GEO Group Northwest, Inc.
Geotechnical Engineers, Geologists
& Environmental Specialists

April 8, 2024 G-2239-2

Mr. John Khaira
Rev Properties Group
426 E. 64th Avenue
Vancouver, BC, Canada V5X 2N1

Subject: Response to Permit Review Comments, Proposed Townhomes,
3803 NE 155th Street, Lake Forest Park, Washington

LFP Permit File No. 2023-CSD-0002

Reference: Updated Geotechnical Engineering Study, Proposed Townhomes,
3803 NE 155th Street, Lake Forest Park, Washington. GEO Group Northwest, Inc., October 29, 2021.

Dear Mr. Khaira:

Per your request, GEO Group Northwest, Inc. has prepared this letter in response to certain comments in the initial permit completeness review letter by the City of Lake Forest Park dated February 1, 2024, for the proposed construction of townhomes at the above-subject location. Specifically, this letter provides our responses to comments #3 and #4 in the City's review letter.

Comment #3

> The site plan shows the presence of a steep slope area meeting the characteristics of those types of slopes regulated in LFPMC 16.16.280-310. Please provide a classification of the sloped area pursuant to the definitions in LFPMC 16.16.040

(G), (J), and (W) from a qualified professional (as defined in LFPMC 16.16.040 (Q)).

Slope Classification

We have evaluated the topographic information provided in the project plans site for classification of the sloped areas per the definitions stated above. Our classification of these areas is illustrated in Plate 1 – Existing Site Plan and is discussed below.

The portion of the site meeting the criteria for classification as Class I slopes consists of the middle to northern and western part of the site, as illustrated in Plate 1 – Existing Site Plan. This area has slopes of less than 15 percent grade.

The remaining part of the site has slopes meeting the criteria for classification as Class III slopes. The Class III designation is applied to this area because the slope inclinations are greater than 15 percent, and the slopes are underlain with relatively impermeable soils and water seepage that has been noted in our referenced geotechnical report.

Landslide Hazard Area Extent

The portion of the area with Class III slopes that has inclinations of 40 percent grade or more and 10 feet or more in height is designated a landslide hazard area per the criteria in LFPMC 16.16.040 (J.2.d). The portion of the Class III slope area in the northeast part of the site that does not have inclinations of 40 percent grade or steeper for a height of at least 10 feet does not meet the criteria for being designated as a landslide hazard area per LFPMC 16.16.040 (J.2). As a result of the designations described above, the extent of the landslide hazard area is the same as that of the steep slope area on the site (discussed below), as illustrated in Plate 1 – Existing Site Plan.

Steep Slope Area Extent

The topographic information indicates that a steep slope area per the criteria in LFPMC 16.16.040 (W) is present on the southern and southeastern portion of the site. The top and bottom of the steep slope area typically has distinct breaks in grade at its top and bottom extents.

The steep slope area has a maximum inclination of approximately 80 percent grade and has a maximum height of approximately 70 feet.

Erosion Hazard Area Extent

Areas that have slopes greater than 15 percent grade meet the criteria for being classified as erosion hazard areas per LFPMC 16.16.040 (G). Therefore, this site area having Class III slopes also is designated as an erosion hazard area.

Comment #4

> The site plan shows a reduced buffer of 25 feet from the top of the surveyed slope. A reduced buffer is permitted in some cases when a qualified professional determines the area meets the reduction criteria in LFPMC 16.16.290 (A) and LFPMC 16.16.310 (A). Please provide an evaluation of the slope reduction criteria from a qualified professional.

We have assessed the potential reduction of the steep slope and landslide hazard area buffers for the proposed project. For our assessment, we considered the following items:

- The proposed buildings will be fully supported on a system of drilled concrete piers and grade beams designed by a structural engineer. Thus, the building will not impose loading on the underlying fills or soils.

- The grading to construct the proposed buildings will not involve the placement of fills to achieve design elevations, except for the placement of capillary break and other drainage related materials. Instead, bottom floor grades for the buildings will be similar to or lower than existing grades.

- Proposed final grades surrounding the proposed buildings will not have inclinations steeper than 15 percent. Engineered retaining walls will be used as appropriate to accommodate grade changes where that would be steeper if finished as graded slopes.

- The grading to construct the proposed driveway, exterior parking stalls, and shared public amenity space has been designed to minimize increases to site elevations to achieve

design grades, and will include engineered retaining walls as appropriate to retain these areas.

- Removal of the existing invasive vegetation and replacement with appropriate planting per an approved landscaping plan is planned for the project. This will provide improvement to the functional use conditions of the site and will mitigate the potential for soil erosion or landslides at the site.

Based on these factors, it is our opinion that a reduction of the steep slope and landslide hazard area buffers to 25 feet is acceptable for the proposed project. These reduced buffers will adequately protect the site and the surrounding properties from an increased risk of soil instability or erosion, provided that the recommendations in our referenced geotechnical report (including those for pile support of concrete retaining walls and for driveway and parking area subgrade preparation) are properly implemented.

Proposed Development Within Proposed Geologic Hazard Area Buffers

Development in Steep Slope Area Buffer

We reviewed the project with regard to the criteria for permitted alterations to steep slope hazard areas as outlined in LFPMC Chapter 16.16.310. Although the proposed project does not encroach into the steep slope area, a portion of the proposed development will extend into the proposed 25 feet steep slope area buffer in the northeast part of the site, as illustrated in Plate 2 – Proposed Site Plan.

The proposed project includes no buildings in the proposed steep slope area buffer. However, retaining walls, a set of stairs, two parking stalls, and paver-surfaced public open space area are proposed south of the driveway and east of the building. These features extend up to 10 feet into the proposed buffer and are located at least 25 and 15 feet away from the top of the steep slope area. The proposed retaining walls in this area will have exposed heights of up to 5 feet.

(A) An alteration plan for the project, showing proposed landscaping improvements and a detailed revegetation plan including enhancement of the area occupied by invasive vegetation, are presented in the referenced project plans.

(B) The project area is within an area that has been substantially modified in the past by the placement of a thick section of fills and by becoming overgrown with invasive non-native plants (Himalayan blackberries and giant knotweed). Removal of this vegetation provides improvement to the vegetation and functional use conditions of the area.

(C) The project is located within an area having slopes of less than 40 percent grade and that was previously cleared/graded for residential development or is invasively vegetated with blackberries. The project approximately maintains the overall slope inclination of the area.

Development in Landslide Hazard Area Buffer

Development within a portion of the landslide hazard area buffer in the northeastern part of the site is proposed for the project. The proposed activity consists of that described above regarding development in the proposed steep slope area buffer, and does not extend into areas having slopes steeper than 40 percent grade.

Alterations to landslide hazard areas where the alteration occurs on slopes of less than 40 percent grade may be permitted without the requirement for buffers if the criteria in LFPMC 16.16.290 (D)(2) are met. We have evaluated the proposed development in the buffer with regard to these criteria and have developed the following comments and conclusions.

a) Retaining walls to be located in the buffer area should be fully supported on pile and grade beam foundation systems, using either small-diameter pipe piles or drilled concrete piles.

b) The proposed driveway and parking areas in the buffer should be over-excavated to a depth of two feet below the bottom elevation of the pavement section, and the exposed subgrade should then be compacted in place to a dense condition. The over-excavated area should be backfilled per the recommendations regarding structural fill and pavement support in our referenced geotechnical report.

c) The proposed development will not decrease slope stability on the site or adjoining properties, provided that the recommendations in our referenced geotechnical report and the recommendations stated above are properly implemented. It also is our conclusion

that the proposed development will not adversely impact other critical areas in a geotechnical manner, nor result in an increase in peak surface water flows or sedimentation to adjacent properties, with the stated provisions.

d) If the above provisions and recommendations are satisfied, we conclude that the proposed development will have been designed so that the landslide hazard risk to the site property or adjacent property is eliminated or mitigated.

Closing

We appreciate the opportunity to provide you with geotechnical consulting services for your project. Please do not hesitate to contact us if you have any questions regarding this letter.

Sincerely,

GEO Group Northwest, Inc.

4/8/2024

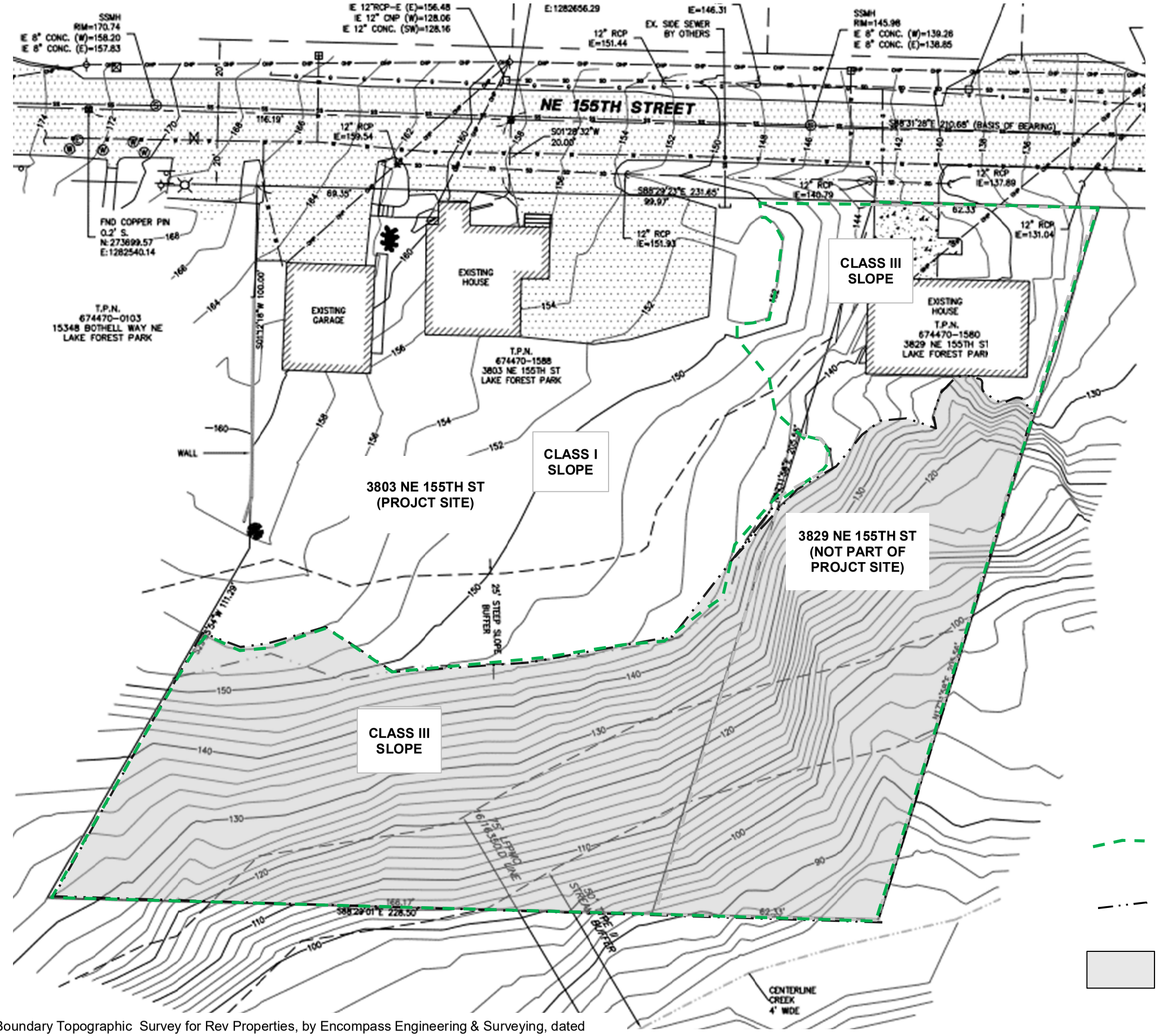
4/8/2024

Keith Johnson
Project Geologist

William Chang, P.E.
Principal Engineer

Plates:

Plate 1 – Existing Site Plan
Plate 2 – Proposed Site Plan



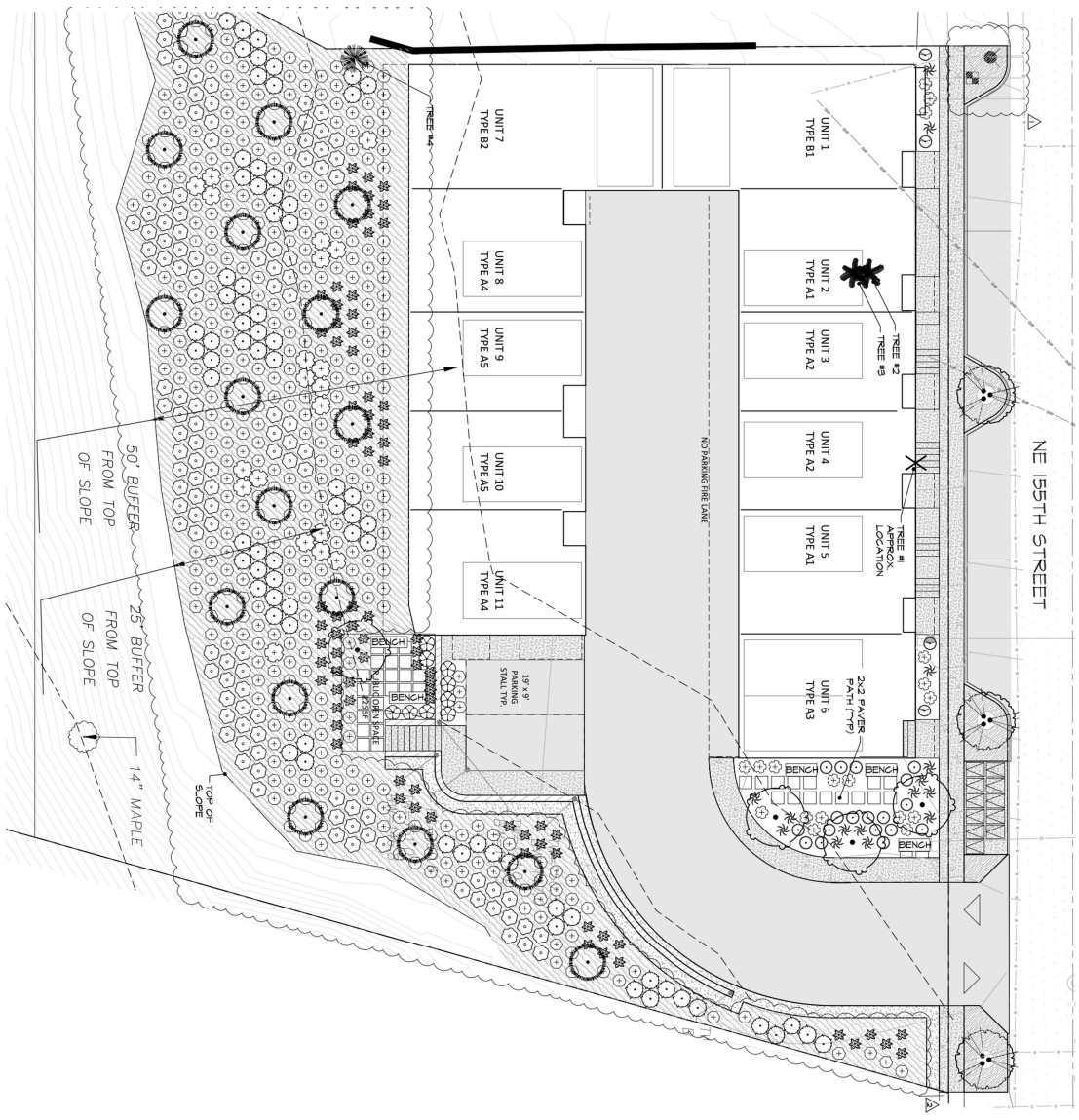
Source: Boundary Topographic Survey for Rev Properties, by Encompass Engineering & Surveying, dated

EXISTING SITE PLAN

PROPOSED TOWNHOMES
3803 NE 155TH STREET
LAKE FOREST PARK, WASHINGTON

DATE	3/29/2024
PROJECT NO.	G-2239-2
PLATE	1
SCALE	1" = 30'
DRAWN BY	KJ
CHECKED BY	WC

Group Northwest, Inc.
Geotechnical Engineers, Geologists, & Environmental Scientists



Source: Landscape Plan, Sheet L1, by Root of Design, dated 3/05/2024.

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PROPOSED DEVELOPMENT PLAN

PROPOSED TOWNHOMES
3803 NE 155TH STREET
LAKE FOREST PARK, WASHINGTON

SCALE	1" = 30'	DRAWN BY	KJ	CHECKED BY	WC	DATE	4/4/2024	PROJECT NO.	G-2239-2	PLATE	2