCING STEEL

GENERAL

- Detail and place reinforcing steel in accordance with the "Reinforcing Steel Manual of Standard Practice" and CSA-A23.1 unless noted otherwise.
- Provide deformed bars with yield strength of 400 MPa as specified in CSA G30.18.
- Provide welded wire fabric as specified in CSA G40.20/G40.21.
- Provide a minimum of (2) 15M bars extending 2'-0" (610mm) beyond all corners at wall and slab openings greater than 2'-0" (610mm) wide.

INSTALLATION

- Reinforcing steel is to be free of all dirt, excessive rust and scale at the time of placing and is to be securely in place prior to placing any concrete. No bars are to be wet dowelled with the exception of anchor bolts.
- All bars shown as being bent on the drawings are to be machine bent prior to being placed.
- Concrete cover and bar splices are to be as indicated or in accordance with N.B.C.
- The minimum clear cover for reinforcement in non-pre-stressed concrete with exposure to earth or weather shall be as shown on the drawings.
- Reinforcing steel which requires splicing must have a minimum lap of 40 bar diameters. Bars must be continuous around corners and at intersections of walls, either by bending around the corner, or by adding corner bars with the minimum 40 bar diameter lap length. Space laps so that no more than 50% of bars placed are lapped within 4'-0" (1200mm) for beams and columns.
- Provide a minimum of (2) 15M bars extending 2'-0" (610mm) beyond all corners at wall and slab openings greater than 2'-0" (610mm) wide.
- All wall and grade beam reinforcing shall be continuous at corners and intersections. Use corner bars.
- Provide chairs, spacer bars, support bars & other accessories to support reinforcing in accordance with the latest editions of CSA A23.1 and A23.3

Min. reinforcing bar lap / splice U.N.O.:

Bar Size	Inches	mm	Bar Size	Inches	mm
10M	16"	410	20M	36"	915
15M	24"	610	25M	44"	1200

CONCRETE - CAST IN PLACE

GENERAL

- The contractor shall provide minimum 24 hours notice for reinforcement inspections. Concrete shall not be poured until the reinforcing has been inspected by Willerton Engineering and final approval is obtained.
- No coring, holes, chases or embedment of pipes other than those shown on the structural drawings is permitted without written permission from Willerton Engineering.
- Mix designs shall be submitted by the contractor to the testing agency for review.
- No chlorides are permitted.
- For slabs on grade and suspended slabs, concrete is to have a curing agent (i.e. Master Seal) applied immediately after finishing the surface with a steel power trowel to a smooth and flat finish.
- Use a minimum of 4" (102mm) concrete slab-on-grade, reinforced with 10M bars @ 18" c/c (460mm) each way placed at mid-depth. UNO.
- Damp proof all walls below grade with (2) coats of asphalt emulsion, and plug tie holes with fiber-gum.
- Construction joints shall be installed at 100'-0" (30.0m) c/c maximum spacing, unless noted otherwise.
- Control joints in slab-on-grade shall be saw cut at a maximum distance of 50 times the slab thickness or 20'-0" (6.0m) whichever is less, before shrinkage cracks can form.

INSTALLATION

- All concrete placement and performance shall be in accordance with CSA-A23.1.
- No more than 2 hours shall elapse between concrete batching and concrete placement unless approved by the testing agency. No water should be added after initial batching. These items are to be monitored by the Contractor.
- Concrete should be protected at all times from being damaged during construction.
- All concrete shall be compacted with mechanical vibrators.
- Formed concrete shall be cured for a minimum of 7 days prior to stripping of formwork.

TESTING

- Concrete testing shall be done by a testing laboratory at the Owner's expense. Concrete testing shall be conducted for every 70 cubic yards of concrete, but not less than 1 test for concrete cast each day.

Concrete Mix Design:				
Location	28 Day Strength (MPa)	Air Content (%)	Water Cement Ratio	MAX. AGGREGATE SIZE ¾" (20mm)
Footings Perimeter	30	1 to 3	0.55	
Retaining walls	30	5 to 8	0.55	
Slab(s) on grade	30	5 to 8	0.45	

The concrete mix shall be in conformance with CSA A23.1 Strength, water cement ratio, and air content shall conform to Tables 7, 8 & 9 of CSA A23.1

COLD WEATHER REQUIREMENT

- Forecasted temperature no below 2°C:
 - If concrete drops below 10° C at point of pouring, the mixing water shall be heated to maintain a minimum concrete temperature of 10°C.
 - Concrete shall not be placed on or against any surface which is at temperatures less than 4°C.
 - Contractor should be prepared to cover concrete pour if unexpected weather occurs.
- Forecasted temperature below 2°C but above -4°C:
 - Forms and steel should be free of ice and snow.
 - Mixing water shall be heated to give a minimum concrete temperature of 10°C at point of pour.
 - Concrete shall not be placed on or against any surface which is at temperatures less than 4°C.
 - Poured concrete shall be covered with canvas or similar and kept a few inches from the surface.
 - Protection should be maintained for at least 3 days.
- Forecasted temperature below -4°C:
 - Forms and steel should be free of ice and snow.
 - Mixing water shall be heated to give a minimum concrete temperature of 10°C at point of pour.
 - Concrete shall not be placed on or against any surface which is at temperatures less than 4°C.
 - Poured concrete shall be covered with canvas or similar and kept a few inches from the surface.
 - Temperature of the concrete at all surfaces shall be kept at minimum of 20°C for 3 days, or 10°C for 5 days. The concrete must be kept above freezing for a minimum of 7 days.
 - The enclosure must be constructed so that air can circulate outside the outer of edge members.

ITEMS NOT SPECIFICALLY DETAILED AND DIMENSIONED ARE TO CONFORM TO PART 9 OF THE BRITISH COLUMBIA BUILDING CODE (BCBC) AND ARE BY OTHERS.

REFER TO ARCHITECTURAL DRAWINGS BY 925R DESIGN INC. FOR FURTHER INFORMATION.

DRAWING INDEX	
S0.1	PROJECT NOTES & KEY PLAN
S1.1	FOUNDATION PLAN & DETAILS

903 MT. GRIFFIN
LOT 24 PLAN EP

REVISIONS

NO.	DATE	DESCRIPTION
0	22/08/16	CONSTRUCTION

PROJECT

**RESIDENCE
 RETAINING WALL**

900 MT. GRIFFIN RD.
 VERNON, B.C.

DRAWING

**FOUNDATION PLAN
 & DETAILS**

FILE
 22-102

DATE
 17 August 2022

SCALE
 AS NOTED

DESIGN
 DAH

ENGINEER
 CW

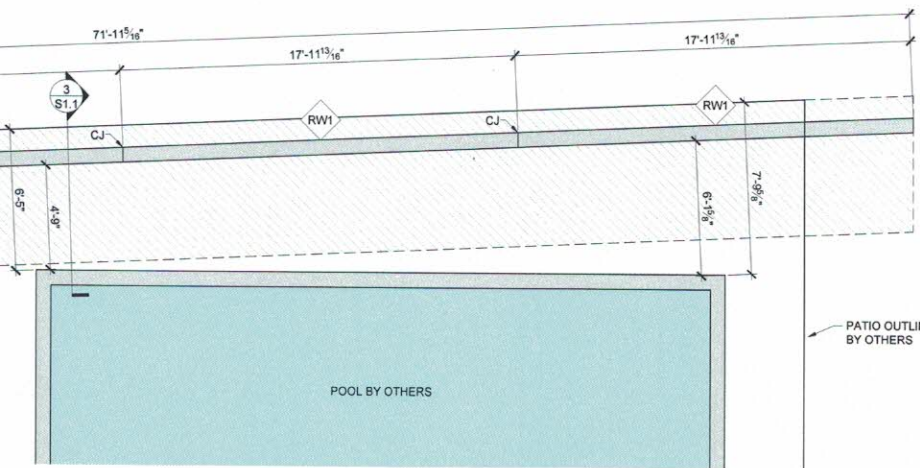
SEAL



PERMIT TO PRACTICE No. 1001581

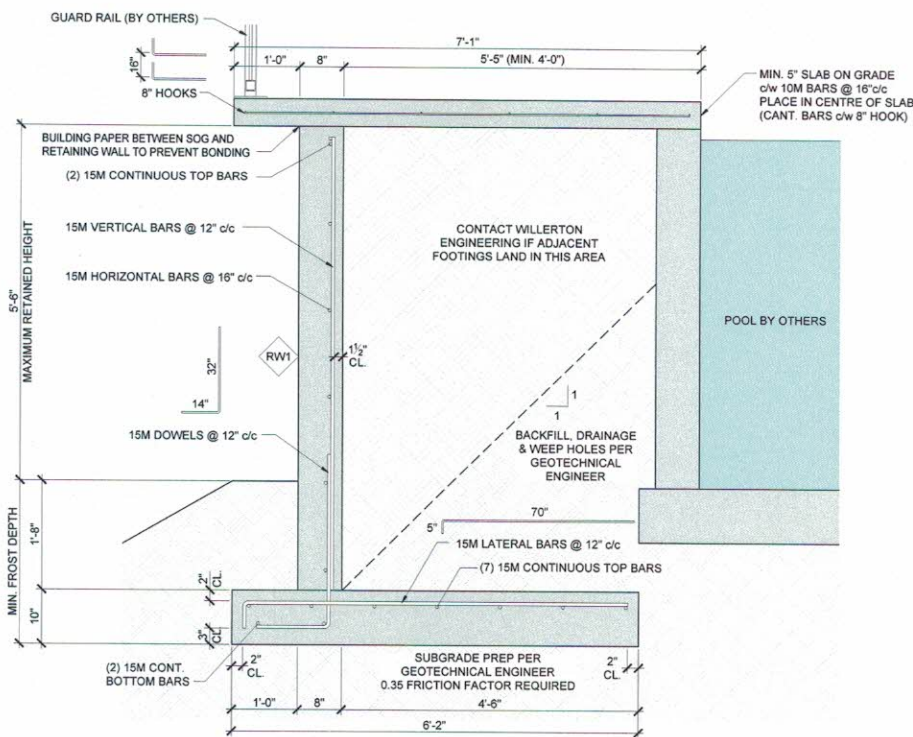
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S1.1 0



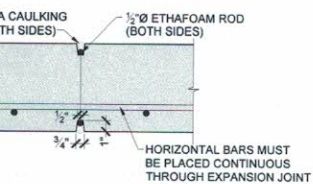
FOUNDATION PLAN

SCALE: 1/4"=1'-0"



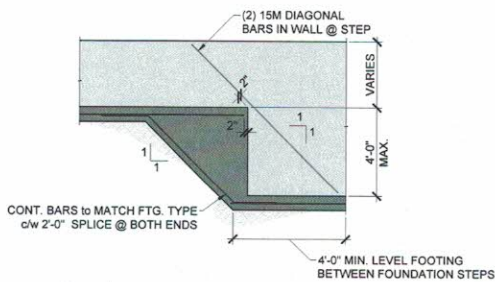
3 RETAINING WALL SECTION - RW1

S1.1 SCALE: 3/4"=1'-0"



EXPANSION JOINT DETAIL - CJ

SCALE: N.T.S.



6 STEP FOOTING DETAIL

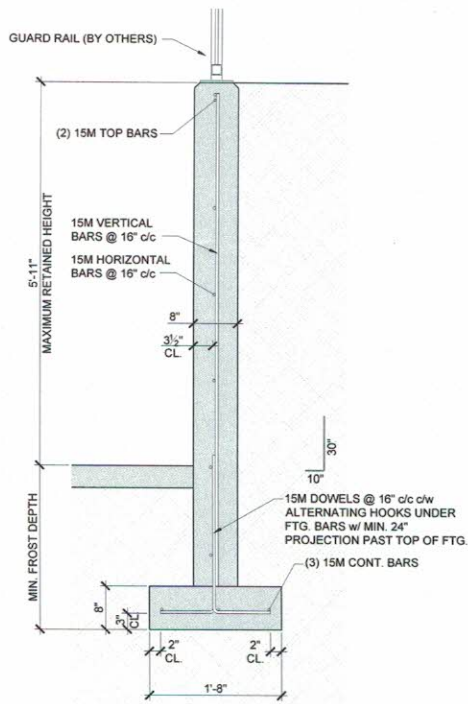
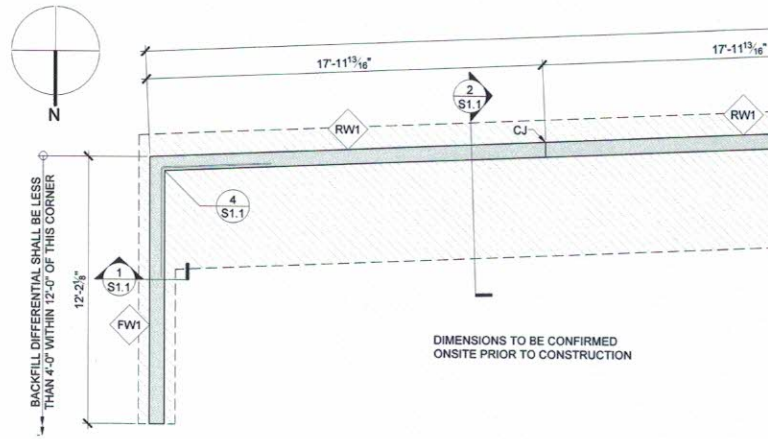
SCALE: N.T.S.

FOUNDATION SCHEDULE:

GENERAL

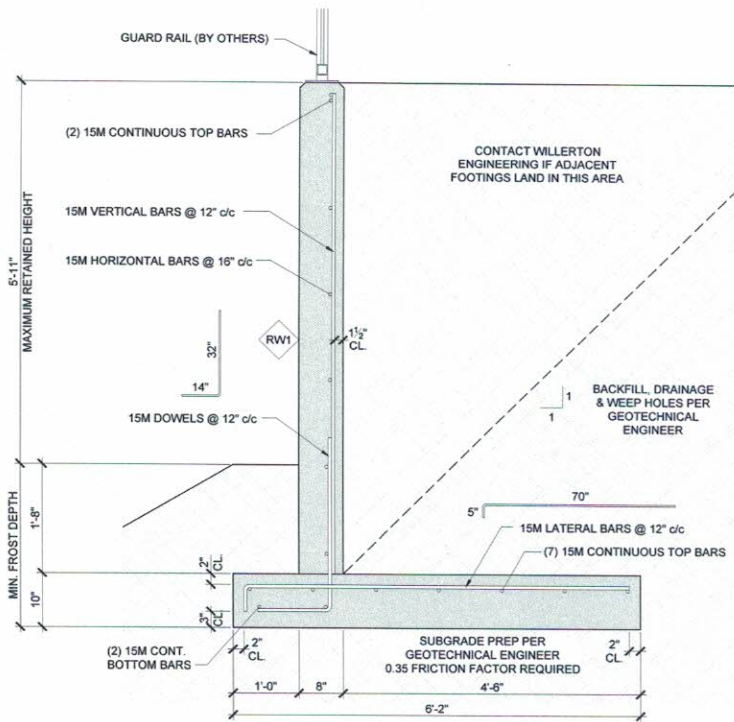
1. DOWELS CANNOT BE WET SET AND MUST BE MACHINE BENT
2. SPLICE BARS REQ'D IN ALL WALL CORNER/INTERSECTIONS UNO.
3. ALL DOWELS TO HAVE MIN. 2'-0" PROJECTION ABOVE FTG. U.N.O.

FW1	<p>8" FOUNDATION WALL</p> <ul style="list-style-type: none"> - CENTRE MAT REINFORCING - 15M VERTICAL BARS @ 16" c/c - 15M HORIZONTAL BARS @ 16" c/c - (2) 15M CONTINUOUS TOP BARS <p>20"x8" STRIP FOOTING</p> <ul style="list-style-type: none"> - (2) 15M CONTINUOUS BARS - 15M DOWELS @ 16" c/c
RW1	<p>8" WIDE x 6'-0" EXPOSED FACE RETAINING WALL</p> <ul style="list-style-type: none"> - BACKFILL MAT REINFORCING, 1 1/2" CLEAR OF BACKFILL - 15M VERTICAL BARS @ 12" c/c - 15M HORIZONTAL BARS @ 16" c/c - (2) 15M CONTINUOUS TOP BARS <p>74"x10" STRIP FOOTING</p> <ul style="list-style-type: none"> - (7) 15M CONTINUOUS TOP BARS - 2" CLEAR OF TOP OF FOOTING - (2) 15M CONTINUOUS BOTTOM BARS - 3" CLEAR OF GRADE - 15M LATERAL BARS @ 12" c/c - 15M DOWELS @ 12" c/c



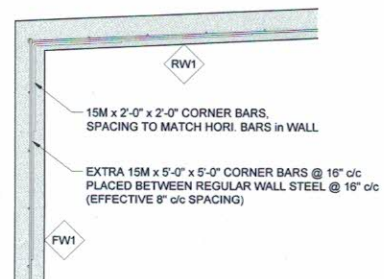
1 FND. WALL SECTION - FW1

S1.1 SCALE: 1/2"=1'-0"



2 RETAINING WALL SECTION - RW1

S1.1 SCALE: 3/4"=1'-0"



4 EXTRA CORNER BAR DETAIL

S1.1 SCALE: 1/2"=1'-0"

9.3 R2 : Large Lot Residential

9.3.1 Purpose

The purpose is to provide a **zone** for **single detached housing**, and compatible **secondary uses**, on large sized urban serviced **lots**. The R2c sub-zoning district allows for **care centre, major** as an additional use. The R2h sub-zoning district allows for **home based business, major** as an additional use. *(Bylaw 5467)*

9.3.2 Primary Uses

- **care centre, major** *(use is only permitted with the R2c sub-zoning district)*
- **single detached housing**

9.3.3 Secondary Use

- **boarding rooms**
- **bed and breakfast homes** *(in single detached housing only) (Bylaw 5498)*
- **care centres, minor**
- **group home, minor**
- **home based businesses, minor**
- **home based businesses, major** *(use is only permitted with the R2h sub-zoning district)*
- **secondary suites**
- **seniors supportive housing**

9.3.4 Subdivision Regulations

- Minimum **lot width** is 18.0m.
- Minimum **lot area** is 557m², or 10,000m² if not serviced by a **community sewer system**.

9.3.5 Development Regulations

- Maximum **site coverage** is 40% and together with driveways, parking areas and **impermeable surfaces** shall not exceed 50%.
- Maximum **height** is 10.0m, except it is 4.5m for **secondary buildings** and **secondary structures**.
- Minimum **front yard** is 5.0m.
- Minimum **side yard** is 1.5m, except it is 5.0m from a **flanking street**. 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.
- Minimum **rear yard** is 7.5m, except it is 1.0m for **secondary buildings**. Where the **lot width** exceeds the **lot depth**, the minimum **rear yard** is 4.5m provided that one **side yard** shall have a minimum width of 4.5m.
- The maximum **height** of any vertical wall element facing a **front, flanking** or **rear yard** (including **walkout basements**) is 6.5m, above which the **building** must be **set back** at least 1.2m.

9.3.6 Other Regulations

- There shall be no more than one **single detached house** per **lot**.
- Where **development** has access to a rear **lane**, vehicular access to the **development** is only permitted from the rear **lane**.
- For **seniors supportive housing**, a safe drop-off area for patrons shall be provided on the **site**.

- **Seniors supportive housing** shall be for no more than four residents. *(Bylaw 5467)*
- 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 Hillside Development Areas

4.15.1 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.

4.15.2 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. No fence shall have pickets or finials extending above the horizontal rail that may pose a danger to wildlife. *(Bylaw 5890)*
- 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).



View from Kalamalka Lake Road outside Lakeway Mobile Home Park in the District of Coldstream



Subject property is the centre white single family dwelling (900 Mt. Griffin Road)