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VANCOUVER KAMLOOPS CALGARY

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Gaetan Royer
CityState Consulting Services
2419 Clarke Street
Port Moody, BC
V3H 2W2

December 14, 2020
File: 17754
R1

Attention: Gaetan Royer

Re: Geotechnical Investigation Report: Proposed Residential Subdivision
1034 Gatensbury Street, Port Moody

1.0 INTRODUCTION

We understand that a new residential subdivision is proposed for the above referenced site. Preliminary subdivision plan drawings, prepared by CityState, indicate the proposed subdivision divides the current property into two lots, referred to as Lot 1 and Lot 2, which are located at the southwest portion and northeast portion of the property respectively. We further understand it is intended to use a retaining wall along the western property line to create a level building platform for Lot 1. We anticipate the subdivision development would include minor improvements to Gatensbury Street for upgrading of service connections. We anticipate the new homes will consist of up to two stories of wood framed construction over one level basements, constructed partially below grade and of reinforced concrete construction. We expect relatively light loadings from new structures.

This report presents the results of our geotechnical investigation and provides recommendations for the design and construction of the proposed development. The report has been prepared exclusively for Gaetan Royer, for their use and the use of others on their design and construction team. We also expect this report will be relied upon by the City of Port Moody during their permit process. No other use of this report is permitted without written consent of GeoPacific.

2.0 SITE DESCRIPTION

The site is located on the west side of Gatensbury Street, north of the intersection with Barlett Avenue in Port Moody. The site has an approximate area of 4,600 m^2 and is bounded by Gatensbury Street to the southeast, existing residential properties to the east, north, and southwest, and Chines Park to the west. The site slopes down from approximately 103 m geodetic at the south to 88 m geodetic at the north, based on a survey prepared by Papove. The average topographic slope through the property is 11 degrees from horizontal with some steeper and flatter localized areas. The site slopes down into a ravine to the west at an approximate angle of 24 degrees from horizontal. The site is currently improved with a single-family home at the south end of site, adjacent to Gatensbury Street. The remainder of the site is landscaped. Existing retaining walls allow grade splits throughout the site.

The location of the site in relation to existing improvements is shown on our site plan, Drawing No. 17754-01, following the text of this report.

3.0 FIELD INVESTIGATION

GeoPacific Consultants Ltd. completed a geotechnical site investigation on March 12, 2020. A total of three test holes were completed to depths of up to 12.2 m below existing grades. To provide subsurface profiling of relative density/consistency, test holes were supplemented with Dynamic Cone Penetration Test (DCPT) soundings to refusal. Test holes were completed using a subcontracted track mounted auger drill rig, supplied and operated by Uniwide Drilling of Richmond, BC.

The test holes were located and logged by a member of our technical staff and were backfilled immediately upon completion of logging, sampling, and testing in accordance with provincial abandonment requirements. The results of the augured test holes and DCPT soundings are included in Appendix A of this report.

The approximate locations of the test holes are shown on Drawing No. 17754-01.

4.0 SUBSURFACE CONDITIONS

4.1 Soil Conditions

The general geology of the region under investigation, according to the Geological Survey of Canada (GSC) map 1484A, is described as Vashon Drift and Capilano Sediments. The Vashon drift and Capilano Sediments are characterized as glacial drift including lodgement and minor flow till, lenses and interbeds of substratified glaciofluvial sand and gravel, and lenses and interbeds of glaciolacustrine laminated stoney silt.

In general, the soil profile noted from the surface downwards at our test hole and locations conforms with the region's geology described by the GSC map and consists of TOPSOIL underlain by SAND, underlain by Sandy SILT, underlain by till-like SAND. TH20-01 was located in a previously excavated cut area; at this location 75 mm of asphalt was observed directly overlying the native sandy silt.

It should be noted that the subsurface stratigraphy provided below is based on soils encountered within the test pits and may vary across the site.

TOPSOIL

Topsoil was encountered at TH20-02 and TH20-03 and extended to between 0.2 and 0.5 m below existing grades. The topsoil was composed of loose silty sand and organics. The topsoil was generally brown to black in colour and slightly moist.

SAND

Underlying the topsoil at TH20-02 and TH20-03, loose to compact fine to medium grained sand with trace to some silt was observed. At TH20-03 the sand was observed to be silty This layer extended to approximately 2.1 m below existing grades. The sand was observed to be brown to grey in colour and slightly moist. At both test holes the sand became dense between approximately 1.0 and 1.8 m below existing grades.

Sandy SILT

Underlying the sand layer, or directly underlying the asphalt at TH20-01, a layer of stiff sandy silt was observed extending to 0.5 m below existing grades at TH20-01 and 3.4 m below existing grades at TH20-02 and TH20-03. At TH20-01 and TH20-02 the layer contained trace gravel. The sandy silt was generally brown to grey in colour and slightly moist to moist. Laboratory testing completed indicate the natural moisture content of the sandy silt is approximately 27%

SAND (Till-Like)

Underlying the sandy silt, dense till-like sand was encountered at all test holes extending to the maximum depths explored. The sand was observed to generally contain trace to some silt and trace to some gravel. AT TH20-01 trace cobbles were observed at approximately 1.2 m below existing grades. At TH20-03 a layer of silty sand and gravel 0.9 m thick was observed at the contact between the sandy silt stratum and the till-like sand stratum. The till-like sand was generally grey in colour and moist to wet.

More detailed descriptions for the subsurface soil conditions is presented in Appendix A.

4.2 Groundwater Conditions

Some groundwater was encountered in the test holes between 3.1 and 4.6 m below existing grades. The groundwater level is expected to be below the founding level considering partial below grade basements. Some perched water may be encountered in the surficial sand layer and is expected to fluctuate with generally higher levels in the wetter months or following sustained precipitation.

5.0 DISCUSSION

5.1 General

Preliminary subdivision plan drawings, prepared by CityState, indicate the proposed subdivision divides the current property into two lots, referred to as Lot 1 and Lot 2, which are located at the southwest portion and northeast portion of the property respectively. We further understand it is intended to use a retaining wall along the western property line to create a level building platform for Lot 1. We anticipate the subdivision development would include minor improvements to Gatensbury Street for upgrading of service connections. We anticipate new homes will consist of up to two stories of wood framed construction over one level basements, constructed partially below grade and of reinforced concrete construction. We expect relatively light loadings from new structures, in the range of 250 kN for columns and 40 kN/m for walls.

We expect conventional foundations can be supported on the native dense sand or on stiff sandy silt deposits or on compacted engineered fill after site preparation is complete.

We expect temporary sloped excavation is feasible for the lot grading and basement excavations; however, temporary vertical shoring can be utilized if required.

Permanent retaining walls are desirable to obtain level grades on portions of the site. The retaining walls can be constructed as reinforced concrete cast-in-place walls or modular walls such as Lock-Block, Valley Stone, or Mechanically Stabilized Earth (MSE) walls, including Flex MSE walls reinforced with geogrid. We expect groundwater ingress can be managed with conventional sumps and pumps. Stormwater and

groundwater must be controlled during any new construction and under no circumstance should it be permitted to flow onto the slopes below the construction area. All storm water from the new development should be drained to municipal sewer or other permitted and safe discharge locations.

The soils on site are not considered prone to liquification under the 2018 British Columbia Building Code (BCBC) design earthquake. We do not expect that there is a landslide risk to the property or other nearby properties due to the construction of the proposed subdivision development.

We confirm, from a geotechnical point of view, that the proposed development, including building and retaining wall construction up to the property line which runs along the top of the ravine slope at the west end of site, is feasible provided the recommendations outlined in this report are incorporated into the overall design.

6.0 RECOMMENDATIONS

6.1 Site Preparation

All existing structures, pavements, organic materials, topsoil, fills, loose and/or otherwise disturbed soils must be removed from the construction area prior to any new construction. It is expected that the loose granular sand observed underlying the topsoil may be compacted in-place or re-used as engineered fill. At test hole locations, the required stripping depth is approximately 0.2 to 0.5 m below existing grades; however, we expect stripping depths will vary across the site and may be greater in some areas such as around stands of trees where the root structure will require greater stripping depths.

"Engineered Fill" can be used for general grade reinstatement. In the context of this report, "Engineered Fill" is defined as sand to sand and gravel containing less than 5% fines (passing through #200 sieve), compacted in 300 mm loose lifts to a minimum of 95% Modified Proctor dry density (ASTM D1557), at a moisture content that is within 2% of its optimum for compaction.

Subgrades containing silty soils may be sensitive to changes in moisture content. Therefore, the subgrade should be graded to prevent ponding of water. Any water softened subgrade must be excavated to expose a subgrade of dense sand or stiff sandy silt.

The subgrade soils must be reviewed by GeoPacific prior to placing blinding or engineered fill.

6.2 Existing Gatensbury Street and Services

As part of the proposed development, it is expected that some improvements to existing Gatensbury Street may be necessary, including utility upgrades. New services should be bedded and backfilled in accordance with MMCD standards. No special construction measures are anticipated, though some groundwater control may be required for deeper services. We expect dewatering can be achieved with conventional sumps and sump pumps.

6.3 Foundations and Bearing Capacity

We expect conventional pad and strip foundations may be used to support the proposed structure on the dense native sand, stiff sandy silt, or on compact engineered fill. We recommend that conventional foundations bearing on the stiff sandy silt or compact engineered fill be designed using a Serviceability Limit State (SLS) bearing pressure of 150 kPa. Foundations bearing on the dense sand can be designed

using an SLS bearing pressure of 200 kPa. Factored Ultimate Limit State (ULS) bearing pressures can be taken as 1.5 × SLS bearing pressure provided.

Irrespective of allowable bearing pressures, footings should not be less than 600 mm by 600 mm and strip footings should not be less than 450 mm in width. Footings should also be buried a minimum of 450 mm below the surface for frost protection. We estimate for foundations designed as per recommended, settlements will not exceed 25 mm total and 20 mm in 10 metres differential.

Adjacent conventional pad and strip foundations constructed at differing elevations should be offset from each other by a minimum distance of twice the difference in elevation, 2H:1V. Similarly, excavations adjacent to footings should be completed outside a 2H:1V slope from outside edge of bottom of footings, including excavations for utility trenches.

The geotechnical engineer shall be contacted to review foundation subgrades of all buildings prior to footing construction.

6.4 Seismic Design of Foundations

Based on the soil profile of the upper 30 m, the site is classified as Site Class C as defined in Table 4.1.8.4.A of the 2018 British Columbia Building Bylaw. We have considered a design earthquake with 2% probability of exceedance over a 50-year period which equates to a return period of 1 in 2475 years. Peak ground accelerations on firm ground for the approximate site location is 0.33g for this site (National Resource Canada, Site Coordinates: 49.272 degrees North, 122.856 degrees West.)

6.5 Slab-On-Grade Floors

In order to provide suitable support and drainage for slab-on-grade floors, we recommend that floor slabs should be underlain by a minimum of 150 mm of a free draining granular material, such as 19 mm clear crushed gravel, and hydraulically connected to perimeter drainage. The crushed gravel fill should be compacted to a minimum of 95% Modified Proctor dry density (ASTM D1557), at a moisture content that is within 2% of its optimum for compaction. A moisture barrier should underlie the slab directly above the free draining granular material.

6.6 Site and Foundation Drainage

A perimeter drainage system will be required for the below grade structure to prevent the development of water pressure on the foundation walls and the basement floor slabs under normal conditions.

6.7 Temporary Excavations

We expect that temporary excavations would be up to 2 to 3 m below existing grades for 1 level partial below grade basements and utility upgrades, and sloped where possible. Temporary shoring may be utilized in some areas to minimize excavation extents. We expect temporary lock-block shoring will be the most economical, if required. GeoPacific can provide specific excavation and slope cut recommendations once the preliminary architectural drawings are provided to us.

We expect that temporary excavation slopes can be cut to 1H:1V within the surficial soils and till-like soils above perched groundwater. Shallower slopes or shoring may be required where groundwater seepage is present. All temporary cut slopes should be covered in poly sheeting to prevent erosion of the slope face.

Light to moderate seepage during the wetter months should be expected from perched water. We expect groundwater inflows can be controlled with conventional sumps and sump pumps. All excavations and trenches must conform to the latest Occupational Health and Safety Regulation supplied by Work Safe BC.

Temporary cut slopes in excess of 1.2 m in height require inspection by a professional engineer.

6.8 Earth Pressures on Foundation and Retaining Walls

The earth pressure on below grade and retaining walls depends upon a number of factors including the backfill material, surcharge loads, backfill slope, drainage, rigidity of the basement wall, presence of shoring, and method of construction including sequence and degree of compaction. For a partially restrained basement wall, a basement wall located adjacent to a shored excavation face, or a retaining wall, a static pressure distribution of 5.5H (kPa) triangular may be used.

Dynamic loading induced by an earthquake should be added to the static loads and should be taken as 3.0H (kPa) inverted triangular.

The loading recommendation for a wall adjacent to a shored face assumes that there is a 0.6 m wide working space filled with clean birds eye gravel separating the shored face and the new foundation wall.

We have assumed that a free draining back fill will be used behind the foundation and retaining walls and that a perimeter drainage system will also be employed to collect any water from behind the walls. Therefore, our wall loading scenarios presented above assume that no water pressure will be generated behind the walls.

All earth pressures are based upon unfactored soil parameters and are assumed to be unfactored loads. Any additional surcharge loads located near the foundation or retaining walls should be added to the earth pressures given.

6.9 Slope Stability

We have completed a preliminary slope stability assessment for the proposed residential subdivision development at the above reference site. The slope stability assessment was completed under static and seismic conditions in accordance with the 2018 BC Building Code (BCBC) and the APEGBC "Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC" (Revised May 2010).

Subsurface stratigraphy and soil strength parameters were evaluated based on our geotechnical site investigation observations. Furthermore, off-site stratigraphy was interpolated from public geology maps and our other investigations in the area.

Topographic site survey data and Port Moody GIS data were utilized to create a section through the slope and proposed development to determine the critical failure section. For this site, the critical failure section was through the ravine sloping down from the west property line to the northwest. The slope has an angle of approximately 7 degrees from horizontal above the subdivision, a maximum slope angle of 11 degrees from horizontal through the subdivision, and a slope angle of 24 degrees from horizontal below the subdivision through the ravine.

The critical section was determined to be along the natural slope as shown on Section A on our Drawing No. 17754-01. The stability assessment was carried out using the numerical modelling software program

GeoStudio Slope/w (2018), which employs the Morgenstern-Price limit equilibrium method. A wide range of potential slip surfaces were calculated to determine the lowest factor of safety.

The guideline provides a pseudo-static limit equilibrium analysis procedure for the calculation of the horizontal earthquake acceleration coefficient k15 (Bray method), for use in the slope stability assessment under seismic conditions. A seismic analysis employing the k15 parameter and yielding a factor of safety of 1.0 or higher is considered acceptable for residential development in accordance with the guideline. The k_{15} for the proposed development site was computed to be 0.154 g using the spectral response acceleration of 0.660 g with a 2% probability of exceedance in 50 years and moment magnitude of 7.0. We performed our analyses utilizing k = 0.154 g.

The assessment results for static and seismic conditions indicate the minimum factor of safety of 1.6 and 1.1, respectively, for pre-development which exceed the acceptance criteria of the guideline. The assessment results for static and seismic conditions indicate the minimum factor of safety of 2.1 and 1.4, respectively, for post-development which exceed the acceptance criteria of the guideline and exceeds the pre-development condition factor of safety.

No design drawings for the homes have been provided at time of this report so the post-development analysis was completed assuming an approximately 1 m cut into the native soils at the east end of site and an approximately 3 m stabilized fill at the west end of site along the critical section. Additionally, an assumed surcharge load of 18 kPa was applied across the levelled pad. The slope stability should be re-assessed once detailed design drawings are available for the new homes.

Our slope stability assessment satisfies the City of Port Moody's adopted 1:100,000 risk tolerance threshold based on the risk tolerance for landslides implemented by the District of North Vancouver for subdivision developments. The results of our slope stability assessment are presented in Appendix B.

Based on the slope stability assessment results, we expect the site may be used safely for the intended use, including building and retaining wall construction up to the property line which runs along the top of the ravine slope at the west end of site, provided that our recommendations are incorporated into the design of the proposed development and are adhered to during construction.

7.0 DESIGN REVIEWS AND CONSTRUCTION INSPECTIONS

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

It is also important that any contractor working on the site, review this document prior to commencing their work so that they become familiar with the sensitive aspects of the works proposed. It is the responsibility of the contractor to contact GeoPacific a minimum of 48 hours in advance to notify us that a field review/inspection is required. It is also the responsibility of the developer to notify GeoPacific Consultants Ltd. when conditions or situations which are not outlined within this document, are encountered.

In summary, geotechnical field reviews for the following aspects of this scheme are required:

1.	Stripping / Excavation	Review of stripping, temporary cut slopes, and soil conditions
2.	Engineered Fill and Compaction	Review of fill material and compaction of engineered fill and clear crushed gravel
3.	Excavation	Review of any excavation in excess of 1.2 m
4.	Conventional Foundations	Review of foundation subgrades, prior to construction of footings
5.	Slabs-on-Grade	Review of subgrade, under-slab fill materials and compaction

8.0 CLOSURE

This report has been prepared exclusively for our client, for the purpose of providing geotechnical recommendations for the design and construction of the proposed development described herein. This report remains the property of GeoPacific Consultants Ltd. and unauthorized use of, or duplication of this report is prohibited.

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

For:
GeoPacific Consultants Ltd

Reviewed by:

DEC 1 6 2020

Liam Jones, B.Eng., EIT
Geotechnical Engineer-in-Training

Matt Kokan, M.A.Sc., P.Eng
Principal

Wyatt Johnson, B.Eng., EIT
Project Engineer

LEGEND:

TH20-1 – TEST HOLE (TH) LOCATION
LOCATIONS ARE APPROXIMATE

REFERENCE:

GEOPACIFIC
PANGEOTEK

DATE: MARCH 12, 2020		
DRAWN BY: LJ	APPROVED BY: WJ	REVIEWED BY: WJ
SCALE: NOT TO SCALE		

PROPOSED RESIDENTIAL SUBDIVISION
1034 GATENSBURY ROAD, PORT MOODY
TEST HOLE LOCATION PLAN

FILE NO.: 17754
DWG. NO.: 17754-01

REVISIONS:
A.
B.
C.

APPENDIX A – TEST HOLE LOGS

Test Hole Log: TH20-01

File: 17754
Project: Proposed Residential Subdivision
Client: Gaetan Royer
Site Location: 1034 Gatensbury Road, Port Moody, BC

GEOPACIFIC CONSULTANTS
1779 W 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth/Elev (m)	Moisture Content (%)	DCPT • (blows per foot) • 10 20 30 40	Groundwater / Well	Remarks
0 / 0		Ground Surface					
		Asphalt	0.0				
		Sandy Silt Silt, sandy, trace gravel, brown, stiff, slightly moist	0.5	14.4	16, 13, 42, >50		
1 / 2 / 3		**Sand** Sand, trace to some silt, trace gravel, brown to grey, compact to dense, slightly moist					Trace cobbles @ 1.2 m
4 / 5 / 6							Perched water at 3.1 m
		Sand (Till-Like) Sand, trace to some silt, grey, dense, moist to wet	5.5	25.4			

Logged: LJ
Method: Solid Stem Auger
Date: 2020-03-12

Datum: Ground Surface
Figure Number: A.01

Test Hole Log: TH20-01

File: 17754
Project: Proposed Residential Subdivision
Client: Gaetan Royer
Site Location: 1034 Gatensbury Road, Port Moody, BC

GEOPACIFIC CONSULTANTS
1779 W 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE				Moisture Content (%)	DCPT • (blows per foot) • 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)				
21 22 23 7 24 25 26 8 27 28 29 9 30 31 32 33 10 34 35 36 11 37 38 39 12 40			12.2				Trace gravel @ 7.6 m Becomes some silt to silty @ 10.1 m

Logged: LJ
Method: Solid Stem Auger
Date: 2020-03-12

Datum: Ground Surface
Figure Number: A.01

Test Hole Log: TH20-02

File: 17754
Project: Proposed Residential Subdivision
Client: Gaetan Royer
Site Location: 1034 Gatensbury Road, Port Moody, BC

GEOPACIFIC CONSULTANTS
1779 W 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth/Elev (m)
0 / 0		Ground Surface	
		Topsoil Sand and organics, silty, brown to black, loose, slightly moist	0.0
1 / 1		**Sand** Sand, trace silt, brown to grey, loose to compact, slightly moist	
2 / 2			2.1
3 / 3		**Sandy Silt** Silt, sandy, trace gravel, brown to grey, stiff, slightly moist to moist	
4 / 4			3.4
5 / 5		**Sand (Till-Like)** Sand, some silt, some gravel, grey, dense, moist to wet	
6 / 6			

Moisture Content (%): 18.7; 27.1

DCPT (blows per foot), 10 20 30 40: 8, 15, 41, 49, 46, 37, 28, 16, 13, 9, 10, >50 Refusal

Groundwater / Well

Remarks:
- Becomes dense @ 1.0 m
- FC = 68.3% @ 2.5 m
- Perched water at 3.1 m
- Becomes gravelly @ 4.9 m

Logged: LJ
Method: Solid Stem Auger
Date: 2020-03-12

Datum: Ground Surface
Figure Number: A.02

Test Hole Log: TH20-02

File: 17754
Project: Proposed Residential Subdivision
Client: Gaetan Royer
Site Location: 1034 Gatensbury Road, Port Moody, BC

GEOPACIFIC CONSULTANTS
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Tel: 604-439-0922 Fax:604-439-9189

Depth	Symbol	SOIL DESCRIPTION (INFERRED PROFILE)	Depth/Elev (m)	Moisture Content (%)	DCPT • (blows per foot) • 10 20 30 40	Groundwater / Well	Remarks
21							
22							
23 – 7		***Silty Sand (Till-Like)*** Sand, some silt to silty, grey, dense, slightly moist to moist	6.7				
24							
25							
26 – 8		***Sand (Till -Like)*** Sand, grey, dense, moist	7.6				
27							
28							
29							
30 – 9		End of Borehole	9.1				
31							
32							
33 – 10							
34							
35							
36 – 11							
37							
38							
39 – 12							
40							

Logged: LJ
Method: Solid Stem Auger
Date: 2020-03-12

Datum: Ground Surface
Figure Number: A.02

Test Hole Log: TH20-03

File: 17754
Project: Proposed Residential Subdivision
Client: Gaetan Royer
Site Location: 1034 Gatensbury Road, Port Moody, BC

GEOPACIFIC CONSULTANTS
1779 W 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth/Elev (m)
0 / 0		Ground Surface	
0 – 3		***Topsoil*** Sand and organics, silty, brown to black, loose, slightly moist	0.0
3 – 7		***Silty Sand*** Sand, some silt to silty, brown to grey, loose to compact, slightly moist	0.5
7 – 12		***Sandy Silt*** Silt, sandy, brown to grey, firm to stiff, slightly moist to moist	2.1
12 – 15		***Gravelly Sand and Silt (Till-Like)*** Sand and silt, gravelly, grey, dense, slightly moist	3.7
15 – 20		***Sand (Till-Like)*** Sand, trace gravel, trace silt, grey, dense, moist	4.6

Moisture Content (%): 16.1; 11.4

DCPT • (blows per foot) •
10 20 30 40

9, 4, 1, 1, 6, >50, 32, 18, 7, 8, 7, 8, 36, >50

Groundwater / Well

Remarks
FC = 30.8% @ 0.9 m
Becomes dense @ 1.8 m
FC = 37.7% @ 4.0 m
Perched water @ 4.6 m

Logged: LJ
Method: Solid Stem Auger
Date: 2020-03-12

Datum: Ground Surface
Figure Number: A.03

Test Hole Log: TH20-03

File: 17754
Project: Proposed Residential Subdivision
Client: Gaetan Royer
Site Location: 1034 Gatensbury Road, Port Moody, BC

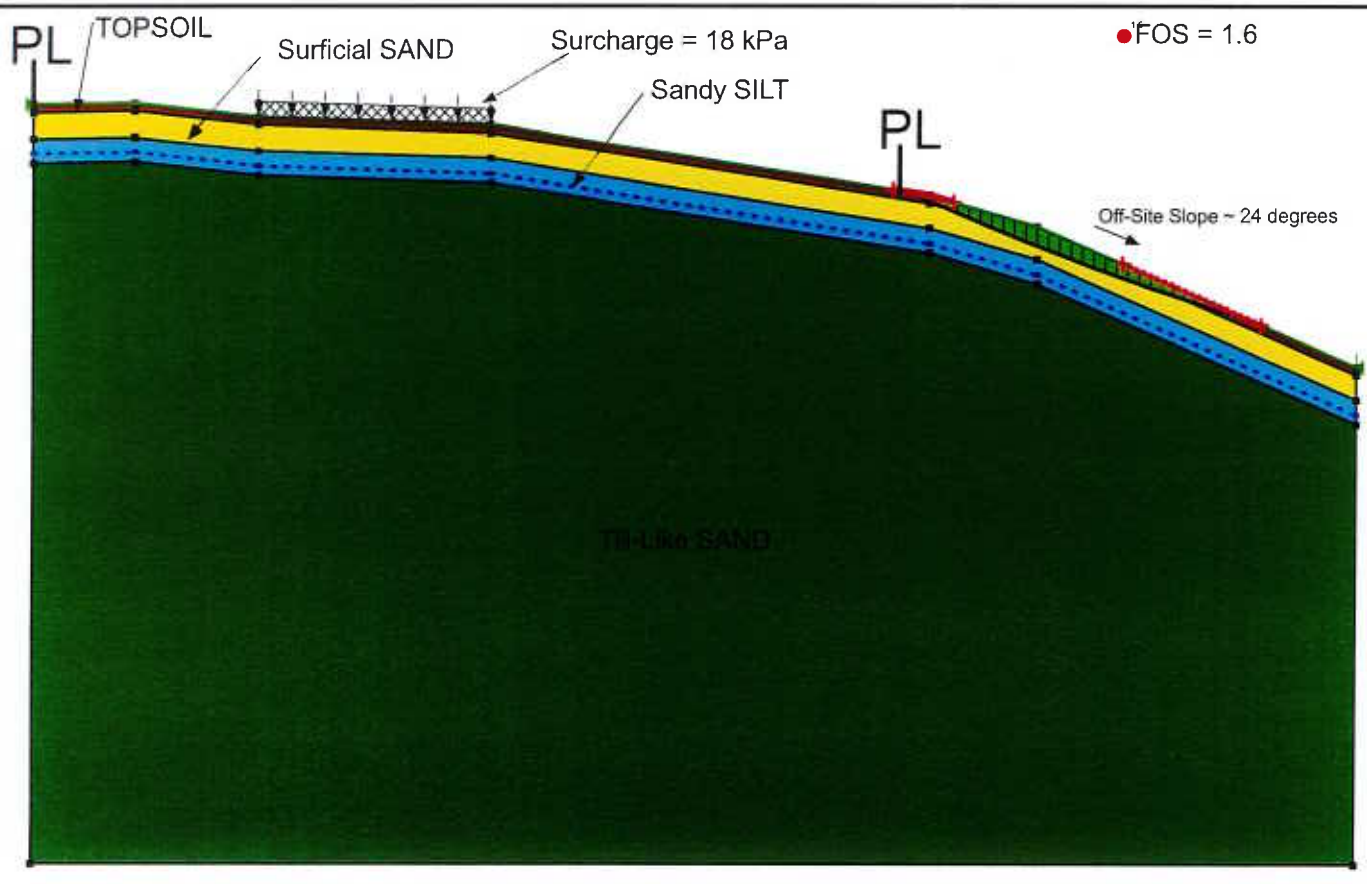
GEOPACIFIC CONSULTANTS
1779 W 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

Depth	Symbol	INFERRED PROFILE: SOIL DESCRIPTION	Depth/Elev (m)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
21							Becomes some silt to silty and moist @ 6.4 m
22							
23 – 7							
24							
25							
		End of Borehole	7.6				
26 – 8							
27							
28							
29							
30 – 9							
31							
32							
33 – 10							
34							
35							
36 – 11							
37							
38							
39 – 12							
40							

Logged: LJ
Method: Solid Stem Auger
Date: 2020-03-12

Datum: Ground Surface
Figure Number: A.03

APPENDIX B – SLOPE STABILITY PRINTOUTS



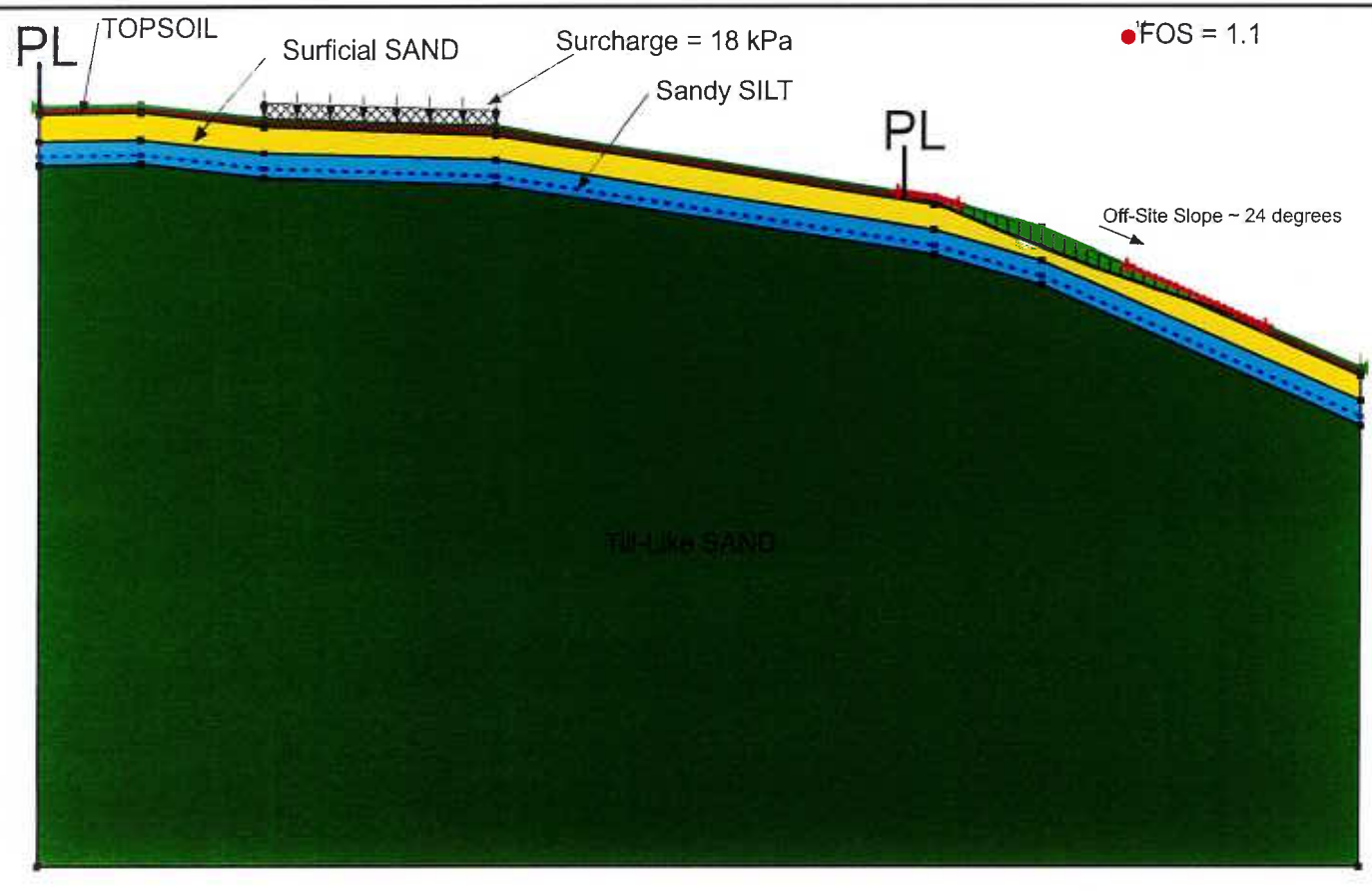
Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)
	Dense Till-Like Sand	Mohr-Coulomb	22	0	40
	Sandy Silt	Mohr-Coulomb	18	0	34
	Surfical Loose to Compact Sand	Mohr-Coulomb	18	0	32
	Topsoil	Mohr-Coulomb	18	0	32

Pre-development STATIC Condition (Ravine Slope)

Project: Proposed Residential Subdivision	**Job No.: 17754**
Model: Section 1	Date: March 16, 2020
Method: Morgenstern-Price — Horz Seismic Coef.: 0	Scale : 1:300
Site Address ; 1034 Gatensbury Street, Port Moody, BC	Analysis by: LJ

GEOPACIFIC

J:\Jobs\17000 FILES\17700\17754 - 1034 Gatensbury Street, Port Moody, BC\ANALYSIS\17754 - SlopeW Analysis - Pre-development2 - 2020-03-23 (LJ).gsz



Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)
	Dense Till-Like Sand	Mohr-Coulomb	22	0	40
	Sandy Silt	Mohr-Coulomb	18	0	34
	Surfical Loose to Compact Sand	Mohr-Coulomb	18	0	32
	Topsoil	Mohr-Coulomb	18	0	32

Pre-development SEISMIC Condition (Ravine Slope)

Project: Proposed Residential Subdivision	**Job No.: 17754**
Model: Section 1	Date: March 16, 2020
Method: Morgenstern-Price — Horz Seismic Coef.: 0.154	Scale : 1:300
Site Address : 1034 Gatensbury Street, Port Moody, BC	Analysis by: LJ

GEOPACIFIC

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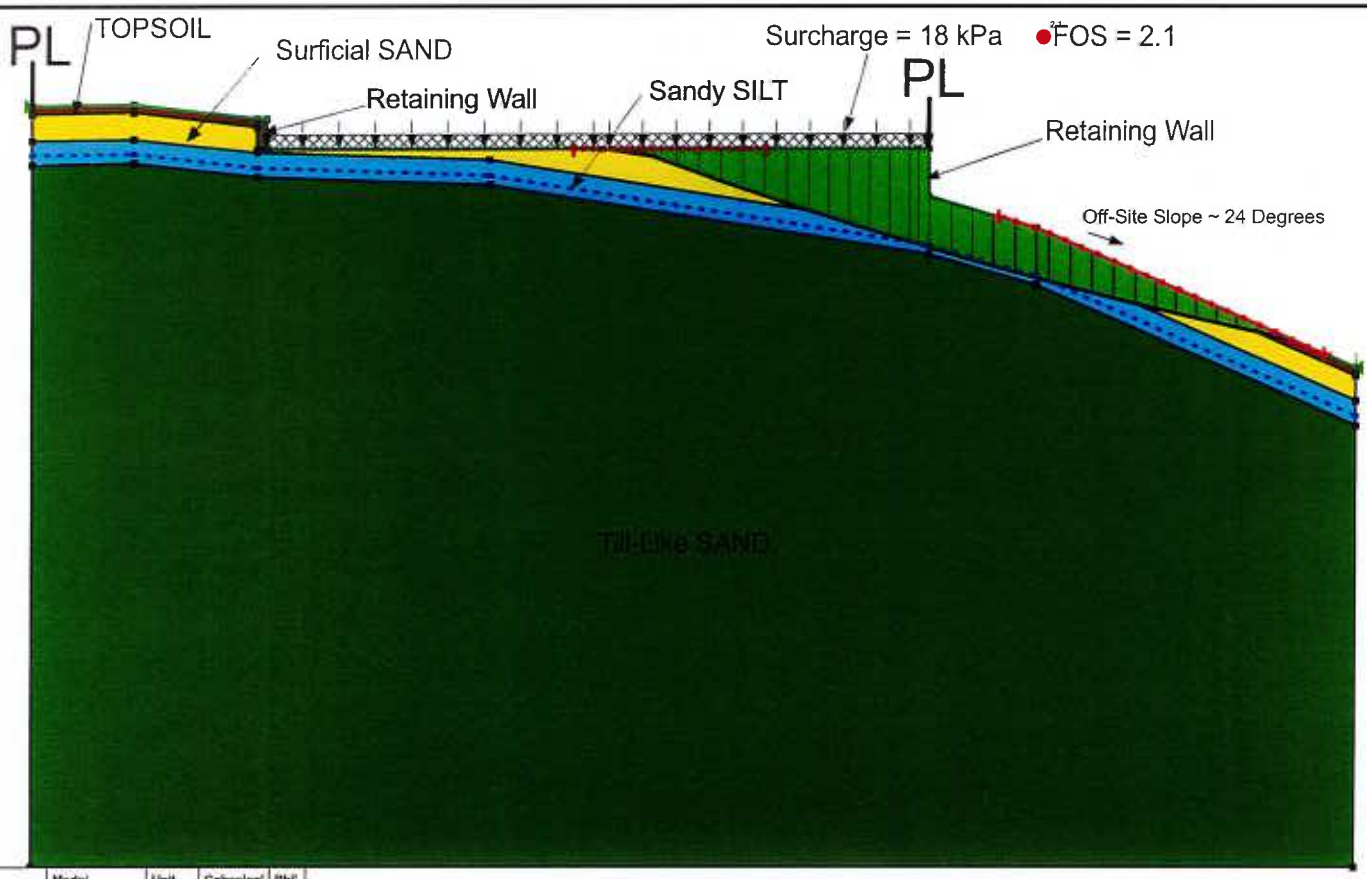

Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)
	Dense Till-Like Sand	Mohr-Coulomb	22	0	40
	RETAINING WALL	High Strength	24		
	Sandy Silt	Mohr-Coulomb	18	0	34
	Surfical Loose to Compact Sand	Mohr-Coulomb	18	0	32
	Topsoil	Mohr-Coulomb	18	0	32

Post-development STATIC Condition (Ravine Slope)

Project: Proposed Residential Subdivision	**Job No.: 17754**
Model: Section 1	Date: March 16, 2020
Method: Morgenstern-Price — Horz Seismic Coef.: 0	Scale : 1:300
Site Address : 1034 Gatensbury Street, Port Moody, BC	Analysis by: LJ

GEOPACIFIC

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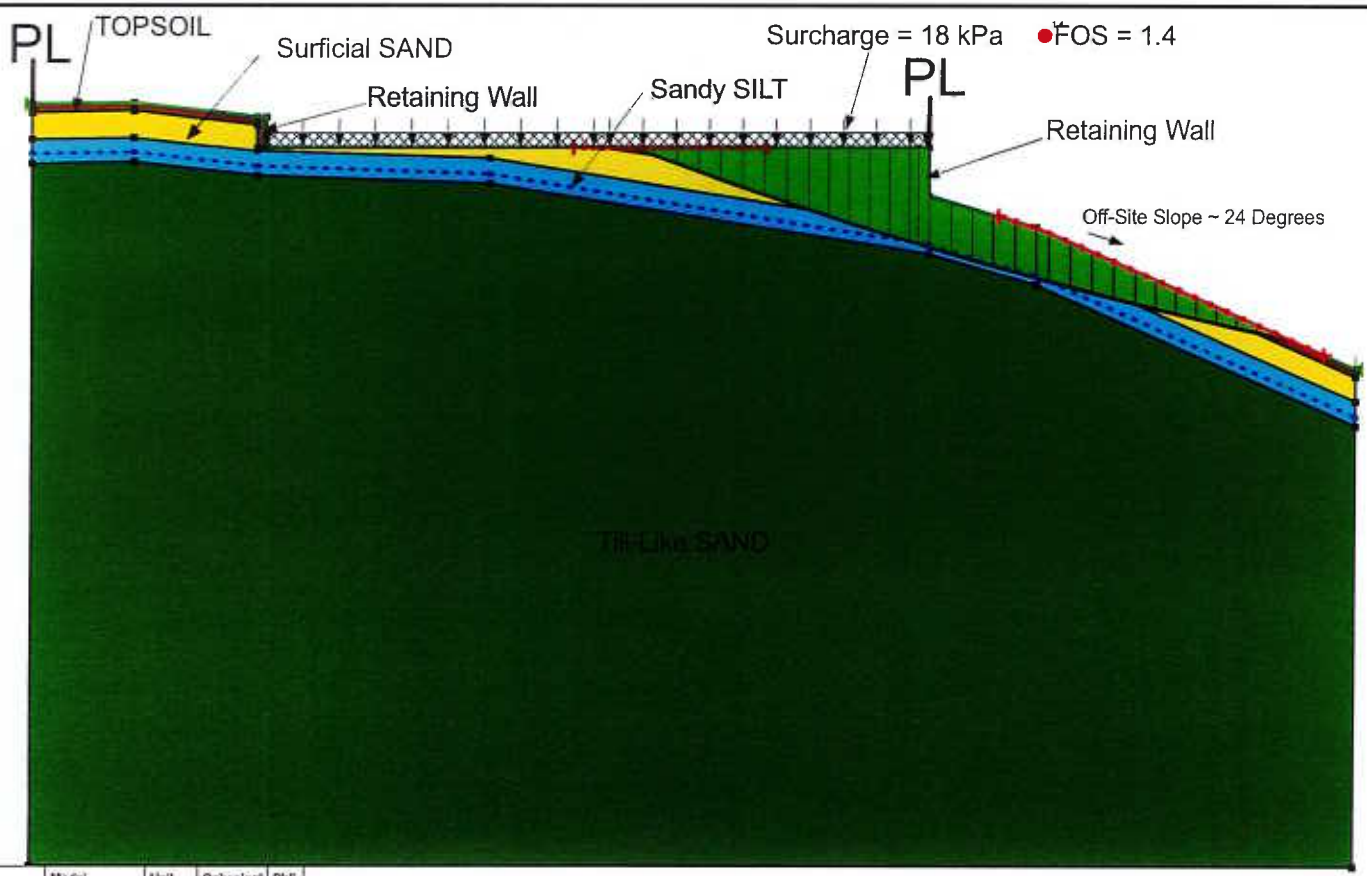

Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)
	Dense Till-Like Sand	Mohr-Coulomb	22	0	40
	RETAINING WALL	High Strength	24		
	Sandy Silt	Mohr-Coulomb	18	0	34
	Surfical Loose to Compact Sand	Mohr-Coulomb	18	0	32
	Topsoil	Mohr-Coulomb	18	0	32

Post-development SEISMIC Condition (Ravine Slope)

Project: Proposed Residential Subdivision	**Job No.: 17754**
Model: Section 1	Date: March 16, 2020
Method: Morgenstern-Price — Horz Seismic Coef.: 0.154	Scale : 1:300
Site Address : 1034 Gatensbury Street, Port Moody, BC	Analysis by: LJ

GEOPACIFIC

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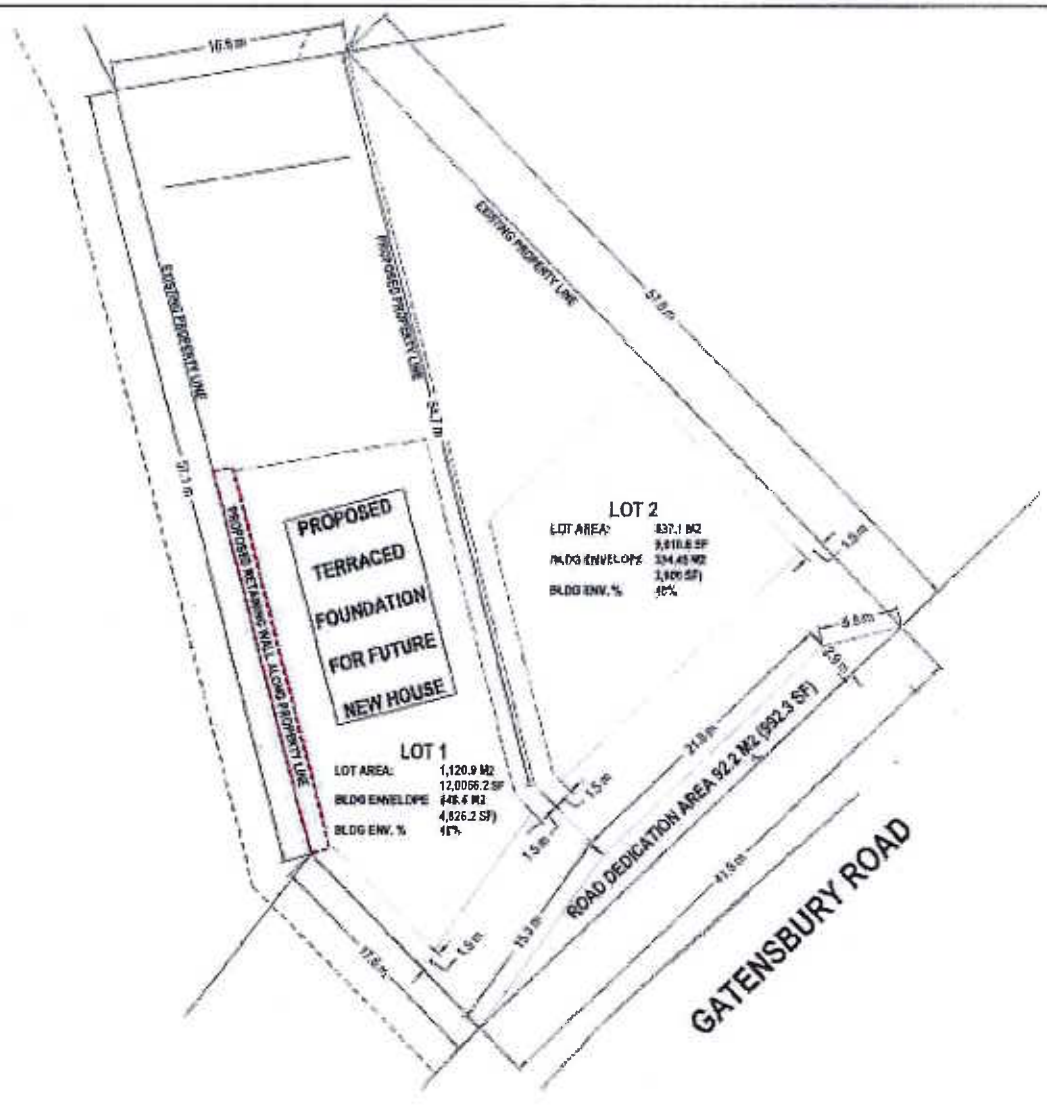
A 001 SITE PLAN

SCALE



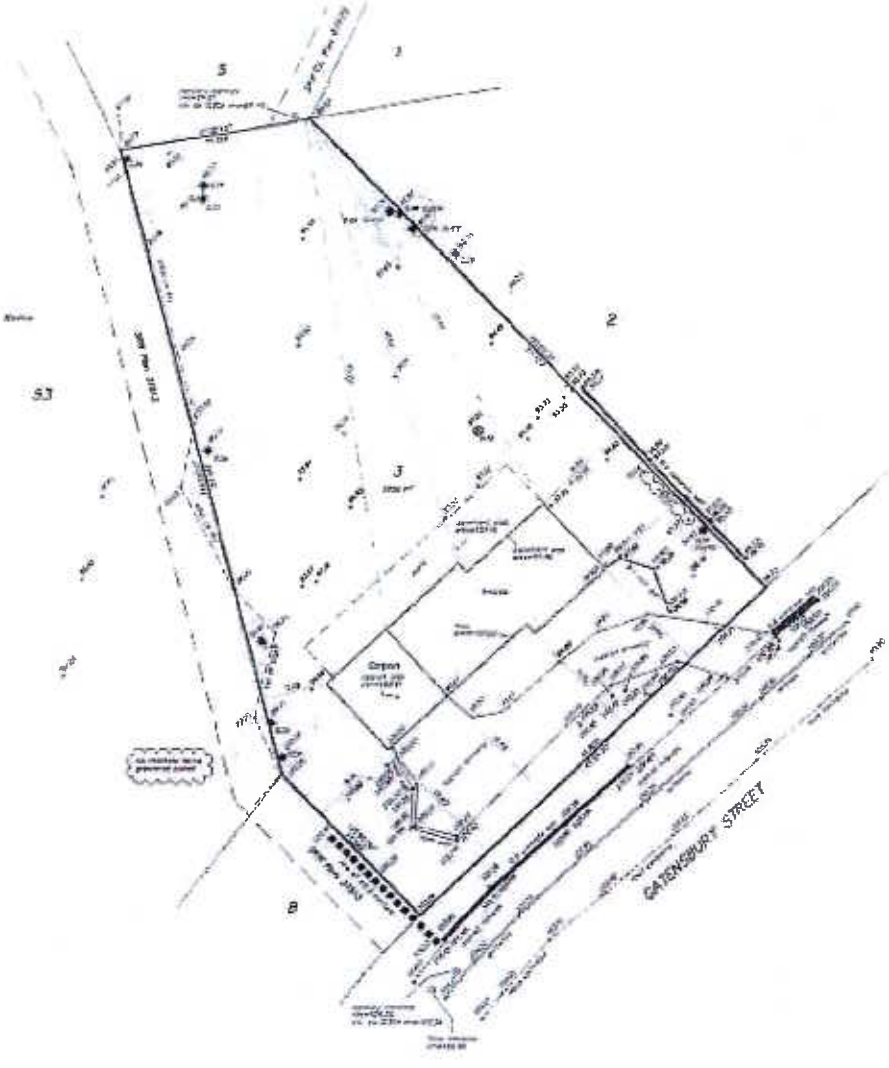
	ft	in
ROOF PEAK EL.		
ROOF HEIGHT EL.		
2ND FLOOR EL.		
MAIN FLOOR EL.		
BASEMENT FLOOR EL.		
AVERAGE GRADE		

CITYSTATE
Gaëtan Royer – CityState Consulting Services
2419 Clarke Street, Port Moody, BC, Canada V3H 1Z2
gaetan@citystate.ca

Project	Sheet	Description	Scale	Date: 28 FEB 2020
1034 GATENSBURY ROAD	001	PRELIMINARY SUBDIVISION PLAN	1:150	Revised: Revised: Revised: Revised: Revised:

TOPOGRAPHICAL PLAN OF LOT 3, DISTRICT LOT 175, GROUP 1, NEW WESTMINSTER DISTRICT, PLAN 18078

SCALE 1:200



LEGEND

CERTIFIED CORRECT