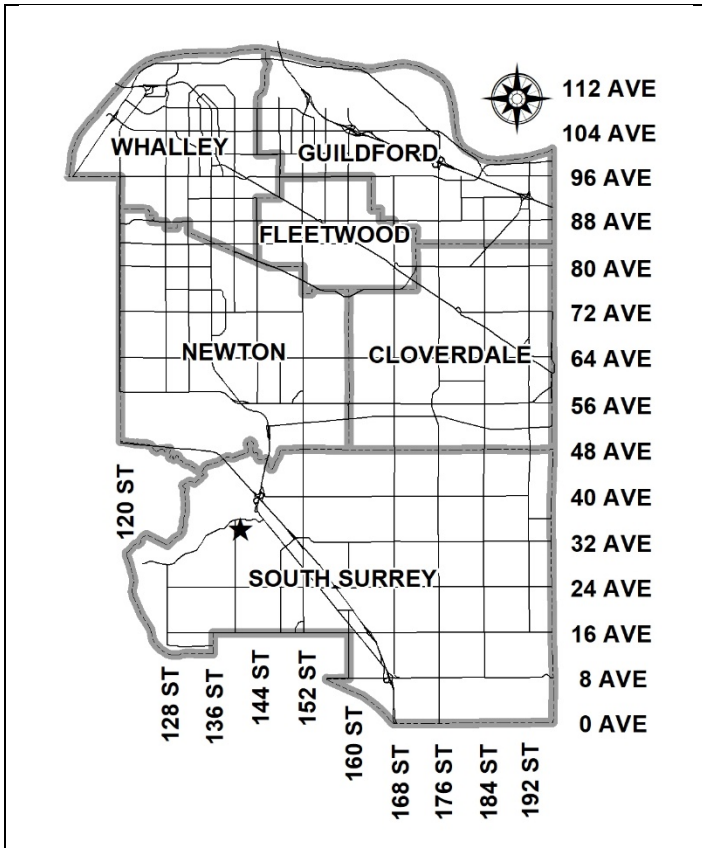


City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7919-0130-00

Planning Report Date: November 4, 2019



PROPOSAL:

- **Development Permit**
- **Development Variance Permit**

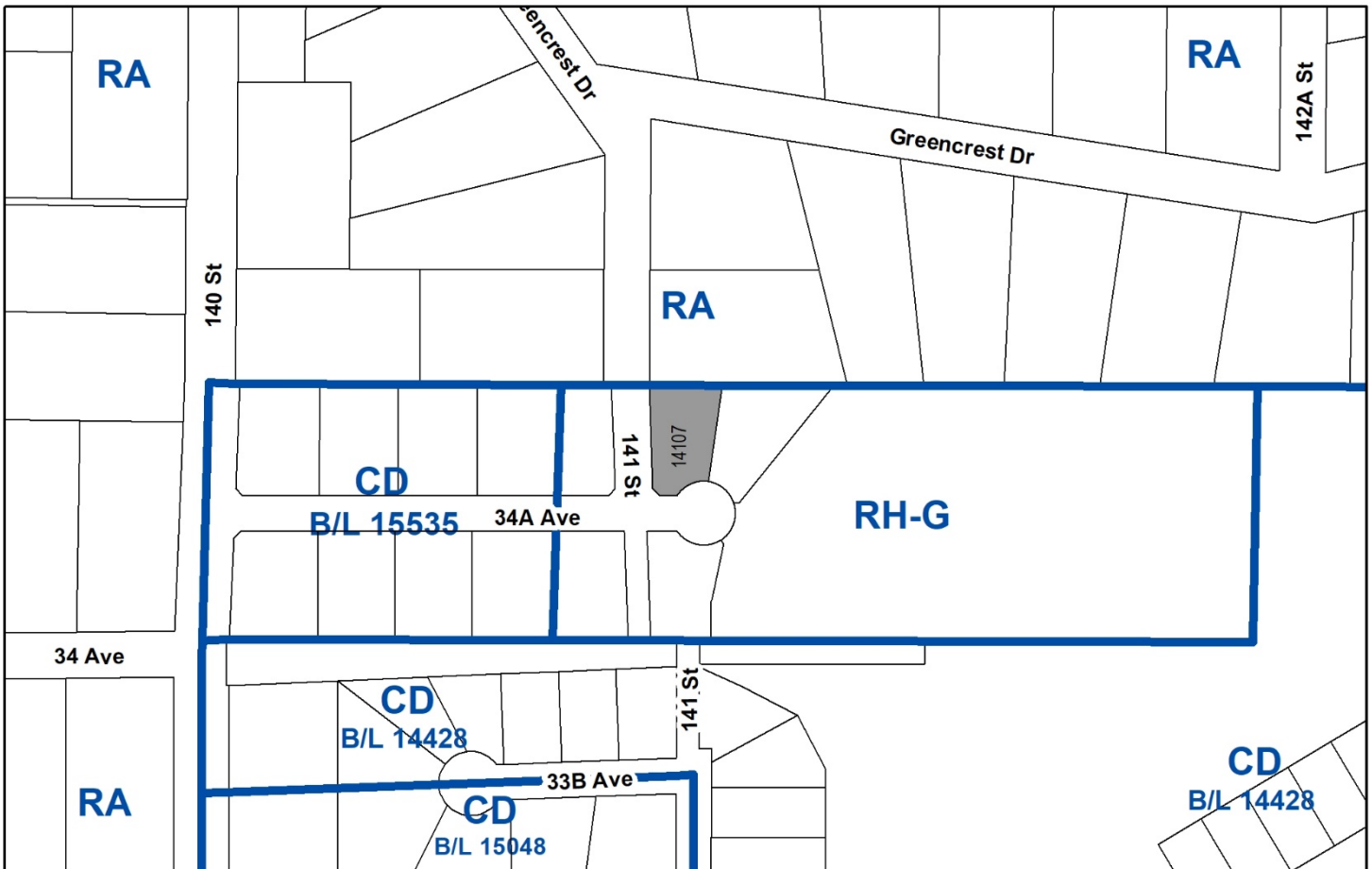
for a Hazard Lands Development Permit and setback variance to allow construction of a single family dwelling.

LOCATION: 14107 - 34A Avenue

ZONING: RH-G

OCP DESIGNATION: Suburban (Density Exception Area)

LAP DESIGNATION: Half-Acre Gross Density



RECOMMENDATION SUMMARY

- Approval to draft Development Permit.
- Approval for Development Variance Permit to proceed to Public Notification.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Seeking a variance to reduce the minimum side yard setback on a flanking street.

RATIONALE OF RECOMMENDATION

- The subject property's western side yard flanks 141 Street, a dedicated road allowance, designed as a pedestrian corridor and emergency access.
- Given the function of the 141 Street road allowance, the subject property is more consistent with the requirements of an interior lot, and not a corner lot. The proposed side yard flanking street setback of 3 metres (10 ft.) is consistent with the setback required of an interior lot in the Half-Acre Residential Gross Density (RH-G) zone, and will allow the design of a wider house, consistent with the existing form and character of the neighbourhood.
- The applicant has provided a Geotechnical Report which addresses the OCP Hazard Land Development Permit guidelines. The geotechnical requirements and recommendations will be incorporated into the Hazard Lands Development Permit and a Section 219 Restrictive Covenant, which will be registered against the subject property.

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council authorize staff to draft a Hazard Lands Development Permit for Steep Slopes, generally in accordance with the Geotechnical Report, prepared by Able Geotechnical Ltd., and dated June 4, 2019.
2. Council approve Development Variance Permit No. 7919-0130-00 (Appendix II) varying the following, to proceed to Public Notification:
 - (a) In Section F, Yards and Setbacks of Part 15- “Half-Acre Residential Gross Density Zone (RH-G)”, the minimum side yard setback on flanking street is reduced from 7.5 metres (25 ft.) to 3 metres (10 ft.), for the west side yard of the proposed dwelling.
3. Council instruct staff to resolve the following issues prior to approval:
 - (a) Registration of a Section 219 Restrictive Covenant to ensure that all on -site preparation and construction complies with the recommendations of the accepted geotechnical report.
 - (b) Submission of a finalized tree survey and a statement regarding tree preservation to the satisfaction of the City Landscape Architect.

REFERRALS

Engineering: The Engineering Department has no objection to the project.

SITE CHARACTERISTICS

Existing Land Use:

Adjacent Area:

Direction	Existing Use	LAP Designation	Existing Zone
North:	Single Family Residential	One Acre	RA
East:	Single Family dwelling under construction	Half Acre Gross Density	RH-G
South (Across 34A Ave):	Single Family Residential	Half Acre Gross Density	RH-G
West (Across 141 Street):	Single Family Residential	Half Acre Gross Density	RH-G

DEVELOPMENT CONSIDERATIONS

Background and Current Proposal

- The subject site is designated “Suburban” in the Official Community Plan (OCP) and is currently zoned Half-Acre Gross Density Residential Zone (RH-G). The approximately 1,271 square metres (13,681 sq.ft.) vacant lot was created in early 2016 under Development Application No. 7913-0290-00.
- This subdivision application also dedicated an area as road to complete the north-south connection of 141 Street. However, due to significant community concern with the proposed road connection the road was instead designed as a pedestrian corridor and for emergency access purposes.
- The applicant is proposing to construct a single family dwelling and is requesting a Development Variance Permit to reduce the side yard flanking street setback from 7.5 metres (25 ft.) to 3 metres (10 ft.).

Hazard Land (Steep Slopes) Development Permit

- The subject site is within a Hazard Lands Development Permit Area due to moderate to steeper slopes located nearby on adjacent lands to the east.
- The applicant has provided a geotechnical report, prepared by Able Geotechnical Ltd which sets out recommendations for slope preparation, excavations, site foundations, foundation drainage system, and structural fill.
- The Geotechnical Report was reviewed by City staff to confirm that the requirements identified in the Development Permit guidelines for Hazard Lands (Steep Slopes) in the Official Community Plan have been considered.
- The Geotechnical Report noted that the overall slope gradient is only 8%, which could be due to the recent grading from the construction of the dwelling to the east. The report also noted that there are no natural hazards that could hinder the development, is significantly away from slope hazard, and that the site is safe for the use intended.
- As a condition of issuance for the Development Permit, the applicant will be required to register a Section 219 Restrictive Covenant on title to ensure that the development of the property occurs in accordance with the recommendations and locational requirements of the accepted geotechnical report.

TREES

- Xudong Bao, ISA Certified Arborist of Woodridge Tree prepared an Arborist Assessment for the subject property. The Arborist Assessment states that there is a total of 7 protected trees on the site. There are no Alder and Cottonwood trees. No trees are proposed to be removed.

BY-LAW VARIANCE AND JUSTIFICATION

(a) Requested Variance:

- In Section F, Yards and Setbacks of Part 15- “Half-Acre Residential Gross Density Zone (RH-G)”, the minimum side yard setback on a flanking street is reduced from 7.5 metres (25 ft.) to 3 metres (10 ft.), for the western side yard of the proposed dwelling.

Applicant's Reasons:

- Through an approval process for Development Application No. 7913-0290-00, the subject site is intended to be treated as interior lot. This is evident by building design guidelines referencing no corner lots present in the subdivision. Retention of trees along the front and rear of the site within the building envelope illustrated a 3 metres (10 ft.) setback from the west property line.

Staff Comments:

- Under the Zoning Bylaw the subject site is considered a corner lot as it fronts 34A Avenue and flanks the 141 Street. However, 141 Street is to be constructed as a right of way and not a through road.
- As 141 Street functions as a pedestrian connection, rather than a through road, the subject site will function as an interior lot.
- The reduced side yard setback meets the RH-G side yard requirement and will allow the applicant to design a wider house, fitting the existing form and character of the neighbourhood.
- A property to the west of the subject site was also subject to a Development Variance Permit (Application No.7916-0373-00) to reduce the side yard setback on flanking street from 7.5 metres (25 ft.) to 3 metres (10 ft.) and received approval from Council on October 24, 2016.
- Staff support the requested variance to proceed to Public Notification.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

Appendix I. Development Permit No. 7919-0130-00
Appendix II. Development Variance Permit No. 7919-0130-00

INFORMATION AVAILABLE ON FILE

Not applicable.

original signed by Ron Hintsche

Jean Lamontagne
General Manager
Planning and Development

CL/cm

(the "City")

DEVELOPMENT PERMIT

NO.: 7919-0130-00

Issued To:

(the "Owner")

Address of Owner:

A. General Provisions

1. This development permit is issued subject to compliance by the Owner with all statutes, by-laws, orders, regulations or agreements, except as specifically varied by this development permit.
2. This development permit applies to that real property including land with or without improvements located within the City of Surrey, with the legal description and civic address as follows:

Parcel Identifier: 029-772-265
Lot 2 District Lot 166 Group 2 New Westminster District Plan EPP53589

14107 - 34A Avenue

(the "Land")

3. This development permit applies to only the portion of the Land shown on Schedule A which is attached to and forms part of this development permit.
4. The Land has been designated as a development permit area in Surrey Official Community Plan, 2013, No. 18020, as amended.

B. Hazard Lands

1. Development shall occur strictly in accordance with the Geotechnical Report prepared by Able Geotechnical Ltd., dated June 4, 2019, attached to this development permit as Schedule B (the "Geotechnical Report").
2. Geotechnical specifications, including erosion, slope stability and soil detention shall be implemented, monitored and inspected in accordance with the Geotechnical Report.

3. Erosion and Sediment Control shall be installed, monitored and inspected in conformance with the City's Erosion and Sediment Control By-law, as may be amended or replaced from time to time.
4. Lot site grading shall occur only in accordance with the approved lot grading plan registered on the certificate of title, under Restrictive Covenant CA4989502, as well as the geotechnical recommendations contained within the Geotechnical Report.

C. Monitoring

1. A geotechnical engineer must be retained by the Owner to ensure completion of the works in accordance with this Development Permit and shall submit monitoring reports and a completion report to the City.
2. Upon completion of the development, the Owner shall provide the City with confirmation from the Qualified Professional(s) that the development is complete in accordance with the terms of this development permit.

D. Administration

1. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development permit.
2. This development permit shall lapse if the Owner does not substantially start any construction with respect to which this development permit is issued within two (2) years after the date this development permit is issued. The terms and conditions of this development permit, and any amendment to it, are binding on any and all persons who acquire an interest in the Land.
3. This development permit is only valid for the development that is described in this development permit. If a change to development is considered, a new development permit or an amendment to this permit is required before any work is started.
4. All reports, documents and drawings referenced in this development permit shall be attached to and form part of this development permit.
5. This development permit is issued subject to compliance by the Owner and the Owner's employees, contractors and agents with all applicable City bylaws, including the Tree Protection Bylaw, Erosion and Sediment Control Bylaw and the Soil Removal and Deposition Bylaw, all as may be amended or replaced from time to time.

6. This development permit is NOT A BUILDING PERMIT.

AUTHORIZING RESOLUTION PASSED BY THE COUNCIL, THE
DAY OF , 20 .

ISSUED THIS DAY OF , 20 .

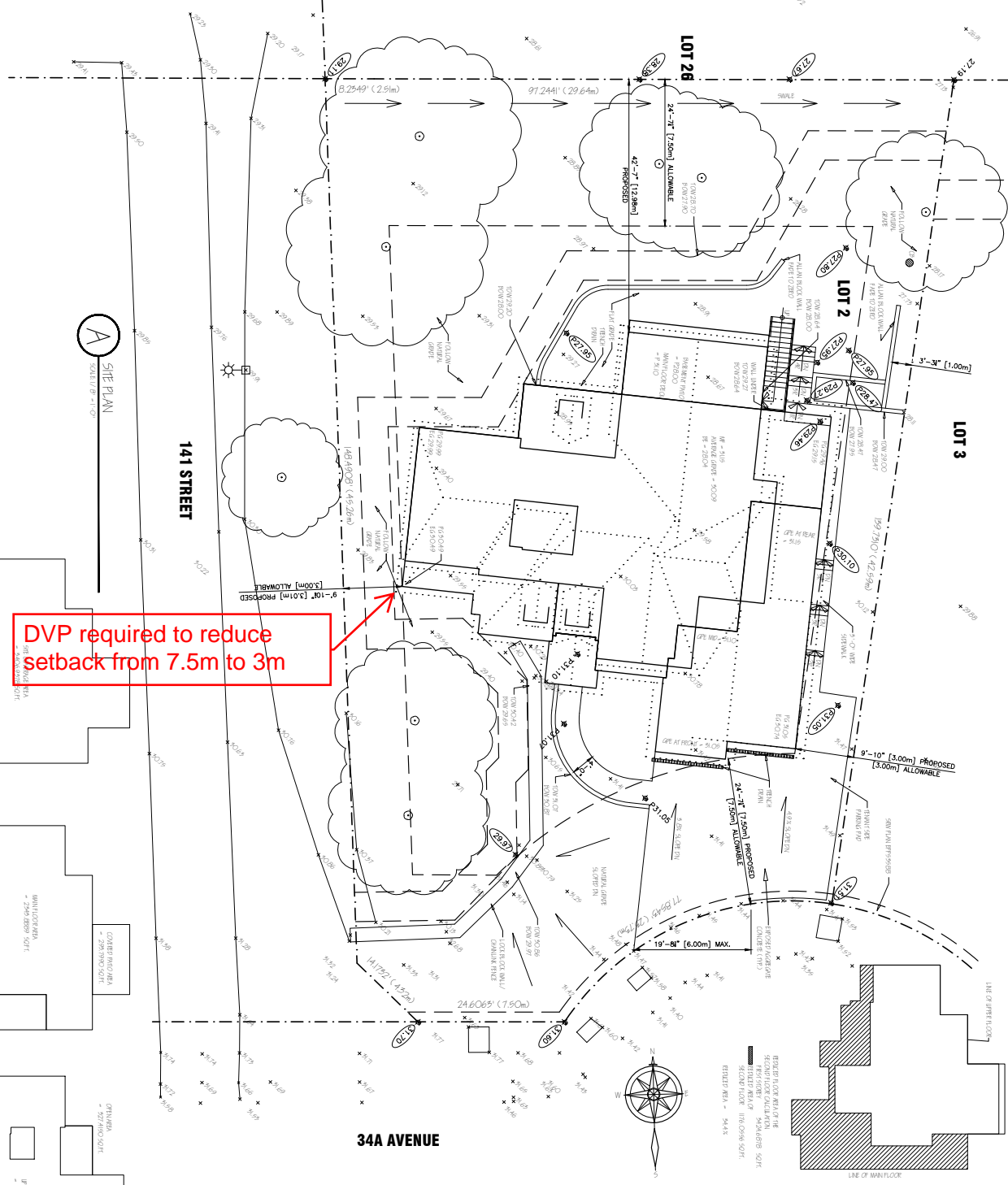
Mayor

City Clerk

IN CONSIDERATION OF COUNCIL APPROVAL OF THIS DEVELOPMENT PERMIT AND
OTHER GOOD AND VALUABLE CONSIDERATION, I/WE THE UNDERSIGNED AGREE TO
THE TERMS AND CONDITIONS OF THIS DEVELOPMENT PERMIT AND ACKNOWLEDGE
THAT WE HAVE READ AND UNDERSTOOD IT.

Authorized Agent: (Signature)

Name: (Please Print)



DVP required to reduce setback from 7.5m to 3m

A SITE PLAN
SCALE: 1/8" = 1'-0"

B SCHEMATICS
SCALE: 1/8" = 1'-0"

- GENERAL NOTES:**
1. All dimensions to be measured from outside of sheathing.
 2. All interior dimensions to be measured to the center of stud, except where otherwise noted.
 3. Joists, beams and posts to be Douglas fir #2 or better.
 4. All framing to be installed in accordance with applicable municipal code.
 5. Load in rafter hanger in flush with rafter. TFS to be glued and nailed to hanger.
 6. Joists to be double under parallel partitions.
 7. Footing to be placed on undisturbed soil at min of 20' below grade.
 8. 9" of well compacted gravel fill under concrete slabs and driveways.
 9. Concrete shall be 3000 PSI in 28 days. Foundation walls should not be backfilled until concrete has reached its specified strength and curing is complete.
 10. All exterior walls to be finished with exterior grade stucco and finished and anchored.
 11. 4" weeping drain tile around the entire perimeter of building footings.
 12. Allowable soil pressure assumed at 2000 PSI for strip footings. Footings in fill to be designed to withstand dry open a certified fill.
 13. All foundation walls 3' or higher should have one horizontal rebar 3" from top corner, rebar to be lapped 24" min.
 14. All footings to have 10mm rebar. The rebar should be situated such that it is 10mm from the bottom of the footing.
 15. All framing construction, mechanical and electrical work to conform to the City Bylaws.
 16. U.L.C. approved smoke alarms installed where required.
 17. Interior stair treads 1" thick, all stringers supported on top and secured rise TYP. Stringers to be 2x9" presented at least spacing 1'0" on 10'0".
 18. All dimensions to be checked before commencement of construction.
 19. Doors to be glued with construction adhesive.
 20. All work to be done in accordance with the 2018 Building code and should be connected to such.

PROJECT INFORMATION

LEGAL DESCRIPTION: LOT 2, 2807 141ST STREET, SURREY, B.C. V4A 1K6

OWNER: JASBIR LAIL

DESIGNER: DAG DESIGN & COMPANY

DATE: 2024-09-09

SCALE: 1/8" = 1'-0"

PROJECT NO: 24-117 (250M) ALLOWABLE

LOT NO: 28

AREA: 42,280 SQ FT

PERMITTED AREA: 42,280 SQ FT

ALLOWABLE FLOOR AREA: 9,000,000 SQ FT

PERMITTED FLOOR AREA: 4,800,000 SQ FT

UNDERWEIGHT: 4,800,000 SQ FT

ALLOWABLE HEIGHT: 45'0" TO 50'0"

PROPOSED HEIGHT: 45'0" TO 50'0"

PROPOSED DECK AREA: 45'0" TO 50'0"

PROPOSED PORCH AREA: 45'0" TO 50'0"

PROPOSED TERRACE AREA: 45'0" TO 50'0"

PROPOSED PATIO AREA: 45'0" TO 50'0"

PROPOSED DRIVEWAY AREA: 45'0" TO 50'0"

PROPOSED GARAGE AREA: 45'0" TO 50'0"

PROPOSED PORCH AREA: 45'0" TO 50'0"

PROPOSED TERRACE AREA: 45'0" TO 50'0"

PROPOSED PATIO AREA: 45'0" TO 50'0"

PROPOSED DRIVEWAY AREA: 45'0" TO 50'0"

PROPOSED GARAGE AREA: 45'0" TO 50'0"



June 4, 2019
File: 947

Acsur Holdings Ltd.
Attn: Jasbir Lail
15512 109 Avenue
Surrey BC V3R 7E8

**Re: Geotechnical Site Assessment
Proposed Single Family Dwelling
14107 34A Avenue, Surrey, BC**

1.0 INTRODUCTION

This report presents the results of a geotechnical site assessment conducted by Able Geotechnical Ltd. (Able) for the proposed single family dwelling (SFD) proposed at the above referenced project site. The purpose of the assessment was to evaluate the site soil conditions in order to provide geotechnical recommendations in relation to the following.

- Hazard assessment and comments in regard to slope stability and building setback requirement.
- Depth to competent subgrade for the proposed building footings.
- Subgrade preparation for proposed building foundations.
- Allowable soil bearing pressure for building foundations.
- Compaction requirements for structural fill.
- Suitability of native soil as structural fill.

Attachments to this report include a Testpit Location Plan, soil logs and Landslide Assessment Assurance Statement (Appendix D).

2.0 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The site is bounded by 34A Avenue to the south, single family dwelling to the east and north, and 141 Street to the west. The site is rectangular in shape and measures approximately 25 m EW by 40 m NS. The site was vacant at the time of site investigation. The topography of the site was very gently sloping down from front to rear and the site grade drops by approximately 3 across the property and the overall slope drops by approximately 5 m. The overall slope gradient is only 8%. Vegetation included trees and bushes. The actual observed slope gradient on-site is flatter than calculated from COSMOS, as indicated above. This is due to the fact that during the construction of adjacent east dwelling, fill has been placed towards the low side which resulted in flatter slope. The site soils seem to be recently graded and vegetation was observed along the west and north property lines only.

It is understood that a SFD will be constructed at the site with a walkout type basement.



3.0 SUBSURFACE INVESTIGATION (TEST PITS)

The subsurface exploration consisted of two testpits (TP1 and TP2) excavated up to depth of 2.0 m below the existing site grade. A track-mounted excavator was utilized to conduct the testpit program. An engineer from Able supervised the field work, located the testpits, classified the soils encountered in the testpits and sent representative soil samples to the laboratory for moisture content determination. Site conditions and features of geological significance were also recorded.

The approximate locations of the testpits are shown on the attached Testpit Location Plan. The soil logs showing soil type and moisture contents are also included. The depths indicated on the logs are related to the ground surface at the time of the subsurface exploration. The testpits were backfilled with excavated soil upon completion of the investigation and compacted with the bucket.

4.0 SOIL AND GROUNDWATER CONDITIONS

Geological map (GeoMap Vancouver – Robert J.W. Turner and John J. Clauge) indicates that the site is located within a formation of silt and clay soils belonging to Ice Age sediments. The subsurface conditions encountered were generally consistent with the published geological information. The soil conditions were generally very consistent in all the testpits. The following soil conditions were encountered in the order of increasing depth:

- **Fill.** Surficial layer of fill was encountered in both testpits and its average thickness was 0.2 m. The fill consisted of silt and organics. It was generally loose. Underlain by;
- **Sand and Gravel.** Native deposit consisting of pitrun gravel and sand was encountered below surficial fill. This stratum terminated at approximately 1.3 m depth below the existing surface. Underlain by;
- **Till.** Silt till was encountered at approximately 1.3 m depth. Till was very stiff, grey and moist. Able completed the geotechnical work for the adjacent east SFD and similar soils conditions were encountered. Based on the geological map and our previous experience in this area, this stratum is likely to extend to a considerable depth.

The soil conditions as described above are generalized and are based on the testpit information. Minor variations in the soil stratigraphy should be expected between the testpit locations and the areas of site not investigated. The soil logs should be referenced for soil and groundwater conditions at specific areas.

Groundwater: No groundwater seepage was encountered in any of the testpits. Based on the testpit information, it is expected that groundwater seepage should not be encountered during the subgrade preparation of the proposed single family dwellings.

HAZARD ASSESSMENT

The site is located in the Hazard Land Development Permit Area (DP2) designated by City of Surrey. Document published by City of Surrey titled “Hazard Land Development Permit Guidelines” was reviewed for the preparation of this report. The DP2 document primarily requires that steep slopes (>20%, steeper than 5H:1V)) should be analysed by a Professional Engineer. The hazard/s should be identified, analysed, complete a feasibility study, provide mitigative measures, and provide inspection requirements (if applicable). The document also



provides guidelines for the development and addresses the submission requirements for the steep slope areas and flood prone areas. The site is outside the designated flood plain area designated by City of Surrey; therefore flooding hazard is not applicable to the site. The slope stability is discussed in the following section.

5.0 SLOPE STABILITY COMMENTS

A walkover review of the site and adjacent slope was carried out during the site investigation. The following site observations were made. As noted above, the site grade drops by only 3 m across the property and the overall slope drops by only 5 m. The overall slope gradient is only 8%. The site seems to be recently graded. The actual observed slope gradient on-site is flatter than calculated from COSMOS, as indicated above. This is due to the fact that during the construction of adjacent east dwelling fill has been placed towards the low side which resulted in flatter slope than calculated. Trees were generally straight and vertical, no tree with bent trunk was noticed. Trees with bent 'pistol butt' trunks are signs of creep. No sign of slope instability was noticed. No sign of ground movement was noticed. The site topography was consistent with the terrain. No unusual topography was observed. Unusual topography can be indication of past soil movements. Areas of pooling or unusual channels can be indications of past or ongoing soil movement. No such irregularities were noted. No signs of erosion were noticed. The lock block wall was straight and no sign of wall movement was noticed.

Given the gradient, it is considered a very gentle slope from stability perspective. Based on the published geological information, testpits, the subsoil conditions are very competent and will be extending down to considerable depth. Slopes with this magnitude of slope and competent soil conditions are not prone to slope instability under static and seismic conditions. Therefore, slope stability assessment by limit equilibrium or pseudo-static limit equilibrium is not required. The site slopes are very gentle for the slope stability software to generate any potential slip plane. Slope instability is not a concern on this site. Based on this, it is concluded that ground displacements would be within the threshold tolerance of 15 cm for the 1 in 2475 earthquake.

The site is above the flood plain elevation. Therefore, flood hazard is not applicable to the development. It is understood that retaining wall/s, if required, would be smaller than 1.2 m height and therefore need not be engineered. During construction, sediment laden water from the site should not be allowed to leave the site.

The development requires no slope cutting to the extent that slope instability issues arise. Stormwater management plan (SMP) during the construction is not required. However, Best Management Practices for the erosion and sediment control should still be followed. The development will not alter the hydrological condition of the site. There are no restrictions regarding the timings when the site preparation may start. The development will not alter the pre and post development hydrological conditions. There were no underground water courses encountered during the site investigation. No gully or rill erosion was noticed on the slope.

In the foregoing, there are no natural hazards that hinder the development. The development is significantly away from the slope hazard. Slope stability is not a concern at the site. Given the above, the site is safe for the use intended. Landslide Assessment Assurance Statement (Appendix D) is attached. Restrictive covenant for the geotechnical setback is not required.



GEOTECHNICAL ASSESSMENT

6.0 DISCUSSION AND RECOMMENDATIONS

6.1 General

Based on the subsurface investigation, the site has satisfactory soil conditions for the proposed SFD supported on conventional footings. Soils below 1.2 m depth are competent for the support of the SFD. Appropriate measures should be taken during construction to minimize erosion and prevent sediment from entering the neighbouring property. The following sections of the report provide our recommendations in further detail.

6.2 Subgrade Preparation

Excavation for the basement type dwellings will expose the native very stiff and competent soils. Therefore no special subgrade preparation is required. Stripping should be carried out with clean-up bucket of excavator to minimize disturbance to the subgrade. The excavator should progressively retreat from stripped areas to avoid disturbance to the exposed subgrade. Stripped subgrade should be reviewed and approved by Able prior to placement of structural fill.

The native till silts are sensitive to moisture accumulation and construction activity. Consequently, measures must be adopted to avoid subgrade disturbance. Conduct the site preparation during extended dry weather. If work is carried during rainy weather, over-excavation is expected. No construction activity directly over the native soils. Prepared subgrades must be sloped to drain water away from the stripped areas. Place 50 mm layer of 19mm clear crush gravel or equivalent to protect the footing subgrade immediately after excavation. The footing subgrades should be prepared minimum 1 m beyond the footing wall and confirmed by survey pins.

6.3 Excavations and Slopes

Temporary excavation cut in the surficial fill and sand&gravel should be cut or benched not steeper than 2H:1V. The slope in the lower till may be vertical subject to a maximum of 2 m vertical. This will make a compound slope which will be steeper in stronger soil and flatter in weaker soil. These excavation comments are preliminary only. The Geotechnical Engineer should review the site excavations, so that site specific safe cut slopes can be recommended. Material stockpile near the excavation should be away from the excavation by at least 2 m. All temporary cuts/slopes and 2 m beyond should be covered with polyethylene sheet, if the work is carried during rainy season. The polyethylene should be secured at top.

6.4 Foundations

The proposed single family dwellings may be supported on spread and strip footings on the native undisturbed very stiff soils, or on overlying structural fill. Footings founded on approved subgrade may be designed for the following parameters:

Serviceability bearing pressure (SLS)	100 kPa
Ultimate bearing resistance (ULS)	150 kPa



Site Class C

Peak ground accelerations (PGA) and spectral acceleration values Sa(T) are outlined in Table below based on a 2% probability of exceedance in 50 years.

Spectral Response Acceleration Values, Sa(T)				PGA
Sa(0.2)	Sa(0.5)	Sa(1.0)	Sa(2.0)	
0.79	0.69	0.39	0.24	0.34

The lateral loads for the footing walls are attached. Footings constructed as recommended above are expected to experience a total settlement of 30 mm and differential settlement of 20 mm over a 10 m span under static loading conditions. *All footing subgrades must be reviewed and approved by the geotechnical engineer to confirm the bearing pressure, before covering with gravel/structural fill.* Minimum footing widths should be 0.45 m for strip footings and 0.9 m for pad footings, in accordance with the requirements of the 2018 British Columbia Building Code. Footings should have a minimum embedment of 0.45 m for frost protection and confinement. Footing subgrades should be stripped of water softened or loose soil prior to placing concrete.

Adjacent footings at different elevations should be offset from each other by a distance at least equal to the difference in elevation and the sloped subgrade between the footings should be undisturbed native. In addition, a geotechnical review will be required at the time of form-work. Similarly, the utility excavation bottom should be beyond a 1.5H:1V line projected down from the outer edge of footing to avoid its undermining.

6.5 Slab-on-Grade

The fill under the concrete floor slabs-on-grade should consist of compacted 20 mm clear crushed gravel. A moisture barrier consisting of 0.15 mm polyethylene sheeting should be installed under the slab to minimize potential for slab dampness. All tears in the polyethylene sheeting should be repaired with red polyethylene tape. The compaction should be done by minimum 500 lb plate compactor. The compaction of the slab-on-grade fill must be approved by the geotechnical engineer prior to installation of polyethylene sheet.

6.6 Foundation Drainage System

The foundation drainage system should consist of 100 mm diameter perforated solid wall PVC drain pipe placed around perimeter footing, and at any steps in the foundation wall. The invert of the pipe should be at the base level of the footings, and a minimum of 200 mm below the underside of floor slab. The pipe should be placed with its perforations pointing downwards. The drainage pipe should be surrounded on top and sides by 150 mm thick 19 mm clear crushed gravel. A layer of non-woven geotextile (Nilex 4545 or equivalent) should then be blanketed over the top and sides of the clear crushed gravel to act as a filter against piping of fines from the backfill. The perimeter drainage pipe should be provided with permanent clean-outs, and should be sloped to direct water by gravity into a storm sewer.



6.7 Structural fill

Structural fill is defined as fill placed beneath any load bearing area. Imported structural fill should consist of well-graded, 75 mm minus pit run sand and gravel or other granular material approved by the Geotechnical Engineer. It should be non-organic and clean (less than 8% fines passing 0.075 mm sieve by weight). Structural fill should be placed in maximum 0.3 m lifts. In building envelope, it should be compacted to at least 95% of Modified Proctor maximum dry density or to the satisfaction of geotechnical engineer.

6.8 Geotechnical Reviews

Recommendations presented herein are based on interpretation of the information collected during the site investigation. During construction, the Geotechnical Engineer must complete field reviews to assess the actual soil conditions to confirm the assumptions used from site investigation. Where conditions differ significantly from those assumed, the above recommendations may need revision. The field reviews are not carried out for the benefit of Contractor's therefore do not affect the Contractor's obligation to perform under his/her contract. It will be the Contractor's responsibility to advise Able (minimum 24 in advance) that a field review is required. It is also critical that Contractor should view this report in advance of work. The following construction reviews should be completed by Able.

1. Review of excavation deeper than 1.2 m for safe manned entry.
2. Review of stripped footing subgrade.
3. Compaction review of structural fill under the footings, if applicable.
4. Compaction review of sub-slab fill before placing the poly sheeting.

Able cannot assume responsibility or liability for the adequacy of its recommendations when they are used in the field without Able being retained to review and approve the soil conditions during construction.

7.0 CLOSURE AND LIMITATIONS

The subsurface conditions may vary between testpits. The interpretation of subsurface conditions provided is an opinion and not a certification. Stratigraphic variations in ground conditions are expected due to its historic nature. As such, all explorations involve an inherent uncertainty that some conditions will not be detected, as expected. Environmental considerations are outside the scope of this geotechnical report. Samples obtained from site will be retained in our laboratory for 60 days. Should no instructions be received to the contrary, these samples will then be discarded. This report has been made in accordance with the generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made. This report has been prepared for the exclusive use of Acsur Holdings Ltd., Client's design and construction team, City of Surrey for specific application to the development mentioned in the report. Able and its employees accept no responsibility to another party for loss or liability incurred as a result of use of this report. Any use of this report for purposes other than the intended, should be approved in writing by Able. The use of this report is subjected to the attached Report Limitations and Conditions. The reader must read these as it is essential that these be followed for proper use and interpretation. The recommendations in this report are provided on the assumption that the contractor will be suitably qualified and experienced. This



report should not be included in the specifications without suitable qualifications approved by the Geotechnical Engineer.

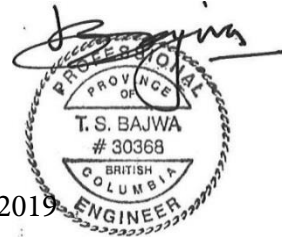
We appreciate the opportunity to be of service to you. If you have any questions regarding the contents of this report, please call the undersigned.

Yours truly,

Able Geotechnical Ltd.

Reviewed By

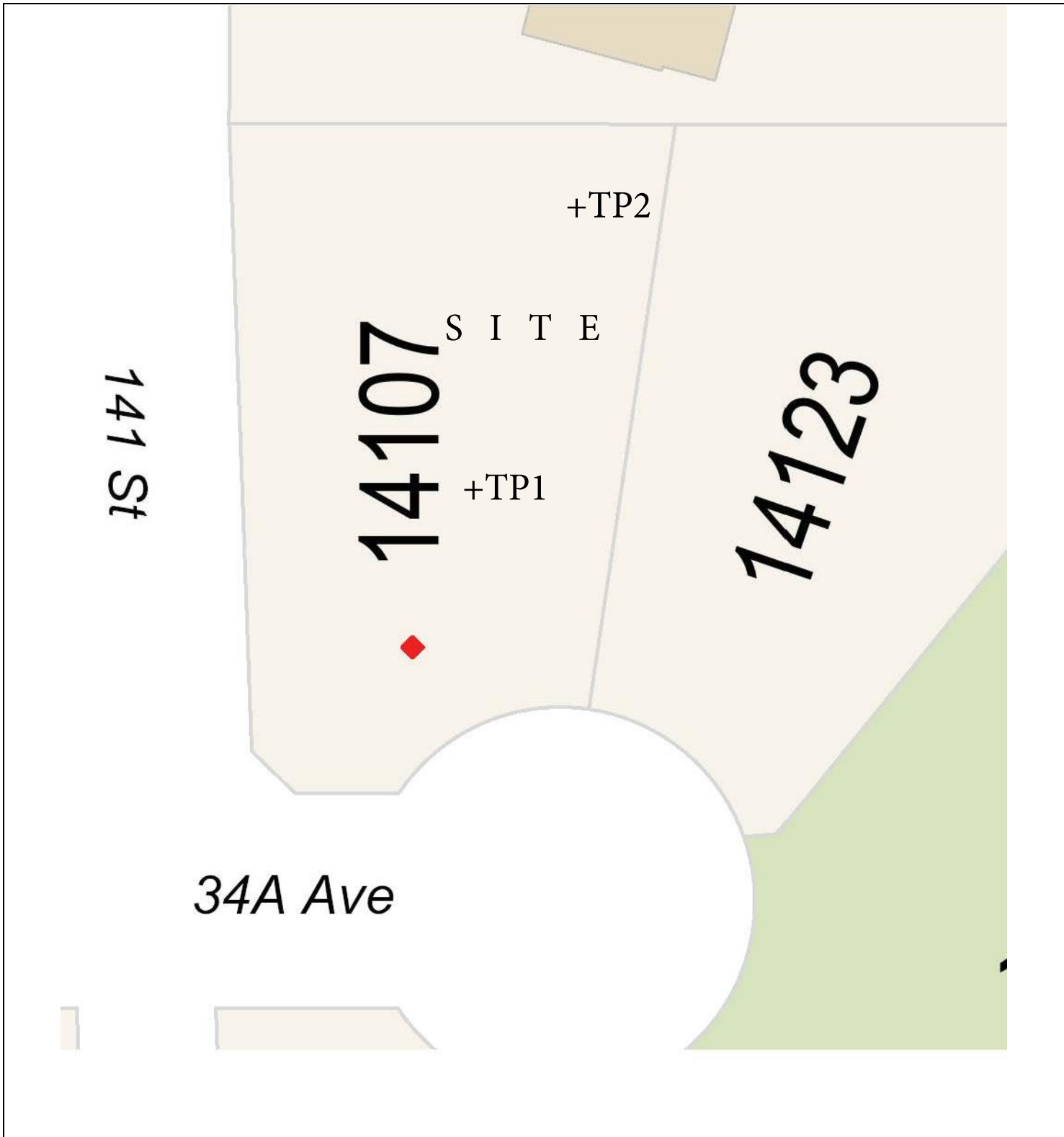
Amanpreet Virk
Engineer-in-Training



June 8, 2019

Tegbir S. Bajwa, P. Eng.
Geotechnical Engineer

Enclosures: Testpit Location Plan, Soil Logs, Contour Plan, Appendix D, Lateral Loads



ABLE GEOTECHNICAL LTD.

TESTPIT LOCATION PLAN
Project: Proposed Single Family Dwelling

Our File: 947

SOIL LOGS

Project: Proposed Single Family Dwelling
Site: 14107 34A Avenue, Surrey

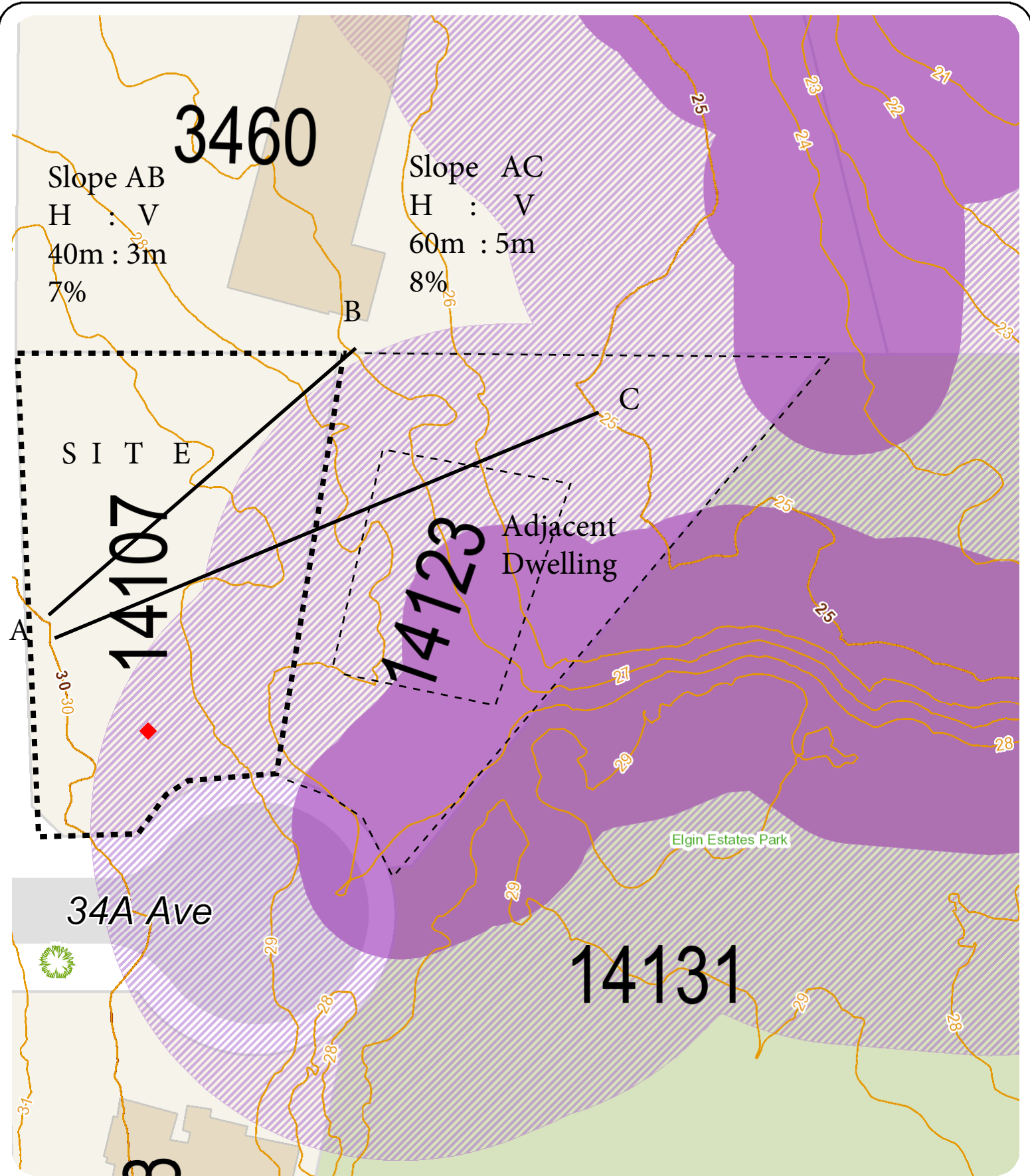
Machine Type: Tracked Excavator
Date Logged: June 3, 2019

TP 1

DEPTH (m)	SOIL CONDITIONS	Moisture (%)
0.0 – 0.3 m	Fill Silt and organics, trace gravel, loose/soft, dark grey brown, moist	
0.3 – 1.4 m	Sand and Gravel Trace silt, 200 mm minus gravel, pitrun, compact, rust brown, moist Below 1 m becomes medium dense	
1.4 – 2.0 m	Silty Till Trace clay and trace gravel, very stiff, non-plastic, light grey brown, moist	At 1.6 m w = 25%
2.0 m	Bottom of testpit No seepage encountered	

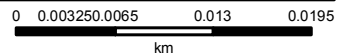
TP 2

DEPTH (m)	SOIL CONDITIONS	Moisture (%)
0.0 – 0.2 m	Fill Silt and organics, trace gravel, loose/soft, dark grey brown, moist	
0.2 – 1.2 m	Sand and Gravel Trace silt, 200 mm minus gravel, pitrun, compact, rust brown, moist Below 1 m becomes medium dense	At 1 m w = 15%
1.2 – 1.8 m	Silty Till Trace clay and trace gravel, very stiff, non-plastic, light grey brown, moist	
1.8 m	Bottom of testpit No seepage encountered	

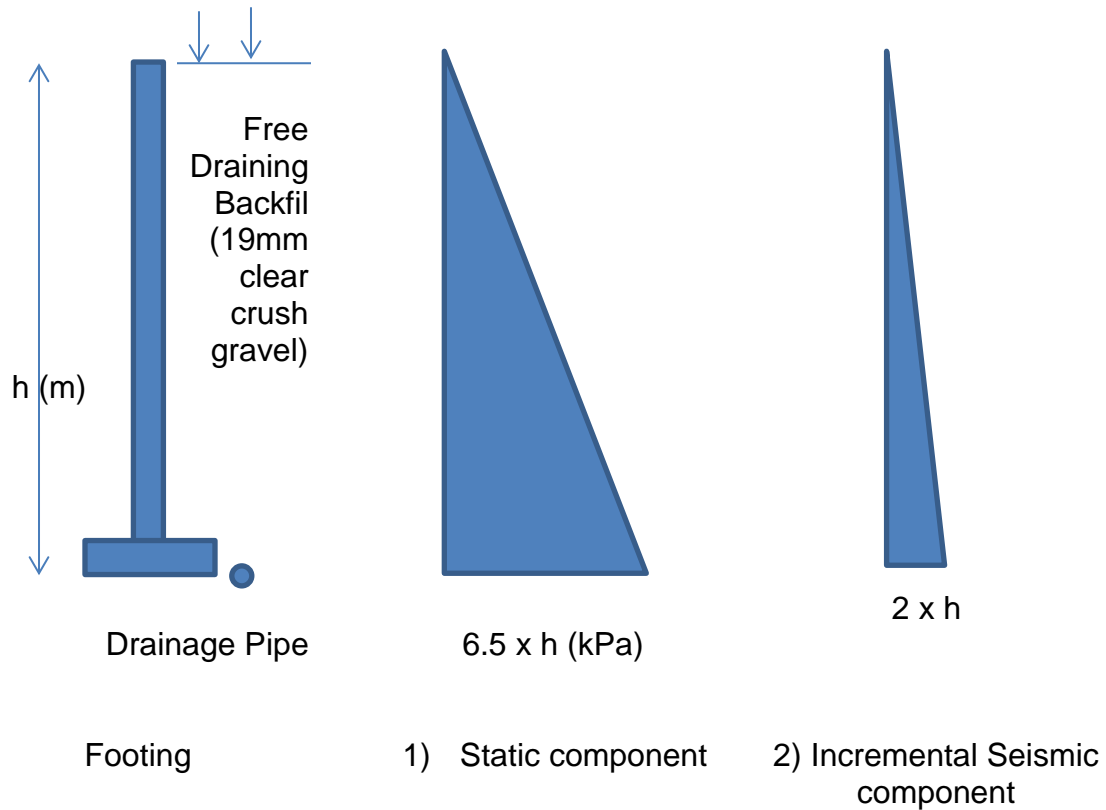


Enter Map Description

Scale: 1:500



LATERAL LOADING ON BASEMENT WALLS



For Static Condition: 1
For Seismic Condition: 1+2

Based on:

- Mononobe-Okabe equation and
- Atik and Sitar (Atik, L. and Sitar, N., (2010) "seismic earth Pressure on Cantiliver retaining structures" ASCE Journal of Geoenvironmental and Geotechnical Engineering, October 2010)

ABLE GEOTECHNICAL LTD.

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 2012)" 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*
City of Surrey

Date: June 5, 2019

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: LOT 2 DISTRICT LOT 166 PLAN EPP53589 NWD GROUP 2.

Legal description and civic address of the Property 14107 34A Avenue, Surrey

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".

Tegbir Bajwa P. Eng.

June 5, 2019

Name (print)

Date

Signature

15580 79A Avenue, Surrey V3S 8R8

Address

778 995 2404

Telephone



Able Geotechnical Ltd.

I am a member of the firm _____
and I sign this letter on behalf of the firm.

(Print name of firm)

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7919-0130-00

Issued To:

(the "Owner")

Address of Owner:

1. This development variance permit is issued subject to compliance by the Owner with all statutes, by-laws, orders, regulations or agreements, except as specifically varied by this development variance permit.
2. This development variance permit applies to that real property including land with or without improvements located within the City of Surrey, with the legal description and civic address as follows:

Parcel Identifier: 029-772-265
Lot 2 District Lot 166 Group 2 New Westminster District Plan EPP53589
14107 - 34A Avenue

(the "Land")

3. Surrey Zoning By-law, 1993, No. 12000, as amended is varied as follows:
 - (a) In Section F, Yards and Setbacks of Part 15- "Half-Acre Residential Gross Density Zone (RH-G)", the minimum side yard setback on flanking street is reduced from 7.5 metres (25 ft.) to 3 metres (10 ft.), for the west side yard of the proposed dwelling.
4. This development variance permit applies to only the portion of the LAND and that portion of the buildings and structures on the Land shown on Schedule A which is attached hereto and forms part of this development variance permit.
5. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development variance permit.

6. This development variance permit shall lapse if the Owner does not substantially start any construction with respect to which this development variance permit is issued, within two (2) years after the date this development variance permit is issued.

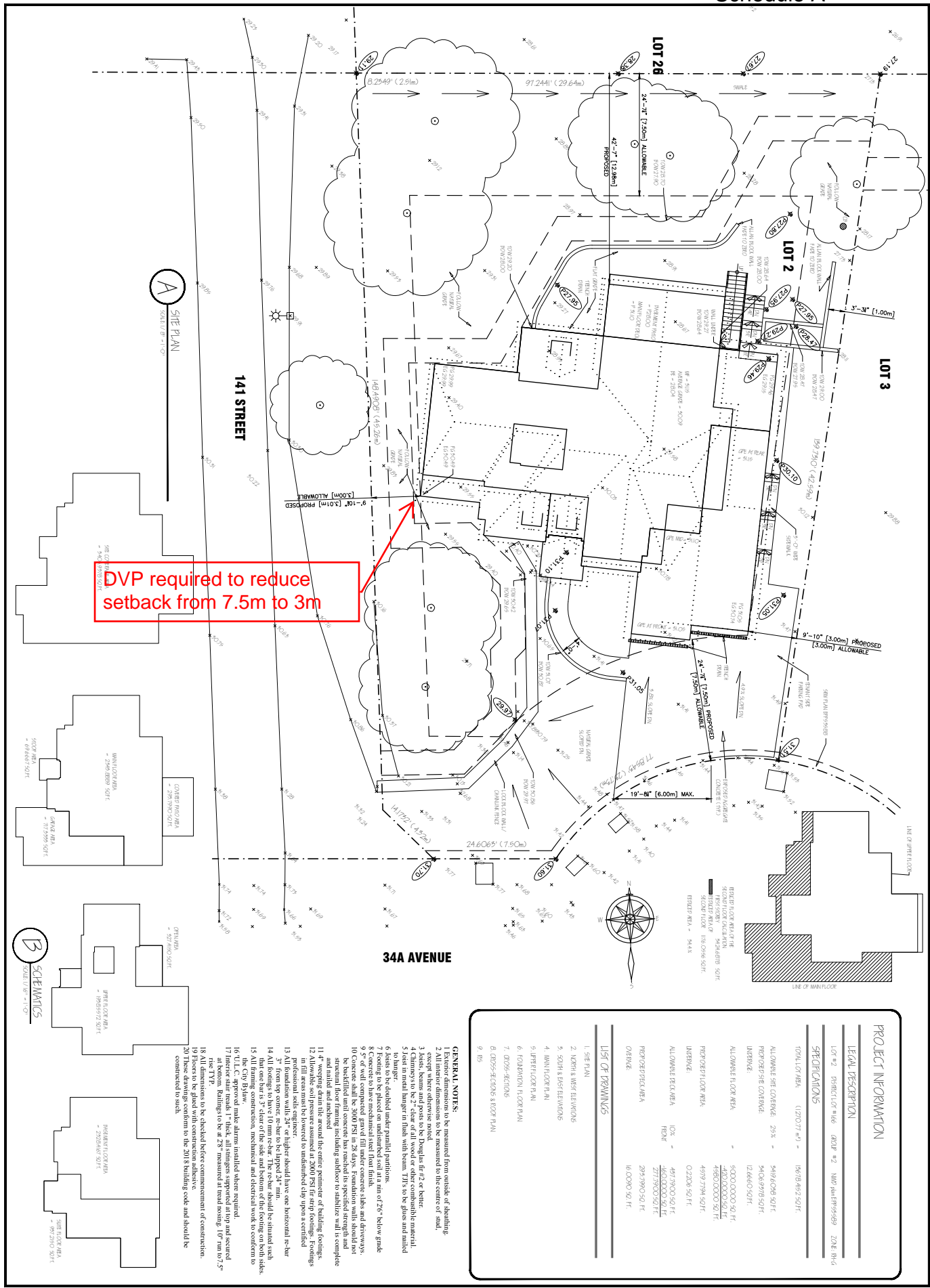
7. The terms of this development variance permit or any amendment to it, are binding on all persons who acquire an interest in the Land.

8. This development variance permit is not a building permit.

AUTHORIZING RESOLUTION PASSED BY THE COUNCIL, THE DAY OF , 20 .
ISSUED THIS DAY OF , 20 .

Mayor – Doug McCallum

City Clerk – Jennifer Ficocelli



DVP required to reduce setback from 7.5m to 3m

PROJECT INFORMATION	
LEGAL DESCRIPTION	LOT 2, SUBSECTION 1666, GROUP 12, NWP PLAN 199-2889, ZONE R1-6
PROJECT LOCATION	14107-34A AVENUE, SURREY, BC V4A 1C6
OWNER	JASBIR LAIL
DATE	2024-09-10
SCALE	1/8" = 1'-0"

LIST OF DRAWINGS	
1. SITE PLAN	DATE: 2024-09-10
2. NORTH & WEST ELEVATIONS	DATE: 2024-09-10
3. SOUTH & EAST ELEVATIONS	DATE: 2024-09-10
4. MAIN FLOOR PLAN	DATE: 2024-09-10
5. UPPER FLOOR PLAN	DATE: 2024-09-10
6. FOUNDATION FLOOR PLAN	DATE: 2024-09-10
7. CROSS-SECTION	DATE: 2024-09-10
8. CROSS-SECTION FLOOR PLAN	DATE: 2024-09-10
9. BS	DATE: 2024-09-10

GENERAL NOTES:

- All dimensions to be measured from outside of sheathing.
- All interior dimensions to be measured to the center of stud, except where otherwise noted.
- Joists, beams and posts to be Douglas fir #2 or better.
- Foundation walls to be 12" thick concrete with 4# reinforcement.
- Footings to be 12" thick concrete with 4# reinforcement.
- Footings to be cast on undisturbed soil or on 2" of 20# below grade.
- 9" of well compacted gravel fill under concrete slabs and driveways.
- Concrete shall be 3000 PSI in 28 days. Foundation walls should not be backfilled until concrete has reached its specified strength and curing is complete.
- 11.4" weeping drain tile around the entire perimeter of building footings.
12. Allowable soil pressure assumed at 2000 PSI for strip footings. Footings in fill must be checked to undisturbed clay upon a certified 13. All foundation walls 36" or higher should have one horizontal re-bar 3" from top corner re-bar to be lapped 24" min.
14. All footings to have 10mm rebar. The rebar should be situated such that the rebar is 40mm from the bottom of the footing.
15. All framing, construction, mechanical and electrical work to conform to the City Bylaws.
16. U.L.C. approved make: always installed where required.
17. Where steel studs are used, all studs supported on top and secured to the TYP.
18. All dimensions to be checked before commencement of construction.
19. Plans to be glued with construction adhesive.
20. Refer to the City Bylaws for the 2018 Building Code and should be conformed to such.