City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Bellevue Connector West
Proposal Address:	804 Lake Hills Connector, Bellevue, WA 98005
Proposal Description:	A Critical Areas Land Use Permit to construct a single-family residence and a shared driveway on an undeveloped lot within a steep slope critical area and associated 50-foot top-of-slope buffer. The proposal also includes a Variance to the Land Use Code to reduce both the 35-foot front and 25-foot rear yard non-critical area structure setbacks to 10 feet and exceed the 15-foot building height required for undersized and non-conforming lots to 27.5 feet.
File Number(s):	23-108075-LO and 23-108076-LS
Applicant:	David Hall
Decisions Included:	Variance from the Land Use Code (Process II. 20.30G) Critical Areas Land Use Permit (Process II. 20.30P)
Planner:	Jordan Borst, Associate Land Use Planner
State Environmental Policy Act Threshold Determination:	Exempt
Director's Decision:	**Approval with Conditions** Rebecca Horner, Director Development Services Department By: *Toni Pratt, Land Use Director* For Antoinette Pratt, Land Use Director

Application Date:	April 11, 2023
Notice of Application Date:	May 18, 2023
Decision Publication Date:	October 10, 2024
Project Appeal Deadline:	October 24, 2024

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Appeal of the Critical Areas Land Use Permit decision and Variance must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

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Attachments

1. Site Plan and Elevation Drawings
2. Mitigation and Monitoring Plan
3. Geotechnical Report and Addendums – Associated Earth Sciences, Inc. Dated 11/02/2023, 11/02/2023 and 01/24/2024.
4. Critical Areas Report – Wetland Resources, Inc. Dated 05/24/2024.
5. Arborist Report – Cascara Tree Consulting. Dated 03/26/2024.
6. Predevelopment Services Application 20-123627-DC – City of Bellevue Department of Transportation, Right of Way Use Division. Dated 04/22/2021
7. Variance Criteria Narrative – Dated 05/06/2024

I. Proposal Description

The applicant is proposing to construct a single-family residence and shared driveway on an undeveloped, abnormally shaped property that is within a steep slope critical area and associated 50-foot top-of-slope buffer. The proposed development will permanently impact 1,658 square feet of steep slope and steep slope buffer area. The project proposes approximately 3,757 square feet of mitigation and enhancement planting.

Additionally, the applicant is requesting a Variance to reduce both the 35-foot front and 25-foot rear yard structure setbacks to 10 feet required per LUC 20.20.010 in the R-1.8 land use district in order to achieve a building footprint consistent with those afforded to properties within the immediate vicinity.

Based on the survey submitted by the applicant, the subject property has a width of 47 feet, which is 52.2% of the minimum width required for the R-1.8 zoning district. As the lot width is less than 70% the minimum lot width, building height is calculated per Land Use Code (LUC) Section 20.20.070.B that provides the following height calculation for undersized lots:

Building Height = 2 x C x H

C = The ratio of potential building area (lot less the area of the lot's minimum setback requirements) to total lot area

H = the general height requirement otherwise applicable to the lot

(In no event shall the building height imposed be less than 15 ft.)

Based on the above calculation, the maximum height for this lot would be 15 feet as follows

Building Height = (2 x 0/44,341 x 30)

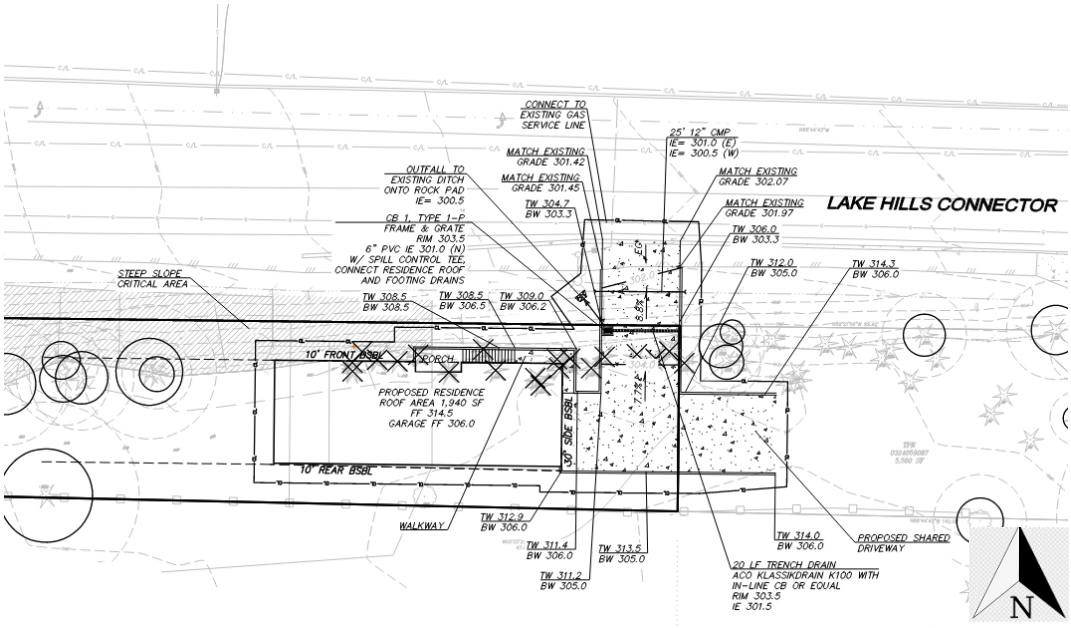
Building Height = (2 x 0 x 30)

Building Height = 0 feet

Pursuant to LUC 20.20.070.D, the maximum building height resulting from the following formula may be modified up to the maximum height allowed in the underlying land use district through a variance. The applicant proposes a maximum roof height of 27.5 feet measured from average existing grade.

See Figure 1 below for a site plan showing the proposal.

Figure 1



II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

The subject parcel, 804 Lake Hills Connector, is an undeveloped lot at 45,308 square feet in size. The site is bifurcated by and gains direct access from the City Right-of-Way, Lake Hills Connector. The proposed home will be located on the eastern half of the site, which is approximately over 31,700 square feet in size and is abnormally long and shaped with a depth of 791-ft and a width of 47-ft. The lot to the east of the subject property is also currently undeveloped. The surrounding vicinity is surrounded by single-family residences in all directions. Most of the site contains steep slopes, which are downward and western facing toward Lake Hills Connector. Most of the site is heavily forested with existing vegetation including a canopy of Douglas fir and big leaf maple. The understory on the site consists of hazelnut, Himalayan blackberry, laurel, sword fern, bracken fern, and English ivy. The lot is located within the Lake Hills neighborhood and was originally created within King County in the 1940s, prior to the incorporation of the City of Bellevue as its own jurisdiction which occurred in 1953. The lot is considered a legally created lot. **See figures 2a and 2b for the existing site condition**.

Figure 2a

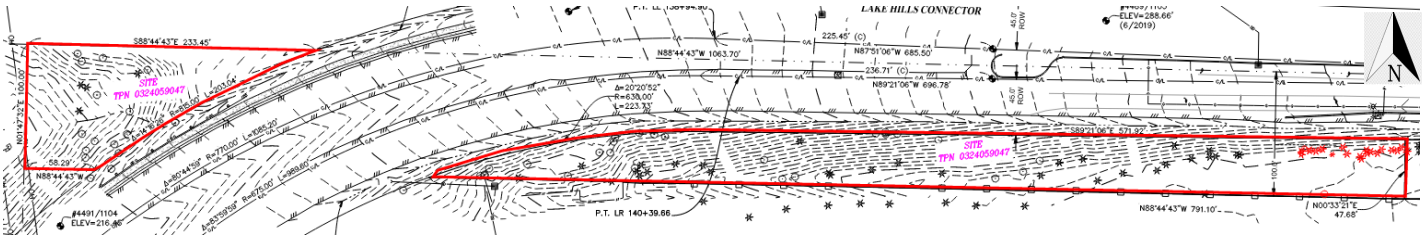


Figure 2b

B. Zoning & Land Use Context

The property is zoned Single-Family Residential (R-1.8) and has a Comprehensive Plan Land Use Designation of Single-Family Low Density (SF-L).

Figures 3 and 4 Zoning and Comprehensive Plan Designation

D. Critical Areas Functions and Values

i. Geologic Hazard Areas

Geologic hazards pose a threat to the health and safety of citizens when commercial, residential, or industrial development is inappropriately sited in areas of significant hazard. Some geologic hazards can be reduced or mitigated by engineering, design, or modified construction practices. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided (WAC 365-190).

Steep slopes may serve several other functions and possess other values for the City and its residents. Several of Bellevue's remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for groundwater, which drains from hillsides to provide a water source for the City's wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City,

providing a “green” backdrop for urbanized areas enhancing property values and buffering urban development.

ii. Habitat Associated with Species of Local Importance

Urbanization, the increase in human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (McKinney 2002, Blair 2004, Marzluff 2005 Munns 2006), is a major cause of native species local extinctions (Czech et al 2000), and is likely to become the primary cause of extinctions in the coming century (Marzluff et al. 2001a). Cities are typically located along rivers, on coastlines, or near large bodies of water. The associated floodplains and riparian systems make up a relatively small percentage of land cover in the western United States, yet they provide habitat for rich wildlife communities (Knopf et al. 1988), which in turn provide a source for urban habitat patches or reserves. Consequently, urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including songbirds, at an intermediate level of development (Blair 1999, Marzluff 2005).Protected wild areas alone cannot be depended on to conserve wildlife species. Impacts from catastrophic events, environmental changes, and evolutionary processes (genetic drift, inbreeding, colonization) can be magnified when a taxonomic group or unit is confined to a specific area, and no one area or group of areas is likely to support the biological processes necessary to maintain biodiversity over a range of geographic scales (Shaughnessy and O’Neil 2001). As well, typological approaches to taxonomy or the use of indicators present the risk that evolutionary potential will be lost when depending on reserves for preservation (Rojas 2007). Urban habitat is a vital link in the process of wildlife conservation in the U.S.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

Excluding lot coverage as discussed in Section VII, the R-1.8 zoning dimensional requirements found in LUC 20.20.010 are generally met by the proposed house, but conformance will be verified during building permit review. All setbacks, height, lot coverage by structure, and impervious surface may be required to be verified by survey through the building permit inspection process. **See Conditions of Approval for building permit in Section X of this report. See Conditions of Approval in Section IX of this report.**

R-1.8	Allowed	Proposed	Complies
Front Setback	30 feet	10 feet	See Section VII.C
Rear Setback	25 feet	10 feet	See Section VII.C
Side Setback	5 feet	30 feet	Complies
Combined Side	15 feet	100+ feet	Complies
Lot Coverage*	35%*	20%*	Complies*

Impervious Surface	45%	6.8%	Complies
Greenscape	50%	94%	Complies
Floor Area Ratio	0.5	0.13	Complies
Height	30 feet	27.5 feet	See Section VII.C
Façade Height	40 feet	31.3 feet	Complies

**Lot coverage is calculated after subtracting all critical areas and stream critical area buffers, pursuant to LUC 20.20.010(13).*

See Figure 5a and 5b for the proposed height limit and structure setback designations highlighted below:

Figure 5a

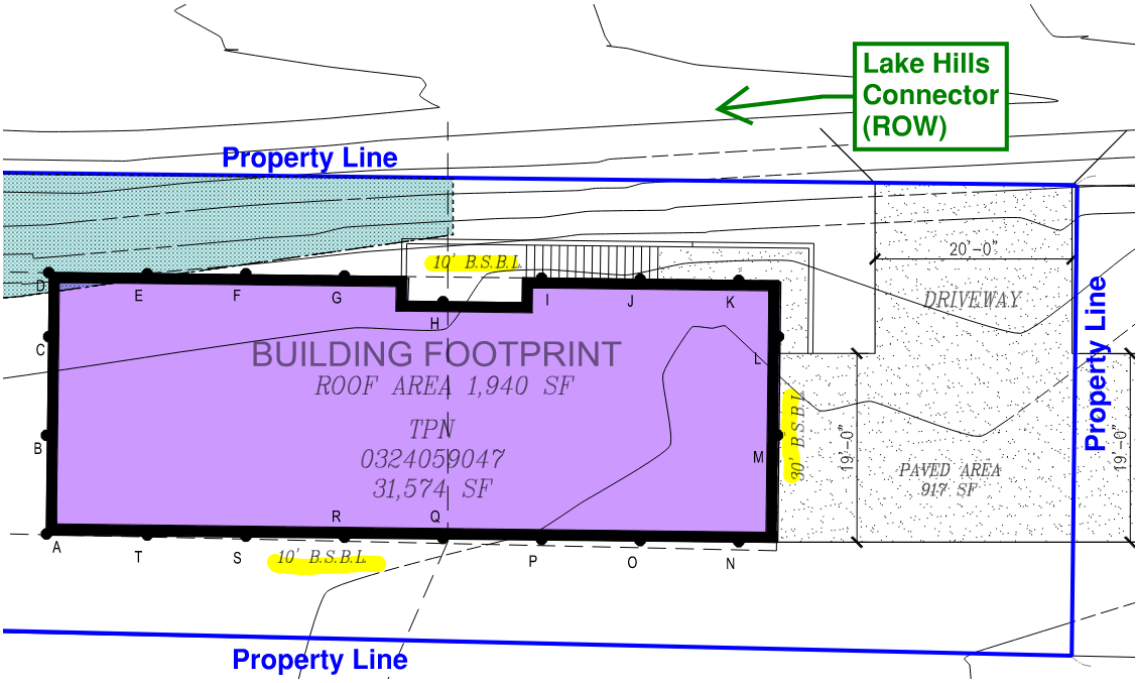
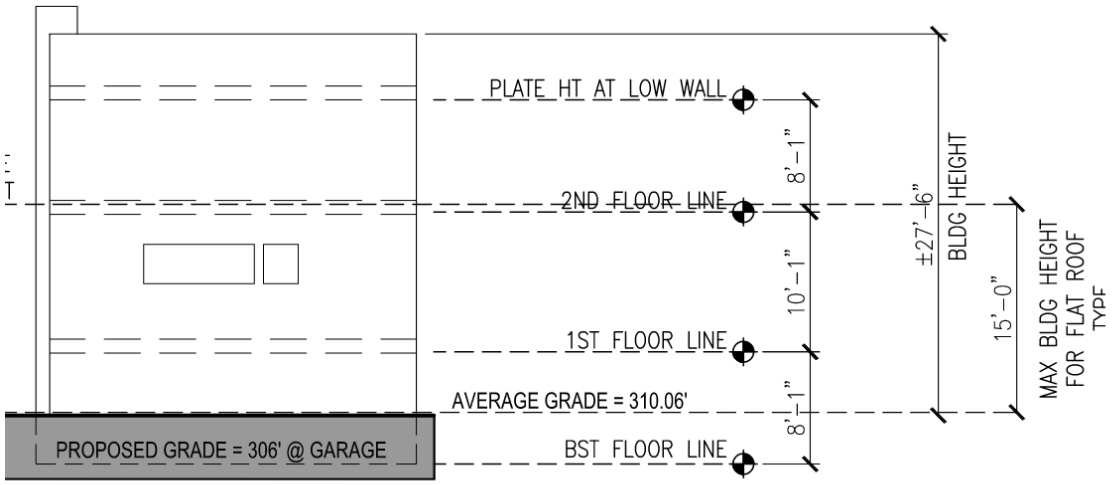


Figure 5b



WEST ELEVATION

B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Area Overlay District (LUC 20.25H) establishes performance standards and procedures that apply to development on any site which contains in whole or in part any portion designated as critical area, critical area buffer, or structure setback from a critical area buffer. This site contains a steep slope with a 50-foot buffer. The project proposal includes the modification of a portion of a steep slope critical area and 50-foot top-of-slope buffer to facilitate the construction of a single-family residence and a shared driveway. **See Figures 6a and 6b for steep slope and buffer area dimensions.**

Figure 6a

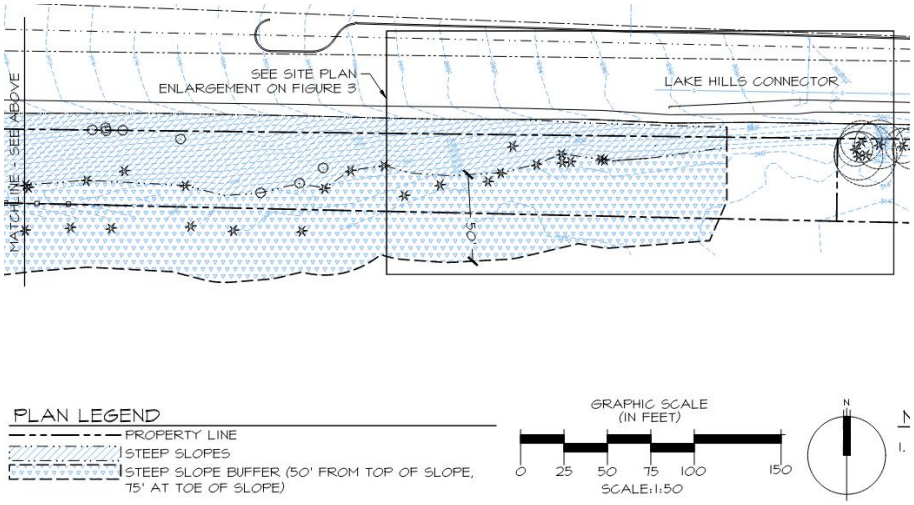
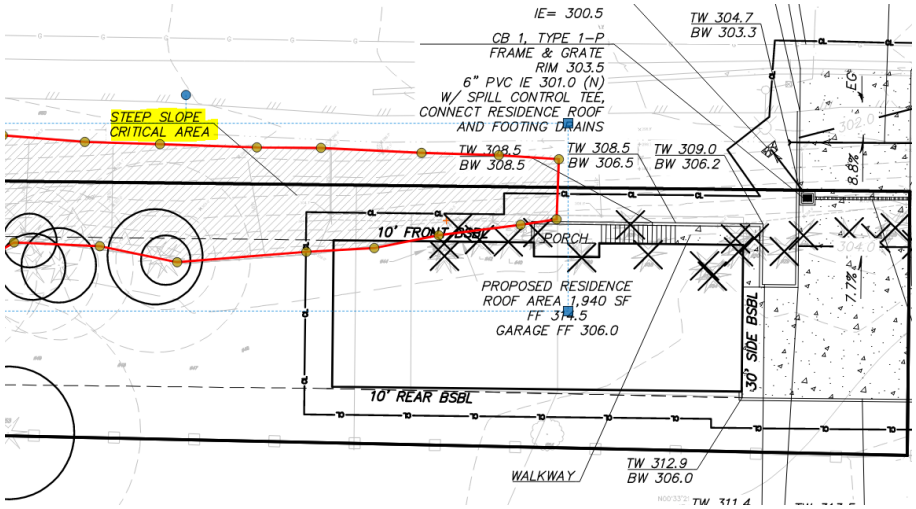


Figure 6b



The project is subject to the following performance standards which are reviewed below.

i. Consistency with LUC 20.25H.125

Development within a landslide hazard or steep slope critical area or the critical area buffers of such hazards shall incorporate the following additional performance standards in design of the development, as applicable.

1. **Structures and improvements shall minimize alterations to the natural contour of the slope and foundations shall be tiered where possible to conform to existing topography;**

   Finding: In order to facilitate the proposed shared driveway and conventional shallow spread foundations, a temporary shoring wall will be utilized, which will support the existing topography during construction. Additionally, the applicant has proposed that the basement footings be embedded at the same elevation as the elevation at the base of the slope to ensure existing contours of the slope will be maintained. This standard is met.

2. **Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;**

   Finding: Due to the site's location near an intersection and its unique and narrow shape, avoidance of the steep slope critical area is not possible. However, only 193 square feet of the 1,658 square foot proposed impact will be within the steep slope critical area. The applicant has designed the proposed residence to mimic a townhome to minimize impact to the steep slope critical area and, therefore, preserving a majority of the site's forested vegetation. Additionally, the proposed driveway was designed with the minimum necessary width and length to allow for adequate ingress, egress, and turnaround to the residence and residence on the neighboring property to the east. This standard is met.

3. **The proposed development shall not result in greater risk or a need for**

increased buffers on neighboring properties;

Finding: The geotechnical report and addendums prepared by Nelson Geotechnical Associates, Inc dated November 2, 2023 (Attachment 3, pg. 7) state that "*provided the recommendations are following during construction, the areas disturbed by construction should remain stable. Therefore, the risk of damage to the proposed development or to adjacent properties from soil instability should be minimal, and the proposed grading and development should not increase the potential for soil movement.*" The property owner will be required to execute a Hold Harmless Agreement releasing the City from liability for any improvements within the critical area or critical area buffer.

See Hold Harmless Agreement Condition of Approval in Section IX of this report.

4. **The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall;**

   Finding: The residence foundations are proposed as a full basement with existing topography remaining undisturbed, as the proposed shoring will help retain the on-site slopes without the need for grading. Additionally, grading of artificial slopes is not proposed as part of this project. This standard is met.

5. **Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer;**

   Finding: Impervious surfaces have been minimized by consolidating the proposed improvements within a specific development area to the eastern portion of the subject property. Additionally, the only proposed impervious surfaces within the development area are the roof and driveway areas. This standard is met.

6. **Where change in grade outside the building footprint is necessary, the site retention system should be stepped and re-grading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;**

   Finding: Any changes in grade outside of the foundation is not proposed nor is any yard area within the steep slope. This standard is met.

7. **Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;**

   Finding: The proposed residence will utilize a foundation comprised of conventional shallow spread footings and retaining walls as building walls for the proposed

basement. No freestanding retaining devices are proposed as part of this project proposal. This standard is met.

8. **On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification;**

   Finding: Grading outside of the footprint of the proposed residence is not proposed. Additionally, the proposed residence will have a full basement, which "should be sufficient to extend structure loads to the core/base of the site slopes. Shoring around the proposed foundation will retain existing topography around the proposed residences. This standard is met.

9. **On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types; and**

   Finding: The project proposal does not include parking or garage within the steep slope critical area. This standard is not applicable.

10. **Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.**

    Finding: As described previously all temporary and permanent disturbance will be mitigated per the submitted mitigation and monitoring plan. The planting on the site is to be monitored for five years per the submitted plans. **See restoration, mitigation, and monitoring conditions of approval in Section IX of this report.**

ii. Consistency with Critical Areas Report LUC 20.25H.230

The applicant supplied a complete critical areas report (attachment 4) prepared by Altmann Oliver Associates; LLC dated 05/02/2024. The report notes that the eastern portion of the site immediately adjacent to the proposed work area is degraded in vegetation and habitat. A mitigation and enhancement plan is proposed, which will include the removal of invasive plant species and re-planting the degraded or sparsely vegetated areas with a variety of native plant species. "*Implementation of this plan will increase critical area functions over current conditions*." (attachment 4, pg. 4) The report met the minimum requirements in LUC 20.25H.250**.**

iii. Consistency with Critical Areas Report LUC 20.25H.140 & 20.25H.145

The modification of a steep slope critical area and the reduction of a steep slope buffer requires a critical areas report as part of the application for a Critical Area Land Use Permit. The applicant has obtained the services of a qualified geotechnical engineering company to study the site and document the observed conditions. Staff has reviewed the following documents:

Geotechnical Report (November 2, 2023) and Addendum (January 18, 2024) prepared by Katelyn S, Brower, GIT; Carston T. Curd, LG; and Khaled M. Shawish, PE; Nelson Geotechnical Associates, INC. (attachment 3, in file)

The geotechnical report notes the site is mapped as Vashon glacial till. Vashon till is described as a glacially overridden, non-sorted mixture of silt, sand, and gravel. Generally, throughout the site, silty sands and gravels at relatively shallow depths were found, which is consistent with the description of glacial till soils. The report indicates no observe groundwater seepage or evidence of significant slope instability within or in the immediate vicinity of the property during, such as deep-seated landsliding, were observed. As a result, a portion of the 50-foot top-of-slope buffer was reduced to 0-feet (attachment 1)

Additionally, the geotechnical analysis in the report documented that "*the clearing of vegetation within the area of the proposed development is feasible and should not adversely impact existing slope stability conditions provided the recommendations provided in this report are strictly followed*" (pg.9) The geotechnical engineer provided recommendations for foundation and foundation wall construction, erosion, and site drainage, among other recommendations. **See Section IX for conditions of approval, and for information on requirements for geotechnical monitoring and hold harmless letter submittal.**

IV. Public Notice and Comment

Application Date:	April 11, 2023
Public Notice (500 feet):	May 18, 2023
Minimum Comment Period:	June 1, 2023

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on the date noted above. The Critical Areas Land Use Permit and Variance were submitted and noticed concurrently with the Variance. The notice was mailed to property owners within 500 feet of the project site. The City received several written comments from the public. A summary of the comments and staff responses are provided below:

Comment: The house size statistics shown considers new homes not existing homes. There are no houses like the one proposed on tiny properties. The proposed design shows a full basement making the home 3 stories which is it out of ordinary for the neighborhood. Adjacent neighbors had concerns regarding the proposed size of the house and how it will complement the existing homes in the neighborhood. Additionally, concerns were raised regarding living square footage and the lot size for this single-family home.

Response: The height of the proposed house on this site is 2.5-feet less than the maximum building height in the R-1.8 land use district which is 30 feet to the top of a flat roof or 35 feet to the top of a pitched roof form. A variance is needed to exceed the 15' height limitation described in LUC 20.20.070.B as noted in Section 1 of this report. The total structural footprint

is 1,903 square feet and the gross floor area is 5,688 square feet. The square footages proposed are smaller on lots over an acre in Bellevue, like the subject property. Additionally, as discussed in Section VII.C., the applicant provides mitigation by to exceeding Floor Area Ratio (FAR) by providing a 7.5-ft side yard structure setback and a 45-degree daylight plane, which is allowed by the Land Use Code.

Comment: The location of the proposed driveway is not ideal as it affects the sight distances and traffic flow of vehicles along and close to Lake Hills Connector and the Lake Hills Connector and 140th Avenue SE intersection. It may cause accidents.

Response: The City of Bellevue Department of Transportation's Right of Way Use Division provided written correspondence on the proposed driveway location and configuration under Predevelopment Services Application, 20-123627-DC (attachment 6). The proposed driveway shall comply with COB Design Manual section 5 Driveways and Driveway in addition to other restrictions. The proposed design is to allow the drivers to turnaround on site, which would prohibit the need to backout onto Lake Hills Connector. The proposed shared driveway will also be limited to right-turn in and out only for this lot and its neighboring lot to the east (803 Lake Hills Connector).

Comment: Concerns were received regarding a reduction in setbacks and slope stability by the requested variance from the required 30' front and 25' rear setback. Deviating from these setbacks poses a direct threat to the stability of the surrounding property, particularly given the presence of critical steep slopes in the area. It is understood that development on steep slopes disrupts natural absorption functions, leading to increased runoff, faster water flow, and diminished soil protection. The additional hard surfaces resulting from the development will shed increasing amounts of water from the buildings, pavement, and compacted soil. This will cause water runoff that will not be able to soak into the ground. This exacerbates the amount of runoff that needs to be managed and places additional strain on existing drainage systems and downstream erosion risk.

Response: The recommendations within the applicant's geotechnical report (attachment 3) for the setbacks and slopes will help protect the slopes from the proposed development. The geotechnical engineer has indicated that due to the site constraints from the property shape, they recommended an effective setback, which is the distance from the face of the slope to the base of the foundation, rather than a horizontal distance to the top of the slope. The foundations for this project will be advanced to a depth that will not affect the slope through structure loading. Drainage from the additional roof areas will be routed to approved systems and will not be allowed to flow over the site slopes and, therefore, the impervious surface proposed should not increase runoff threat to the slopes on or near the site. Additionally, the applicant's Critical Areas Report (attachment 4) proposes mitigation planting which will also improve slope stability and erosion control on the slope. While the setback reductions locate the proposed home closer within the steep slope area, the requested front and rear yard setbacks are not related to the steep slope critical areas or slope stability. The setback reductions are proposed to allow the construction of the home on the site due to the site's

narrow and long shape. Additionally, the geotechnical report's storm drainage recommendations state that finished ground be sloped at a minimum gradient of three percent for a distance of at least 10 feet away from the proposed structure. "*Runoff generated on this site should be collected and routed into a permanent discharge system. This should include all downspouts and runoff generated on all hard surfaces and yards areas. Under no circumstances should water be allowed to flow uncontrolled over the site slopes*" (attachment 3, pg.19). Development will be constructed in such a way that water will not be allowed to collect in any area where footings or slabs are to be constructed.

Comment: Trees and their roots are what is holding that hill and the weight above it. There is still one big lot above this site, and in the future when they want to subdivide, all that weight of new constructions will not hold.

Response: Per the geotechnical report, the installation of shoring walls and extending the residence basements down to the elevation of the base of the northern steep slopes will safeguard the residences and ensure the development does not negatively affect the stability of the site slopes. With the recommendations incorporated, all structure loads will be advanced to the base of the site slopes so that no structure loading will occur above the slopes. The additional shoring wall will provide stability to the cuts that will be made into the slopes to facilitate construction of the residences. Additionally, the applicant proposes over 3,700 square feet of mitigation planting to improve slope stability and erosion control. Lastly, the amount trees proposed for removal are the minimum necessary to construct the proposed residence, which is only 1,930 square feet in size. Only four (trees) from within the steep slope critical area and critical area buffer are to be removed. The project also proposes to retain more than 30% of the site's total diameter inches.

Comment: Granting variances opens the door for other people to want to do the same.

Response: Please see Section VII.C. of this staff report as an applicant must comply with the variance standards noted in LUC 20.30G.140.A in order to receive an approval.

V. Summary of Technical Reviews

A. Clearing and Grading

The Clearing and Grading Division of the Development Services Department has reviewed the proposed site development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff approved the application with the associated **condition of approval in Section IX of this report for Rainy Season Restrictions.**

B. Utilities

The Utilities Department has reviewed the proposed site development and has no concerns with the application.

C. Transportation

The Transportation Department has reviewed the proposed site development and has no

concerns with the application given their previous review under pre-development services 20-123627 DC.

VI. State Environmental Policy Act (SEPA)

Per BCC 22.02.032 and WAC 197-11-800(1) construction and associated grading of one single-family residence and improvements located in critical areas and critical areas is exempt from SEPA review.

VII. Decision Criteria

A. Critical Areas Report Decision Criteria-Proposals to Reduce Regulated Critical Area Buffer LUC 20.25H.255.B. The Director may approve, or approve with modifications, a proposal to reduce the regulated critical area buffer on a site where the applicant demonstrates;

1. **The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions;**

   Finding: The proposal includes plans to restore portions of a degraded steep slope critical area and steep slope buffer with the removal of invasive plant species and the planting of a variety of native vegetation within the steep slope and steep slope buffer. Restoration and enhancement activities are proposed to result in overall net gain in critical area and critical area buffer functions. This criterion is met.

2. **The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist;**

   Finding: The proposed restoration plan will result in an overall net gain in critical area to the ecosystem by increasing plant species and structural diversity of the degraded habitat on site. This criterion is met.

3. **The proposal includes a net gain in stormwater quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer;**

   Finding: The proposal includes planting of native vegetation within steep slope and steep slope buffer areas, in addition to a stormwater drainage plan, which is intended to meet all City of Bellevue and Washington State Department of Ecology (DOE) stormwater standards. This criterion is met.

4. **Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts;**

   Finding: This is a proposal to construct one (1) single-family residence and a shared

driveway. The applicant is proposing mitigation proportional to the impact and has included a mitigation and restoration plan with the proposal. To ensure installation and appropriate maintenance of the proposed and required mitigation the applicant is required to submit a financial security device meeting the requirements of LUC 20.40.490. Mitigation measures must be installed before occupancy is granted and maintenance of required plantings is required for a period of five years. **See Section IX for condition of approval associated with assurance device requirements.**

5. **The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and**

   Finding: The project proposal to construct one (1) single-family residence and a shared driveway within a steep slope critical area and steep slope buffer will result in the removal of invasive species on-site and the installation of native vegetation to enhance and restore the functions and values provided by the critical area and critical area buffer. This criterion is met.

6. **The resulting development is compatible with other uses and development in the same land use district.**

   Finding: The project proposal maintains consistency with the surrounding residential land use district. This criterion is met.

B. 20.30P.140 Critical Area Land Use Permit Decision Criteria – Decision Criteria

The Director may approve, or approve with modifications an application for a Critical Area Land Use Permit if:

1. **The proposal obtains all other permits required by the Land Use Code;**
   The applicant must obtain the required development permits and other necessary construction permits before beginning any work. **See Building Permit Conditions of Approval in Section IX of this report.**

2. **The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;**
   Impacts to steep slopes and their associated buffers are unavoidable due to the site's narrow shape and immediacy to Lake Hills Connector. However, the proposal is located as far away from the steep slope area as possible and in a location on the site so as to minimize permanent impacts to the steep slope critical area impacts. This criterion is met.

3. **The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;**
   As discussed in Section III of this report, the applicable performance standards of LUC

Section 20.25H are being met and, therefore, this criterion is met.

4. **The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;**
   The property is served by adequate public facilities. This criterion is met.

5. **The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and**
   The proposed vegetation planting is sufficient to meet the requirements for mitigation and restoration planting. To guarantee the installation of the mitigation and restoration planting, an installation surety that is 150 percent of the cost of plants and their installation will be required. Additionally, the planting will be maintained and monitored for a period of five years. Annual reports will be submitted to the City once a year. The reports shall include a copy of the approved plan and photographs and written narrative regarding the success the planting has had in regard to the goals and performance standards found in the submitted mitigation plan. Monitoring will be guaranteed by a surety that will be held for the five-year monitoring period. Based on the submitted mitigation plans, the required installation surety is required to be 20 percent of the cost of plants and maintenance and monitoring for five years. The sureties will be in forms provided to the applicant that will be completed with a financial institution and submitted to the City prior to building permit issuance. **See Installation, Maintenance, and Monitoring Conditions of Approval in Section IX of this report.**

6. **The proposal complies with other applicable requirements of this code.**
   As discussed in this report, the proposal complies with all other applicable requirements of the Land Use Code and, therefore, this criterion is met.

C. 20.30G.140 VARIANCE DECISION CRITERIA

The Director may approve or approve with modifications an application for a variance from the provisions of the Land Use Code if:

1. **The variance will not constitute a grant of special privilege inconsistent with the limitation upon uses of other properties in the vicinity and land use district of the subject property**

   Finding: The variance requested is to reduce both the 30-foot front and 25-foot rear yard structure setbacks each to 10 feet and increase the building height limitation of 15 feet on a lot that has a width that does not meet 70 percent of the minimum required in the R-1.8 land use district to a height of 27.5 feet. The variance does not constitute a grant of special privilege as it allows the construction of one (1) single-family residence which a legal lot is entitled to. Full compliance with the front and rear yard structure setbacks required in the land use code would prevent any development of the lot for the construction of a single-family residence. Additionally, the construction of a single-family residence with a building height limitation of 15 feet would not be consistent with the allowed heights granted to homes in the vicinity of the site.
   The applicant has designed the proposed residence like a townhome that is more

compact and vertical, with living space located above the garage. Also, the applicant proposes a total gross floor area of 5,688-square feet, including the basement, which is comparable with properties within a ¼ of a mile of the subject lot. The applicant's proposed floor area ratio does not exceed the .5 threshold, as the site size is over 44,000 square feet, but does provide a 7.5-foot side yard structure setback. See Figures Attachment 1 for site and elevation drawing.

However, the proposed residence will be required to conform to side yard setbacks, lot coverage, impervious surface, Floor Area Ratio and greenscape requirements. Approval of this variance would allow the applicant to achieve the developable area that is afforded to other similarly zoned and constrained sites in the area while keeping with the residential character of the Lake Hills neighborhood area. This criterion is met.

2. **The variance is necessary because of special circumstances relating to the size, shape, topography, location or surroundings of the subject property to provide it with use rights and privileges permitted to other properties in the vicinity and in the land use district of the subject property**

Finding: The proposed variance to the front and rear yard structure setbacks and the building height are necessary to allow development. The property has a width of only 47 feet with the majority of the property also being encumbered by steep slopes which makes any development only possible with a variance to setbacks in order to allow development of a single-family residence with the least impact to the steep slope critical area and steep slope critical area buffer. Additionally, based on the building height calculation provided in Section I of this report, a Variance to building height is not inconsistent with homes approved in vicinity and in Bellevue. The proposed building height of 27.5-feet at the highest peak from average existing grade is below the maximum 30-feet allowed within the R-1.8 land use district. This criterion is met.

3. **The granting of the variance will not be materially detrimental to property or improvements in the immediate vicinity of the subject property**

Finding: The granting of a setback and height variance will not be materially detrimental to property improvements in vicinity. The proposed height is consistent with the zoning and maximum height allowed on properties in vicinity. Additionally, the proposed front yard and rear yard setbacks are necessary to ensure the development of a single-family home on this narrow lot. This development is consistent with the zoning of the area and is not detrimental to adjacent properties. The proposed home does not limit future development or use of adjacent property. Lastly, the height variance assists in avoidance by placing more structural coverage in a smaller footprint area. This criterion is met.

4. **The variance is not inconsistent with the Comprehensive Plan**

Finding: The site is in the Southeast Bellevue Subarea and designated Single-Family Low Density (SF-L) per the Comprehensive Plan. The overall density (R-1.8) of the

proposal complies with the site's designation. The proposal is supported by the following policies of the Comprehensive Plan:

Subarea Goals and Policies

POLICY S-SE-15. *Limit clearing and grading in new developments to the minimum necessary for access, utilities, and building sites.*

POLICY S-SE-16*. Encourage the retention of natural vegetation during and after development to minimize potential erosion and as a significant design feature of the area*

Environmental Policies

POLICY EN-30. *Regulate land use and development to protect natural topographic, geologic, vegetational, and hydrological features*

POLICY EN-31*. Protect geologically hazardous areas, especially forested steep slopes, recognizing that these areas provide multiple critical areas functions*

VIII. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the construction of the proposed house and improvements and setback and building height variance. **Approval of this Critical Areas Land Use Permit and Variance does not constitute a permit for construction. A building permit, clear and grade permit, and/or utility permit is required and all plans are subject to review for compliance with applicable City of Bellevue codes and standards.**

Note- Expiration of Approval:

- In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a clearing and grading permit or other necessary development permits within one year of the effective date of the approval.

- Variances shall run with the land in perpetuity if recorded with King County Recorder's Office within 60 days following the City's final action.

IX. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Tom McFarlane, 425-452-5207

Transportation Code- BCC 14.60	William Bou, 425-452-7910
Utility Code- BCC Title 24	James Henderson, 425-452-7889
Land Use Code- BCC Title 20	Jordan Borst, 425-452-6997
Noise Control- BCC 9.18	Jordan Borst, 425-452-6997

The following conditions are imposed under the Bellevue City Code referenced:

1. **Building Permit:** Approval of this Critical Areas Land Use Permit does not constitute an approval of a development permit. Application for a building permit or other required permits with clear and grade review must be submitted and approved. Plans submitted as part of either permit application shall be consistent with the activity permitted under this approval. These conditions of approval shall be submitted with the building permit application along with responses describing how they have been or will be met as part of the building permit.

   Authority: Land Use Code 20.30P.140; Clearing & Grading Code 23.76.035
   Reviewer: Jordan Borst, Land Use; Tom McFarlane, Clearing & Grading

2. **Height Limit:** The primary residence shall not exceed 27.5 feet in height from average existing grade to the highest peak. The building height will be verified by survey through the building permit inspection process

   Authority: Land Use Code 20.30G.140.A.1
   Reviewer; Jordan Borst, Land Use

3. **Minimum Front & Rear Yard Structure Setbacks:** No structure shall be located less than 10 feet from the subject property's lines facing Lake Hills Connector and no less than 10 feet from the rear property line. These setbacks will be verified by survey through the building permit inspection process.

   Authority: Land Use Code 20.30G.140.A.1
   Reviewer: Jordan Borst, Land Use

4. **Vesting:** This staff report approving the variance and the associated site plan must be recorded with the King County Department of Records within 60 days from the date of variance approval to vest this approval. This variance approval will expire if the approval is not recorded. A copy of the recorded variance shall be submitted with the building permit application.

   Authority: Land Use Code 20.40.500
   Reviewer: Jordan Borst, Land Use

5. **Restoration of Temporary Disturbance:** All areas of temporary disturbance shall be determined and depicted on the plans submitted with the building permit. These areas

shall be restored with the planting depicted on the mitigation planting plan proposed for the site**.**

Authority: Land Use Code 20.30P.205
Reviewer: Jordan Borst, Land Use

6. **Geotechnical Review:** The project geotechnical engineer must review the final plans, including all foundation, retaining wall, shoring, and vault designs. A letter from the geotechnical engineer stating that the plans conform to the recommendations in the geotechnical report and any addendums and supplements must be submitted to the clearing and grading section prior to issuance of the construction permits.

   Authority: Clearing & Grading Code 23.76.050
   Reviewer: Tom McFarlane, Clearing & Grading

7. **Geotechnical Monitoring:** The project geotechnical engineer of record or his representative must be on site during critical earthwork operations. The geotechnical engineer shall observe all excavations and fill areas. In addition, the engineer shall monitor the soil cuts prior to construction of rockeries and verify compaction in fill areas. The engineer must submit field reports in writing to the DSD inspector for soils verification and foundation construction. All earthwork must be in general conformance with the recommendations in the geotechnical report.

   Authority: Clearing & Grading Code 23.76.160
   Reviewer: Tom McFarlane, Clearing & Grading

8. **Rainy Season Restrictions:** No clearing and grading activity may occur during the rainy season, which is defined as October 1 through April 30 without written authorization of the Development Services Department. Should approval be granted for work during the rainy season, increased erosion and sedimentation control measures, representing the best available technology must be implemented prior to beginning or resuming site work.

   Authority: Clearing & Grading Code 23.76.093
   Reviewer: Tom McFarlane, Clearing & Grading

9. **Planting Cost Estimate:** A cost estimate for the proposed mitigation and restoration plant installation must be submitted prior to Building Permit issuance.

   Authority: Land Use Code 20.30P.160
   Reviewer: Jordan Borst, Land Use

10. **Landscape Installation Assurance Device:** To ensure the required slope vegetation restoration and restoration of areas of temporary and permanent disturbance is completed, an installation assurance device is required in an amount equal to 150% of the cost of mitigation planting. The amount is determined by a cost estimate submitted as part of the building permit.

Authority: Land Use Code 20.30P.140 and 20.25H.220
Reviewer: Jordan Borst, Land Use

11. **Maintenance and Monitoring:** The planting area shall be maintained and monitored for 5 years as required by LUC 20.25H.220. An annual monitoring report is to be submitted to Development Services, Land Use Division in each of the five consecutive years following installation. The monitoring report shall include detailed information regarding the goals and standards outlined in the approved management plan. Photos from selected photo points shall be included in the monitoring reports to document the planting and ongoing success. As stated in the submitted maintenance and monitoring plan.

    Annual monitoring reports are to be submitted to Land Use each of the five years. The reports, along with a copy of the planting plan, can be sent to Jordan Borst at JBorst@bellevuewa.gov or to the address below:

    Land Use Division
    Development Services Department
    City of Bellevue
    PO Box 90012
    Bellevue, WA 98009-9012

    Authority: Land Use Code 20.30P.140; 20.25H.220
    Reviewer: Jordan Borst, Land Use

12. **Maintenance and Monitoring Assurance Device:** A maintenance assurance device in an amount equal to 20% of the cost of plants and for five years of maintenance labor and materials is required to ensure the plants are maintained and monitored. Release of this assurance device is contingent upon receipt of documentation reporting successful establishment in compliance with the approved management plan. Land Use inspection of the planting after 5-years is required to release the surety. The maintenance surety is required to be submitted prior to building permit issuance.

    Authority: Land Use Code 20.25H.220
    Reviewer: Jordan Borst, Land Use

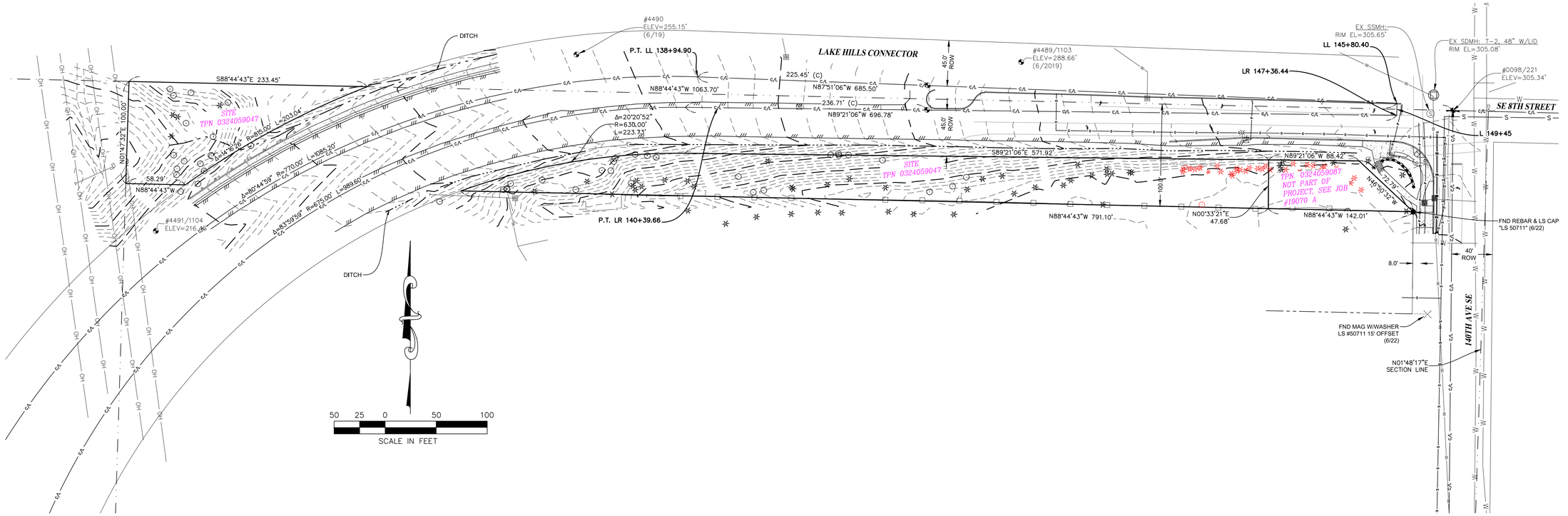
13. **Land Use Inspection:** Following installation of the mitigation planting the applicant shall call the inspection line and request a Land Use inspection of the planting area prior to final building inspection. Staff will need to find that the plants are in a healthy and growing condition. Land Use inspection is also required to release the maintenance surety at the end of the 5-year monitoring period. Release of the maintenance surety is contingent upon successful monitoring and maintenance and submittal of the annual monitoring reports.

    Authority: Land Use Code 20.30P.140
    Reviewer: Jordan Borst, Land Use

14. **Hold Harmless Agreement:** The applicant shall submit a hold harmless agreement in a form approved by the City Attorney which releases the City from liability for any damage arising from the location of improvements within a critical area buffer in accordance with LUC 20.30P.170. The hold harmless agreement is required to be recorded with King County prior to clearing and grading permit issuance. Staff will provide the applicant with the hold harmless form.

    Authority: Land Use Code 20.30P.170
    Reviewer: Jordan Borst, Land Use

BOUNDARY AND TOPOGRAPHIC SURVEY



LEGEND

(NOTE: NOT ALL SYMBOLS MAY APPEAR ON THE MAP)

- FOUND CONCRETE MONUMENT AS NOTED
- SET 1/2" REBAR/CAP, #50711
- FOUND 1/2" REBAR/CAP OR AS NOTED
- SET LINE STAKE
- SET NAIL W/LS WASHER, #50711
- (M) MEASURED DIMENSION
- (C) CALCULATED DIMENSION
- LUMINAIRE (LUM.)
- YARD LIGHT
- POWER METER
- UTILITY POLE
- GUY ANCHOR
- JUNCTION BOX (AS NOTED)
- CATCH BASIN (CB)
- STORM MANHOLE (SDMH)
- STORM DRAIN CULVERT
- SANITARY SEWER MANHOLE (SSMH)
- DIRECTIONAL ARROWS
- SECTION CORNER (AS NOTED)
- CONCRETE
- GRAVEL/SAND (AS NOTED)
- ASPHALT
- BUILDING LINE
- CHAINLINK FENCE
- WOOD FENCE
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- HOGWIRE FENCE
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- G GAS LINE
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- OH OVERHEAD/UNDERGROUND PWR. LINE
- SD STORM LINE
- S SEWER LINE
- DEC DECIDUOUS TREE
- CON CONIFEROUS TREE
- ROCKERY
- CONIFEROUS TREE / TWIN / CLUSTER
- DECIDUOUS TREE / TWIN / CLUSTER
- TREE W/ DRIPLINE
- STEEP SLOPE AREA: SLOPES OVER 40%, OVER 1,000 SQ. FT. WITH > 10.0' OF RISE PER LUC 20.25H.120 (2)

TREE LEGEND

- CONIFEROUS TREE / TWIN / CLUSTER (TO REMAIN)
- DECIDUOUS TREE / TWIN / CLUSTER (TO REMAIN)
- TREE W/ PROTECTION ZONE (TPZ) – PER ARBORIST
- TREE W/ CRITICAL ROOT ZONE (CRZ) – PER ARBORIST
- TREE TO BE REMOVED
- #1 - #55 TAG NUMBER PER ARBORIST REPORT (#1 – #55)
- #1111 SURVEYOR TOPO # OF TREE & ASSOC. TABLE #

REVISION HISTORY

1) 9-6-2022: COMPLETED TOPOGRAPHIC SURVEY & SLOPE ANAYLASIS.
2) 3-8-2024: FIELD LOCATED TREES IN DEVELOPMENT AREA.
3) 3-28-2024: REVISED TREE LABLES, TAGS & TABLES PER A.B.C. CONSULTING ARBORISTS LLC "HALL PRTECTION PLAN, DATED 3-26-2024 BY DANIEL J MAPLE ".
   - TREES RECOMENDING REMOVAL THEREIN HAVE BEEN SHOWN IN RED HEREON.
   - TREE PROTECTION ZONES & CRITICAL ROOT ZONES FOR TREES THAT AREA PROPOSED TO BE RETAINED HAVE SHOWN HEREON.

JOE W. WILLIS, JR. STATE OF WASHINGTON 50711 REGISTERED PROFESSIONAL LAND SURVEYOR
3/28/24

Title:
BOUNDARY AND TOPOGRAPHIC SURVEY
PORTION OF THE NE/4 OF THE NW/4 OF
SEC. 3, T24N, R5E, W.M.
BELLEVUE, KING COUNTY, WASHINGTON

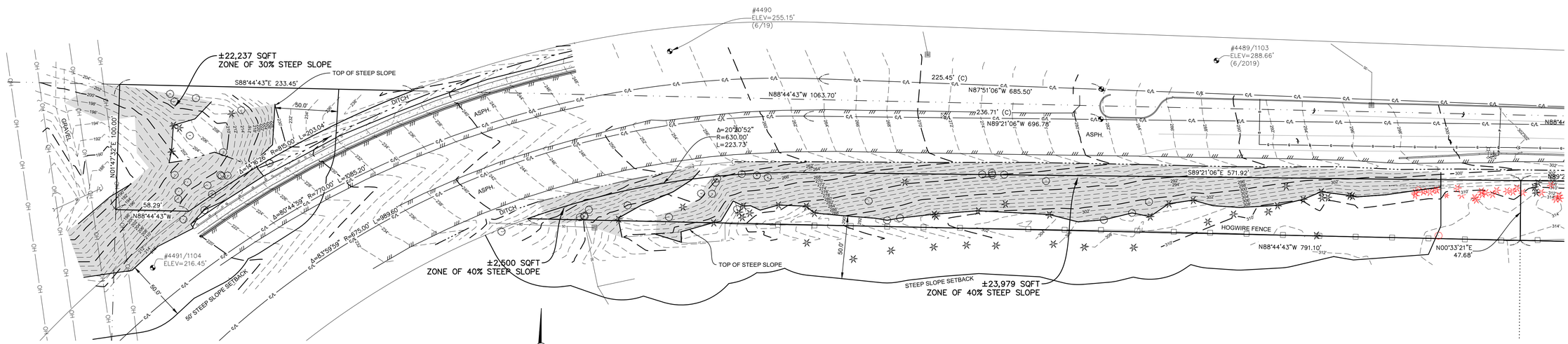
For:
R E T INVESTMENT TRUST
TPN 0324059047

Scale: Horizontal 1"=50' Vertical
Designed —— Drawn KAW Checked JWW Approved JWW Date 3/15/24

ALL Land Surveying
1901 Vernon Rd, Lake Stevens, WA
PO Box #440, Lake Stevens, WA 98258
Professional Land Surveyors
Phone (360) 568-4031
Email:info@AllLandSurveying.com

Job Number 19070B
SHEET 1B of 3B

BOUNDARY AND TOPOGRAPHIC SURVEY



40 20 0 40 80
SCALE IN FEET

BASIS OF BEARINGS - WA NORTH NAD83(2011)

HELD A BEARING OF NORTH 88°44'43" WEST ALONG THE NORTHERN LINE OF SECTION AS CALCULATED ON WASHINGTON SPC PER CITY OF BELLEVUE MONUMENT CARDS H0107 & H0098.

REFERENCES

PLAT OF DORALEE ACRES, VOL. 44, PG. 79, BOOK OF PLATS RECORDS OF KING COUNTY, WA.

HELD SECTION DATA FROM RECORD OF SURVEY RECORDED IN VOLUME 47, PAGE 235, UNDER KING COUNTY REC. NO. 8512239007.

RECORD OF SURVEY RECORDED IN VOLUME 107, PAGE 216, UNDER KING COUNTY REC. NO. 9602089002.

RECORD OF SURVEY RECORDED IN VOLUME 151, PAGE 24, UNDER KING COUNTY REC. NO. 20020321900002.

NOTES

1) INSTRUMENTATION FOR THIS SURVEY WAS A SOKKIA SX ROBOTIC TOTAL STATION.
2) PROCEDURES USED WERE FIELD TRAVERSE, MEETING OR EXCEEDING STANDARDS SET BY WAC 332-130-090.
3) THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS OF RECORD, OR OTHERWISE IF ANY.
4) THIS MAP REPRESENTS A JOB PERFORMED BY ME OR MY CONSTITUENTS AND CAN ONLY BE CONSIDERED AS REPRESENTATIVE OF THE SITE AT THE TIME OF MY SURVEY.
5) UTILITIES SHOWN HEREON ARE FROM FIELD LOCATION AT CENTER OF RIM AND THEIR EXACT LOCATIONS SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6) SEWER, STORM AND WATER LINES SHOWN HEREON ARE COPIED FROM CITY OF BELLEVUE GIS DATA.
7) CONTOUR SHOWN HEREIN ARE BASED ON A TOPOGRAPHIC FIELD SURVEY AND ARE SHOWN AT 2' CONTOUR INTERVALS.
8) THE THE NORTHEAST PORTION OF THE SUBJECT PROPERTY WAS RE SURVEYED WITH GREATER DETAIL ON 6/17/2022, TO DETERMINE THE EXTENT OF STEEP SLOPES ON & OFFSITE THE PROPERTY IN THE SOUTHERN RIGHT OF WAY OF LAKE HILLS CONNECTOR. THE CITY OF BELLEVUE DEFINES A STEEP SLOPE AS HAVING A RISE OF 10' OR GREATER, AT A SLOPE OF 40% OR GREATER, FOR A SLOPE AREA OF GREATER THAN 1,000 SQUARE FEET PER (LUC 20.25H.120(2)). **ONLY THE AREAS THAT MEET THIS DEFINITION HAVE BEEN SHADED.** LIMITED SPOT ELEVATIONS FROM THIS SURVEY HAVE BEEN PROVIDED BY REQUEST. SAID SLOPES ARE HEAVILY COVERED IN VEGETATION & WOODED SLASH PILES, BECAUSE OF THERE IS NO DEFINED "TOP" OR "TOE" OF SLOPE IN MANY OF THE SLOPE AREAS. THE TOPS AND TOES SHOWN HEREIN HAVE BEEN DISCERNED VIA MEAN ELEVATION OF THE HIGH VOLUME SLOPE SURVEY DATA UTILIZING 3D MODELING. ADDITIONALLY BREAKS IN SLOPE MODIFY AREAS OF THE SLOPES TO BE LESS THAN 10' OR LESS THAN 1,000 SQ. FT. PROVIDING THIS DATA ON A 2D MAP IS IMPRACTICAL.

LEGAL DESCRIPTION TPN. 0324059047

THE NORTH 100 FEET OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER LESS THE COUNTY ROAD, LESS THE EAST 150 FEET, SECTION 3, TOWNSHIP 24 NORTH, RANGE 5 EAST W.M.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

VERTICAL DATUM - NAVD88

HELD CITY OF BELLEVUE MONUMENTS ON VERTICAL MONUMENT #221 AT THE INTERSECTION OF SE 8TH ST ELEV=305.34'

LEGEND

(NOTE: NOT ALL SYMBOLS MAY APPEAR ON THE MAP)

- FOUND CONCRETE MONUMENT AS NOTED
- SET 1/2" REBAR/CAP, #50711
- FOUND 1/2" REBAR/CAP OR AS NOTED
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- SET NAIL W/LS WASHER, #50711
- (M) MEASURED DIMENSION
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- JUNCTION BOX (AS NOTED)
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- ROCKERY

STEEP SLOPE AREA: SLOPES OVER 40%, OVER 1,000 SQ. FT. WITH > 10.0' OF RISE PER LUC 20.25H.120 (2)

TREE LEGEND

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- #1111 SURVEYOR TOPO # OF TREE & ASSOC. TABLE #

CRITICAL SLOPE AREA (40% OR GREATER)
TPN. 0324059047

WEST PORTION

TOTAL SITE AREA:	13,733 SQFT
STEEP SLOPE AREAS ONSITE:	7,124 SQFT
STEEP SLOPE BUFFER ONSITE:	5,825 SQFT
UNENCUMBERED AREA ONSITE:	785 SQFT

EAST PORTION

TOTAL SITE AREA:	31,575 SQFT
STEEP SLOPE AREAS ONSITE:	16,764 SQFT
STEEP SLOPE BUFFER ONSITE:	11,996 SQFT
UNENCUMBERED AREA ONSITE:	2,814 SQFT

TREE TABLE
FOR TPN.0324059047
(NOT INCLUDED IN ARB. REPORT)

Point # ONSITE	Description
1238	16" FIR
1239	16" FIR
1240	12" FIR
1241	16" FIR
1242	14" FIR
1243	16" FIR
1244	16" FIR
1245	14" DEC
1246	14" DEC
1247	14" DEC
1254	16" FIR
1257	12" DEC
1258	16" FIR
1259	12" FIR
1262	10" TWIN DEC
1264	14" FIR
1265	14" FIR
1266	10" DEC
1267	18" FIR
1429	20" FIR
1430	12" FIR
1431	14" FIR
1432	10" FIR
1433	10" CDR
1434	10" CDR
1436	18" FIR
1437	12" DEC
1440	10" DEC
1458	3" DEC CLUSTER
1459	3" DEC CLUSTER
1469	20" FIR
1470	32" DEC
1472	10" TWIN DEC
1473	10" DEC
1474	48" DEC
1475	10" DEC
1476	14" FIR
1477	12" DEC
1487	22" FIR
1488	12" DEC
1493	14" DEC
1494	14" DEC
1495	12" DEC
1496	12" DEC
1734	22" DEC
1736	12" CDR
1738	26" DEC
1741	18" MAP
1742	16" TWIN DEC
1743	12" TWIN DEC
1745	18" TWIN DEC
1746	28" CDR
1747	32" CDR
1752	12" CDR
1753	8" DEC
1754	44" MAP
1755	8" MAP
1756	8" MAP
1760	12" TWIN DEC
1761	22" DEC
1762	10" DEC
1763	8" DEC
1764	20" DEC

TREE LEGEND
OFFSITE

Point # OFFSITE	Description
1260 os	12" DEC
1261 os	10" DEC
1263 os	12" DEC
1413 os	32" FIR
1415 os	28" FIR
1416 os	30" FIR
1418 os	32" FIR
1419 os	32" FIR
1420 os	32" FIR
1421 os	32" FIR
1422 os	28" FIR
1423 os	28" FIR
1460 os	3" DEC CLR.
1497 os	16" DEC
1730 os	18" DEC
1758 os	16" MAP
1759 os	14" DEC

JOE W. WILLIS JR. STATE OF WASHINGTON 50711 REGISTERED PROFESSIONAL LAND SURVEYOR
3/28/24

Title: BOUNDARY AND TOPOGRAPHIC SURVEY
PORTION OF THE NE/4 OF THE NW/4 OF
SEC. 3, T24N, R5E, W.M.
BELLEVUE, KING COUNTY, WASHINGTON

For: R E T INVESTMENT TRUST
TPN 0324059047

Scale: Horizontal 1"= 40' Vertical

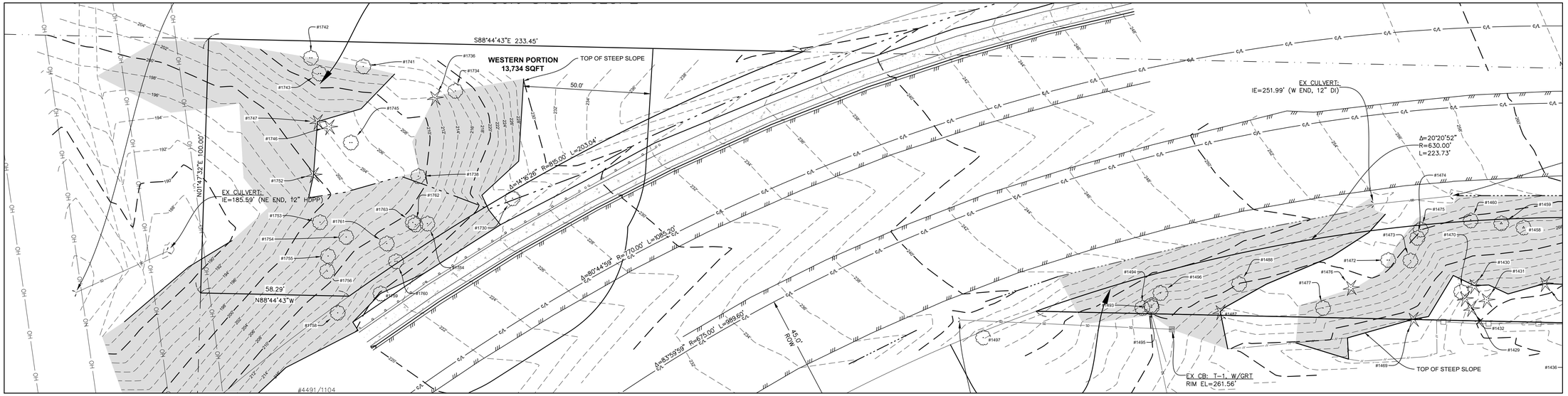
Designed ____ Drawn KAW Checked ____ Approved ____ Date 3/15/24

ALL Land Surveying
1901 Vernon Rd, Lake Stevens, WA
PO Box #440, Lake Stevens, WA 98258
Professional Land Surveyors
Phone (360) 568-4031 Email: info@AllLandSurveying.com

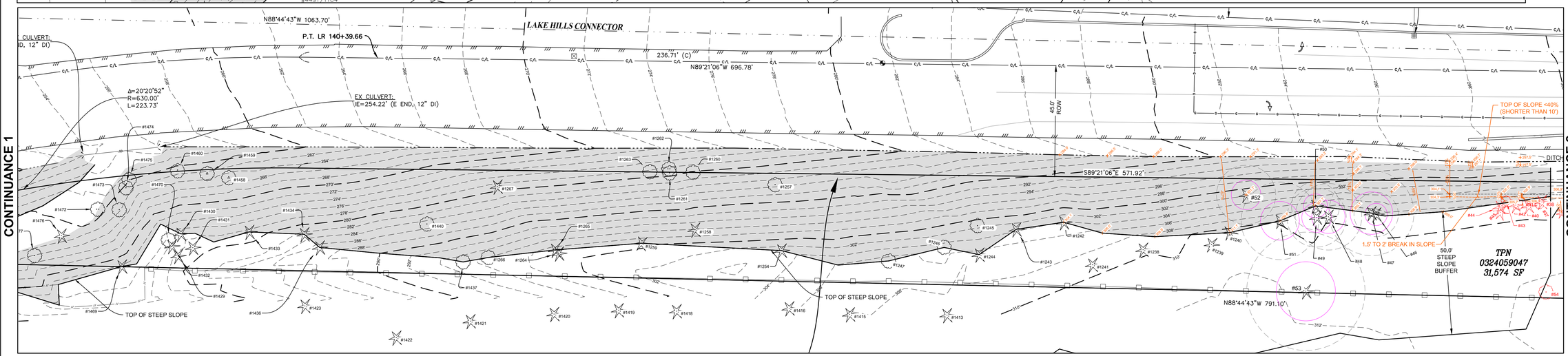
Job Number 19070B

SHEET 2B of 3B

BOUNDARY AND TOPOGRAPHIC SURVEY

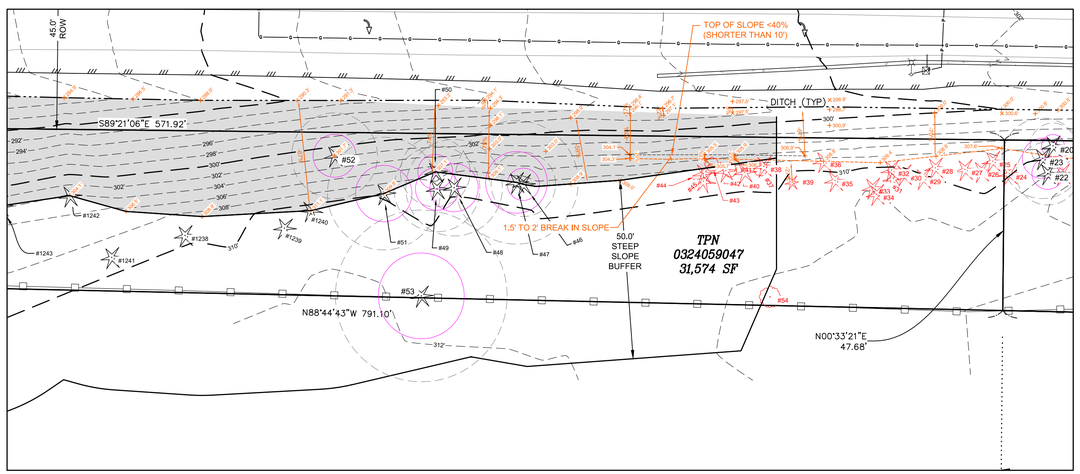


CONTINUANCE 1



CONTINUANCE 2

CONTINUANCE 2



TREE LEGEND

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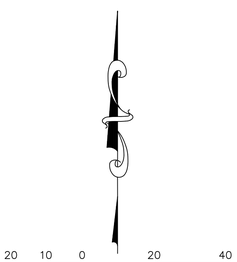

JOE W. WILLIS JR.
STATE OF WASHINGTON
50711
REGISTERED
PROFESSIONAL LAND SURVEYOR
3/28/24

Title: BOUNDARY AND TOPOGRAPHIC SURVEY
PORTION OF THE NE/4 OF THE NW/4 OF
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BELLEVUE, KING COUNTY, WASHINGTON

For: R E T INVESTMENT TRUST
TPN 0324059047

Scale: Horizontal 1" = 20' Vertical
Designed — Drawn KAW Checked — Approved — Date 3/15/24

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PO Box #440, Lake Stevens, WA 98258
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Phone (360) 568-4031
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Job Number 19070B

SHEET 3B of 3B

NW 1/4 SECTION 3, TOWNSHIP 24 N, RANGE 5 E, W.M.

804 LAKE HILLS CONNECTOR

LEGAL DESCRIPTION:

N 100 FT OF NE 1/4 OF NW 1/4 LESS CO RD LESS E 150 FT

PER KING COUNTY IMAP

IMPERVIOUS AREAS NOTE:

SITE AREA: 44,430 S.F. (±1.020 AC.)

EXISTING IMPERVIOUS AREAS:
NONE

PROPOSED IMPERVIOUS AREAS ON LOT:

ROOF	1,940 S.F.
WALKWAY	73 S.F.
PORCH	114 S.F.
DRIVEWAY	917 S.F.
TOTAL PROPOSED IMPERVIOUS	3,044 S.F. (6.8%)
OFFSITE DRIVEWAY	937 S.F.
TOTAL P.G.I.S.	1,854 S.F.

SIGNIFICANT TREE RETENTION NOTES:

1. THE APPLICANT IS REQUIRED TO SAVE 30% MINIMUM OF TOTAL DBH OF THE SIGNIFICANT TREES ON SITE.
2. 804 LAKE HILLS CONNECTOR CONTAINS 396.2 INCHES OF VIABLE EXISTING DBH AND WILL RETAIN 119 INCHES DBH EQUALING 30% RETENTION. SEE NOTE 4.
3. SEE ARBORIST REPORT FOR IN DEPTH CALCULATIONS.
4. PER ARBORIST REGARDING THIS PROPERTY: "ONLY THE TREES NEAR THE DEVELOPED PORTION OF LOT 2 WERE INVENTORIED. SEVERAL HUNDRED INCHES OF DBH ON LOT 2 WERE NOT INVENTORIED; RETAINED DBH OF LOT 2 WILL GREATLY EXCEED THE REQUIRED 30% TREE RETENTION."

TESC LEGEND:

FOR ADDITIONAL TESC DETAILS REFER TO CSWPPP

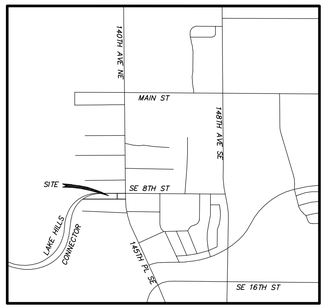
CRZ
TPZ

SIGNIFICANT TREES TO BE REMOVED

SIGNIFICANT ONSITE TREE TO BE RETAINED WITH CORRESPONDING CRZ AND TPZ

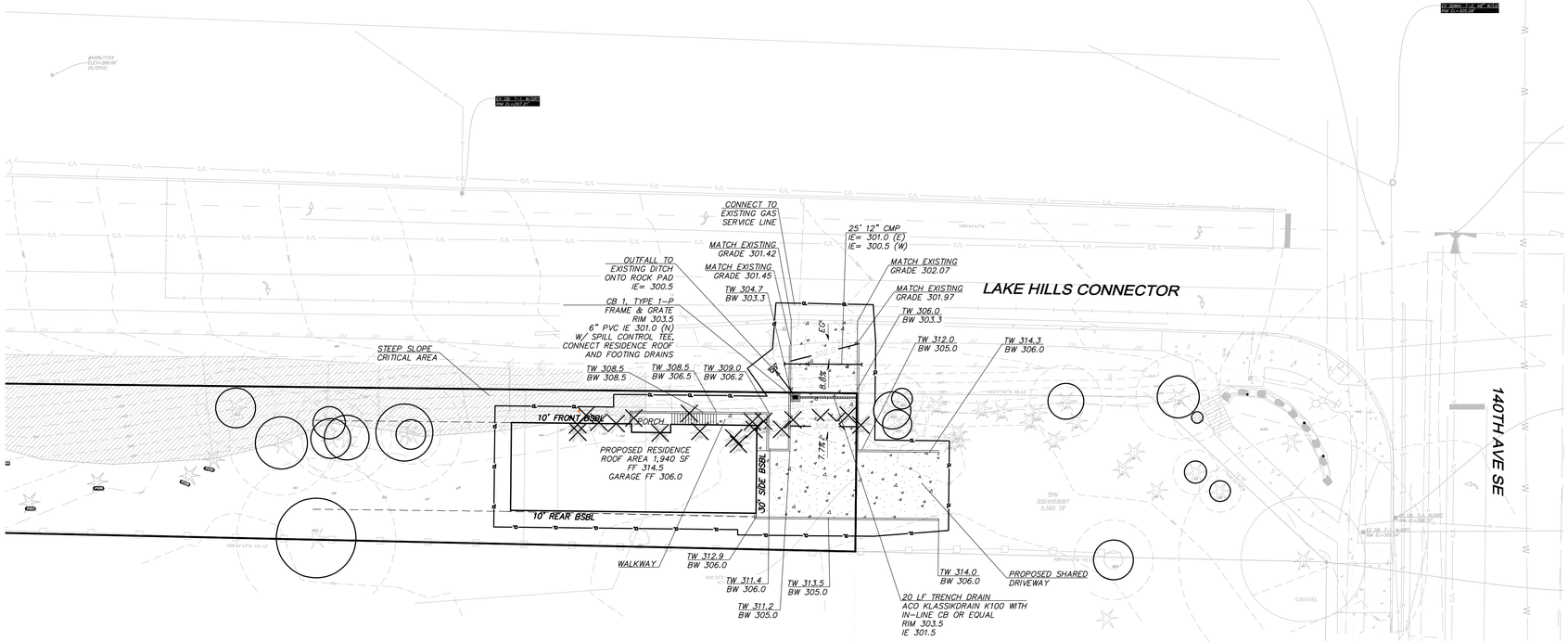
CONSTRUCTION SEQUENCE:

1. BEFORE ANY WORK BEGINS, CONTACT C.O.B. TO SCHEDULE A PRECONSTRUCTION MEETING.
2. INSTALL HIGH VISIBILITY CONSTRUCTION FENCE TO DELINEATE CLEARING LIMITS.
3. POST SIGN WITH NAME AND PHONE NUMBER OF TESC SUPERVISOR.
4. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
5. INSTALL SILT FENCE PERIMETER PROTECTION.
6. COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR END OF WORK DAY BETWEEN NOV. 1 & APRIL 30, AND ALSO AT THE THREAT OF RAIN, WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING AND EQUIVALENT.
7. GRADE AND STABILIZE NEW DRIVEWAY.
8. CONSTRUCT SURFACE WATER CONTROLS SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.
9. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH C.O.B. STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
10. RELOCATE EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH C.O.B. TESC REQUIREMENTS.
11. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.
12. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
13. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BMPS REMOVED AS APPROVED BY THE C.O.B. CLEARING AND GRADING INSPECTOR.



VICINITY MAP
SCALE 1"=800'

NORTH



PROJECT DESCRIPTION:

ADDRESS OF THE PROPERTY:	804 LAKE HILLS CONNECTOR BELLEVUE, WASHINGTON
TAX PARCEL NUMBER	0324059047
EXISTING ZONING	R-1.8
SURROUNDING ZONING	R-1, R-3.5, R-10, R-20
NUMBER OF LOTS	1
ACREAGE	44,430 S.F (1.020 ACRES)
SENSITIVE AREAS AND BUFFERS	0.39 ACRES
PROPOSED USE	SINGLE FAMILY
WATER DISTRICT	CITY OF BELLEVUE
FIRE DISTRICT	CITY OF BELLEVUE
SEWER DISTRICT	CITY OF BELLEVUE
SCHOOL DISTRICT	BELLEVUE 405
TELEPHONE SERVICE	FRONTIER
POWER SOURCE	PUGET SOUND ENERGY

PROJECT CONTACTS:

OWNER/APPLICANT	DAVID HALL 9827 128TH AVE NE KIRKLAND, WA 98033 CONTACT: DAVID HALL (206) 588-6579
CIVIL ENGINEER	D. R. STRONG CONSULTING ENGINEERS 620 – 7TH AVENUE KIRKLAND, WA 98033 CONTACT: YOSHIO L. PIEDISCALZI P.E. (425) 827-3063
SURVEYOR	ALL LAND SURVEYING 1317 MAPLE AVE SNOHOMISH COUNTY, WA 98290 (360) 568-4031
GEOTECHNICAL ENGINEER	NELSON GEOTECHNICAL ASSOCIATES, INC 17311-135TH AVE. NE SUITE A-500 WOODINVILLE, WASHINGTON 98072 (425) 486-1669

NOTES:

1. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CLEARING AND GRADING INSPECTOR
2. TREE PROTECTION IS REQUIRED FOR ALL TREES TO REMAIN IN THE VICINITY OF THE WORK AREA
3. EARTHWORK WITHIN TREE DRIPLINES MUST BE PERFORMED UNDER THE SUPERVISION OF AN ARBORIST TO MINIMIZE DAMAGE TO TREE ROOTS.
4. EROSION CONTROL IS REQUIRED FOR ALL TRENCHES FOR UTILITIES AND DRY UTILITIES INSTALLATION

SITE VOLUME CALCULATIONS

CUT VOLUME (CU. YDS.)	FILL VOLUME (CU. YDS.)	NET VOLUME (CU. YDS.)
505	0	505 CUT

ALL VOLUMES ARE APPROXIMATE AND ARE PROVIDED FOR PERMITTING PURPOSES AND REPRESENT FINISH GRADE TO EXISTING GRADE AS SHOWN. CONTRACTOR SHALL RELY ON HIS/HER OWN ESTIMATES FOR DETERMINING ACTUAL EARTHWORK QUANTITIES.
THE VOLUMES DO NOT INCLUDE STRIPPING, STRUCTURAL EXCAVATION, EXPANSION/COMPACTION FACTOR OR ANY SOIL TYPE RESTRICTIONS.

NORTH
GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FT.

Call 2 Working Days Before You Dig
811
Utilities Underground Location Center
(ID,MT,ND,OR,WA)

D.R. STRONG CONSULTING ENGINEERS
ENGINEERS PLANNERS SURVEYORS
620 - 7th AVENUE KIRKLAND, WA 98033
O 425.827.3063 F 425.827.2423

804 LAKE HILLS CONNECTOR
SITE PLAN B
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98005
PARCEL NO. 0324059047

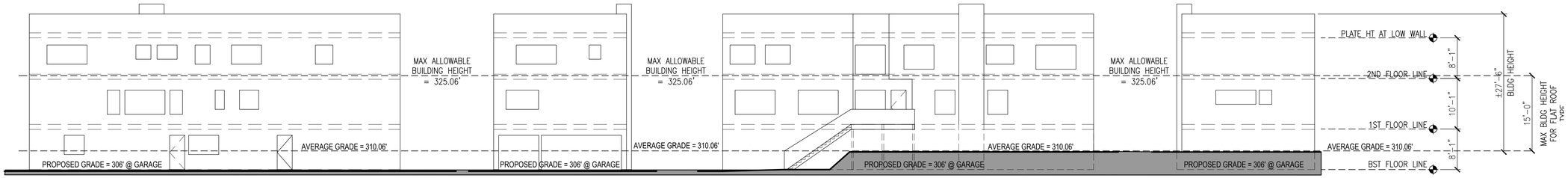
WAYNE SEMINOFF
P.O. BOX 956
KIRKLAND, WA 98083
425.766.7077

YOSHIO L. PIEDISCALZI
STATE OF WASHINGTON
23235
REGISTERED PROFESSIONAL ENGINEER
4-23-24

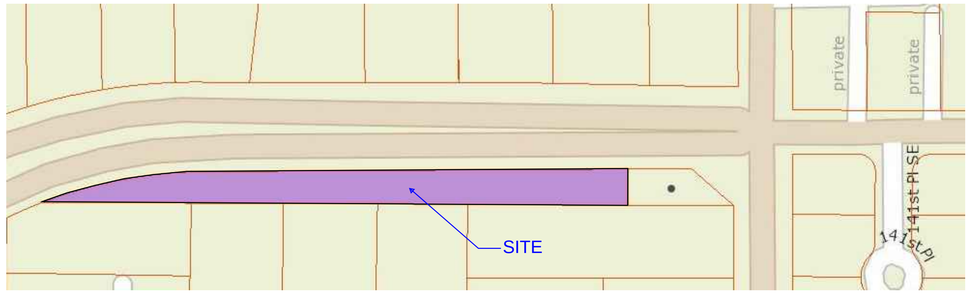
DATE	REVISION	APR
8.11.23	CITY COMMENTS	YLP
4.23.24	CITY COMMENTS	YLP

DRAFTED BY: RMF
DESIGNED BY: RMF
PROJECT ENGINEER: YLP
DATE: 03.29.23
PROJECT NO.: 23010

DRAWING: C1
SHEET: 1 OF 1



1 ELEVATIONS
3/32"=1'-0"



2 VICINITY MAP – EAST PARCEL
1/8"=1'-0"

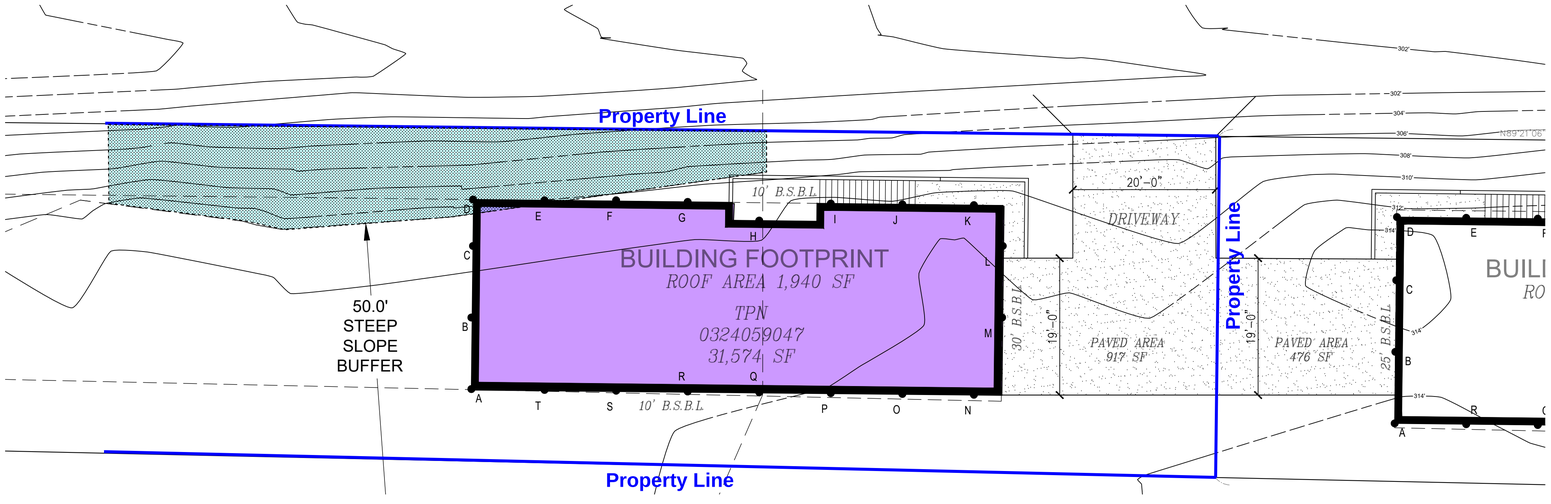
ZONED R1.8
Lot Size (Bifurcated Parcel) = 31,574 sf + 13,299 sf = 44,430 sf
Lot Size without ECA = 10,192 sf
Max Lot Coverage by Structure 35% = 3,567 sf
Max Hard Surface Coverage 75% = 33,322 sf
Max Impervious Surface 45% = 19,935 sf
Min Greenspace Percentage of Front Setback = 50%
F.A.R. = 50% = 22,215 sf max

LOT COVERAGE BY STRUCTURE:		
PROPOSED HOUSE W/ GARAGE FOOTPRINT	1,930	SF
PROPOSED STAIRS AND PORCH FOOTPRINT	114	SF
TOTAL STRUCTURE:	2,044	SF
TOTAL LOT SF (W/O CRITICAL AREA):	10,192	SF
% OF LOT:	20.0%	
MAXIMUM ALLOWABLE STUCTURE:	35%	

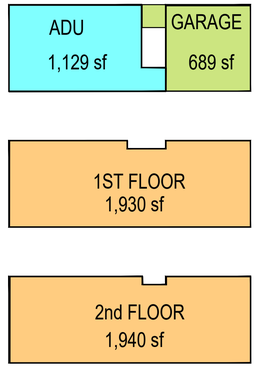
IMPERVIOUS SURFACE COVERAGE:		
PROPOSED HOUSE ROOVES (INCLUDING EAVES)	1,940	SF
PROPOSED CONCRETE DRIVEWAY	917	SF
PROPOSED CONCRETE WALKWAY	73	SF
PROPOSED ENTRY STAIR AND PORCH	114	SF
TOTAL IMPERVIOUS:	3,044	SF
TOTAL LOT SF:	44,430	SF
% OF LOT:	6.8%	
MAXIMUM ALLOWABLE IMPERVIOUS:	45%	

GREENSCAPE:		
TOTAL AREA OF FRONT SETBACK	5,790	SF
HARDSCAPE	345	SF
GREENSCAPE	5,445	SF
% GREENSCAPE IN FRONT SETBACK:	94%	
MINIMUM % GREENSCAPE IN FRONT SETBACK:	50%	

FAR CALCULATIONS:		
PROPOSED BASEMENT FLOOR AREA	1,129	SF
PROPOSED GARAGE FLOOR AREA	689	SF
PROPOSED FIRST FLOOR AREA	1,930	SF
PROPOSED SECOND FLOOR AREA	1,940	SF
TOTAL ENCLOSED SF:	5,688	SF
TOTAL LOT SF:	44,430	SF
FAR:	.13	
MAXIMUM ALLOWABLE FAR 50%:	.50	



3 SITE PLAN – WEST PARCEL
1/8"=1'-0"

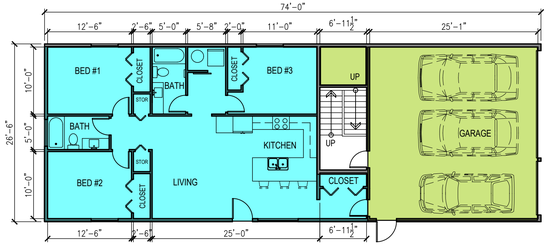


Total Living Area
1,940 sf + 1,930 + 1,129 sf = 4,999 sf

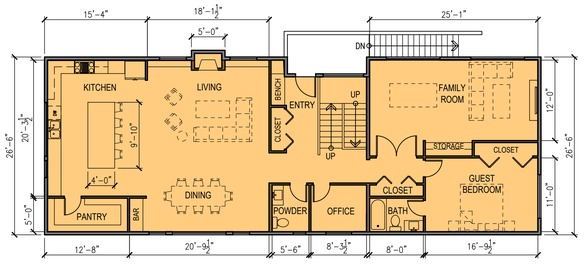
SPOT ELEVATIONS FOR HEIGHT CALCULATIONS:							
A	312.0	H	309.0	O	312.0		
B	311.0	I	310.0	P	312.0		
C	309.0	J	310.0	Q	312.0		
D	306.0	K	309.4	R	310.0		
E	306.0	L	310.0	S	312.0		
F	305.8	M	312.0	T	312.0		
G	309.1	N	312.0				

TOTAL (A-T) = 6201.3' / 20 = 310.06' AEG
ALLOWABLE BUILDING HEIGHT = 325.06' (15 FEET)

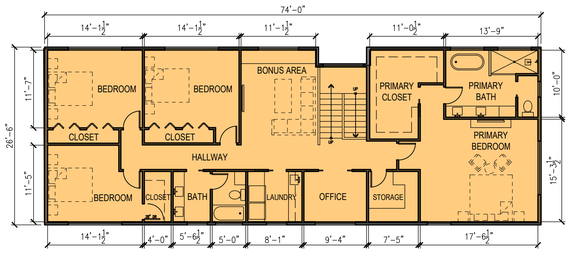
NOTE: REFER TO ELEVATIONS FOR ADDITIONAL INFORMATION



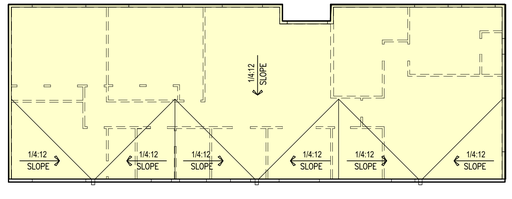
A GARAGE & ADU FLOOR PLAN
3/32"=1'-0"



B FIRST FLOOR PLAN
3/32"=1'-0"



C SECOND FLOOR PLAN
3/32"=1'-0"



D ROOF PLAN
3/32"=1'-0"

0 5 10
GRAPHIC SCALE
NORTH

Bellevue Lake Hills Connector SFR - West Parcel

SE 8th St, Bellevue, WA 98005 Parcel #: 0324059047

WP1

02/13/2024

S88°44'43"E 233.45'

N01°47'32"E 100.00'

58.29'

N88°44'43"W

50'

MATCHLINE - SEE BELOW

SEE SITE PLAN ENLARGEMENT ON FIGURE 3

LAKE HILLS CONNECTOR

MATCHLINE - SEE ABOVE

140TH AVE. SE

N46°59'32"W 172.79'

EX CB: T-1, W/GRT
RIM EL=308.72'

PLAN LEGEND

- PROPERTY LINE
- STEEP SLOPES
- STEEP SLOPE BUFFER (50' FROM TOP OF SLOPE, 75' AT TOE OF SLOPE)

GRAPHIC SCALE (IN FEET)

0 25 50 75 100 150

SCALE: 1:50

N

NOTES

1. BASE INFORMATION PROVIDED BY D.R. STRONG CONSULTING ENGINEERS, 620 - 7TH AVENUE, KIRKLAND, WA 98033, 425.827.3063.

FIGURE 1: EXISTING CONDITIONS
HALL PROPERTY - STEEP SLOPE MITIGATION PLAN
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98006
PARCELS 0324059041 AND -9087

PROJECT 7194
DRAWN SO
SCALE AS NOTED
DATE 9-14-23
REVISED 4-29-24
1/6

Altmann Oliver Associates, LLC
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4569
AOA Environmental Planning & Landscape Architecture

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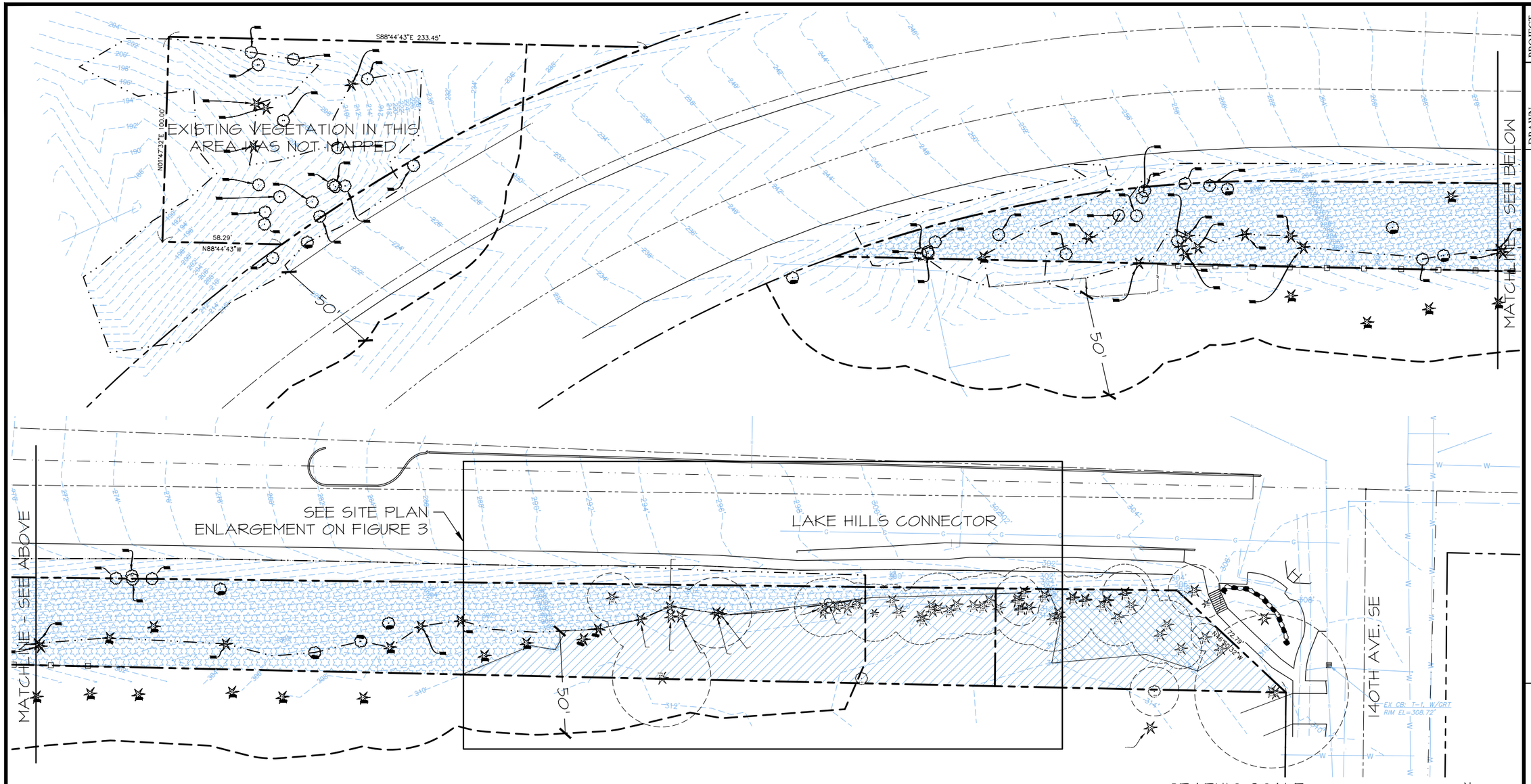

PLAN LEGEND

- PROPERTY LINE
- STEEP SLOPES
- STEEP SLOPE BUFFER (50' FROM TOP OF SLOPE, 75' AT TOE OF SLOPE)

EXISTING VEGETATION LEGEND

	100% NATIVE UPPER CANOPY - 50% INDIAN PLUM, HAZELNUT, SWORD FERN - 50% IVY, PERIWINKLE, HOLLY	23,579 SF
	~5% MADRONA, INDIAN PLUM AND SWORD FERN - ~95% LAUREL, HOLLY, HAWTHORN, IVY AND HIMALAYAN BLACKBERRY	10,949 SF
	100% DOUGLAS FIR CANOPY - 15% HIMALAYAN BLACKBERRY, HOLLY AND LAUREL UNDERSTORY	2,606 SF

NOTES

1. BASE INFORMATION PROVIDED BY D.R. STRONG CONSULTING ENGINEERS, 620 - 7TH AVENUE, KIRKLAND, WA 98033, 425.827.3063.

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FIGURE 2: EXISTING VEGETATION MAP
HALL PROPERTY - STEEP SLOPE MITIGATION PLAN
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98006
PARCELS 0324059041 AND -9087

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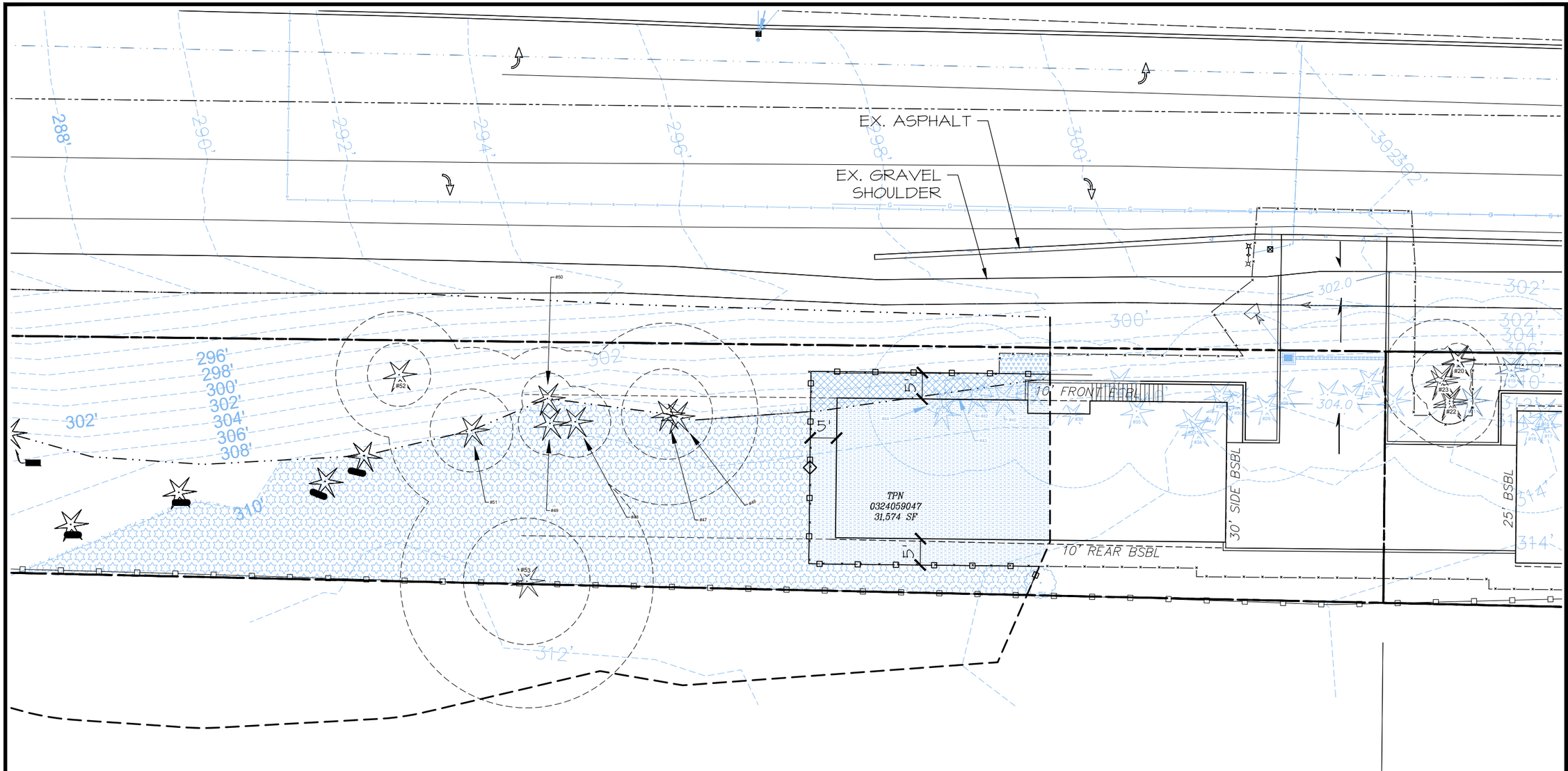

PLAN LEGEND

- PROPERTY LINE
- STEEP SLOPES
- STEEP SLOPE BUFFER (50' FROM TOP OF SLOPE, 75' AT TOE OF SLOPE)
- CLEARING LIMITS
- SPLIT-RAIL FENCE WITH SIGN

IMPACT LEGEND

PERMANENT STEEP SLOPE IMPACTS	193 SF
PERMANENT STEEP SLOPE BUFFER IMPACTS	1,465 SF
TOTAL IMPACT	1,658 SF
TEMPORARY STEEP SLOPE IMPACT TO BE RESTORED	37 SF

MITIGATION LEGEND

MITIGATION AREA - REMOVE INVASIVES (LAUREL, HOLLY, HAWTHORN, IVY AND HIMALAYAN BLACKBERRY) AND PLANT NATIVE TREES, SHRUBS AND GROUNDCOVER AT 95% DENSITY	3,757 SF

GRAPHIC SCALE
(IN FEET)

0 10 20 30 40 60

SCALE: 1:20

N

NOTES

1. BASE INFORMATION PROVIDED BY D.R. STRONG CONSULTING ENGINEERS, 620 - 7TH AVENUE, KIRKLAND, WA 98033, 425.827.3063.

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SCALE AS NOTED
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REVISED 4-29-24
3/6

FIGURE 3: SITE PLAN IMPACTS & MITIGATION
HALL PROPERTY - STEEP SLOPE MITIGATION PLAN
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98006
PARCELS 0324059047 AND -9087

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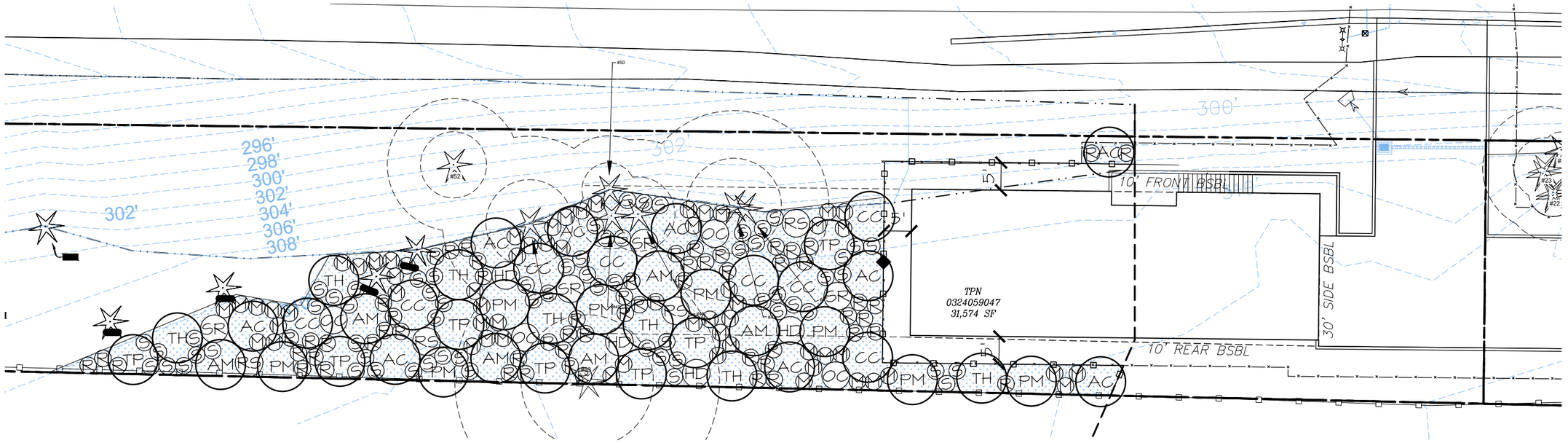


GRAPHIC SCALE
(IN FEET)

0 10 20 30 40 60

SCALE: 1:20

N

PLANT SCHEDULE

TREES

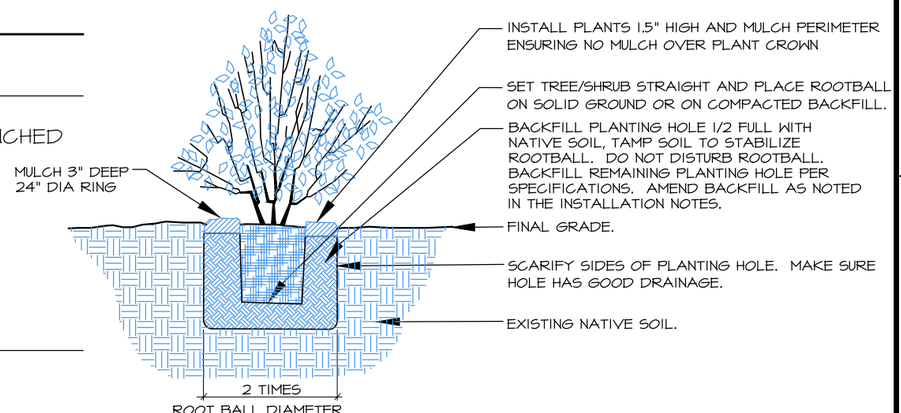
KEY	SCIENTIFIC NAME	COMMON NAME	DENSITY	QTY.	SIZE (MIN.)	NOTES
AC	ACER CIRCINATUM	VINE MAPLE	10' O.C.	9	2 GAL.	MULTI-STEM (3 MIN.)
AM	ACER MACROPHYLLUM	BIG LEAF MAPLE	10' O.C.	6	2 GAL.	SINGLE TRUNK, WELL BRANCHED
CC	CORYLUS CORNUTA	WESTERN HAZELNUT	10' O.C.	8	2 GAL.	MULTI-STEM (3 MIN.)
PM	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	10' O.C.	8	2 GAL.	FULL & BUSHY
TP	THUJA PLICATA	WESTERN RED CEDAR	10' O.C.	7	2 GAL.	FULL & BUSHY
TH	TSUGA HETEROPHYLLA	WESTERN HEMLOCK	10' O.C.	7	2 GAL.	FULL & BUSHY

SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	DENSITY	QTY.	SIZE (MIN.)	NOTES
HD	HOLODISCUS DISCOLOR	OCEAN SPRAY	4.5' O.C.	4	1 GAL.	MULTI-STEM (3 MIN.)
M	MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	4.5' O.C.	60	1 GAL.	FULL & BUSHY
OC	OEMLERIA CERASIFORMIS	INDIAN PLUM	4.5' O.C.	4	1 GAL.	MULTI-STEM (3 MIN.)
RS	RIBES SANGUINEUM	RED CURRANT	4.5' O.C.	4	1 GAL.	MULTI-STEM (3 MIN.)
R	ROSA NUTKANA	NOOTKA ROSE	4.5' O.C.	61	1 GAL.	MULTI-STEM (3 MIN.)
SR	SAMBUCUS RACEMOSA	RED ELDERBERRY	4.5' O.C.	4	1 GAL.	MULTI-STEM (3 MIN.)
S	SYMPHORICARPOS ALBUS	SNOWBERRY	4.5' O.C.	64	1 GAL.	MULTI-STEM (3 MIN.)

GROUNDCOVER

KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY.	SIZE (MIN.)	NOTES
	POLYSTICHUM MUNITUM	SWORD FERN	3' O.C.	297	1 GAL.	FULL & BUSHY



1 CONTAINER TREE/SHRUB PLANTING (TYP.)

SCALE: NTS

NOTES

1. BASE INFORMATION PROVIDED BY D.R. STRONG CONSULTING ENGINEERS, 620 - 7TH AVENUE, KIRKLAND, WA 98033, 425.827.3063.

PROJECT 7194
DRAWN SO
SCALE AS NOTED
DATE 9-14-23
REVISED 4-29-24
4/6

FIGURE 4: PLANTING PLAN & DETAIL
HALL PROPERTY - STEEP SLOPE MITIGATION PLAN
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98006
PARCELS 0324059047 AND -9087

Altmann Oliver Associates, LLC
AOA
Environmental Planning & Landscape Architecture
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4599

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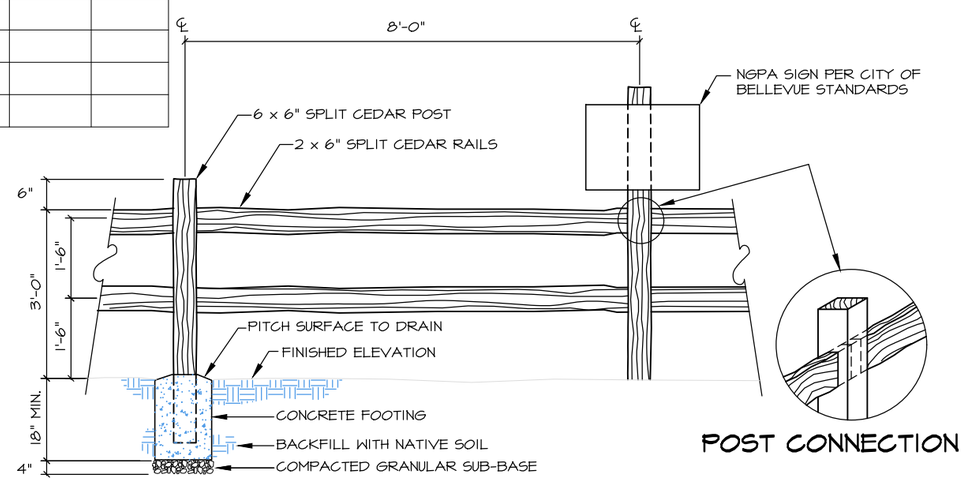
SPECIFICATIONS

1. CONTRACTOR INFORMATION. WHEN IT IS AVAILABLE, CONTACT INFORMATION SHALL BE PROVIDED TO THE CITY OF BELLEVUE THAT INCLUDES NAMES, ADDRESSES AND PHONE NUMBERS OF PERSONS/FIRMS THAT WILL BE RESPONSIBLE FOR INSTALLING REQUIRED PLANTS AND PERFORMING REQUIRED MAINTENANCE.
2. CONTRACTOR'S QUALIFICATIONS. ALL WORK SHALL BE PERFORMED BY A LICENSED LANDSCAPE CONTRACTOR REGISTERED IN THE STATE OF WASHINGTON. CONTRACTOR MUST BE EXPERIENCED IN MITIGATION AND RESTORATION WORK. THE CONTRACTOR SHALL PROVIDE THAT THERE IS ONE PERSON ON THE SITE AT ALL TIMES DURING WORK AND INSTALLATION WHO IS THOROUGHLY FAMILIAR WITH THE TYPE OF MATERIALS BEING INSTALLED AND THE BEST METHODS FOR THEIR INSTALLATION, AND WHO SHALL DIRECT ALL WORK BEING PERFORMED UNDER THESE SPECIFICATIONS. THIS PERSON SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE INSTALLING NATIVE PLANT MATERIALS FOR WETLAND MITIGATION OR RESTORATION PROJECTS, UNLESS OTHERWISE ALLOWED BY THE LANDSCAPE DESIGNER, WETLAND BIOLOGIST AND/OR THE CITY OF BELLEVUE.
3. TEMPORARY EROSION CONTROL MEASURES WILL BE INSTALLED ALONG THE PROPOSED BUFFER BOUNDARY PRIOR TO ANY WORK IN THE CRITICAL AREA OR BUFFER.
4. A PRE-CONSTRUCTION MEETING WILL BE HELD ONSITE WITH THE LANDSCAPE CONTRACTOR AND AOA PRIOR TO START OF WORK.
5. ALL PLANTS SHOULD BE INSTALLED BETWEEN DECEMBER 1ST AND MARCH 15TH UNLESS SUPPLEMENTAL IRRIGATION IS IN PLACE PRIOR TO PLANTING.
6. INTERMEDIATE INSPECTIONS. ALL PLANTS SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE DESIGNER AND/OR WETLAND BIOLOGIST PRIOR TO INSTALLATION. CONDITION OF ROOTS OF A RANDOM SAMPLE OF PLANTS WILL BE INSPECTED, AS WELL AS ALL ABOVEGROUND GROWTH ON ALL PLANTS. ROOTS OF ANY BARE ROOT PLANTS, IF PERMITTED FOR USE, WILL BE INSPECTED. PLANT MATERIAL MAY BE APPROVED AT THE SOURCE, AT THE DISCRETION OF THE LANDSCAPE DESIGNER AND THE WETLAND BIOLOGIST. ALL MATERIAL MUST BE RE-INSPECTED AND APPROVED ON THE SITE PRIOR TO INSTALLATION. PLANT LOCATIONS SHALL ALSO BE INSPECTED AND APPROVED PRIOR TO PLANTING.
7. PRIOR TO INSTALLATION OF PLANT MATERIAL, THE PLANTING AREAS WILL BE LAID OUT BASED ON THE PLANTING PLAN, AND ALL NON-NATIVE WOODY AND HERBACEOUS VEGETATION LOCATED IN THE PLANTING AREAS WILL BE REMOVED BY HAND WITH THE EXCEPTION OF JAPANESE KNOTWEED THAT SHOULD BE INJECTED PER KING COUNTY STANDARDS. ENSURE FULL KILL BEFORE HAND REMOVAL OF REMAINING PLANT MATTER.
8. IN WEED-REMOVAL AREAS, IMPORTED DEJONG'S FERTIL-MULCH SHALL BE PLACED TO PRE CLEARING GRADES.
9. ALL PLANTS SHALL BE PIT-PLANTED IN PLANTING PITS EXCAVATED 2X THE DIAMETER OF THE PLANT. PITS SHALL BE BACKFILLED WITH A 30/70 MIX OF STEERCO TO NATIVE SOIL. PLANTS SHALL BE INSTALLED 3" HIGH AND SURFACED MULCHED TO A DEPTH OF 3" WITH COMPOSTED HOG-FUEL OR WOOD CHIPS PLACED CONTINUOUSLY THROUGHOUT THE PLANTING BED IN OPEN AREAS AND PLACED WITHIN A 24" DIAMETER AROUND EACH PLANT IN VEGETATED AREAS..
10. ALL PLANTS SHALL BE NURSERY GROWN (IN WESTERN WA OR OR) FOR AT LEAST 1 YEAR FROM PURCHASE DATE, FREE FROM DISEASE OR PESTS, WELL-ROOTED, BUT NOT ROOT-BOUND AND TRUE TO SPECIES.
11. PLANT LAYOUT SHALL BE APPROVED BY AOA PRIOR TO INSTALLATION AND APPROVED UPON COMPLETION OF PLANTING.
12. UPON COMPLETION OF PLANTING, ALL PLANTS SHALL BE THOROUGHLY WATERED.
13. UPON APPROVAL OF PLANTING INSTALLATION BY AOA, THE CITY OF BELLEVUE WILL BE NOTIFIED TO CONDUCT A SITE REVIEW FOR FINAL APPROVAL OF CONSTRUCTION.
14. MAINTENANCE SHALL BE REQUIRED IN ACCORDANCE WITH THE CITY OF BELLEVUE MITIGATION GUIDELINES AND APPROVED PLANS.
15. AN IRRIGATION SYSTEM SHALL BE DESIGNED BY THE LANDSCAPE CONTRACTOR TO PROVIDE 1/2" OF FLOW 2-3 TIMES WEEKLY FROM JULY 1 -OCTOBER 31 THE FIRST YEAR AFTER PLANTING TO ALL PLANTED AREAS VIA MP3 ROTOR HEADS. FLOW SHALL REDUCE TO 1-2 TIMES WEEKLY THE SECOND YEAR AFTER PLANTING AND ONCE WEEKLY THE YEARS 3-5.
16. MAINTENANCE SHALL BE IMPLEMENTED ON A REGULAR BASIS ACCORDING TO THE SCHEDULE BELOW.

ANNUAL MAINTENANCE SCHEDULE

MAINTENANCE ITEM	J	F	M	A	M	J	J	A	S	O	N	D
WEED CONTROL			1		1	1	1	1	1	1		
GENERAL MAINT.			1		1	1	1	1	1	1		
IRRIGATION - YEAR 1						4	8	8	8			
IRRIGATION - YEAR 2						4	8	8	8			
IRRIGATION - YEARS 3-5						4	4	4	4			

1-8 = NUMBER OF TIMES TASK SHALL BE PERFORMED PER MONTH.



1 SPLIT-RAIL FENCE WITH SIGN
SCALE: NTS

FIGURE 5: SPECIFICATIONS & DETAIL
HALL PROPERTY - STEEP SLOPE MITIGATION PLAN
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98006
PARCELS 032405-9047 AND -9087

PROJECT 7194
DRAWN SO
SCALE AS NOTED
DATE 9-14-23
REVISED 4-29-24
5/6

Altmann Oliver Associates, LLC
AOA Environmental Planning & Landscape Architecture
PO Box 578 Carnation, WA 98014 Office (425) 333-4535Fax (425) 333-4599

7194-MIT-04-29-24.dwg

MAINTENANCE & MONITORING PLAN

CONSTRUCTION MANAGEMENT

1. Prior to commencement of any work in the mitigation planting area, the clearing limits will be staked and all existing vegetation to be saved will be clearly marked. A pre-installation meeting will be held at the site to review and discuss all aspects of the project with the owner, aoa, the geotechnical engineer and the civil engineer.
2. A biologist will supervise plan implementation during construction to ensure that objectives and specifications of the mitigation planting area are met.
3. Any necessary significant modifications to the design that occur as a result of unforeseen site conditions will be jointly approved by the City of Bellevue and the biologist prior to their implementation.

MONITORING METHODOLOGY

1. The monitoring program will be conducted twice yearly (in the beginning and end of the growing season) for a period of five years, with reports submitted annually (at the end of the growing season) to the City of Bellevue.
2. Vegetation establishment within the mitigation planting area will be monitored during each field visit with a record kept of all plant species found.
3. Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress in plant community establishment in the mitigation area. Review of the photos over time will provide a semi-quantitative representation of success of the restoration plan.

PERFORMANCE STANDARDS

Success of plant establishment within the mitigation planting area will be evaluated on the basis of percent survival of planted species.

1. Native woody cover will be a minimum of; 10% at construction completion, 15% at year 1, 20% at year 2, 30% at year 3 and 60% at year 5.
2. There will be 100% survival of all woody planted species throughout the mitigation planted area at the end of the first year of planting. For years 2-5, success will be based on an 85% survival rate or similar number of recolonized native woody plants.
3. Exotic and invasive plant species will be maintained at levels below 10% total cover. Removal of these species will occur immediately following the monitoring event in which they surpass the above maximum coverage. Removal will occur by hand whenever possible.

MAINTENANCE (M) & CONTINGENCY (C)

1. Established performance standards for the project will be compared to the monitoring results in order to judge the success of the mitigation project.
2. Contingency will include many of the items listed below and would be implemented if these performance standards are not met.
3. Maintenance and remedial action on the site will be implemented immediately upon completion of the monitoring event, (unless otherwise specifically indicated below).

- replace dead plants with the same species or a substitute species that meet the goal of the mitigation plan (C)
- re-plant areas after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.) (C)
- irrigate following plant installation for five years (M)

PERFORMANCE BOND

1. A performance bond or other surety device will be posted with the City of Bellevue by the applicant to cover the costs of mitigation plan implementation (including labor, materials, maintenance, and monitoring).
2. The bond or assignment may be released in partial amounts in proportion to work successfully completed over the five year monitoring period, as the applicant demonstrates performance and corrective measures.

PROJECT 7194
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SCALE AS NOTED
DATE 9-14-23
REVISED 4-29-24
6/6

FIGURE 6: MAINTENANCE & MONITORING PLAN
HALL PROPERTY - STEEP SLOPE MITIGATION PLAN
804 LAKE HILLS CONNECTOR
BELLEVUE, WA 98006
PARCELS 032405-9047 AND -9087

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November 2, 2023

RET Investment Trust
ATTN: Wayne Seminoff
P.O. Box 956
Kirkland, WA 98083
Via Email: wayne@isomedia.com

Geotechnical Engineering Evaluation – **REVISED**
SE 8th Street Residential Development
803 – 140th Avenue SE and 804 Lake Hills Connector
Bellevue, Washington
NGA File No. 1310521

Dear Wayne:

We are pleased to submit the attached report titled "**Geotechnical Engineering Evaluation – SE 8th Street Residential Development – 803 - 140th Avenue SE and 804 Lake Hills Connector – Bellevue, Washington.**" This report summarizes our observations of the existing surface and subsurface conditions within the property and provides general recommendations for the proposed site development. Our services were completed in general accordance with the proposal signed by you on October 15, 2021.

The site is long, relatively narrow, and east-west oriented, comprising an estimated combined area of approximately 1.16 acres. The proposed development site is currently vacant and undeveloped and is bordered by the Lake Hills Connector (SE 8th Street) to the north and west, 140th Avenue SE to the east, and residential development to the south. Topographically, the site forms a relatively level terrace along the southernmost portion, stepping down to the north at steep inclinations for approximately 9.0 feet toward the Lake Hills Connector on the northern portion of the proposed development site. The site slopes appear to have resulted from grading for the development of the Lake Hills Connector.

We understand the plans for development include two single-family residences on the upper benched area on the southern portion of the site, with access from the Lake Hills Connector to the north. There will be only one residence on each parcel. Access will require retaining wall systems and modifications to the existing slope morphology. The City of Bellevue has requested a geotechnical report to address geological Environmentally Critical Areas.

We completed six hand auger exploration at the site on November 11, 2021. Our explorations indicated that the site was generally underlain by a surficial mantle of undocumented fill with competent, native glacial till soils at relatively shallow depths.

It is our opinion that the proposed site development is feasible from a geotechnical engineering standpoint, provided that our recommendations for site development are incorporated into the project plans. In general, the native glacial soils underlying the site should adequately support the planned structures. For bearing capacity and settlement considerations, foundations should be advanced through the loose and/or undocumented fill soils and be supported directly on the competent glacial material interpreted to underlie the site, or structural fill extending to these soils. These soils should generally be encountered approximately 0.5 to 2.0 feet below the existing ground surface, based on our explorations. However, deeper areas of loose soil and/or undocumented fill could also exist within unexplored areas of the site. If undocumented fill is encountered in unexplored areas of the site, it should be removed and replaced with structural fill for foundation and pavement support.

It is also our opinion that the soils that underlie the site and form the core of the slopes within and within the vicinity of the subject site should be stable with respect to deep-seated earth movements, due to their inherent strength and slope geometry. However, there is a potential for shallow sloughing and erosion events to occur on the localized steeper slopes within and within the vicinity of the subject property. We anticipate that the grading associated with the proposed development will require permanent retaining walls and should not adversely impact the existing slope stability conditions provided the recommendations provided in this report are followed.

Specific grading and stormwater plans were not available when this report was prepared, but we understand that stormwater may be directed to on-site infiltration facilities, if feasible. Based on our field observations, the native glacial soils encountered at depth within our explorations are likely to be limited for stormwater infiltration, depending on how the site is graded and if setbacks in accordance with the 2021 City of Bellevue Surface Water Engineering Standards manual can be maintained. This is further discussed in the attached report.

In the attached report, we have included recommendations for general site grading, foundation and slab support, retaining walls and drainage. We recommend that Nelson Geotechnical Associates (NGA) be retained to review the geotechnical aspects of the project plans prior to construction. We also recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the construction differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications.

It has been a pleasure to provide service to you on this project. Please contact us if you have any questions regarding this report or require further information.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.

Khaled M. Shawish, PE
Principal Engineer

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LIST OF FIGURES

Geotechnical Engineering Evaluation – **REVISED**
SE 8th Street Residential Development
803 – 140th Avenue SE and 804 Lake Hills Connector
Bellevue, Washington

INTRODUCTION

This report presents the results of our preliminary geotechnical engineering investigation and evaluation of the proposed SE 8th Street Residential Development project in Bellevue, Washington. **The project site is located southwest of the intersection of Lake Hills Connector (SE 8th Street) and 140th Avenue SE,** as shown on the Vicinity Map in **Figure 1**. The property addresses are 803 – 140th Avenue SE and 804 Lake Hills Connector, Bellevue, Washington. The affected parcel numbers for the project include 032405-9047 and -9087. The purpose of this study is to explore and characterize the site's surface and subsurface conditions and to provide preliminary geotechnical recommendations for the planned site development.

The site is long, relatively narrow, and east-west oriented, comprising an estimated combined area of approximately 1.16 acres. The proposed development site is currently vacant and undeveloped and is bordered by the Lake Hills Connector (SE 8th Street) to the north and west, 140th Avenue SE to the east, and residential development to the south. Topographically, the site forms a relatively level terrace along the southernmost portion, stepping down to the north at steep inclinations for approximately 9.0 feet toward the Lake Hills Connector on the northern portion of the proposed development site. The site slopes appear to have resulted from grading for the development of the Lake Hills Connector. Review of the City of Bellevue GIS website indicates that the steep slopes within the northern and western portion of the site are designated as "steep slope geologic hazard areas."

We understand the plans for development include two single-family residences; one on each parcel, to be located on the upper terrace area on the southern portion of the properties, with shared access from the Lake Hills Connector to the north. Access will require retaining wall systems and modifications to the existing slope morphology. Shoring will be required to retain the tall cuts such as to reduce modification of the topography. The existing site layout is shown on the Schematic Site Plan in **Figure 2**.

SCOPE

The purpose of this study is to explore and characterize the site surface and subsurface conditions and provide general recommendations for site development.

Specifically, our scope of services includes the following:

1. A review of available soil and geologic maps of the area.

2. Exploring the subsurface soil and groundwater conditions in the vicinity of the proposed development with hand tool explorations.

3. Mapping the conditions on the site slopes using shallow, hand-tool explorations where necessary to construct geological cross sections and qualitatively evaluate slope stability.

4. Conducting numerical limit-equilibrium modeling on representative slopes affected by the development to provide a quantitative evaluation of slope stability.

5. Performing laboratory grain-size sieve analysis on soil samples, as necessary.

6. Providing recommendations for structure setbacks from or mitigation for geologic hazards, as necessary.

7. Providing recommendations for earthwork and foundation support.

8. Providing recommendations for retaining walls, including soldier pile shoring walls and/or modular concrete block retaining walls, as warranted.

9. Providing recommendations for temporary and permanent slopes.

10. Providing recommendations for subsurface utilities and pavement subgrade preparation.

11. Providing our general, preliminary opinion on stormwater infiltration feasibility.

12. Providing general recommendations for site drainage and erosion control.

13. Documenting the results of our findings, conclusions, and recommendations in a written geotechnical report.

SITE CONDITIONS

Surface Conditions

The subject site comprises two parcels covering a total combined area of approximately 1.16 acres, although much of it is encumbered by steep slopes on the westernmost portion. The site is long, relatively narrow, and east-west oriented. The proposed development site is currently vacant and undeveloped and is bordered by the Lake Hills Connector (SE 8th Street) to the north and west, 140th Avenue SE to the east, and residential development to the south. Topographically, the site forms a relatively level terrace along the southernmost portion, stepping down to the north at steep inclinations between 28 and 30 degrees (53 and 58 percent grade) for approximately 9.0 feet of vertical relief toward the underlying Lake Hills Connector on the northern portion of the proposed development site, as shown on the Cross-Sections A-A' and B-B' in **Figures 3 and 4**, respectively. The site slopes appear to have resulted from grading for the development of the Lake Hills Connector. The slopes are moderately vegetated with mature coniferous trees and a thin understory of Western swordfern, laurel, and English ivy.

We did not observe surface water throughout the site during our field work on November 11, 2021. We also did not observe groundwater seepage or evidence of significant slope instability within or in the immediate vicinity of the property during our investigation, such as deep-seated landsliding.

Subsurface Conditions

Geology: The geologic units for this site are shown on the Geologic Map of Bellevue Washington by GeoMapNW (University of Washington, 2012). The site is mapped as Vashon glacial till (Qt). Vashon till is described as a glacially overridden, non-sorted mixture of silt, sand, and gravel. Our explorations generally found silty sands and gravels at relatively shallow depths throughout the site, consistent with the description of glacial till soils.

Explorations: The subsurface conditions within the site were explored on November 11, 2021 by monitoring the excavation of two test pits and one hand auger exploration extending to depths ranging from 1.0 to 3.5 feet below the existing ground surface using hand tools. The approximate locations of our explorations are shown on the Schematic Site Plan in **Figure 2**.

A geologist from NGA was present during the explorations, examined the soils and geologic conditions encountered, obtained samples of the different soil types, and maintained logs of the explorations. The soils were visually classified in general accordance with the Unified Soil Classification System, presented in **Figure 5**. The logs of our explorations are attached to this report and are presented as **Figure 6 and 7**. We present a brief summary of the subsurface conditions in the following paragraph. For a detailed description of the subsurface conditions, the exploration logs should be reviewed.

At the surface of all of our hand auger explorations, we generally encountered approximately 0.5 to 2.0 feet of loose, dark brown, silty sand with varying amounts of roots, organics which we interpreted as surficial undocumented fill. Underlying the surficial fill in Hand Augers One through Three, Five, and Six, we encountered medium dense or better, gray, silty sand with varying amounts of gravel which we interpreted as native glacial till soils to the shallow depths explored. Hand Auger Four exposed gray silt beneath the surficial 2.0-foot-thick layer of undocumented fill, which we also interpreted as glacial till as well. All of our explorations were terminated within the competent native glacial soils at depths in the range of 1.0 to 3.5 feet below the existing ground surface.

Hydrogeologic Conditions

We did not encounter groundwater within our explorations. If groundwater is encountered during construction, we would interpret this groundwater seepage to be perched groundwater. Perched water occurs when surface water infiltrates through less dense, more permeable soils and accumulates on top of a relatively low permeability material. Perched water does not represent a regional groundwater "table" within the upper soil horizons. Perched water tends to vary spatially and is dependent upon the amount of rainfall. We would expect the amount of perched groundwater to decrease during drier times of the year and increase during wetter periods.

SENSITIVE AREA EVALUATION

Seismic Hazard

We reviewed the 2018 International Building Code (IBC) for seismic site classification for this project. Since competent glacial till soils are inferred to underlie the site at depth, the site conditions best fit the IBC description for **Site Class D**.

Table 1 below provides seismic design parameters for the site that are in conformance with the 2018 IBC, which specifies a design earthquake having a 2% probability of occurrence in 50 years (return interval of 2,475 years), and the 2008 USGS seismic hazard maps.

Table 1 – 2018 IBC Seismic Design Parameters

Site Class	Spectral Acceleration at 0.2 sec. (g) S_s	Spectral Acceleration at 1.0 sec. (g) S_1	Site Coefficients		Design Spectral Response Parameters	
			F_a	F_v	S_{DS}	S_{D1}
D	1.316	0.505	1.000	1.500	0.877	0.505

The spectral response accelerations were obtained from the USGS Earthquake Hazards Program Interpolated Probabilistic Ground Motion website (2008 data) for the project latitude and longitude.

Hazards associated with seismic activity include liquefaction potential and amplification of ground motion. Liquefaction is caused by a rise in pore pressures in a loose, fine sand deposit beneath the groundwater table. It is our opinion that the medium dense or better glacial deposits interpreted to underlie the site have a low potential for liquefaction or amplification of ground motion.

Erosion Hazard

The criteria used for determination of the erosion hazard for affected areas include soil type, slope gradient, vegetation cover, and groundwater conditions. The erosion sensitivity is related to vegetative cover and the specific surface soil types, which are related to the underlying geologic soil units. The Natural Resources Conservation Service (NRCS) lists the site as Alderwood gravelly sandy loam, 8 to 15 percent slopes. This material is listed as having a moderate erosion hazard where the surficial soils are exposed. Since the slope gradients at the site are higher than the mapped soils, it is our opinion that the erosion hazard for site soils should be low to moderate in areas where the site is not disturbed.

Landslide Hazard/Slope Stability

The criteria used for evaluation of landslide hazards include soil type, slope gradient, and groundwater conditions. Topographically, the site forms a relatively level terrace along the southernmost portion, stepping down to the north at steep inclinations between 28 and 30 degrees (53 and 58 percent grade) for approximately 9.0 feet of vertical relief toward the underlying Lake Hills Connector on the northern portion of the proposed development site, as shown on the Cross-Sections A-A' and B-B' in **Figures 3 and 4**, respectively. We did not observe evidence of significant slope instability within or in the immediate vicinity of the property during our investigation, such as deep-seated landsliding. We also did not observe groundwater seepage or signs of erosion or sloughing within or within the vicinity of the site on our visit.

The site slopes appear to have resulted from grading for the development of the Lake Hills Connector. In accordance with the City of Bellevue Land Use Code (LUC) Section 20.25H.120, it is our professional opinion that the slope in proximity to the proposed development is not a geologic hazard area due to the vertical relief of less than 10 feet. A topographic survey should delineate the presence of slopes exceeding 40 percent in gradient, 10 feet in vertical relief, and over 1,000 square feet in area, which constitutes the definition of a Steep Slope critical area in accordance with LUC 20.25H.120 (2).

The core of the site slopes within the site are inferred to consist primarily of dense or better native glacial soils. Relatively shallow sloughing failures as well as surficial erosion are natural processes and should be expected on the localized steeper slopes during extreme weather or significant seismic conditions. It is our opinion that while there is potential for erosion, soil creep, and shallow failures within the loose surficial soils on the site slopes, there is no significant potential for deep-seated slope failures under current site conditions.

There will be one structure located on each property. The residences will be located in the upper terrace on each site but will be constructed with daylight basements according to the plans. If structures are to be located further than 15-feet from the top of the steep north-facing slope below and to the west of the property, standard foundation embedment depths can be utilized. However, if the very northern structure foundations are to be located closer than 15 feet from the top of the steep north-facing slope, we recommend that the downhill northern foundation lines be additionally embedded a minimum of two feet into the competent native glacial soils. In addition to the minimum embedment depth, we recommend that the foundation be deepened to maintain a minimum effective setback of 10 feet extending from the base of the western foundations horizontally to the face of the steep north-facing slope below. It is our opinion that the proposed structures within the subject property are feasible and should not adversely impact the existing slope stability conditions of the steep slope areas within the vicinity of the subject site provided the minimum setbacks provided above are maintained.

CONCLUSIONS AND RECOMMENDATIONS

General

It is our opinion that the planned residence development within the site is feasible from a geotechnical standpoint. Our explorations indicated that the site was underlain by surficial undocumented fill soils with medium dense or better native glacial soils at relatively shallow depths. These glacial soils should provide adequate support for foundation, slab, and pavement loads. We recommend that the structures be designed utilizing shallow foundations. Footings should extend through any loose surficial soil and be keyed into the underlying competent native glacial bearing soils. These soils should be encountered roughly 0.5 to 2.0 feet below the ground surface based on our explorations. We should note that localized areas of deeper unsuitable soils and/or undocumented fill could be encountered at this site. This condition would require additional excavations in foundation, slab, and pavement areas to remove the unsuitable soils.

It is also our opinion that the competent glacial soils that underlie the site and form the core of the site slopes should be stable with respect to deep-seated earth movements, due to their inherent strength and slope geometry. It is our opinion that while there is potential for erosion, soil creep, and shallow failures within the loose surficial soils on the localized steeper site slopes within the very western portions of the subject site, there is not a significant potential for deep-seated slope failures under current site conditions.

Proper site grading, foundation support and placement, as recommended in this report should help maintain or improve current stability conditions both during and after construction. Provided that the recommendations in this report are followed during construction, the areas disturbed by construction should remain stable. Therefore, the risk of damage to the proposed development or to adjacent properties from soil instability should be minimal, and the proposed grading and development should not increase the potential for soil movement.

We recommend all foundations and any slab-on-grade planned for the new structures be supported directly on competent native soils slabs. Depending on the overall site grading, tall cuts may be needed to facilitate the construction of the proposed residence. These cuts may not be able to be safely sloped back due to site constraints such as slopes, neighboring property lines and utilities. If temporary cuts are not able to be safely sloped as recommended in this report, such as along the northern side, we recommend that the cuts be shored with a soldier pile shoring retaining wall. If a soldier pile retaining wall is utilized, this wall could be designed as a permanent wall and incorporated into the building structural design. We provided recommendations for temporary and permanent cut slopes in the **Temporary and Permanent Slopes** section of this report. We also provide recommendations for soldier pile shoring walls in the **Soldier Pile Shoring Wall** subsections of this report.

We anticipate that structures may be located in proximity to the top of the steep north-facing slope on the northern side of the site. If structures are to be located greater than 15-feet from the top of the steep north-facing slope on the north side of the site, standard foundation embedment depths can be utilized. Between 15-feet and 10-feet to the top of the slope, the foundation should be deepened 4-feet into native glacial soils. Based on the latest plan for site development, we understand some portions of the western residence foundation will encroach directly onto the site slopes. In this case, any foundation element closer than 10-horizontal feet to the top of the slope should be embedded such that the base of the footing is at or below the elevation as that of the base of the slope. Given that the residences are proposed with full basements per the plan, this should be possible. We also understand the entrance/deck along the north side of the residences will be supported on columns closer than 10-feet to the slope. These columns should be supported on sonotubes or similar, also extending to the base of the site slopes. These recommendations allow for the residences to be placed closer to the steep slopes to accommodate the size of the residences and safeguard the site slopes from the development.

An overlay on the Bellevue GIS map suggests that the site is exempt from stormwater infiltration requirements due to proximity to steep slopes. It may be possible for shallow infiltration systems to be constructed on the property in accordance with the 2021 City of Bellevue Surface Water Engineering Standards manual depending on how the site is graded. This is further discussed in the **Stormwater Infiltration** subsection of this report.

All grading operations and drainage improvements planned as part of this development should be planned and completed in a matter that enhances the stability of the site slopes, not reduces it. Excavation spoils associated with the residence excavations should not be stockpiled near the site slopes or be allowed to encroach on the slopes. Also, all runoff generated within the site should be collected and routed into a permanent discharge system and not be allowed to flow over the slopes.

Future vegetation management on the slopes should be the subject of a specific evaluation and a plan approved by the City of Bellevue. The site slopes should be monitored on an ongoing basis, especially during the wet season, for any signs of instability, and corrective actions promptly taken should any signs of instability be observed. Lawn clipping and any other household trash or debris should never be allowed to reach the slopes.

The soils encountered on this site are considered moisture-sensitive and will disturb easily when wet. To lessen the potential impacts of construction on the slopes and to reduce cost overruns and delays, we recommend that construction take place during the drier summer months. If construction takes place during the rainy months, additional expenses and delays should be expected. Additional expenses could include the need for placing erosion control and temporary drainage measures to protect the slopes, the need for placing a blanket of rock spalls on exposed subgrades, and construction traffic areas prior to placing structural fill, and the need for importing all-weather material for structural fill.

Erosion Control and Slope Protection Measures

The erosion hazard for the on-site soils is considered to be low to moderate but the actual hazard will be dependent on how the site is graded and how water is allowed to concentrate. Best Management Practices (BMPs) should be used to control erosion. Areas disturbed during construction should be protected from erosion. Erosion control measures may include diverting surface water away from the stripped or disturbed areas. Silt fences and/or straw wattles should be erected to prevent muddy water from leaving the site or flowing over the slopes. Stockpiles should be covered with plastic sheeting during wet weather and stockpiled material should be placed near site slopes. Disturbed areas should be planted as soon as practical, and the vegetation should be maintained until it is established. The erosion potential for areas not stripped of vegetation should be low to moderate.

Protection of the site slope areas should be performed as required by the City of Bellevue. No additional material of any kind should be placed on either slope or be allowed to reach the slopes, such as excavation spoils, lawn clippings, and other yard waste, trash, and soil stockpiles. Vegetation should not be removed from slopes without a revegetation plan. Water should not be allowed to concentrate on slopes during or after construction.

In our opinion, the clearing of vegetation within the area of the proposed development is feasible and should not adversely impact existing slope stability conditions provided the recommendations provided in this report are strictly followed. We recommend that the disturbed areas outside the building footprints be revegetated as soon as practical and protected from erosion.

Replacement of vegetation should be performed in accordance with City of Bellevue code. In areas that are disturbed during or after construction, planting, hydro seeding, and/or straw mulching are effective ways to minimize erosion and allow vegetation to be re-established rapidly. We recommend that we be retained to review grading revegetation plans once plans are finalized.

Site Preparation and Grading

After erosion control measures are implemented, site preparation should consist of stripping any loose soils and/or undocumented fill to expose medium dense or better native glacial soil in foundation, slab-on-grade, and pavement areas. The stripped materials should be removed from the site or stockpiled for later use as landscaping fill. Based on our observations, we anticipate stripping depths of 0.5 to 1.5 feet within the proposed development area. However, additional stripping may be required if areas of deeper undocumented fill and/or loose soil are encountered in unexplored areas of the site.

If the ground surface, after site stripping, should appear to be loose, it should be compacted to a non-yielding condition. Areas observed to pump or weave during compaction should be over-excavated and replaced with properly compacted structural fill or rock spalls. If loose soils are encountered in any slab areas, the loose soils should be removed and replaced with rock spalls or granular structural fill. If significant surface water flow is encountered during construction, this flow should be diverted around areas to be developed, and the exposed subgrades should be maintained in a semi-dry condition.

Portions of this site may be underlain by moisture-sensitive soils. Due to these conditions, special site stripping and grading techniques might be necessary, especially if grading is attempted in wet weather. These could include using large excavators equipped with wide tracks and a smooth bucket to complete site grading and promptly covering exposed subgrades with a layer of crushed rock for protection. If wet conditions are encountered or construction is attempted in wet weather, the subgrade should not be compacted as this could cause further subgrade disturbance.

In wet conditions, it may be necessary to cover the exposed subgrade with a layer of crushed rock as soon as it is exposed to protect the moisture sensitive soils from disturbance by machine or foot traffic during construction. The prepared subgrade should be protected from construction traffic and surface water should be diverted around prepared subgrade. Shallow groundwater, if encountered, should be intercepted with cut-off drains and routed around the planned grading area, or the groundwater should be controlled with sump-pumps or dewatering systems. Failure to follow these recommendations could cause erosion and failures on the slopes, as well as result in inadequate subgrades. NGA should be retained to evaluate the suitability of all on-site and imported structural fill material during construction.

Structure Setbacks

Uncertainties related to building along the top and toe of steep slopes are typically addressed by the use of building setbacks. The purpose of the setback is to establish a "buffer zone" between the structure and the top and toe of the slope so that ample room is allowed for normal slope recession during a reasonable life span of the structure. In a general sense, the greater the setback, the lower the risk of slope failures to impact the structure. From a geological standpoint, the setback dimension is based on the slope's physical characteristics, such as slope height, slope angle, material composition, and hydrology. Other factors such as historical slope activity, rate of regression, and the type and desired life span of the development are important considerations as well.

Based on the conditions described above, it is our opinion that the potential for shallow sloughing-type failures during severe weather exists on the steeper site slopes below and to the west of the subject property. We anticipate that structures may be located in proximity to the top of the steep north-facing slope on the northern side of the site. If structures are to be located greater than 15-feet from the top of the steep north-facing slope on the north side of the site, standard foundation embedment depths can be utilized. Between 15-feet and 10-feet to the top of the slope, the foundation should be deepened 4-feet into native glacial soils.

Based on the latest plan for the site, we understand some portions of the western residence foundation will encroach directly onto the site slopes. In this case, any foundation element closer than 10-horizontal feet to the top of the slope should be embedded such that the base of the footing is the same elevation as that of the base of the slope, or deeper. Given that the residences are proposed with full basements per the plan, this should be possible. We also understand the entrance/deck along the north side of the residences will be supported on columns closer than 10-feet to the slope. These columns should be supported on sonotubes or similar, also extending to the base of the site slopes. These recommendations allow for the residences to be placed closer to the steep slopes to accommodate the size of the residences and safeguard the site slopes from the development.

No material of any kind should be placed within the setback area or be allowed to reach the slopes, such as excavation spoils, lawn clippings, debris, and soil stockpiles. Any sloping areas disturbed during construction should be planted as soon as practical to reduce the potential for erosion. New vegetation should be maintained until it is established. Revegetation should be performed in accordance with City of Bellevue code. Under no circumstances should water be allowed to concentrate on the slope.

Temporary and Permanent Slopes

Temporary cut slope stability is a function of many factors, including the type and consistency of soils, depth of the cut, surcharge loads adjacent to the excavation, length of time a cut remains open, and the presence of surface or groundwater. It is exceedingly difficult under these variable conditions to estimate a stable, temporary, cut slope angle. Therefore, it should be the responsibility of the contractor to maintain safe slope configurations at all times as indicated in OSHA guidelines for cut slopes.

The following information is provided solely for the benefit of the owner and other design consultants and should not be construed to imply that Nelson Geotechnical Associates, Inc. assumes responsibility for job site safety. Job site safety is the sole responsibility of the project contractor.

For planning purposes, we recommend that temporary cuts in the upper undocumented fill and loose surficial soils be no steeper than 2 Horizontal to 1 Vertical (2H:1V). Temporary cuts in the competent native glacial soils at depth should be no steeper than 1.5H:1V. If temporary cut excavations are not able to achieve the recommended inclinations, we recommend that the cuts up to 7.5-feet in height be temporarily shored with an UltraBlock shoring wall as discussed in the **Temporary UltraBlock Shoring Wall** subsection of this report. For excavations exceeding 7.5-feet in height, such as for the basements, a soldier pile shoring wall should be erected as discussed in the **Soldier Pile Shoring Wall** subsection of this report. If significant groundwater seepage or surface water flow were encountered, we would expect that flatter inclinations would be necessary.

We recommend that cut slopes be protected from erosion. The slope protection measures may include covering cut slopes with plastic sheeting and diverting surface runoff away from the top of cut slopes. We do not recommend vertical slopes for cuts deeper than four feet, if worker access is necessary. We recommend that cut slope heights and inclinations conform to appropriate OSHA/WISHA regulations.

Permanent cut and fill slopes should be no steeper than 2H:1V. However, flatter inclinations may be required in areas where loose soils are encountered. Permanent slopes should be vegetated, and the vegetative cover maintained until established.

Shoring Walls

Temporary Ultra Block Shoring Wall: Due to the tall cuts needed to facilitate foundations and driveway access for the development, we anticipate shoring walls will be needed. Specific tall cuts less than or equal to 7.5-feet can be shored utilizing a temporary Ultra Block Shoring Wall. This type of shoring wall may be designed as permanent foundation retaining walls and incorporated into the residences.

If temporary cut excavations as recommended above cannot be accommodated because of close proximity of the excavations to the property-lines, we recommend that the cuts be temporarily shored with an UltraBlock shoring wall. The total height of the shoring wall should not exceed 7.5 feet. The UltraBlock wall should be constructed with a vertical batter or a slight lean back towards the cut and should be supported directly on competent native bearing glacial till soils.

All vertical joints between blocks should be staggered at each row. Temporary cuts above the temporary Ultra Block shoring wall should be sloped back away from the wall at 1.5H:1V or flatter inclination and should be no greater than four feet in overall height. All exposed soils above the shoring wall should be protected from erosion. The UltraBlock wall is considered only a temporary excavation support measure and should be buried or removed, and permanent support established by the building retaining walls. A schematic wall detail is shown on **Figure 8.**

The UltraBlock wall materials should be readily available on site prior to beginning excavation of the temporary cuts to be shored. The cut should be sloped or benched as needed for temporary stability, and wall construction should be accomplished immediately after excavation of the temporary slopes. Safe worker access should be maintained at all times during wall construction. We recommend that the construction of the new UltraBlock wall be performed in short segments no greater than 15 feet in length and be entirely completed using machinery. No personnel should be present between the wall and the cut at any time. Gaps between the wall and cuts should be backfilled with clean 1¼-inch crushed rock.

Soldier Pile Shoring Wall: For cuts taller than 7.5-feet, a solider pile shoring wall should be utilized to support cut excavations. A soldier pile wall typically consists of a series of steel H-beams placed vertically at a certain spacing from one another (typically six to ten feet). The beams are usually placed in drilled shafts that are filled with a structural concrete or a lean mix. The concrete shafts are typically embedded below the bottom of the planned excavation a distance equal to one to two times the exposed height of the wall. The steel beams are extended above finished ground surface to provide shoring capabilities for the area to be retained. The beams are typically spanned by pressure treated timber lagging or concrete panels. The H-beam size, shaft diameter, shaft embedment, and pile spacing are dependent on the nature of the soils anticipated to be retained by the wall and the soils at depth, wall height, drainage conditions, and the final geometry.

The shoring wall should be designed by an experienced structural engineer licensed in the State of Washington. The lateral earth pressure acting on the shoring wall will be dependent on the nature and density of the soil behind the wall, structure and traffic loads on the wall, and the amount of lateral wall movement that may occur as material is excavated from the front of the wall. If the shoring wall is free to yield at least one-thousandth of the retained height, an "active" loading condition develops. If the wall is restrained from movement by stiffness or bracing, the wall is considered in an "at-rest" loading condition. Active and at-rest earth pressure can be calculated based on equivalent fluid densities.

The shoring wall should be designed to resist a lateral load resulting from a fluid with a unit weight of 40 and 60 pounds per cubic foot (pcf) for the active and at-rest loading conditions, respectively. An additional uniform surcharge of 8H should be applied to the wall design to account for seismic loading, if the shoring walls are intended to provide permanent support; H in this case is the exposed height of the wall. These loads should be applied across the pile spacing above the excavation line. These loads can be resisted by a passive pressure of 200 pcf on the below grade medium dense or better native glacial soils encountered at depth. The passive pressure should be applied on two-pile diameters under the excavation line. These values of the passive pressure incorporate a factor of safety of 2.0. The upper two feet of pile embedment should be neglected when calculating the passive resistance for the permanent condition. Also, for the permanent condition, the below-grade portion of the wall should be no less than 1.5 times the wall stick-up height (exposed height).

The above loads should be applied on the full center-to-center pile spacing above the base of the exposed portion of the wall. A 50 percent reduction of the active pressure could be applied for the purpose of designing the wall lagging.

The above pressures assume that the on-site soils retained by the shoring wall are not significantly disturbed and that hydrostatic forces are not allowed to build up behind the wall. These values do not include the effects of surcharges other than what is described above. The retained soils should be readily drained and collected water should be routed into a permanent storm system. Adequate gaps should be maintained between the lagging elements to allow for any potential water seepage buildup to flow through the wall.

The wall designer should calculate the predicted wall deflection, including deflection resulting from the below-grade movement of the piles. The predicted deflection values should be confirmed in the field through a survey monitoring program. Also, surrounding structures should be monitored for any adverse effects resulting from shoring wall installation.

The shoring wall should be installed by a shoring contractor experienced with this type of system. Due to the soil density, we anticipate that an open-hole drilling method may be successful for installing the soldier piles in the on-site soils. If the contractor determines that open-hole methods will not be possible due to groundwater seepage, we recommend that the shoring contractor have the capability of casing the holes as sloughing and/or water seepage may be encountered. It might be prudent to perform one or more “test” holes to confirm installation conditions prior to finalizing budget and work plans. Any sloughing or water that may collect in the drilled holes should be removed prior to pumping grout. Grout should be readily available on site at the time the holes are drilled and cased.

If groundwater seepage is encountered, we recommend that water be pumped out of the holes and the concrete be tremied from the bottom of the excavations to displace the groundwater to the surface. Extra Portland Cement, or other additives, may also be placed in the excavations to reduce the effects of seepage. The spoils from the soldier pile excavations are expected to be moisture-sensitive materials and should be removed from the site. We should be retained to monitor on-site activities during the shoring wall installation on a full-time basis.

Foundations

Conventional shallow spread foundations should be placed on undisturbed medium dense or better native glacial soils. Medium dense or better native glacial bearing soils should be encountered roughly 0.5 to 2.0 feet below the ground surface based on our explorations; however, deeper areas of loose soil and/or undocumented fill may be encountered in unexplored areas of the site. Where undocumented fill or less dense soils are encountered at footing bearing elevation, the subgrade should be over-excavated to expose suitable bearing soil. In addition to supporting the foundations on native, medium dense or better soils, the foundations must also meet setback-embedment recommendations as follows. We anticipate that structures may be located in proximity to the top of the steep north-facing slope on the northern side of the site. If structures are to be located greater than 15-feet from the top of the steep north-facing slope on the north side of the site, standard foundation embedment depths can be utilized. Between 15-feet and 10-feet to the top of the slope, the foundation should be deepened at least 4-feet into native glacial soils. Based on the latest plan for the site, we understand some portions of the western residence foundation will encroach directly onto the site slopes. In this case, any foundation element closer than 10-horizontal feet to the top of the slope should be embedded such that the base of the footing is the same elevation as that of the base of the slope, or deeper. Given that the residences are proposed with full basements per the plan, these embedments should be possible and incorporated into the design. We also understand the entrance/deck along the north side of the residences will be supported on columns closer than 10-feet to the slope. These columns should be supported on sonotubes or similar, also extending to the base of the site slopes. These recommendations allow for the residences to be placed closer to the steep slopes to accommodate the size of the residences and safeguard the site slopes from the development.

Footings should extend at least 18 inches below the lowest adjacent finished ground surface for frost protection and bearing capacity considerations. Foundations should be designed in accordance with the 2018 IBC. Footing widths should be based on the anticipated loads and allowable soil bearing pressure. Water should not be allowed to accumulate in footing trenches. All loose or disturbed soil should be removed from the foundation excavation prior to placing concrete.

For foundations constructed as outlined above, we recommend an allowable design bearing pressure of not more than 2,000 pounds per square foot (psf) be used for the design of footings founded on the medium dense or better native soils or structural fill extending to the competent native material. The foundation bearing soil should be evaluated by a representative of NGA. We should be consulted if higher bearing pressures are needed. Current IBC guidelines should be used when considering increased allowable bearing pressure for short-term transitory wind or seismic loads. Potential foundation settlement using the recommended allowable bearing pressure is estimated to be less than 1-inch total and ½-inch differential between adjacent footings or across a distance of about 20 feet, based on our experience with similar projects.

Lateral loads may be resisted by friction on the base of the footing and passive resistance against the subsurface portions of the foundation. A coefficient of friction of 0.35 may be used to calculate the base friction and should be applied to the vertical dead load only. Passive resistance may be calculated as a triangular equivalent fluid pressure distribution. An equivalent fluid density of 200 pounds per cubic foot (pcf) should be used for passive resistance design for a level ground surface adjacent to the footing. This level surface should extend a distance equal to at least three times the footing depth. These recommended values incorporate safety factors of 1.5 and 2.0 applied to the estimated ultimate values for frictional and passive resistance, respectively. To achieve this value of passive resistance, the foundations should be poured “neat” against the native medium dense soils or compacted fill should be used as backfill against the front of the footing. We recommend that the upper one foot of soil be neglected when calculating the passive resistance.

Retaining Walls

Specific grading plans for this project were not available at the time this report was prepared but retaining walls may be incorporated into project plans. We understand the shoring walls planned for the site may be incorporated into the structure; however, if walls are constructed separately as basement walls, we have outlined the following recommendations. In general, the lateral pressure acting on subsurface retaining walls is dependent on the nature and density of the soil behind the wall, the amount of lateral wall movement which can occur as backfill is placed, wall drainage conditions, and backfill inclination.

For walls that are free to yield at the top at least one thousandth of the height of the wall (active condition), soil pressures will be less than if movement is limited by such factors as wall stiffness or bracing (at-rest condition). We recommend that walls supporting horizontal backfill and not subjected to hydrostatic forces, be designed using a triangular earth pressure distribution equivalent to that exerted by a fluid with a density of 40 pcf for yielding (active condition) walls, and 60 pcf for non-yielding (at-rest condition) walls. A seismic design loading of 8H in psf should also be included in the wall design where "H" is the total height of the wall.

These recommended lateral earth pressures are for a drained granular backfill and are based on the assumption of a horizontal ground surface behind the wall for a distance of at least the subsurface height of the wall, and do not account for surcharge loads. Additional lateral earth pressures should be considered for surcharge loads acting adjacent to subsurface walls and within a distance equal to the subsurface height of the wall. This would include the effects of surcharges such as traffic loads, floor slab loads, slopes, or other surface loads. We could consult with the structural engineer regarding additional loads on retaining walls during final design, if needed.

The lateral pressures on walls may be resisted by friction between the foundation and subgrade soil, and by passive resistance acting on the below-grade portion of the wall. Recommendations for frictional and passive resistance to lateral loads are presented in the **Foundations** subsection of this report.

All wall backfill should be well compacted as outlined in the **Structural Fill** subsection of this report. Care should be taken to prevent the buildup of excess lateral soil pressures due to over-compaction of the wall backfill. This can be accomplished by placing wall backfill in 8-inch loose lifts and compacting the backfill with small, hand-operated compactors within a distance behind the wall equal to at least one-half the height of the wall. The thickness of the loose lifts should be reduced to accommodate the lower compactive energy of the hand-operated equipment. The recommended level of compaction should still be maintained.

Permanent drainage systems should be installed for retaining walls. Recommendations for these systems are found in the **Subsurface Drainage** subsection of this report. We recommend that we be retained to evaluate the proposed wall drain backfill material and observe installation of the drainage systems.

Structural Fill

General: Fill placed beneath foundations, pavement, or other settlement-sensitive structures should be placed as structural fill. Structural fill, by definition, is placed in accordance with prescribed methods and standards, and is monitored by an experienced geotechnical professional or soils technician. Field monitoring procedures would include the performance of a representative number of in-place density tests to document the attainment of the desired degree of relative compaction. The area to receive the fill should be suitably prepared as described in the **Site Preparation and Grading** subsection prior to beginning fill placement. Sloping areas to receive fill should be benched using a minimum 8-foot-wide horizontal benches keyed into competent soils.

Materials: Structural fill should consist of a good quality, granular soil, free of organics and other deleterious material, and be well graded to a maximum size of about three inches. All-weather fill should contain no more than five-percent fines (soil finer than U.S. No. 200 sieve, based on that fraction passing the U.S. 3/4-inch sieve). Some of the more granular on-site soils may be suitable for use as structural fill, but this will be highly dependent on the moisture content of these soils at the time of construction. We should be retained to evaluate all proposed structural fill material prior to placement.

Fill Placement: Following subgrade preparation, placement of structural fill may proceed. All filling should be accomplished in uniform lifts up to eight inches thick. Each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts. All structural fill underlying building areas and pavement subgrade should be compacted to a minimum of 95 percent of its maximum dry density. Maximum dry density, in this report, refers to that density as determined by the ASTM D-1557 Compaction Test procedure. The moisture content of the soils to be compacted should be within about two percent of optimum so that a readily compactable condition exists. It may be necessary to over-excavate and remove wet soils in cases where drying to a compactable condition is not feasible. All compaction should be accomplished by equipment of a type and size sufficient to attain the desired degree of compaction.

Slab-on-Grade

Slabs-on-grade should be supported on subgrade soils prepared as described in the **Site Preparation and Grading** subsection of this report. We recommend that all floor slabs be underlain by at least six inches of free-draining gravel with less than three percent by weight of the material passing Sieve #200 for use as a capillary break. A suitable vapor barrier, such as heavy plastic sheeting (6-mil minimum), should be placed over the capillary break material. An additional 2-inch-thick moist sand layer may be used to cover the vapor barrier. This sand layer may be used to protect the vapor barrier membrane and to aid in curing the concrete.

Pavements

Pavement subgrade preparation and structural filling where required, should be completed as recommended in the **Site Preparation and Grading** and **Structural Fill** subsections of this report. The pavement subgrade should be proof-rolled with a heavy, rubber-tired piece of equipment, to identify soft or yielding areas that require repair. The pavement section should be underlain by a minimum of six inches of clean granular pit run or crushed rock. We should be retained to observe the proof-rolling and recommend repairs prior to placement of the asphalt or hard surfaces.

Utilities

We recommend that underground utilities be bedded with a minimum six inches of pea gravel prior to backfilling the trench with on-site or imported material. Trenches within settlement sensitive areas should be compacted to 95% of the modified proctor as described in the **Structural Fill** subsection of this report. Trench backfill should be compacted to a minimum of 95% of the modified proctor maximum dry density in the upper five feet of the backfill within the roadway and should be tested. Trenches located in non-structural areas and five feet below roadway subgrade should be compacted to a minimum 90% of the maximum dry density.

Site Drainage

Stormwater Infiltration: The soils encountered throughout the site generally consisted of undocumented fill soils underlain by glacial till soils at depth. The City of Bellevue GIS map indicates that the site may be exempt from infiltration requirements due to proximity to the steep slopes; however, depending on how the site is graded shallow infiltration systems may be feasible. The infiltration systems, if feasible, should be designed in accordance with the parameters outlined in the 2021 City of Bellevue Surface Water Engineering Standards manual. Design infiltration rates should be determined with a small-scale pilot infiltration test (PIT) after preliminary grading and drainage plans are developed.

Surface Drainage: Final site grades should allow for drainage away from the planned development area. We suggest that the finished ground be sloped at a minimum gradient of three percent for a distance of at least 10 feet away from the structure. Runoff generated on this site should be collected and routed into a permanent discharge system. This should include all downspouts and runoff generated on all hard surfaces and yards areas. Under no circumstances should water be allowed to flow uncontrolled over the site slopes. Water should not be allowed to collect in any area where footings or slabs are to be constructed.

Subsurface Drainage: If groundwater is encountered during construction, we recommend that the contractor slope the bottom of the excavation and collect the water into ditches and small sump pits where the water can be pumped out of the excavation and routed into a suitable outlet. We recommend that the residence down spouts and footing drains be tightlined to an appropriate discharge location. We recommend the use of footing drains around structures. Footing drains should be installed at least one foot below planned finished floor elevation. The drains should consist of a minimum 4-inch-diameter, rigid, slotted or perforated, PVC pipe surrounded by free-draining material wrapped in a filter fabric. We recommend that the free-draining material consist of an 18-inch-wide zone of clean (less than three-percent fines), granular material placed along the back of walls. Washed rock is an acceptable drain material, or drainage composite may be used instead. The free-draining material should extend up the wall to one foot below the finished surface. The top foot of soil should consist of low permeability soil placed over plastic sheeting or building paper to minimize the migration of surface water or silt into the footing drain. Footing drains should discharge into tightlines leading to an appropriate collection and discharge point with convenient cleanouts to prolong the useful life of the drains. Roof drains should not be connected to wall or footing drains.

CONSTRUCTION MONITORING

We recommend that we be retained to provide construction monitoring services to evaluate conditions encountered in the field with respect to anticipated conditions, to provide recommendations for design changes should the conditions differ from anticipated, and to evaluate whether construction activities comply with contract plans and specifications.

USE OF THIS REPORT

NGA has prepared this report for **RET Investment Trust** and associated agents, for use in the planning and design of the development on this site only. The scope of our work does not include services related to construction safety precautions and our recommendations are not intended to direct the contractors' methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. There are possible variations in subsurface conditions between the explorations and also with time. Our report, conclusions, and interpretations should not be construed as a warranty of subsurface conditions. A contingency for unanticipated conditions should be included in the budget and schedule. We recommend that we be retained to review the project plans after they have been developed to determine that recommendations in the report were incorporated into project plans.

We recommend that NGA be retained to review final plans prior to construction. We also recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications. We should be contacted a minimum of one week prior to construction activities and could attend pre-construction meetings if requested.

Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted geotechnical engineering practices in effect in this area at the time this report was prepared. No other warranty, expressed or implied, is made. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the owner.

o-o-o

It has been a pleasure to provide service to you on this project. If you have any questions or require further information, please call.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.

Katelyn S. Brower, GIT
Project Geologist

Carston T. Curd, LG
Project Geologist

11.02.2023

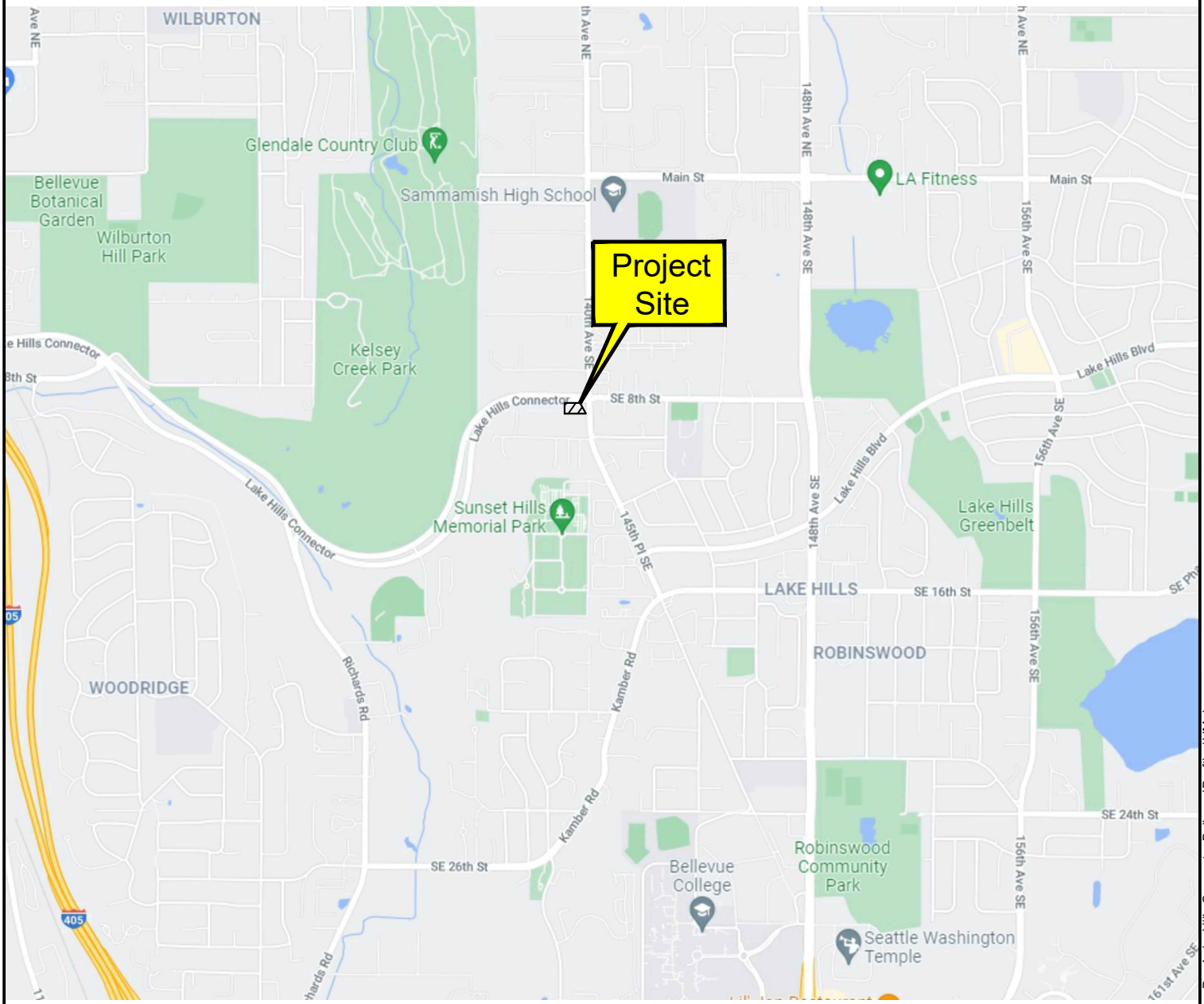
Khaled M. Shawish, PE
Principal

KSB:CTC:KMS:dy

Eight Figures Attached

VICINITY MAP

Not to Scale



Bellevue, WA

Project Number 1310521	SE 8th St Residential Development Lake Hills Connector Vicinity Map	NELSON GEOTECHNICAL ASSOCIATES, INC Woodinville Office: 17311-135th Ave. NE, A-500, Woodinville, WA 98072, (425) 486-1669 / Fax: 481-2510 Wenatchee Office: 105 Palouse St. Wenatchee, WA 98801, (509) 665-7696 / Fax: 665-7692 www.nelsongeotech.com
Figure 1		

No.	Date	Revision	By	CK
1	12/2/21	Original	DPN	KSB

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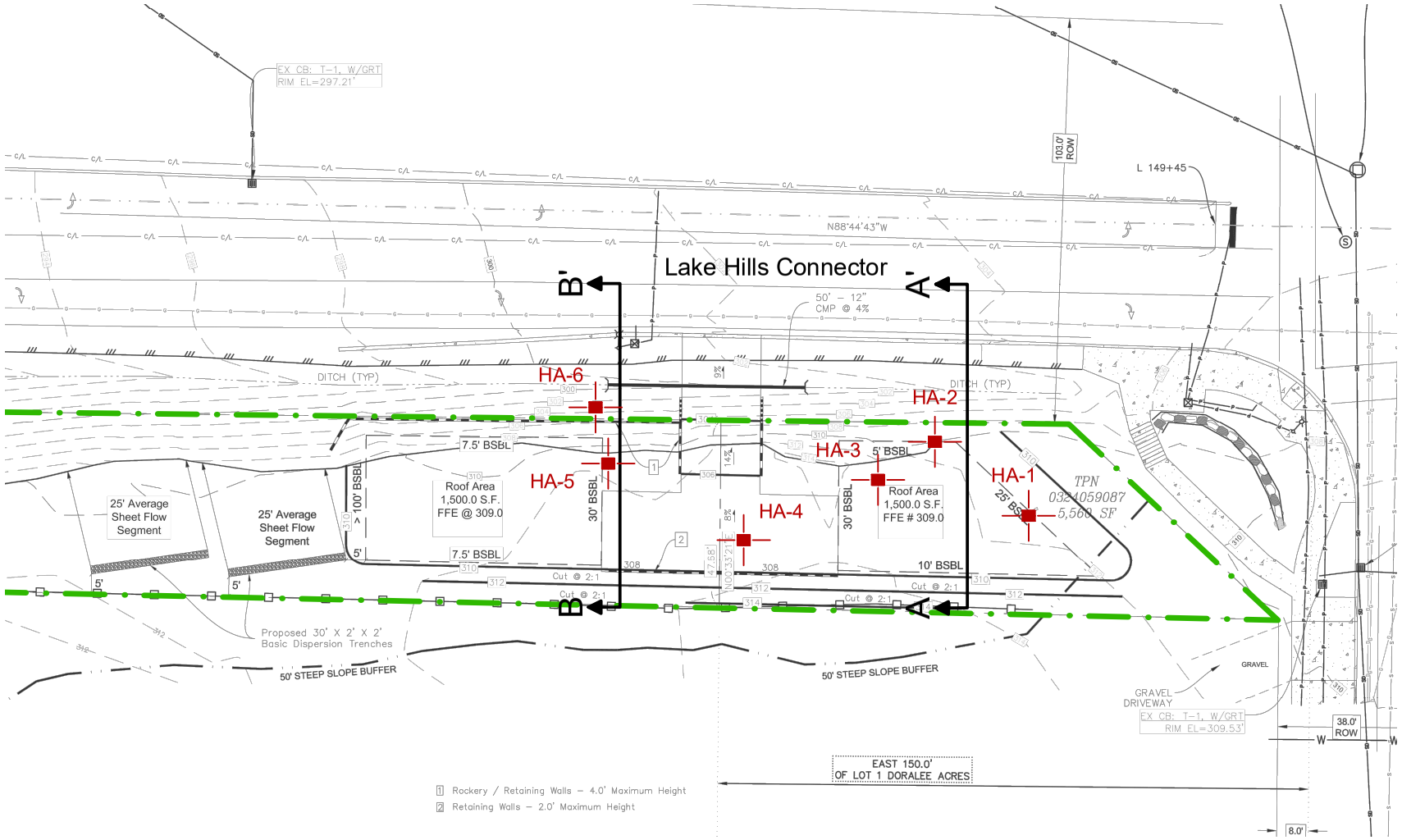
Site Plan



LEGEND

Property line

HA-1

Number and approximate location of hand auger

A A'

Approximate location of cross-section

0 40 80

Scale: 1 inch = 40 feet

Reference: Site plan based on a plan dated November 1, 2021 titled "Seminoff Homes," prepared by Pacific Land Engineering.

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Project Number 1310521

Figure 2

SE 8th St
Residential Development
Lake Hills Connector
Site Plan

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No.	Date	Revision	By	CK
1	1/9/15	Original	DPN	LSB

Figure 3

Project Number 1310521

SE 8th St Residential Development
Lake Hills Connector
Cross-Section A-A'

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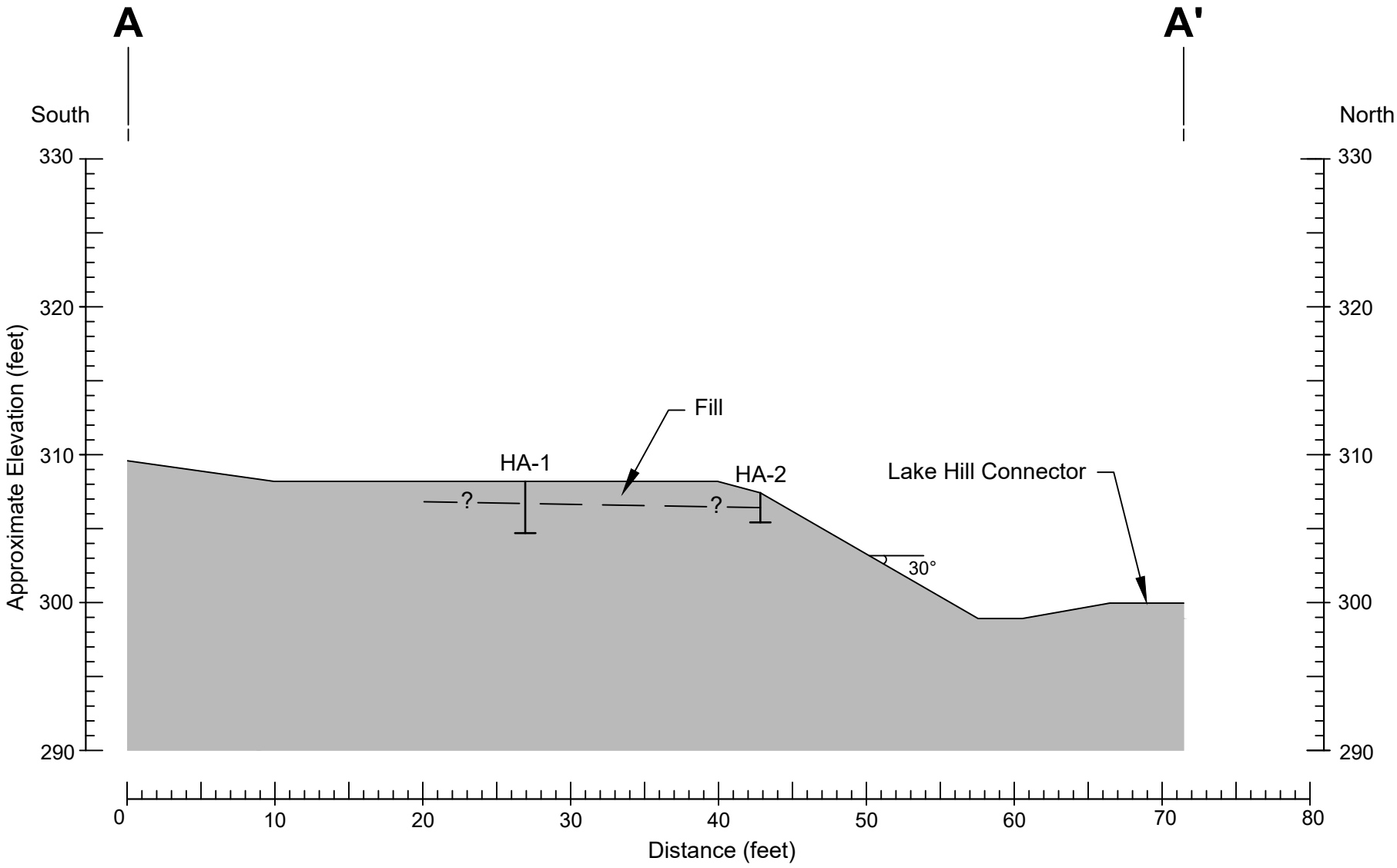
No.	Date	Revision	By	CK
1	12/2/21	Original	DPN	KSB



Exploration

Hand Auger Designation → HA-1

Groundwater Level During Exploration →

Geologic Contact (approximate) → ?—?

NOTES:
1) Stratigraphic conditions are interpolated between the explorations. Actual conditions may vary.
2) Elevations are approximate.

Reference: Cross Section is based on field measurements using a hand-held clinometer and 100-ft tape measure.

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Project Number
1310521

Figure 4

SE 8th St
Residential Development
Lake Hills Connector
Cross-Section B-B'

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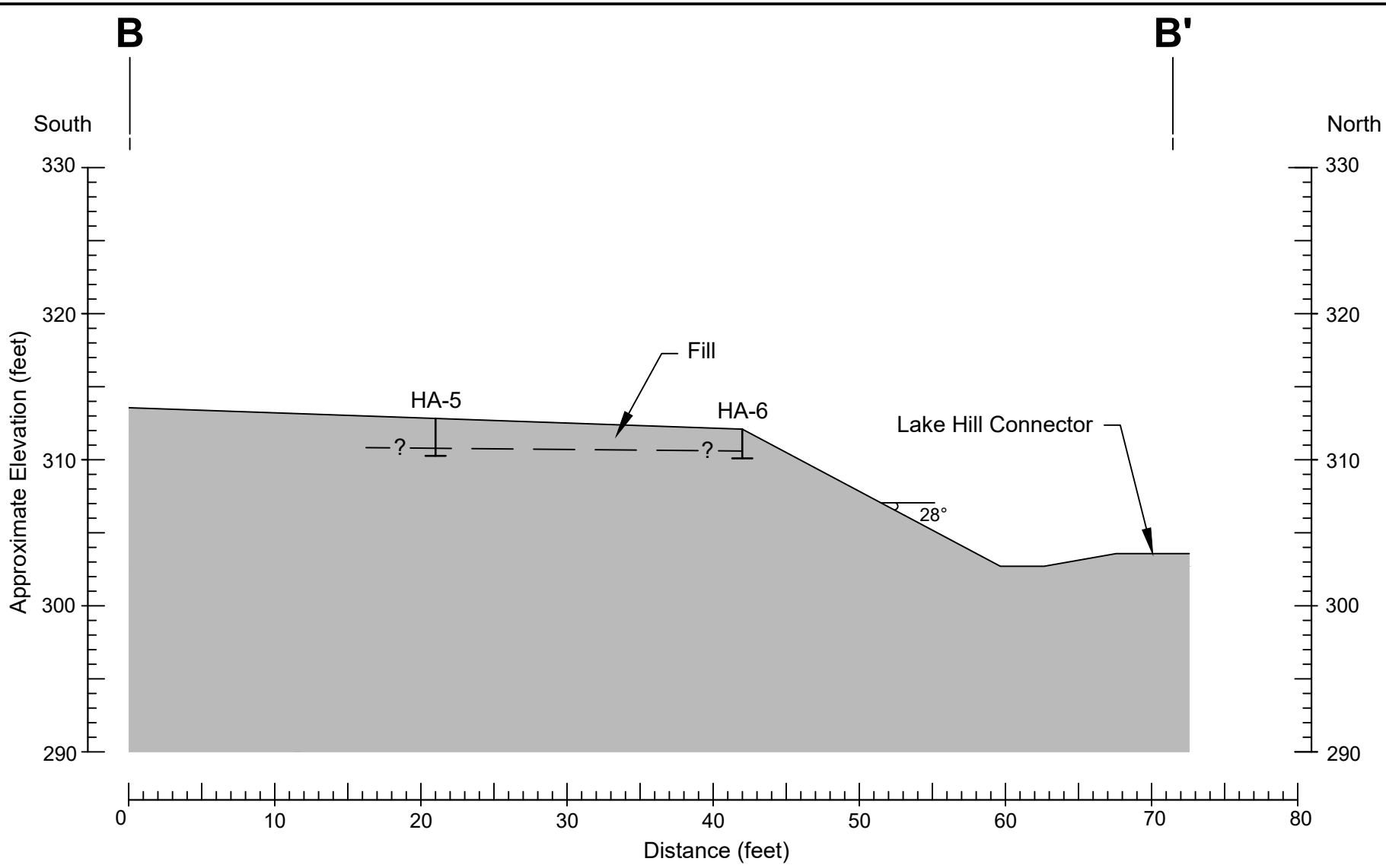
No.	Date	Revision	By	CK
1	12/2/21	Original	DPN	KSB



Exploration

Hand Auger Designation → HA-1

Groundwater Level During Exploration →

Geologic Contact (approximate) → ?—?

NOTES:
1) Stratigraphic conditions are interpolated between the explorations. Actual conditions may vary.
2) Elevations are approximate.

Reference: Cross Section is based on field measurements using a hand-held clinometer and 100-ft tape measure.

\\hill\company\2021 NGA Project Folders\13105-21 RET Res Dev Lake Hills Connector Bellevue\Drafting\CS.dwg

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE - GRAINED SOILS MORE THAN 50 % RETAINED ON NO. 200 SIEVE	GRAVEL MORE THAN 50 % OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL	GW	WELL-GRADED, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND MORE THAN 50 % OF COARSE FRACTION PASSES NO. 4 SIEVE	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE - GRAINED SOILS MORE THAN 50 % PASSES NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT LESS THAN 50 %	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY LIQUID LIMIT 50 % OR MORE	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1) Field classification is based on visual examination of soil in general accordance with ASTM D 2488-93.

2) Soil classification using laboratory tests is based on ASTM D 2488-93.

3) Descriptions of soil density or consistency are based on interpretation of blowcount data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water.

Wet - Visible free water or saturated, usually soil is obtained from below water table

Project Number 1310521	SE 8th St Residential Development Lake Hills Connector Soil Classification Chart	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
Figure 5			1	12/2/21	Original	DPN	KSB

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LOG OF EXPLORATION

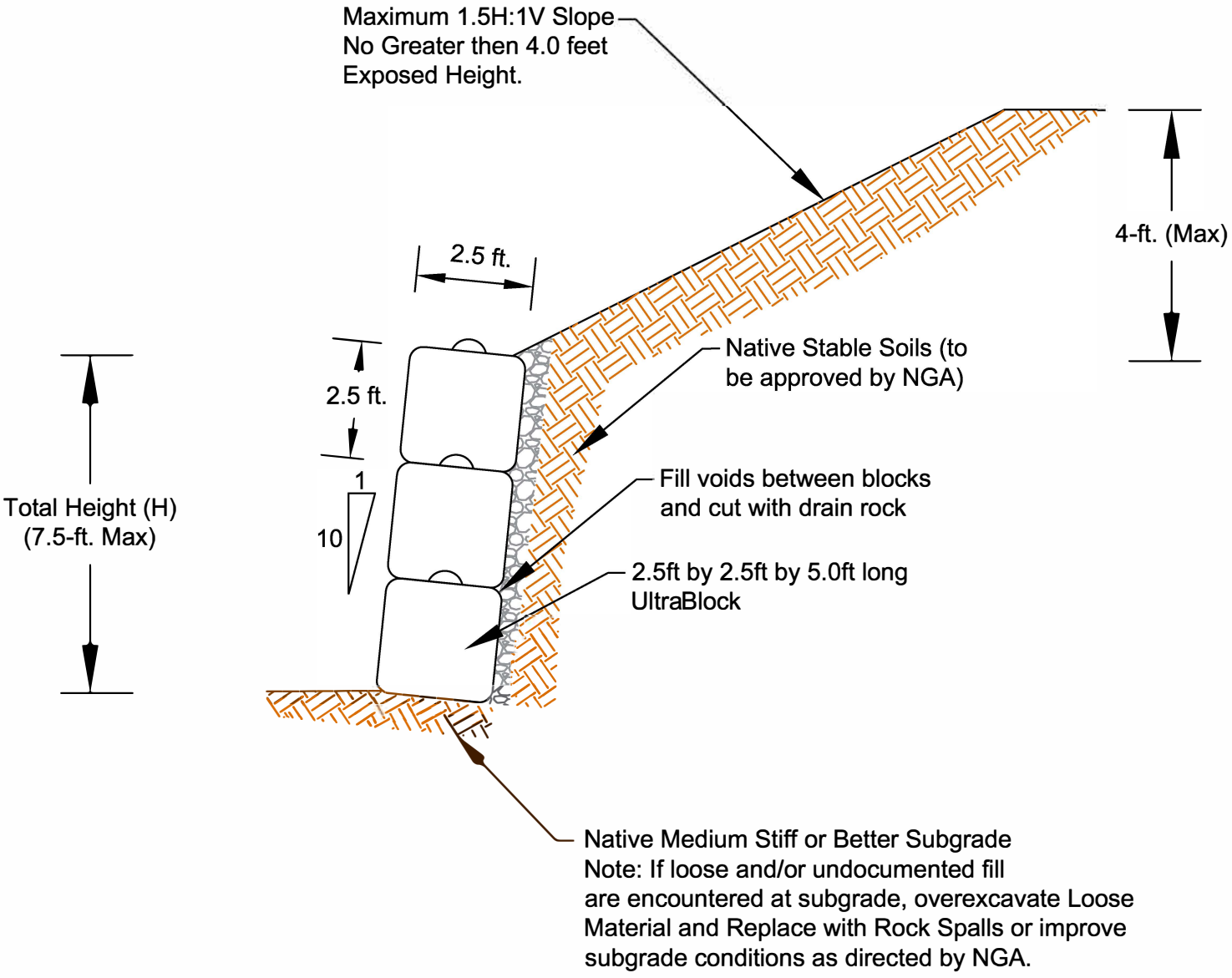
DEPTH (FEET)	USCS	SOIL DESCRIPTION
HAND AUGER ONE		
0.0 – 1.5		DARK BROWN TO LIGHT GRAY, SILTY FINE TO COARSE SAND WITH ROOTS, GRAVEL, COBBLES, AND ORGANICS (LOOSE, MOIST TO WET) (**FILL**)
1.5 – 3.5	SM	GRAY, SILTY FINE TO COARSE SAND WITH GRAVEL AND IRON-OXIDE STAINING (MEDIUM DENSE TO DENSE, MOIST) (**GLACIAL TILL**)
		SAMPLES WERE NOT COLLECTED GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 3.5 FEET ON 11/12/2021
HAND AUGER TWO		
0.0 – 1.0		BROWN-GRAY, SILTY FINE TO MEDIUM SAND WITH ORGANICS AND ROOTS (LOOSE, MOIST TO WET) (**FILL**)
1.0 – 2.0	SM	GRAY, SILTY FINE TO MEDIUM SAND WITH GRAVEL (MEDIUM DENSE TO DENSE, MOIST) (**GLACIAL TILL**)
		SAMPLE WAS COLLECTED AT 2.0 FEET GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 2.0 FEET ON 11/12/2021
HAND AUGER THREE		
0.0 – 1.0		GRAY-BROWN **TOPSOIL** WITH ROOTS (LOOSE, MOIST TO WET) (**FILL**)
1.0 – 2.0	SM	GRAY, SILTY FINE TO MEDIUM SAND WITH IRON-OXIDE STAINING (MEDIUM DENSE, MOIST) (**GLACIAL TILL**)
		SAMPLES WERE NOT COLLECTED GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 2.0 FEET ON 11/12/2021
HAND AUGER FOUR		
0.0 – 2.0		BROWN TO ORANGE SILT WITH FINE TO MEDIUM SAND, ROOTS, AND ANTHROPOGENIC DEBRIS (SOFT, MOIST TO WET) (**FILL**)
2.0 – 2.5	ML	GRAY TO GRAY-BROWN SILT (MEDIUM STIFF, MOIST TO WET) (**GLACIAL TILL**)
		SAMPLES WERE NOT COLLECTED GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 2.5 FEET ON 11/12/2021
HAND AUGER FIVE		
0.0 – 1.5		BROWN, SILTY FINE TO MEDIUM SAND WITH ORGANICS AND ROOTS (LOOSE, MOIST TO WET) (**FILL**)
1.5 – 2.0	SM	GRAY TO GRAY-BROWN, SILTY FINE TO MEDIUM SAND WITH GRAVEL AND IRON-OXIDE STAINING (MEDIUM DENSE, MOIST) (**GLACIAL TILL**)
		SAMPLE WAS COLLECTED AT 2.0 FEET GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 2.0 FEET ON 11/12/2021

LOG OF EXPLORATION

DEPTH (FEET)	USCS	SOIL DESCRIPTION
HAND AUGER SIX		
0.0 – 0.5		BROWN, SILTY FINE TO MEDIUM SAND WITH ORGANICS AND ROOTS (LOOSE, MOIST TO WET) (**FILL**)
0.5 – 1.0	SM	GRAY, SILTY FINE TO MEDIUM SAND (MEDIUM DENSE TO DENSE, MOIST TO WET) (**GLACIAL TILL**)
		SAMPLES WERE NOT COLLECTED GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 2.0 FEET ON 11/12/2021

Temporary UltraBlock Shoring Wall Detail

(Not to Scale)



Project Number	SE 8th St Residential Development Lake Hills Connector Temporary UltraBlock Shoring Wall Detail	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
1310521			1	12/13/21	Original	CTC	KMS
Figure 8		

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MEMORANDUM

DATE: November 2, 2023

TO: RET Investment Trust
ATTN: Wayne Seminoff

FROM: Khaled M. Shawish, PE
Katelyn S. Brower, GIT

RE: Comment Response Memorandum
SE 8th Street Residential Development
803 – 140th Avenue SE and 804 Lake Hills Connector
Bellevue, Washington
NGA File No. 1310521

11.02.2023

This memorandum documents our response to a request for comments regarding the SE 8th Street Development project located at **803 – 140th Avenue SE and 804 Lake Hills Connector in Bellevue, Washington.** We previously issued a geotechnical report for the project dated December 30, 2021.

Plans include the construction of two residence structures, one on each of the lots, with a hammerhead driveway, providing access branching from the Lake Hills Connector. We understand the configuration of the site will require cuts and retaining walls approximately up to 10-feet in height to facilitate shared driveway access in some areas to facilitate driveway access construction and overall grading and residence placement on the site. We also understand that the residences will be placed in close proximity to the existing cut slope adjacent to the Lake Hills Connector.

To aid us in preparing this comment response, we were given the following documents:

- ***Architectural Sheets for the East and West Parcels, dated September 29, 2023.***
- ***Civil Engineering Plans titled "804 Lake Hills Connector & 803 140th Avenue NE, dated August 11, 2023 and prepared by DR Strong Consulting Engineers.***
- ***Civil Engineering Plans titled "804 Lake Hills Connector," dated August 11, 2023 and prepared DR Strong Consulting Engineers.***
- ***Critical Areas report titled "804 Lake Hills Connector Parcels 032405-9047 and 032407-9807," dated September 21, 2023, and prepared by Altmann Oliver Associates.***

- ***A letter from the City of Bellevue titled "804 Lake Hills Connector, Bellevue WA," dated June 30, 2023 and in reference to Permit No. 23-108075-LO and 23-108076-LS.***

- ***A letter from the City of Bellevue titled "803 140th Avenue SE, Bellevue, WA," dated June 28, 2023 and in reference to Permit No. 23-108084-LS.***

We understand that the City of Bellevue has come back with a second set of revision comments and community comments after submittal, and we have been requested to provide geotechnical responses to these comments. In the following section, we summarize the relevant geotechnical concern raised by the City as well as other commentors, followed by our response and supplemental recommendations. Please note, some of these comments are identical comments requested for each parcel and are answered together for each property.

COMMENT 1:

"2) and 4) Structure Setbacks. Are the structure setbacks you propose the minimum necessary to construct a single-family residence? The current proposal results in the removal of eight (8) trees. Is there a way for all or at least some of these trees to be retained and protected? Additionally, why are 25-foot, 20-foot, or 15-foot structure setbacks not feasible for this site? Please explain."

RESPONSE 1: The buildings are currently designed at just over 2,000 square feet and are elongated parallel to the thin lots to accommodate the minimum lot setbacks. It appears that if an additional 15-foot setback from the top of the site slopes were included on top of these setbacks, it may prove impractical for especially the western residence.

We provided recommendations within our report to mitigate the reduced setbacks such that the slope will still be protected from the development. The residences will be designed with full basements that we have recommended should be embedded such that the base of the foundations will be at the same elevation as the base of the northern slopes. This will transfer structure loads to below the slope level, therefore protecting the slope from failures associated with 'loading' from the development.

Additionally, it appears the trees in and near the location of the western residence cannot be retained due to their proximity to the footprint, and to the shoring wall that will need to be installed prior to excavation. Due to shoring activities and equipment needed, leaving the trees on the western lot would not be feasible, and may become unsafe if they were to be retained. The shoring wall will protect and support the site slopes during construction, and we understand that stumps will be left in place, if possible, as long as they do not interfere with the wall alignment. Our report contains recommendations to stabilize the slope in terms of erosion protection during construction as well.

Our review of the Critical Areas report indicates that mitigation and replantings on the western parcel will take place for the removal of trees.

COMMENT 2:

"4) a. and 3) b. The geotechnical report states "specific structure locations have not been finalized when this report was prepared." Please update your geotechnical report providing a specific structure location and your recommendations to reflect the location."

RESPONSE 2: We have updated the previous report to better reflect the most current plans.

COMMENT 3:

"4) b. and 3) c. Within your geotechnical report, demonstrate the proposed development meets the excavation and fill limitations of 10-feet and 5-feet, respectively, as provided in LUC 20.20.460.E.3. This LUC states: Changes in existing grade outside the building footprint shall be minimized. Excavation shall not exceed 10 feet. Fill shall not exceed five feet subject to the following provisions: all fill in excess of four feet shall be engineered; and engineered fill may be approved in exceptional circumstances to exceed five feet to a maximum of eight feet. Exceptional circumstances are: (1) instances where driveway access would exceed 15 percent slope if additional fill retained by the building foundation is not permitted; or (2) where the five-foot fill maximum generally is observed but limited additional fill is necessary to accommodate localized variations in topography."

RESPONSE 3: No excavations are proposed that are greater than 10-feet, based on our review of project plans and discussion with the project engineer. Due to the residences being proposed with full basements, we anticipate an excavation of 10-feet or less to accommodate the basements. The shoring wall planned for the site will reduce or eliminate artificial/temporary grading slopes. We anticipate that some fill will be required to create the driveway ramp onto the site across the short ditch by Lake Hills Connector, but to our knowledge, the fills should not likely be greater than 5-feet and should be engineered properly as it will function as the main access drive. We do not anticipate any other significant fills being placed on the site. As stated in our report, no fills should be planned on site slopes.

COMMENT 4:

"4) c. and 3) d. Comments were submitted by the public with concerns regarding driveway access, slope stability, and stormwater management. Your geotechnical engineer shall address these comments in the geotechnical report. See combined comments attached to this revision request letter."

RESPONSE 4: Responses listed after each comment.

***Commentor #1**: The house size statistics for the neighborhood are ridiculous. First, it only considers new houses built not the existing stock. Second, there are no such massive houses on such a tiny properties. Also, the permit refers to there only being 1 new construction which is 1 story. Again, only considering new construction, not existing stock. More importantly, these designs have a full basement effectively making them 3 stories which is quite OUT of the ordinary for the neighborhood. There is no way these homes match the character of the neighborhood and to imply as such in the permit is insulting.*

RESPONSE COMMENTOR #1: This comment is mostly outside of our specialty in geotechnical engineering; however, we can offer that the full basement proposed for the homes will serve as an effective way to transfer structure loads to the base or core of the steep slopes onsite, protecting the slopes from structure loading while providing useable space.

***Commentor #2**: The "Bellevue Connector Residence West" project proposal encompasses a range of aspects that pose significant risks to public safety, the surrounding property, and the overall well-being of our community. I believe it is of utmost importance that these concerns be addressed before proceeding further. First and foremost, I would like to highlight the dangerous and detrimental nature of the proposed driveway location on the Lake Hills Connector. Situated just after a curve and lacking a deceleration lane, this placement compromises the safety of an important thoroughfare where the established speed limit is 40 mph. According to established guidelines, driveways should not be located near sharp curves, steep grades, or points that hinder the free and safe movement of traffic. Unfortunately, the proposed location fails to meet these essential criteria. It is crucial to recognize that drivers entering the roadway from a driveway require a clear line of sight in each direction to identify approaching vehicles before entering the roadway. Simultaneously, drivers already traveling on the roadway must be able to perceive vehicles entering the roadway in order to slow down or even come to a stop, if necessary. The proposed driveway's inadequate visibility and positioning compromise these critical factors, significantly increasing the risk of accidents and impeding the flow of traffic on this already busy road. Secondly, I have concerns regarding the requested variance from the required 30' front and 25' rear setback. Deviating from these setbacks poses a direct threat to the stability of the surrounding property, particularly given the presence of critical steep slopes in the area. It is understood that development on steep slopes disrupts natural absorption functions, leading to increased runoff, faster water flow, and diminished soil protection. The additional hard surfaces resulting from the development will shed increasing amounts of water from the buildings, pavement, and compacted soil. Our concern is that the water will run off quickly and fail to soak into the ground. This exacerbates the amount of runoff that needs to be managed and places additional strain on existing drainage systems and downstream erosion risk. To ensure the safety of our community and the preservation of our environment, I implore the local government to reconsider the proposed land use project in light of these concerns. It is imperative that the project adheres to long established guidelines and regulations that prioritize the safety of residents and the surrounding infrastructure. I kindly request a comprehensive reassessment of the proposed driveway location, with a particular focus on identifying a safer alternative that allows for clear visibility and does not hinder traffic flow. Moreover, I urge you to carefully consider the potential consequences of deviating from the required setbacks, especially in relation to the stability of the critical steep slopes and the management of stormwater runoff.*

RESPONSE COMMENTOR #2: As geotechnical engineer for the project, we cannot speak directly to what is safe or stable in regards to traffic for the driveway location, however, based on discussions with the client, the driveway cannot be moved any closer to the intersection because the ROW won't allow this. It would also be impractical to move the driveway westward, as it would be closer or within the taller critical areas slopes.

Regarding concerns for steep slopes and runoff, the maximum lot coverage allowed by the zoning is 45%. Both properties meet this requirement, with the eastern lot coming in at 44.9% and the western lot coming in at just 6.8% of the total lot size due to the size of unbuildable area. The recommendations within our report for the setbacks and slopes will help protect the slopes from the proposed development. Due to the site constraints from the property shape, we recommended an effective setback, which is the distance from the face of the slope to the base of the foundation, rather than a horizontal distance to the top of the slope. The foundations for this project will be advanced to a depth that will not affect the slope through structure loading. Drainage from the additional roof areas will be routed to approved systems and will not be allowed to flow over the site slopes, and therefore the impervious surface proposed should not increase a runoff threat to the slopes on or near the site.

Additionally, we have reviewed the critical areas mitigation report prepared by Altmann Oliver Associates and the area of critical slope and buffer that the western residence will encroach upon, and where the trees will be removed, will be properly mitigated with plantings to enhance the critical area present on the western property.

Commentor #3:

1)The lake hills connector east bond traffic will come from downhill and driving up hill at a relatively high speed and very limited amount of visibility on what is above them, especially during poor weather conditions and night time. (90% of the time) having a drive way going in and out on to lake hill connectors would increase the risk of serious injuries and put unnecessary load on our police and first responders.

2) trees and their roots are what is holding that hill and the weight above it . There is still one big lot above, and in the future when they want to subdivide, all that weight of new constructions will not hold . It is in my opinion playing with fire and unnecessarily risking the lives of people above and below, as not one expert can guarantee that remove all those trees will not cause s landslide under heavy rain fall.

3) by not abiding by the rules and granting variances opens the door for other people to want to do the same. Everyone will look at this project and say you granted variance in that one why not mine? A slippery slope to say the least.

RESPONSE COMMENTOR #3: Regarding traffic and variances is not our specialty as geotechnical engineers, but in regards to the site slopes, the recommendations we have provided for shoring walls and extending the residence basements down to the elevation of the base of the northern steep slopes will safeguard the residences and ensure the development does not negatively affect the stability of the site slopes. If our recommendations are properly incorporated, all structure loads will be advanced to the base of the site slopes so that no structure loading will occur above the slopes. The additional shoring wall will provide stability to the cuts that will be made into the slopes to facilitate construction of the residences.

Commentor #4: *I find this variance proposal highly inadequate given the following data which is also based on the exact same parcels provided on the variance request. While I understand the need for a variance given the non-conformity of the lot in question, this does not equate to blatantly ignoring the parameters and guidelines established in the Land Use Code. Specifically, the proposal results in a Living Square Footage to Lot Ratio of 86% as seen on the appended Table 1 below. This is multiple times higher – as also evidenced in the same appended table - than any permutation of the properties in the vicinity within ¼ mile from the subject property. It is in fact more than THREE TIMES the ratio of the three largest homes. I deem this proposal highly unacceptable and disagree with the statement on the proposal that this would not convey any special privilege. It clearly does as the House (living square footage) to Lot ratio is nothing close to anything else in that same zone.*

RESPONSE COMMENTOR #4: As geotechnical engineering is our specialty, we cannot comment on the size ratio of the residences or character of the neighborhood.

Commentor #5:

1. Zoning and Neighborhood Character

The subject property is zoned R-1.8, which per the city land use code "provide[s] for a low density residential environment which may serve to protect steep slopes or unstable land from overdevelopment". This particular lot is in an area that serves as a visual gateway to the preserved open space of Kelsey Creek Park and nearby parkland. The area is characterized by deeper setbacks and a thick tree buffer between homes and the transportation corridors. The proposed reduced setback and increased building height would negatively affect this characteristic of the neighborhood. Please consider these visual impacts when addressing this application. When Lake Hills Connector was built, I assume that affected property owners were compensated at market value for the lost portion of their parcels. This would have compensated for the loss of utility, meaning that it should not be a factor in this application. Further, we value Bellevue's reputation as a "city in a park" and support the city's goal of 40% tree canopy by 2050. Please apply the land use code in keeping with the spirit of these goals.

2. Transportation Impacts

This area is intensively used not just by motorists, but by bicyclists, pedestrians and transit riders. It enjoys two frequent King County Metro routes. Bicycle lanes were installed in the recent past, but the eastbound bicycle facility stops short of this area. By adding a 20 foot driveway serving multiple homes, there will be a safety and traffic impact that should be considered. In addition, 140th Ave SE has frequent heavy backups. In the peak PM travel period, southbound backups frequently extend past Main Street. Although this is just one driveway, I would like to see that the City is considering any traffic impacts as part of this application

RESPONSE COMMENTOR #5: As geotechnical engineering is our specialty, we cannot comment on neighborhood character or transportation impacts. Although as said before, we understand due to restrictions, the driveway location shown on the plans cannot be feasibly moved due to ROW restrictions and critical slope locations. The Critical areas report we reviewed specifies that the tree removal will be mitigated through planting of native species on the western lot.

COMMENT 5:

"3) a. The geotechnical report shall address the performance standards in LUC 20.25H.125."

RESPONSE 5: These were addressed in our memorandum dated April 22, 2022; however, we are aware that plans have changed slightly. Below we readdress these performance standards given current available plans:

LUC 20.25H.125 Performance standards – Landslide hazards and steep slopes.

A. Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography;

Foundation plans should follow our recommendations given in our previous report for foundation elements. The plans specify that a full basement will be utilized. We have provided recommendations for shoring that will support the existing topography while construction takes place. In general, we have recommended that basement footings be embedded at the same elevation as the elevation at the base of the slope. With the exception of the proposed access driveway, existing contour of the slope will be maintained.

B. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;

The structures are located such that the footprint areas are minimized, and the tallest portion of the slope is not altered, and that the use of the relatively level bench is maximized. A small portion of the western foundation will extend out onto the critical slopes due to the narrowing of the lot toward the west. We have given recommendations in our report to extend foundation footing elevation to be the same elevation as the base of the slope, such that no slope loading occurs.

C. The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;

Recommendations made in our geotechnical report are intended to prevent adverse impacts to neighboring properties by the proposed development. If planned in accordance with our recommendations, the development will not require increased buffers on adjacent properties.

D. The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall;

Per the plans, the residence foundations are proposed as full basements. Existing topography will remain undisturbed around all areas that remain undeveloped, as shoring practices will be implemented to retain the slopes safely without the need for grading modification. No areas of significant fill have been proposed on the site slopes.

E. Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer;

We assume impervious areas to be limited to the footprint of the proposed residence and small access driveways, based on provided plans. Impervious areas appear to have been minimized to the fullest possible extent given the shared driveways and residence sizes proposed.

F. Where change in grade outside the building footprint is necessary, the site retention system should be stepped and regrading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;

We do not anticipate excavations or grading outside what is necessary within the driveway and building footprint.

G. Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;

We do not anticipate freestanding retaining devices outside of structural elements of the building foundation for the design of the residences and engineered retaining walls for the driveway based on provided plans.

H. On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification;

The residence is proposed with full basement , which should be sufficient to extend structure loads to the core/base of the site slopes. Shoring around the proposed foundation will retain existing topography around the proposed residence . Due to no other access, route, the driveway will modify a small section of the northern slope, but not the 'critical slope'.

I. On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types…

An entry/deck is planned on the north side of the residence within 10-feet from the top of the slopes, but not directly on the slopes.

J. Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210*.*

Upon reviewing the Critical Areas report from Altmann Oliver Associates, the modified impact to the western parcel's permanent steep slope is 494 square feet, and the modified permanent impact to the permanent steep slope buffer is a total of 1,888 square feet. This will be mitigated with 3,327 square feet of invasive vegetation removal and replanting with native vegetation at 95 % density.

COMMENT 6:

"3) b. The geotechnical report states "specific structure locations have not been finalized when this report was prepared." Please update your geotechnical report providing a specific structure location and your recommendations to reflect the location.

i. Clearly state the modified and/or reduced top-of-slope buffer in your geotechnical report. Ensure the modified and/or reduced buffer is consistent with your critical areas report and mitigation & restoration plan."

RESPONSE 6: The latest documents have been reviewed and our geotechnical report has been revised to include more specifics regarding the site development. We have included within our report, recommendations for structure setbacks from the steep slopes, given the foundation type and embedment.

Upon reviewing the Critical Areas report from Altmann Oliver Associates, the modified impact to the western parcel's permanent steep slope is 494 square feet, and the modified permanent impact to the permanent steep slope buffer is a total of 1,888 square feet. This will be mitigated with 3,327 square feet of invasive vegetation removal and replanting with native vegetation at 95 % density.

We trust that this memorandum should satisfy your needs at this time. Please do not hesitate to contact us should you require anything further.

o-o-o

cc: David Hall
davideltonhall@gmail.com

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MEMORANDUM

DATE: January 18, 2024

TO: RET Investment Trust
ATTN: Wayne Seminoff

FROM: Khaled M. Shawish, PE
Katelyn S. Brower, GIT

1.18.2024

RE: Comment Response Memorandum #3
SE 8th Street Residential Development
804 Lake Hills Connector
Bellevue, Washington
NGA File No. 1310521
COB: 23-108075-LO and 23-108076-LS

This memorandum documents our response to a request for comments regarding the SE 8th Street Development project located at **804 Lake Hills Connector in Bellevue, Washington.** We previously issued a geotechnical report for the project dated December 30, 2021, an initial comment response dated May 27, 2022, as well as a revision to the geotechnical report and comment response dated November 2, 2023. These comments addressed concerns over structure setbacks, vegetation management and site slope considerations, which we addressed.

To aid us in preparing this comment response, we were given the following documents:

- ***Architectural Sheets for the East and West Parcels, dated September 29, 2023.***
- ***Civil Engineering Plans titled "804 Lake Hills Connector & 803 140th Avenue NE, dated August 11, 2023 and prepared by DR Strong Consulting Engineers.***
- ***Civil Engineering Plans titled "804 Lake Hills Connector," dated August 11, 2023 and prepared DR Strong Consulting Engineers.***
- ***Critical Areas report titled "804 Lake Hills Connector Parcels 032405-9047 and 032407-9807," dated September 21, 2023, and prepared by Altmann Oliver Associates.***
- ***A letter from the City of Bellevue titled "804 Lake Hills Connector, Bellevue WA," dated December 7, 2023 and in reference to Permit No. 23-108075-LO and 23-108076-LS.***

We understand that the City of Bellevue has come back with a third set of revision comment(s), and we have been requested to provide geotechnical responses to these comments. In the following section, we summarize the relevant geotechnical concern raised by the City, followed by our response.

COMMENT 1:

"Geotechnical Report. It appears a portion of the top-of-slope buffer is to be reduced to 0-feet in areas for the proposed residence and other distances for areas surrounding the residence. However, the critical areas report should clearly state the modified and reduced top-of-slope buffer in your Critical Areas Report."

RESPONSE 1: As taken from the Structure Setback section from our REVISED Geotechnical Evaluation dated November 1, 2023: "If structures are to be located greater than 15-feet from the top of the steep north-facing slope on the north side of the site, standard foundation embedment depths can be utilized. Between 15-feet and 10-feet to the top of the slope, the foundation should be deepened 4-feet into native glacial soils. Based on the latest plan for the site, we understand some portions of the western residence foundation will encroach directly onto the site slopes. In this case, any foundation element closer than 10-horizontal feet to the top of the slope should be embedded such that the base of the footing is the same elevation as that of the base of the slope, or deeper. Given that the residences are proposed with full basements per the plan, this should be possible. We also understand the entrance/deck along the north side of the residences will be supported on columns closer than 10-feet to the slope. These columns should be supported on sonotubes or similar, also extending to the base of the site slopes. These recommendations allow for the residences to be placed closer to the steep slopes to accommodate the size of the residences and safeguard the site slopes from the development."

To clarify in addition to the Structure Setback subsection within our report, we do understand some portions of the proposed western residence will extend onto the slopes themselves (approximately 14 square feet of the northwestern corner of the residence). Our approval of previous plans, given the recommendations embedment as well as a shoring wall to protect site slopes from instability during construction indicates that the buffer for the development on the western lot is to be reduced to 0-feet in areas surrounding the proposed residence on the westernmost side.

COMMENT 2:

Quote from our November 2, 2023 Comment Response Letter: A small portion of the western foundation will extend out onto the critical slopes due to the narrowing of the lot toward the west. We have given recommendations in our report to extend foundation footing elevation to be the same elevation as the base of the slope, such that no slope loading occurs**.** ***City Comment:*** *"Is this impact to the steep slope critical area that's shown on the attached plan?"*

RESPONSE 2: Approximately 14 square feet of the 492 square foot permanent impact polygon on the Critical Areas site plan is the impact of the structure foundation overlap onto the steep slope critical area. There may be a slight additional square footage permanently altered to install the recommended shoring wall for the residence basement, however, as far as we are aware, no other modification, other than the small residence/shoring wall overlap, and removal of trees within the top of slope and western residence footprint, will be done to permanently alter the steep slope within the 492 square foot polygon.

CLOSURE

We trust that this memorandum should satisfy your needs at this time. Please do not hesitate to contact us should you require anything further.

o-o-o

cc: David Hall
davideltonhall@gmail.com

Altmann Oliver Associates, LLC

PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509

AOA
Environmental
Planning &
Landscape
Architecture

May 2, 2024

AOA-7194

David Hall
davideltonhall@gmail.com

SUBJECT: **Critical Areas Report for 804 Lake Hills Connector**
Parcels 032405-9047 and 032407-9087, Bellevue, WA
City Files #23-108075-LO and 23-108076-LS (Revised)

Dear David:

We have updated this report to address the Critical Areas comments presented in the December 7, 2023 comment letter prepared by the City of Bellevue. The primary comment was a request for additional information regarding the clearing/grading to the north of the proposed residence on the -9047 parcel.

Background

On August 15, 2023 AOA conducted a habitat assessment on the subject property to review the proposed steep slope and steep slope buffer impacts associated with the two new residences proposed for the site. The property is currently undeveloped, relatively long and narrow, and consists of a mixed upland forest that slopes down from south to north along the roadway.

1.0 EXISTING CRITICAL AREAS

A steep slope described in the geotechnical report occupies the majority of the property. The steep slope requires a 50-foot buffer from the top of the slope. The portion of the site on the north side of the Lake Hills Connector was not reviewed.

2.0 WILDLIFE HABITAT ASSESSMENT

Prior to conducting the field investigations, the Washington State Department of Fish and Wildlife's Priority Habitats and Species (PHS) database was reviewed. No priority habitats or species were identified on or immediately adjacent to the proposed work area on the site as part of this mapping (**Attachment A**).

The project site consists of two lots comprised of Parcels 032405-9047 and 032407-9087. The undeveloped property consists of an upland mixed forest that contains both native and non-native invasive species. Dominant species included Douglas fir (*Pseudotsuga menziesii*), big-leaf maple (*Acer macrophyllum*), hazelnut (*Corylus cornuta*), Himalayan blackberry (*Rubus armeniacus*), laurel, sword fern (*Polystichum munitum*), bracken fern (*Pteridium aquilinum*), and English ivy (*Hedera helix*).

Surrounding land use consists of single-family residential to the south and the Lake Hills Connector to the north.

No large snags, downed logs, or other significant habitat features were observed on the site and no raptors or raptor nests were identified during the field investigations.

Wildlife Species of Local Importance
Twenty-three (23) species have been designated by the City of Bellevue as species of local importance (**LUC 20.25H.150**). The potential of site utilization by each species is briefly described below:

- Bald eagle (*Haliaeetus leucocephalus*): site not located within Bald Eagle Buffer Management Zone per PHS data. Some potential occasional perching opportunity within larger trees in vicinity of site possible but does not have a primary association with habitat on or immediately adjacent site. Primary Association: no.

- Peregrine falcon (*Falco peregrinus*): generally associated with coastal cliffs and shorelines, but also use large buildings in city center. Use of project site unlikely. Primary Association: no.

- Common Loon (*Gavia immer*): no presence - highly aquatic species associated with large water bodies. Primary Association: no.

- Pileated woodpecker (*Dryocopus pileatus*): Pileated woodpeckers generally inhabit mature and old-growth forests, and second-growth forests with large snags and fallen trees. The range of the species encompasses all of the forested areas of the state. Although typically found in larger forested tracts, they are known to occur in suburban habitats as well. Their key breeding habitat need is the presence of large snags or decaying live trees for nesting, as this species generally excavates a new nest cavity each year. The breeding and nesting periods of the pileated woodpecker extends from late March to early July. Although some foraging potential is present, the lack of large snags limits the nesting potential of this species. Primary Association: no.

- Vaux's swift (*Chaetura vauxi*): Vaux's swifts are strongly associated with old growth and mature forests throughout the state and are highly dependent on large hollow trees and snags for breeding and roosting. Although some minor potential for foraging, unlikely nesting or primary association on the site due to lack of large snags. Primary Association: no.

- Merlin (*Falco columbarius*): unlikely presence – generally require coastal or high elevation forests. Primary Association: no.

- Purple martin (*Progne subis*): unlikely presence – generally require cavities near or over water for nesting. Primary Association: no.

- Western grebe (*Aechmophorus occidentalis*): no presence – highly aquatic species associated with large water bodies. Primary Association: no.

- Great blue heron (*Ardea herodias*): unlikely presence – typically forage in larger wetlands or pasture which do not occur on-site. No roosts observed on or adjacent site. Primary Association: no.

- Osprey (*Pandion haliaetus*): unlikely presence - perch availability not near large water body. Primary Association: no.

- Green heron (*Butorides striatus*): unlikely presence – not near large wetland or waterbody. Primary Association: no.

- Red-tailed hawk (*Buteo jamaicensis*): potential utilization of site for occasional perching, although no nests observed and not near significant open expanse. Primary Association: no.

- Western big-eared bat (*Plecotus townsendii*): potential presence, but no known nearby hibernacula or caves so not considered a habitat of primary association. Primary Association: no.

- Keen's myotis (*Myotis keenii*): potential presence, but generally associated with larger coniferous forests so not considered a habitat of primary association. Primary Association: no.

- Long-legged myotis (*Myotis volans*): potential presence, but generally associated with larger coniferous forests so not considered a habitat of primary association. Primary Association: no.

- Long-eared myotis (*Myotis evotis*): potential presence, but generally associated with larger coniferous forests so not considered a habitat of primary association. Primary Association: no.

- Oregon spotted frog (*Rana pretiosa*): no presence - believed to be extirpated from nearly all of western Washington and no ponding on the site. Primary Association: no.

- Western toad (*Bufo boreas*): presence possible but no breeding potential and not considered habitat of primary association. Primary Association: no.

- Western pond turtle (*Clemmys marmorata*): no presence - no ponding on site and no known nearby populations. Primary Association: no.

- Chinook (*Oncorhynchus tshawytscha*): no presence – no streams that support Chinook on or adjacent to the site. Primary Association: no.

- Bull trout (*Salvelinus confluentus*): no presence – no streams that support bull trout on or adjacent to the site. Primary Association: no.

- Coho salmon (*Oncorhynchus kisutch*): no presence – no streams that support Coho on or adjacent to site. Primary Association: no.

- River lamprey (*Lampetra ayresi*): no presence – no streams that support river lamprey on or adjacent to the site. Primary Association: no.

None of the 23 species of local importance appear to have a primary association with habitat on or adjacent to the project site. The proposed project consists of the construction of two single-family residences in the far eastern portion of the property. There are no anticipated significant impacts to any species of local importance from the proposed project.

3.0 PROPOSED SLOPE AND SLOPE BUFFER MODIFICATIONS

The proposed project consists of the construction of two new single-family residences in the far eastern portion of the site. The clearing limits on the slope to the north of the proposed residence on Parcel -9047 has been reduced below the previous submittal and is now the minimum necessary to construct the residence. As part of the current project, 193 s.f. of steep slope and 1,465 s.f. of the 50-foot top of slope buffer would be impacted by the development. It is my understanding that the residence must impact the slope and slope buffer down to zero feet in the area of the proposed residence. Impacts are required for clearing and grading to allow for construction of the residence.

Due to the slope buffer encumbrance it is not possible to avoid the buffer modification. It is also my understanding that site grading is the minimum necessary to accomplish the goal of the project. The area in the vicinity of the .slope and slope buffer impact is dominated largely by a canopy of Douglas fir with a dense understory of invasive laurel.

3.1 Steep Slope and Slope Buffer Modification

Any proposals to modify a critical area buffer must meet the criteria of **LUC 20.25H.255.A**

A. General.

Except for the proposals described in subsection B of this section, the Director may approve, or approve with modifications, the proposed modification where the applicant demonstrates:

1. *The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;*

We have prepared an enhancement plan (**Figures 1 through 6**) for an area of degraded habitat on the site. Enhancement will occur through the removal of

invasive plant species and re-planting degraded or sparsely vegetated areas with a variety of native plant species. Implementation of this plan will increase critical area functions over current conditions.

2. *Adequate resources to ensure completion of any required mitigation and monitoring efforts*;

Installation of the habitat enhancement plan should be a condition of any permit requirement by the City of Bellevue and the project would be maintained and monitored for a period of 5 years.

3. *The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and*

The proposed work should not be detrimental to any off-site critical area functions

4. *The resulting development is compatible with other uses and development in the same land use district*.

The residential project is compatible with adjacent land uses and is in line with the land use district.

We have also included the decision criteria of **LUC 20.25H.255.B**

B. Decision Criteria – Proposals to Reduce Regulated Critical Area Buffer.

The Director may approve, or approve with modifications, a proposal to reduce the regulated critical area buffer on a site where the applicant demonstrates:

1. *The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions;*

   A habitat enhancement plan has been prepared for an area of degraded habitat in the eastern portion of the site immediately adjacent to the proposed work area. Enhancement will occur through the removal of invasive plant species and re-planting degraded or sparsely vegetated areas with a variety of native plant species.

2. *The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist;*

   Since the primary function of the buffer on the site is as a component of the overall habitat on and adjacent to the property, an enhancement plan has been prepared to increase the plant species and structural diversity of the degraded habitat on the site.

3. *The proposal includes a net gain in stormwater quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer;*

   The proposed project will be designed to incorporate all required City of Bellevue stormwater management measures.

4. *Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts;*

   Installation of the habitat enhancement plan should be a condition of any permit requirement by the City of Bellevue and will include a 5 year maintenance and monitoring program.

5. *The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and*

   The proposed work should not be detrimental to any off-site critical areas.

6. *The resulting development is compatible with other uses and development in the same land use district. (Ord. 5680, 6-26-06)*

   The residential project is compatible with adjacent land uses and is in line with the land use district.

3.2 Decision Criteria per LUC 20.30P.140

The Director may approve or approve with modifications an application for a Critical Areas Land Use Permit if:

A. The proposal obtains all other permits required by the Land Use Code; and

It is our understanding that all permits required by the Land Use Code will be obtained.

B The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer; and

The project will need to utilize all of the best available construction, design, and development techniques to ensure the least possible impact on the critical area and its buffer.

All plantings within the enhancement area will consist of native species and will be installed and maintained only by a qualified landscape contractor familiar with work in sensitive environments.

C The proposal incorporates the performance standards of Part 20.25H LUC to the maximum extent applicable; and

All of the applicable performance standards in LUC 20.25H would be implemented to the maximum extent possible.

D The proposal will be served by adequate public facilities including streets, fire protection, and utilities; and

It is our understanding that the proposal will be served by adequate public facilities including streets, fire protection, and utilities.

E The proposal includes a mitigation or restoration plan consistent with the requirements of LUC 20.25H.210; except that a proposal to modify or remove vegetation pursuant to an approved Vegetation Management Plan under LUC 20.25H.055.C.3.i shall not require a mitigation or restoration plan; and

A critical area enhancement plan has been prepared for a degraded portion of the site.

F The proposal complies with other applicable requirements of this code

It is our understanding that all other applicable requirements of the Land Use Code will be met.

4.0 FUNCTIONAL ASSESSMENT

Per LUC 20.25H.250.B.5, the City of Bellevue requires an *analysis of the level of protection of critical area functions and values provided by the regulations or standards of this code, compared with the level of protection provided by the proposal. The analysis shall include:*

a. *A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist*;

Critical areas on the site include a steep slope. The steep slope requires a standard 50-foot buffer from the top of the slope.

The primary habitat function of the steep slope and steep slope buffer on this site are as a component of the overall habitat on and adjacent to the property and not as specific habitat for an individual species of local importance. The slope stability functions of the slope and slope buffer have been assessed by the geotechnical engineer.

b. A discussion of the functions and values likely to be provided by the critical area and critical area structure setback on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development; and

The slope stability functions of the slope and structure setback have been assessed by the geotechnical engineer and these functions should continue following the proposed project.

c. *A discussion of the functions and values likely to be provided by the critical area and critical area structure setback on the site through the modifications and performance standards included in the proposal over the anticipated life of the proposed development;*

Enhancement of a degraded area on the site will increase the habitat value of the property by increasing the plant species and structural diversity within the enhanced area. The proposed plantings will increase the quality of the preserved habitat. Without implementation of the proposed planting plan, the degraded area will likely continue to become established with invasive species such as laurel, Himalayan blackberry, English holly and English ivy.

5.0 MONITORING PROGRAM

We have prepared a mitigation plan (**Figures 1 through 6**) for the required slope and slope buffer impacts on the site. Mitigation will consist of enhancing with native plantings a degraded area on the property. The mitigation has been designed to increase the habitat quality of the degraded area by increasing the plant species and structural diversity over current conditions.

5.1 Goal, Objectives, and Performance Standards for Enhancement Areas

The primary goal of the enhancement plan is to increase the habitat and protective functions of the degraded area on the site over current conditions. To meet this goal, the following objectives and performance standards have been incorporated into the design of the plan:

Objective A: Increase the structural and plant species diversity within the enhancement area.
Performance Standard: Following every monitoring event for a period of at least 5 years, the enhancement area will contain at least 7 native plant species. In addition, there will be 100% survival of all woody planted species throughout the enhancement area at the end of the first year of planting. Following Year 1, success will be based on an 85% survival rate of all planted tree and shrub species or equivalent replacement of a combination of planted and re-colonized native species. Areal coverage of plantings or native re-colonized species will be at least 15% at Year 1, 20% at Year 2, 30% at Year 3, and 60% at Year 5.

Objective B: Limit the amount of invasive and exotic species within the enhancement area.
Performance Standard: After construction and following every monitoring event for a period of at least five years, exotic and invasive plant species will be maintained at levels below 10% total cover in all planted areas.

5.2 Construction Management

Prior to commencement of any work in the enhancement area, the clearing limits will be staked and all existing vegetation to be saved will be clearly marked. A pre-construction meeting will be held at the site to review and discuss all aspects of the project with the landscape contractor and the owner.

A consultant will supervise plan implementation during construction to ensure that objectives and specifications of the enhancement plan are met. Any necessary significant modifications to the design that occur as a result of unforeseen site conditions will be jointly approved by the City of Bellevue and the consultant prior to their implementation.

5.3 Monitoring Methodology

As required, the monitoring program will be conducted for a period of five years with annual reports submitted to the City of Bellevue. Permanent vegetation sampling plots will be established to monitor the general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weeds.

Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress in plant community establishment in the enhancement area. Review of the photos over time will provide a visual representation of the success of the plan.

5.4 Maintenance Plan

Maintenance will be conducted on a routine, year round basis. Additional maintenance needs will be identified and addressed following a twice-yearly consultant maintenance review. Contingency measures and remedial action on the site shall be implemented on an as-needed basis at the direction of the consultant or the owner.

Routine removal and control of non-native and other invasive plants shall be performed by manual means whenever possible. Weed removal includes hand grubbing all roots and exporting off-site. Undesirable and weedy exotic plant species shall be maintained at levels below 10% total cover within any given stratum at any time during the five-year monitoring period.

5.5 Contingency Plan

All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the enhancement plan. Plant material shall meet the same specifications as originally installed material. Replanting will not occur until after the reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.). Replanting shall be completed under the direction of the consultant, City of Bellevue, or the owner.

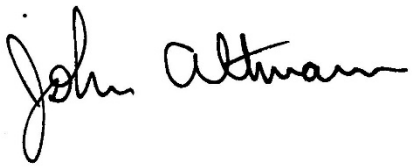
5.6 As-Built Plan
Following completion of construction activities, an as-built plan for the enhancement area will be provided to the City of Bellevue. The plan will identify and describe any changes in relation to the original approved plan.

5.7 Financial Guarantee
A financial guarantee will be posted to ensure that the mitigation and monitoring program is fully implemented.

If you have any questions regarding the critical areas report, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachments

Priority Habitats and Species on the Web

Attachment A

Report Date: 09/21/2023

The Priority Habitats and Species (PHS) datasets do not contain information for your project area. This does not mean that species and habitats do not occur in your project area. PHS data, points, lines and polygons are mapped only when occurrences of these species or habitats have been observed in the field. Unfortunately, we have not been able to comprehensively survey all sections in the state and therefore, it is important to note that priority species and habitats may occur in areas not currently known to the Department.

A.B.C Consulting Arborists LLC

Accurate *Balanced* *Certified*

Hall
Tree Protection Plan

Updated
March 26, 2024

PREPARED FOR:

David Hall / RET Investment Trust
RE: 804 Lake Hills Connector and 803 140th Ave SE
Bellevue, WA. 98005

PREPARED BY:

A.B.C. Consulting Arborists LLC

Daniel Maple,
Registered Consulting Arborist #627
ISA Municipal Specialist # PN-7970AM
ISA Tree Risk Assessment Qualified (TRAQ)
ISA Board Certified Master Arborist #PN-7970BM

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CONSULTING ARBORIST

Daniel J. Maple / A.B.C. Consulting Arborists, LLC
Westside (425) 999-0867 Daniel@AbcArborist.Com Eastside (509) 953-0293

Certifications

ASCA Registered Consulting Arborist (RCA)	# 627
ASCA Tree & Plant Appraisal Qualified (TPAQ)	December 15, 2024
ISA Board Certified Master Arborist	PN-7970BM
ISA Certified Arborist Municipal Specialist	PN-7970BM
ISA Tree Risk Assessment Qualified (TRAQ)	May 13, 2025
ATFS Qualified Tree Farm Inspector	# 169449
Commercial Applicator	# 92432
Commercial UAV Airman Pilot	# 4135495

ASSIGNMENT

Provide a Tree Protection Plan for the development of parcel 032405-9047 & 9087.

Limitations

This report is a preliminary, conceptual report that may change as the site is developed. I could not find survey markers on the N property line; therefore, I was unable to distinguish between perimeter and interior trees. However, most of the trees are perimeter trees. The report is limited to the assignment.

METHODOLOGY

To evaluate the trees, as well as to prepare this report, I drew upon my 30+ years of experience in the field of arboriculture and my formal education. I followed the protocol of the International Society of Arboriculture (ISA) for Management of Trees and Shrubs During Site Planning, Site Development, and Construction (2012) and Root Management (2013). I performed my assessment considering the following Best Management Practices (BMP):

ANSI A300 Part 5 - *Managing Trees During Construction.*
ANSI A300 Part 9 - *Tree Risk Assessment* (Second Edition)
Best Management Practices, Tree Inventories (Second Edition)

Best Management Practices were developed to aid in the interpretation of professional standards and guide work practices based upon current science and technology. Using this process, I performed my assessment, which included looking at the overall health of the trees as well as the site conditions.

SITE

Parcels Lot 1: 0324059087 / 5,560 sq. ft. (.13-acres) & Lot 2: 032405-9047/ 44,431 sq. ft. (1.02-acres) **Zoned** R-1.8. Using City of Bellevue Map Viewer, a steep slope was noted. Soils was native, moderate in depth and well drained. A history of windthrown stumps was noted on the eastern portion of the site. No other relevant site conditions were noted.

TREE LOCATION AND ID

BCC 20.50.046, a significant tree is 1) **healthy**[1] 2) ≥ 8-inch in diameter 4.5 above the ground (DBH).

We inventoried 55 ≥ 8" trees on or near the site. Trees 1-53 were tagged with aluminum tags. 2 offsite trees were geo-tagged 54 & 55. Please refer to *Attachment 1, Site Images* for an orientation to the site and approx. location of the trees.

Tree Summary

There were 22 trees on lot 1 with a combined total DBH of 340.7-inches.
There were 29 trees on lot 2 with a combined total DBH 452.2-inches.
We inventoried 8 significant trees west of the proposed 2 lots. They were in or near a critical area/buffer.
We inventoried 4 significant trees near the proposed 2 lots. They may be near proposed construction.
Please refer to *Attachment 3, Tree Summary, TPZ/Instructions* for a summary of the tree data.

[1] Trees that were not healthy were listed as not viable. **All unhealthy trees *Do Not* qualify as significant and should be removed from the calculations.**

TREE RETENTION BCC 20.20.900 F 1[2]

Hazardous/Non-viable

There were 6 tree(s) that were dead, dying, decayed, or had other significant defects and were not viable.

Trees Conflict with Improvements

There were 31 significant trees that conflict with the improvements. 14 on lot 1. 16 on lot 2.

Trees to be Retained.

There were 7 trees on lot 1 with a combined total DBH of 117.3-inches that are proposed for retention. There were 7+ trees on lot 2 with a combined total DBH of 119+ inches that are proposed for retention.

Tree Retention Percentages

	Total DBH	Non-Viable	Viable DBH	Removed	Retained	Percentage
Lot 1 - 22 trees	340.7	1 – 17.5"	323.2	205.9	7 / 117.3	36%
Lot 2 – 29 trees	452.2	5 – 56"	396.2	257.2	7+ / 119	30%
Total	792.9	6 - 73.5	719.4	463.1	14+ / 236.3	33%

Only the trees near the developed portion of lot 2 were inventoried. Several hundred inches of DBH on lot 2 were not inventoried; retained DBH of lot 2 will greatly exceed the required 30% tree retention.

Offsite Trees.

There were 4 offsite trees near proposed work areas that may require protection.

Impact.

With the installation of the TPZ fencing prior to development activity and following the measures for tree protection in Attachment 4, impacts to the remaining onsite and off-site trees should be minimal.

ALTERNATE TREE RETENTION/REPLACEMENT BCC 20.20.900 G[3]

The project will retain 30% or more of the sites DBH – **No Replacement Trees Are Required.**

---

[2] Site Area. For new single-family structures or additions to impervious surface areas that exceed 20 percent when located on a single-family lot developed with a residential use, the applicant shall retain a minimum of 30 percent of the diameter inches of significant trees existing in the site area; provided, that alder and cottonwood trees' diameter inches shall be discounted by a factor of 0.5.

[3] 1. An applicant may request a modification of the tree retention requirements set forth in subsections D, E, and F of this section.
2. The Director may administratively approve a modification of the perimeter or interior tree retention requirements if:
a. The modification is consistent with the stated purpose of this section; and
b. The modification proposal either:
i. Incorporates the retention or replacement of significant trees equal in equivalent diameter inches or incorporates the increased retention or replacement of significant trees and naturally occurring undergrowth to what would otherwise be required; or
ii. Incorporates the retention or replacement of other natural vegetation in consolidated locations which promotes the natural vegetated character of the site and neighborhood including use as pasture land or for agricultural uses.
iii. Where a modification proposal includes supplemental or replacement trees in lieu of retention, the applicant shall utilize plant materials which complement the natural character of the Pacific Northwest, and which are adaptable to the climatic, topographic, and hydrologic characteristics of the site.

TREE PROTECTION ZONE (TPZ)

- In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment's arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and possibly die. With proper preparation, often costing little or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites.
- The TPZ is the optimal protection zone set to preserve trees during construction. The TPZ radius generally is 8-Inches to 18-Inches of protection for every 1-Inch of DBH, based on the trees size, vigor and construction tolerances (*ANSI A300 Part 5 BMP, Matheny, Clark, 1998*).
- The TPZ can usually be reduced by 20% as long as it does not impact the CRZ. Greater reductions may be possible, pending review, and direct oversite of the work, by the Consulting Arborist.
- The trees to be saved, must be protected during construction by temporary 6' tall chain-link, or like fencing, located 10' beyond the edge of the trees farthest extending limbs on all sides (dripline). The individual tree protection zones (TPZ) are 10' past the driplines of the tree(s), unless otherwise delineated by A.B.C. Consulting Arborist LLC. See **Attachment 2** for tree specific TPZ.
- No irrigation lines, trenches, or other utilities shall be installed within the TPZ, without detailed written instructions and the oversite of the Consulting Arborist, to reduce the impacts to the tree roots, and construction related stressors. Cuts or fills should impact no more than 20% of a tree's root system. If topsoil is added to the root zone of a protected tree, the depth should not exceed 2 inches of a sandy loam or loamy fine sand topsoil and should not cover more than 20% of the root system.
- If roots are encountered outside the TPZ during construction, they shall be cut cleanly with a saw (not ripped or torn) and covered immediately with moist soil. Noxious vegetation within the critical root zone should be removed by hand. If a proposed save tree must be impacting by grading or fills, then the tree should be re-evaluated by A.B.C. Consulting Arborist LLC to determine if the tree can be saved with mitigating measures, or if the tree should be removed.

CRITICAL ROOT ZONES (CRZ)

The CRZ is the area where the roots vital for the trees survival are located, the CRZ is generally 2/3 to ½ of the TPZ, depending on the species, size, health and vigor. At no time or for any reason shall the roots within the CRZ be impacted. See **Attachment 2** for tree specific TPZ and CRZ.

See **Attachment 3** for complete tree protection instructions.

FENCING

6' tall chain link or 4' construction fencing shall be installed at the outer edge of the TPZs prior to commencement of site clearing and shall remain in place for the duration of the project. When possible, it is preferred that trees be fenced as a group, rather than individuals.
At no time shall any vehicle or equipment be allowed inside TPZ.
No placing or stock-piling of any material of any kind shall be allowed inside the TPZ/Fencing.
Removal of any vegetation within the TPZ shall be done by hand. Should any disturbance be required inside the TPZ to install utilities or any other needs during the construction period, they will require project specific instructions by the Consulting Arborist and approval by the city prior to undertaking any said activity in the TPZ.

Fencing Material:

1) 6’ tall chain link panels
2) 4’ construction fencing made of polyethylene laminar safety fencing or similar material approved by the city.

ROOT PROTECTION

Any roots encountered of 1” in diameter or greater, shall be cut with loppers, pruners, reciprocal saw or like device to provide a clean smooth cut. At no time, shall 1” or greater diameter roots be ripped or torn. No roots over 2” shall be cut or removed without the City and/or Project Arborist approval and under the direct oversite of the Project Arborist. Exposed roots shall be covered with wet burlap, or like item, to keep roots from drying out and shall be covered with soil as soon as reasonably possible.

Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations. Protect root systems from damage due to removal of adjacent trees.

SEE ATTACHMENT 3 For Complete Tree Protection Instructions.

Thank you for contacting A.B.C. Consulting Arborists LLC for your arboricultural needs.

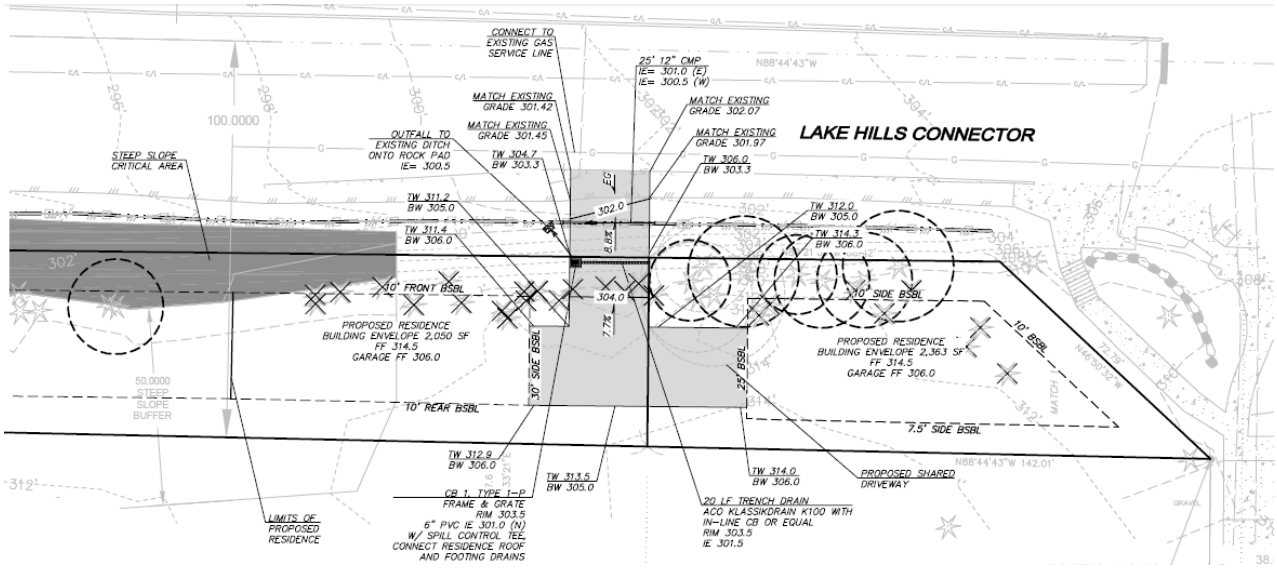
Sincerely,

Daniel Maple, Consulting Arborist

Registered Consulting Arborist #627
Tree & Plant Appraisal Qualified (TPAQ)
ISA Municipal Specialist # PN-7970BM
ISA Tree Risk Assessment Qualified (TRAQ)
ISA Board Certified Master Arborist #PN-7970BM

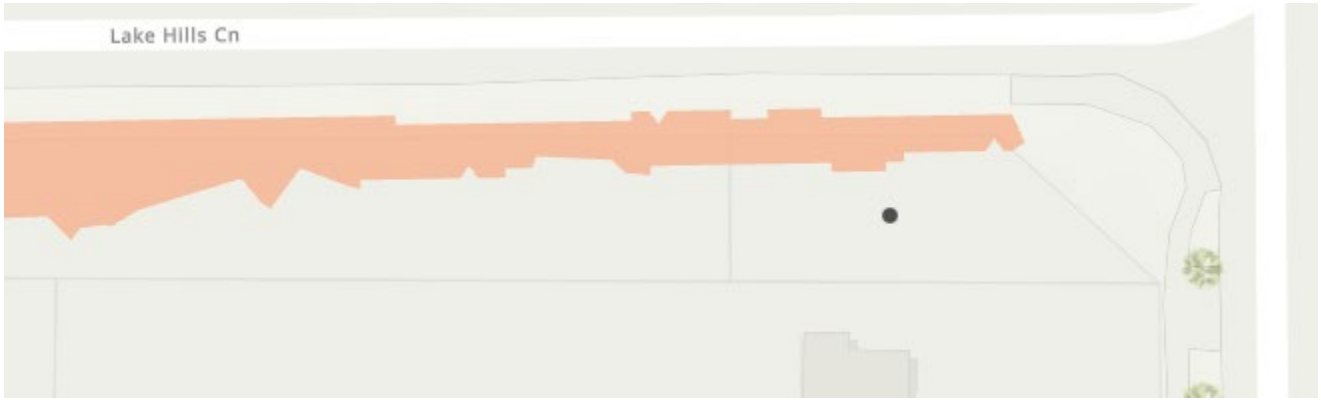
ATTACHMENTS

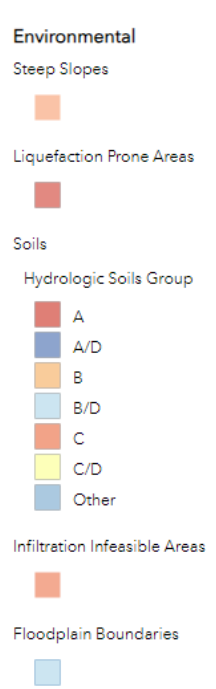
Conceptual Plan



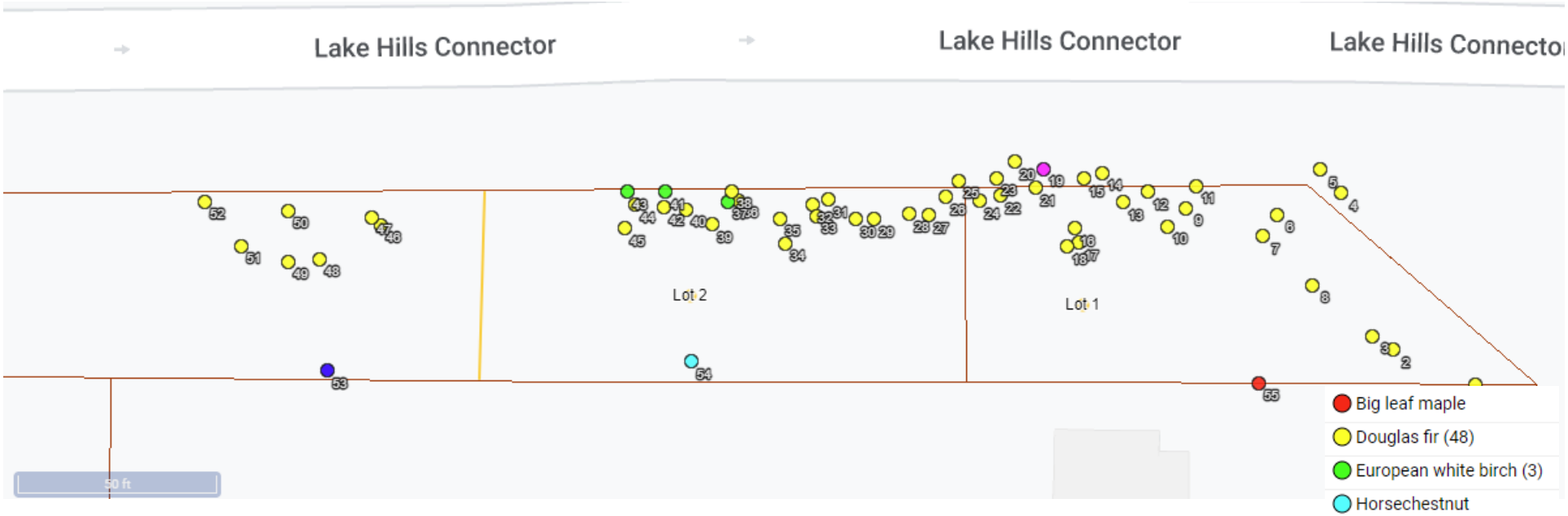
ATTACHMENT 1 - SITE IMAGES

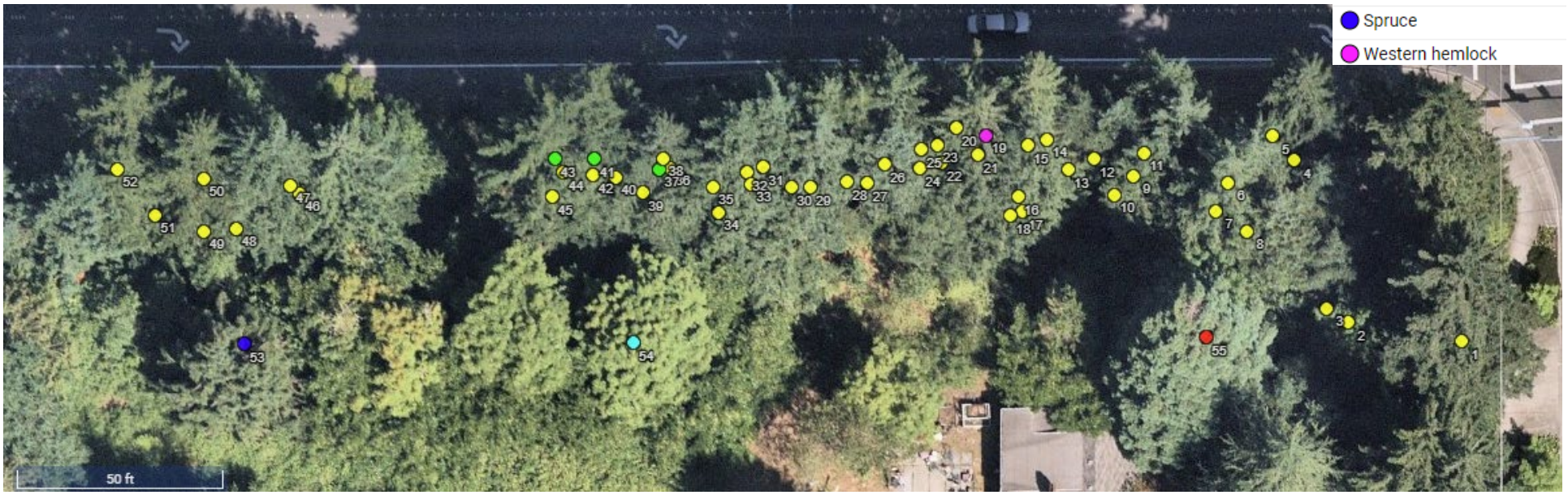
Bellevue Map Viewer W/Environmental Layer





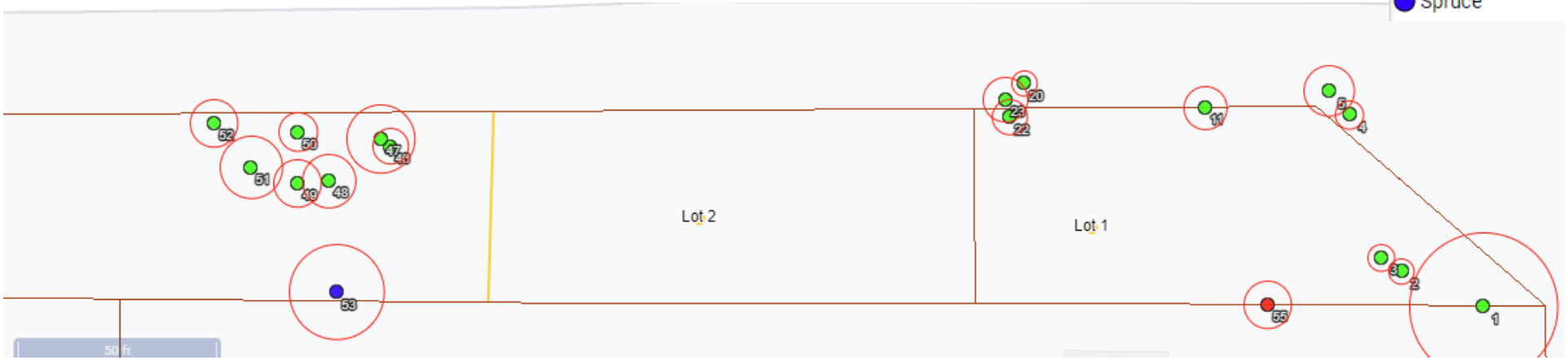
On & Offsite Trees





Retained / Tree Protection Zones (TPZ)

Retained / Critical Root Zones (CRZ)



ATTACHMENT 2 - TREE SUMMARY/TPZ/INSTRUCTIONS

ID	Common	*Latin*	DBH	Health	Structure	Proposed	TPZ-Radius [ft]	CRZ - Radius [ft]	Location	Notes
1	Douglas fir	*Pseudotsuga menziesii*	50	Excellent	Good	Retain -Viable	37.5	18.75	Lot 1	Shared custody
2	Douglas fir	*Pseudotsuga menziesii*	8.5	Fair	Fair	Retain -Viable	6.375	3.1875	Lot 1	Low LCR
3	Douglas fir	*Pseudotsuga menziesii*	9	Fair	Fair	Retain -Viable	6.75	3.375	Lot 1	Low LCR
4	Douglas fir	*Pseudotsuga menziesii*	9.5	Fair	Fair	Offsite-Viable	7.125	3.5625	Offsite	Low LCR
5	Douglas fir	*Pseudotsuga menziesii*	17	Good	Good	Offsite-Viable	12.75	6.375	Offsite	On toe of slope
6	Douglas fir	*Pseudotsuga menziesii*	13.5	Good	Good	Remove- Conflict w/ plans	10.125	5.0625	Lot 1	Asymmetrical
7	Douglas fir	*Pseudotsuga menziesii*	19	Good	Good	Remove- Conflict w/ plans	14.25	7.125	Lot 1	Asymmetrical
8	Douglas fir	*Pseudotsuga menziesii*	14.3	Good	Good	Remove- Conflict w/ plans	10.725	5.3625	Lot 1	Asymmetrical
9	Douglas fir	*Pseudotsuga menziesii*	19.5	Good	Good	Remove- Conflict w/ plans	14.625	7.3125	Lot 1	Asymmetrical
10	Douglas fir	*Pseudotsuga menziesii*	14.2	Good	Good	Remove- Conflict w/ plans	10.65	5.325	Lot 1	Asymmetrical
11	Douglas fir	*Pseudotsuga menziesii*	14.5	Good	Good	Retain -Viable	10.875	5.4375	Lot 1	edge of slope
12	Douglas fir	*Pseudotsuga menziesii*	9	Fair	Fair	Remove- Conflict w/ plans	6.75	3.375	Lot 1	edge of slope / suppressed
13	Douglas fir	*Pseudotsuga menziesii*	14.5	Good	Good	Remove- Conflict w/ plans	10.875	5.4375	Lot 1	edge of slope
14	Douglas fir	*Pseudotsuga menziesii*	11.3	Good	Good	Remove- Conflict w/ plans	8.475	4.2375	Lot 1	edge of slope
15	Douglas fir	*Pseudotsuga menziesii*	9.6	Good	Good	Remove- Conflict w/ plans	7.2	3.6	Lot 1	edge of slope
16	Douglas fir	*Pseudotsuga menziesii*	17.5	Fair	Fair	Remove -Not Viable	13.125	6.5625	Lot 1	edge of slope / lean N
17	Douglas fir	*Pseudotsuga menziesii*	18	Good	Good	Remove- Conflict w/ plans	13.5	6.75	Lot 1	Top of slope
18	Douglas fir	*Pseudotsuga menziesii*	18	Good	Good	Remove- Conflict w/ plans	13.5	6.75	Lot 1	Top of slope
19	Western hemlock	*Tsuga heterophylla*	8.5	Fair	Fair	Remove- Conflict w/ plans	10.625	5.3125	Lot 1	Mid slope
20	Douglas fir	*Pseudotsuga menziesii*	8.5	Fair	Fair	Retain -Viable	6.375	3.1875	Lot 1	Mid slope
21	Douglas fir	*Pseudotsuga menziesii*	23.5	Good	Good	Remove- Conflict w/ plans	17.625	8.8125	Lot 1	Top edge of slope
22	Douglas fir	*Pseudotsuga menziesii*	11.8	Good	Good	Retain -Viable	8.85	4.425	Lot 1	Top edge of slope
23	Douglas fir	*Pseudotsuga menziesii*	15	Good	Good	Retain -Viable	11.25	5.625	Lot 1	Top edge of slope
24	Douglas fir	*Pseudotsuga menziesii*	13	Good	Good	Remove- Conflict w/ plans	9.75	4.875	Lot 1	Top edge of slope
25	Douglas fir	*Pseudotsuga menziesii*	18	Good	Good	Remove- Conflict w/ plans	13.5	6.75	Lot 2	Top edge of slope
26	Douglas fir	*Pseudotsuga menziesii*	11	Fair	Fair	Remove- Conflict w/ plans	8.25	4.125	Lot 2	Top edge of slope
27	Douglas fir	*Pseudotsuga menziesii*	17.5	Fair	Fair	Remove- Conflict w/ plans	13.125	6.5625	Lot 2	Top edge of slope
28	Douglas fir	*Pseudotsuga menziesii*	13	Fair	Fair	Remove- Conflict w/ plans	9.75	4.875	Lot 2	Top edge of slope
29	Douglas fir	*Pseudotsuga menziesii*	14.5	Fair	Fair	Remove- Conflict w/ plans	10.875	5.4375	Lot 2	Top edge of slope
30	Douglas fir	*Pseudotsuga menziesii*	18	Good	Good	Remove- Conflict w/ plans	13.5	6.75	Lot 2	Top edge of slope
31	Douglas fir	*Pseudotsuga menziesii*	10	Fair	Poor	Remove -Not Viable	7.5	3.75	Lot 2	Top edge of slope
32	Douglas fir	*Pseudotsuga menziesii*	11.5	Fair	Good	Remove -Not Viable	8.625	4.3125	Lot 2	Top edge of slope
33	Douglas fir	*Pseudotsuga menziesii*	21.5	Good	Good	Remove- Conflict w/ plans	16.125	8.0625	Lot 2	Top edge of slope
34	Douglas fir	*Pseudotsuga menziesii*	14.5	Good	Fair	Remove- Conflict w/ plans	10.875	5.4375	Lot 2	Top of slope
35	Douglas fir	*Pseudotsuga menziesii*	22.8		Good	Remove- Conflict w/ plans	17.1	8.55	Lot 2	Top edge of slope
36	Douglas fir	*Pseudotsuga menziesii*	8	Fair	Good	Remove- Conflict w/ plans	6	3	Lot 2	Top edge of slope

37	European white birch	*Betula pendula*	12.5	Poor	Poor	Remove -Not Viable	12.5	6.25	Lot 2	Heavy lean top 2/3 of the tree gone
38	Douglas fir	*Pseudotsuga menziesii*	10.5	Good	Fair	Remove- Conflict w/ plans	7.875	3.9375	Lot 2	
39	Douglas fir	*Pseudotsuga menziesii*	18.6	Good	Good	Remove- Conflict w/ plans	13.95	6.975	Lot 2	Top edge of slope
40	Douglas fir	*Pseudotsuga menziesii*	10	Good	Fair	Remove- Conflict w/ plans	7.5	3.75	Lot 2	Top edge of slope
41	European white birch	*Betula pendula*	10	Good	Poor	Remove -Not Viable	10	5	Lot 2	Top edge of slope / moderate to heavily bowed crown
42	Douglas fir	*Pseudotsuga menziesii*	23	Good	Good	Remove- Conflict w/ plans	17.25	8.625	Lot 2	Top edge of slope
43	European white birch	*Betula pendula*	12	Fair	Poor	Remove -Not Viable	12	6	Lot 2	Top edge of slope/large decay column in the trunk
44	Douglas fir	*Pseudotsuga menziesii*	13.8	Good	Fair	Remove- Conflict w/ plans	10.35	5.175	Lot 2	Top edge of slope
45	Douglas fir	*Pseudotsuga menziesii*	22.5	Good	Good	Conflict w/ plans	16.875	8.4375	Lot 2	Top edge of slope
46	Douglas fir	*Pseudotsuga menziesii*	12	Good	Good	Retain -Viable	9	4.5	Lot 2	Top edge of slope
47	Douglas fir	*Pseudotsuga menziesii*	23	Good	Good	Retain -Viable	17.25	8.625	Lot 2	Top edge of slope
48	Douglas fir	*Pseudotsuga menziesii*	18	Good	Good	Retain -Viable	13.5	6.75	Lot 2	Top edge of slope
49	Douglas fir	*Pseudotsuga menziesii*	16	Good	Good	Retain -Viable	12	6	Lot 2	Top edge of slope
50	Douglas fir	*Pseudotsuga menziesii*	13	Good	Good	Retain -Viable	9.75	4.875	Lot 2	Mid slope
51	Douglas fir	*Pseudotsuga menziesii*	21	Good	Good	Retain -Viable	15.75	7.875	Lot 2	Top is the slope
52	Douglas fir	*Pseudotsuga menziesii*	16	Good	Good	Retain -Viable	12	6	Lot 2	Middle to bottom of slope
53	Spruce	*Picea species*	24	Good	Fair	Offsite-Viable	24	12	Offsite	On fence line
54	Horse chestnut	*Aesculus hippocastanum*	20	Good	Fair	Conflict w/ plans	20	10	Lot 2	Surveyed – Onsite.
55	Big leaf maple	*Acer macrophyllum*	12	Fair	Fair	Offsite- Assess	12	6	Offsite	Leans over property line Growing into fence. tree declining. assessment recommended

1) The TPZ is in RADIUS FT. Fencing shall be installed (using the noted material) along the noted TPZ radius, prior to any construction activity. This distance is listed above, as well as on the maps, and marked on each tree tag with a permeant marker.
2) Fencing material to be used:
   A. Chain link fencing panels 6' tall
   B. 4' Construction fencing shall be made of polyethylene laminar safety fencing or similar material approved by the city.
3) **SEE ATTACHMENT 3 For a Complete List of Instructions.**

	Total DBH	Non-Viable	Viable DBH	Removed	Retained	Percentage
Lot 1 - 22 trees	340.7	1 – 17.5"	323.2	205.9	7 / 117.3	36%
Lot 2 – 29 trees	452.2	5 – 56"	396.2	257.2	7+ / 119	30%
Total	792.9	6 - 73.5	719.4	463.1	14+ / 236.3	33%

I did not see survey markers on the N property line and was not able to determine perimeter v interior trees. However, most of the trees would likely be perimeter trees.

There were a significant number of trees on lot 2 that were well outside any development areas. All of these trees are being retained. Retention percentage far exceeds 30%.

ATTACHMENT 3 - TREE PROTECTION

The following minimum Tree Protection Measures can be copied and introduced into all relevant documents such as site plans, permit applications and conditions of approval, and bid documents so that everyone involved is aware of the requirements.

1. Tree Protection Fencing:

   a. Tree Protection Fences will need to be placed around each tree or group of trees to be retained.

      i. Tree Protection Fences are to be placed according to the attached drawing (bottom of attachment) at a distance of not less than 5' feet outside the dripline of the tree or group of trees to be saved, **or at the designated TPZ See Attachment 2 for individual TPZ's**
      ii. Tree Protection Fences must be inspected prior to the beginning of any demolition or construction work activities.
      iii. Nothing must be parked or stored within the Tree Protection Fences—no equipment, vehicles, soil, debris, or construction supplies of any sorts.

   b. Signs:

      i. The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters. Signs shall be placed every 40'.

         TREE PROTECTION FENCE DO NOT ENTER!
         DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTION AREA

         Questions contact Daniel Maple of A.B.C. Consulting Arborists LLC.
         Cell: (509) 953-0293 **Email:** Daniel@AbcArborist.Com

Signs along the TPZ may be waived at the discretion of the City and/or its officials.

2. Cement Trucks/Washout:

   a. Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the Tree Protection Fences.
   b. No waste wash out, or contaminated water shall be allowed to flow into the Tree Protection Area.

3. Canopy Pruning:

   a. The canopies of some of the trees may need to be properly pruned to allow Sight lines (vehicular), access of equipment, materials, or building and construction clearance.
   b. If so, the pruning must be done by an International Society of Arboriculture, (ISA) Certified Arborist using current industry standard pruning techniques. (ANSI A300 Pruning Standards and ANSI Z131.1 Safety Standards as well as all OSHA, WISHA, and local standards must be followed.) and under the direction of the Project Arborist.
   c. Plant debris can be chipped and utilized on site for the mulch under the trees.

5. When excavation occurs near trees that are scheduled for retention, the following procedure must be followed to protect the long-term survivability of the tree:

    a. An International Society of Arboriculture, (ISA) Certified Arborist must be working with all equipment operators.
        i. The Certified Arborist should be outfitted with an Airspade™, shovel, hand pruners, a pair of loppers, a handsaw, and a power saw (a "saws all" type reciprocating saw is recommended).
    b. The hoe must be placed to "comb" the material directly away from the trunk as opposed to cutting across the roots.
        i. Combing is the gradual excavation of the ground cover plants and soil in depths that only extend as deep as the tines of the hoe.
    c. When any roots of one-inch diameter or greater, of the tree to be retained, is struck by the equipment, the Certified Arborist should stop the equipment operator.
    d. The Certified Arborist should then excavate around the tree root by Airspade™ (recommended) or by hand/shovel and cleanly cut the tree root.
        i. The Certified Arborist should then instruct the equipment operator to continue.

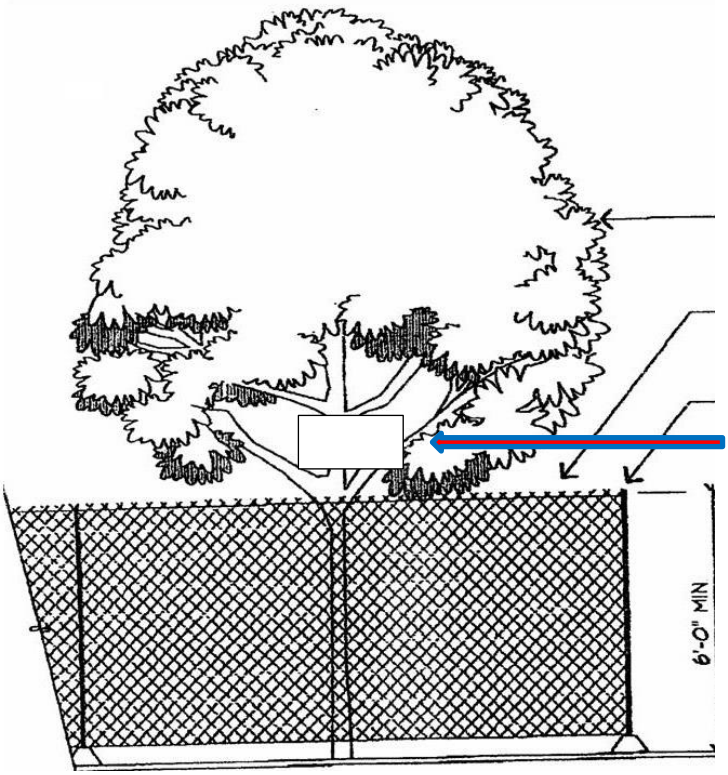
6. Putting Utilities Under the Root Zone:

    a. Boring under the root systems of trees (and other vegetation) shall be done under the supervision of an ISA Certified Arborist. This is to be accomplished by excavating a limited trench or pit on each side of the critical root zone of the tree and then hand digging or pushing the pipe through the soil under the tree. The closest pit walls shall be a minimum of 7 feet from the center of the tree and shall be sufficient depth to lay the pipe at the grade as shown on the plan and profile.
    b. Tunneling under the roots of trees shall be done under the supervision of an ISA Certified Arborist in an open trench by carefully excavating and hand digging around areas where large roots are exposed. No roots 1 inch in diameter or larger shall be cut.
    c. The contractor shall verify the vertical and horizontal location of existing utilities to avoid conflicts and maintain minimum clearances; adjustment shall be made to the grade of the new utility as required.

7. Watering:

Native trees and vegetation are naturally adapted to the local climate, supplemental watering is usually not needed for these plants, Non-native trees may require supplemental watering throughout the summer and early fall. The Project Arborist Shall periodically assess the trees, July-September, and make recommendations for supplemental watering as needed. The contractor shall be responsible for implementing the supplemental watering. Water to the sites has been shut off limiting the supplemental watering options. The Project Arborist will work with the contractor to provide reasonable recommendations for the deep root watering of the trees that need supplemental water. Methods may include the use of water bags, mulch, watering trucks or other approved methods.

    a. Water the tree to a depth of 18 to 20 inches. Once the water reaches the proper depth, turn off the hoses for four weeks and then water again. Water more often when temperatures increase— every three weeks when temperatures exceed 80 degrees and every two weeks when temperatures exceed 90 degrees. This drying out of the soil in between watering is important to prevent soil pathogens from attacking the trees.
    b. If using watering bags be sure they are installed per manufactures instructions. Check bags bi-weekly, fill with water as needed.



Farthest extending branch = Drip line
Existing Significant Tree

Continuous 6' min. chain link or like fencing. Fence post @ 10' Max O.C.

Install as shown on plans 5' min past Dripline, or per specific TPZ/CRZ instructions.

Signs installed every 20 to 25-feet
TREE PROTECTION FENCE DO NOT ENTER!
DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTION AREA

Include Arborist Contact Info.

Six-foot high temporary chain link (or like material) fencing shall be installed as shown on plans. Fencing shall be installed prior to construction activity and remain in place until construction is completed. Fencing panels are recommended. Fencing shall completely encircle the tree(s). Install fence posts using pier blocks. Avoid driving posts or stakes into major roots.

Make a clean straight cut, using loppers, reciprocal saw, or like tool, to remove damaged portion of root(s) over 1" inch diameter that are damaged during construction. **ALL** exposed roots shall be temporarily covered with damp burlap and covered with soil the same day, if possible, to prevent drying out. If not possible, the burlap must be kept moist at all times.

Work within the protection fencing shall be done manually. No stockpiling of materials, soil, debris, vehicular traffic, or storage of machinery or equipment shall be allowed within the limits of the fencing.

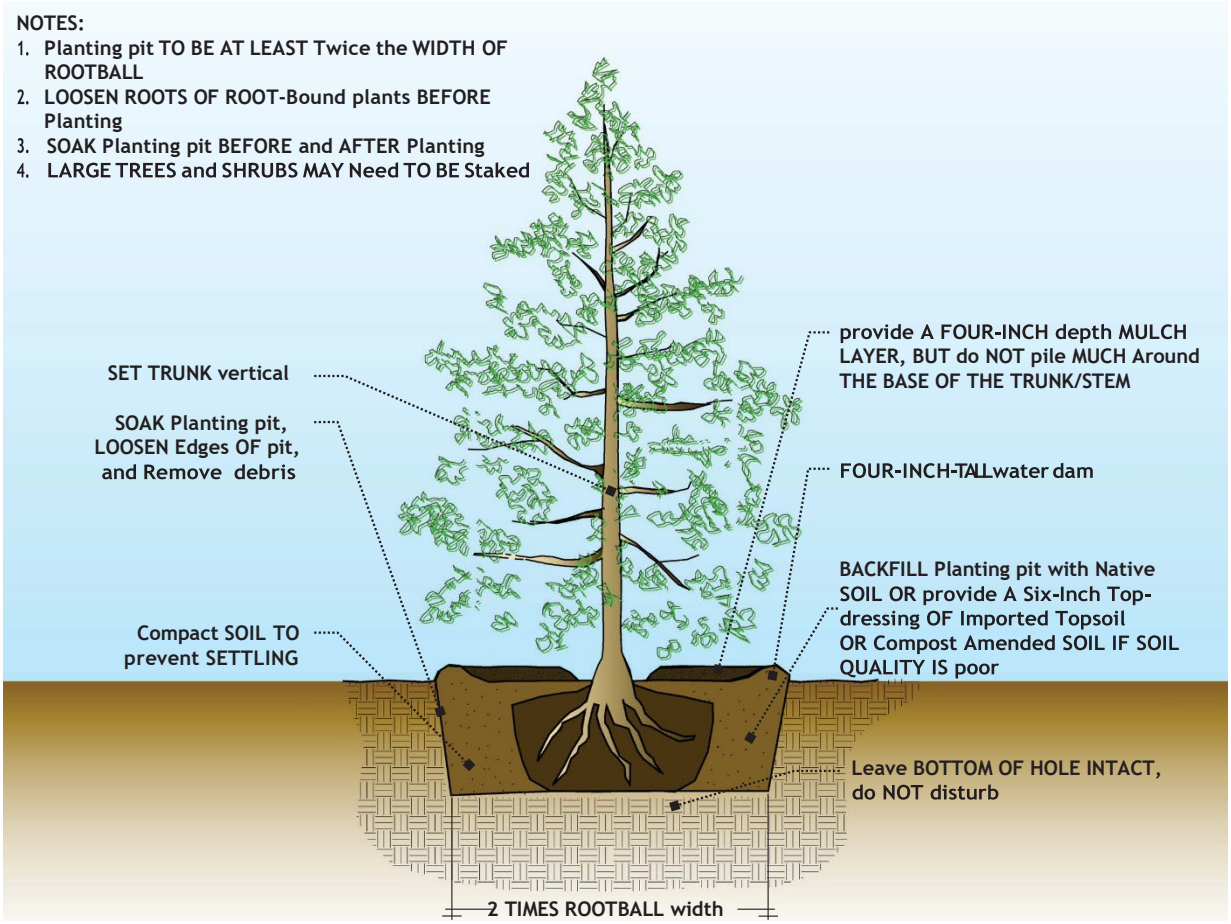
Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the tree protection fences, or in a manner that would allow the waste or wash out material to enter the TPZ.

If mulch is required. the area within the tree protection fencing shall be covered with wood chips, hog fuel, or similar materials, to a depth of 3 to 6 inches. The materials shall be placed prior to beginning construction and remain until the tree protection fencing is taken down. (see Attachment 5 Mulching)

Should the tree protection fencing need to be installed inside the TPZ to allow for construction activity, then the following shall be done.

1. For construction equipment, cover the area from the tree protection fencing to the outer edge of the TPZ with 8 to 10 inches of wood chips, hog fuel, or similar materials, to reduce compaction, cover area with 1" – 1.5" thick steel plates.
2. For foot traffic' cover the area from the tree protection fencing to the outer edge of the TPZ with 6 inches of wood chips, hog fuel, or similar materials, to reduce compaction, cover with ¾ inch to 1-inch plywood.
3. The steel plates, plywood and wood chips are to remain in place until all construction activity is completed. The steel plates, plywood and woodchips can then be removed and the tree protection fencing installed along the outer edge of the tree protection zone.

ATTACHMENT 4 - TREE PLANTING STANDARDS & MAINTENANCE



TREE And SHRUB Planting SEQUENCE

1) Remove all invasives from the site. Spraying with glyphosate in spring during active growth is recommended, remove ivy from the site and plant in the fall.
2) Evaluate the soil conditions. If the soil is too compacted to easily dig, consider options for recompacting and amending the soil with **compost**. Amend the entire restoration area when possible.
3) Lay out plants or use flags to mark the location of each plant.
4) Dig a pit for each plant that is twice the width (not depth) of the root ball or plant container.
5) Soak the pit with water by filling it at least half-way. Allow the water to drain before installing plant. Note that some pits may not fill if the soil is very sandy.
6) Remove all excess soil and expose the root flare.
7) "Rough up" the roots of the plants, pruning or straightening circling roots. Roots that circle the bottom and sides of the root ball can later girdle the tree as the trunk attempts to grow outward.
8) Install the plant in the pit, backfilling as necessary such that soil surface matches the surrounding ground level. Make sure the root flare is at or slightly above grade. DO NOT PLANT TO DEEP!
9) Form a basin to hold water around the plant using remaining soil.
10) **Mulch** each plant with 4 inches of coarse wood chip mulch (preferred) or raked leaves. Do not bury the stem in mulch – mulch should be kept a few inches away from the stem.

MULCH

Mulching is one of the easiest and most effective ways to improve urban soil quality entry health. Mulching is the application materials to the soil surface to improve or protect the tree and/or soil. Most materials can be organic or inorganic. When selecting mulch, organic materials are usually preferred over inorganic materials. Organic mulches moderate soil temperatures reduce soil compaction and erosion and increase soil organic matter; thereby stimulating microbial activity, soil aggregation, and nutrient availability. Inorganic mulches may be fire resistant, do not decompose, reflect, or transfer heat more readily into the soil, and tend to be more stable when exposed to high wind or flooding.

Table 2) Potential uses and limitations of typical mulches for urban trees.

Mulch	**Uses**									**Limitations**					
	Prevent compaction	Prevent erosion	Limit evaporation	Deter past	Control weeds	Promote aggregation	Increase organic matter	Increase nutrients	Expensive or limited availability	Crusting or matting	Unstable	Anaerobic soils	Salts or contaminants	Potential N immobilization	Temporary or unknown effects
Grass clippings		X				X	X	X		X	X				X
Fresh leaves		X				X	X	X			X				X
Needles		X	X			X	X	X							
Hay/straw		X	X			X	X	X						X	
*Arborist woodchips	X	X	X		X	X	X	X						X	
Bark	X	X	X	X	X	X	X	X						X	
Eucalyptus		X	X	X		X	X	X	X						
Cypress		X	X	X		X	X	X	X						
Pecan shells		X	X			X	X	X	X						
Leaf mold		X	X			X	X	X		X					
Compost		X	X			X	X	X					X		
Fabrics		X			X				X			X			
Recycled rubber	X	X		X	X				X				X		
Stone/gravel	X	X			X				X						
Black plastic		X	X		X				X			X			

*Arborist woodchips are less costly and hold up better, they are the preferred mulch, in moderate to high traffic areas.

Mulching guidelines for urban landscapes

1. Depth of mulch application is dependent upon mulch texture, density, material decomposition rate, and climate. Wooden chip mulch should be applied and maintained at depths of 3-6 inches for trees. Materials that are finer, denser, and slower to decompose should be applied at lesser depths. thicker mulch layers should be applied in arid regions to retain more water in the soil.
2. Apply a sufficiently thick layer of mulch, usually 2-4 inches, to kill existing weeds and prevent new weed seeds from germinating or reaching the soil surface. If thinner layers are applied, kill or remove weeds prior to installing mulch.
3. Do not place impervious plastic sheeting or fabric barriers under mulch. Impervious barriers stop water movement and limit incorporation of organic matter into the soil.
4. The mulch area should cover as much of the tree root zone as possible, from near the trunk to the dripline, is considered ideal.
5. For recent transplants, mulch beyond the root ball. The minimum recommended radius is 3 feet. Maintain mulch for at least three years to facilitate root growth and protect trees from mechanical damage.
6. For larger existing trees, the minimum radius for mulch is at least three times the trunk diameter.
7. Mulch applied as a continuous bed around multiple trees is more effective than single rings around individual trees.
8. Average chip size of most organic mulches should be 1-2 inch.
9. Avoid woodchips from trees that are known to have allelopathic affects (e.g., *Juglans nigra*) and from individual trees that may have soil transmittable diseases (e.g., Verticillium wilt).

On wet sites, soil drying can be promoted by removing organic mulches. Be aware of some other potential negative impacts of mulches, including toxicity (allelopathy and “sour” anaerobic mulches with pH of <2.5), slime molds (unsightly, but mostly harmless), matting (hydrophobic layers from fungal mats and mulches), flammability, and some fungus problems (e.g., Sphaerobolus, Mutinuscaninu, and M. elegans).

Maintenance: Trees shall be watered regularly for 2 years using 1 of the following:

Option 1. A permanent built-in irrigation system with an automatic controller designed and certified by a licensed landscape architect as part of the landscape plan.
Option 2. An irrigation system designed and certified by a licensed landscape architect as part of the landscape plan, which provides sufficient water to ensure that the plants will become established. The system does not have to be permanent if the plants chosen can survive adequately on their own, once established.
Option 3. Irrigation by hand. If the applicant chooses this option, an inspection will be required one (2) years after final inspection to ensure that the landscaping has become established.
Option 4. Approved water bags; must be inspected and filled weekly (more frequently in hot weather)

Protection. Trees and shrubs, must be protected from potential damage by adjacent uses and development, including parking and storage areas. Protective devices such as bollards, wheel sops, trunk guards, root guards, etc., may be required in some situations.

ATTACHMENT 5 - TREE & PLANT SELECTION GUIDE

A list of excellent trees and shrubs that improve wildlife habitat as well as the health of our streams, wetlands, and lake shorelines.

Native Trees	Height/Width (ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Abies grandis Grand Fir	60/20		●	●				●	●		Shady/partial sun-loving tree with glossy green needles. Does not transplant from the wild - nursery-grown only.
Acer macrophyllum Bigleaf Maple	50/25	●		●	●		●	●			This large, fast-growing tree offers shade and important wildlife habitat. It has large, distinct leaves.
Alnus rubra Red Alder	50/20	●			●	●	●				Feed and shelter birds with this fast-growing tree with brittle limbs and shallow, weak roots.
Arbutus menziesii Pacific madrone	35/30	●		●	●		●	●			Only broadleaf evergreen native; difficulty in transplanting; establishes in rocky, poor soils; do not disturb if seedlings growing; gets canker
Cornus nuttallii Pacific Dogwood	50/20	●		●	●		●	●			Susceptible to diseases, our native Dogwood provides great fall color; requires well-drained soils; beautiful flowers.
Crataegus suksdorfii douglasii *Black Hawthorn*	25/15	●			●	●		●	●		This small, shrubby Hawthorn is loved by birds for food and shelter.
Fraxinus latifolia Oregon Ash	50/20	●			●	●	●	●			Tolerates flooded wet soils for short periods.
Malus fusca Pacific Crabapple	30/20	●			●	●	●	●			A favorite food source and nesting tree with small blooms and fruit.
Picea sitchensis Sitka Spruce	45/20		●	●	●		●	●			Prefers moist soil to look healthiest. Varying shades of green with broad horizontal branches. Subject to Cooley spruce gall, caused by aphids.
Pinus contorta Shore Pine	40/20		●	●			●	●		●	Grows in poor conditions where other species do not thrive. Highly desirable and easily available.
Pinus monticola Western White Pine	40/20		●		●		●	●			Subject to Blister Rust Disease, this 5-needled Pine has blue-green foliage.
Populus trichocarpa Black Cottonwood	80/30	●			●	●	●				Plant this fast growing, aggressively rooted tree 40 feet or more away from sidewalks, sewers, and structures. Limited use.
Prunus emarginata Bitter cherry	25/15	●			●			●	●		Small white flowers bloom in spring. Limited quantities available from nurseries.

Native Trees	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Prunus virginiana Chokecherry	25/15	●			●		●	●			Tiny white flowers; good fall color. More available than Bitter cherry.
Pseudotsuga menziesii Douglas Fir	65/25		●		●		●	●		●	Our most common native tree. It can grow moderately to heights over 100'. Highly desirable and easily available.
Quercus garryana Oregon white oak	50/50		●	●			●	●			Only native oak tree. Slow growing needs open space and well-drained soil; high wildlife value. Limited Growing Range Not Good for All Sites.
Rhamnus purshiana Cascara	30/15	●			●		●	●			Birds enjoy the berries while the bark is used for medicinal purposes.
Salix lasiandra Pacific Willow	30/20	●			●	●	●				Great tree for wildlife.
Salix scouleriana Scouler's Willow	30/20	●			●		●				Great tree for wildlife. Scouler's Willow prefers dry to moist soil; not very wet.
Salix sitchensis Sitka Willow	30/20	●			●	●	●				Great tree for wildlife
Thuja plicata Western Red Cedar	50/25		●		●	●	●	●	●	●	For moist sunny and shaded areas, this is a useful native with graceful spreading branches. Highly desirable and easily available.
Tsuga mertensiana Mountain Hemlock	40/20		●		●		●	●		●	Slow-growing and narrow. Prefers sun. Highly desirable and easily available.

Deciduous Trees	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Acer palmatum Japanese Maple	25/25			●	●		●		Low horizontal shape with excellent fall orange/red color. Many varieties.
Styrax japonicus Japanese Snowbell	25/25	●		●	●		●		Fragrant flowers; often low-branched. Has a rounded form.
Tilia cordata Little-Leaf Linden	40/30			●	●		●		Varieties have different shapes, most with yellow fall color. Leaves drop during dry Septembers.
Zelkova serrata Sawleaf Zelkova	40/38			●			●		Variety Village Green has a nice vase shape and better orange/red fall color.
Cornus nuttallii Pacific Dogwood	50/20	●		●	●		●	●	Susceptible to diseases, our native Dogwood provides great fall color; requires well-drained soils; beautiful flowers.
Crataegus suksdorfii douglasii *Black Hawthorn*	25/15	●			●	●		●	This small, shrubby Hawthorn is loved by birds for food and shelter.
Fraxinus latifolia Oregon Ash	50/20	●			●	●	●	●	Tolerates flooded wet soils for short periods.
Malus fusca Pacific Crabapple	30/20	●			●	●	●	●	A favorite food source and nesting tree with small blooms and fruit.
Acer platanoides Norway Maple	varies		●	●	●		●		From narrow columnar varieties to globe and upright oval shaped, there are many form and color choices available.
Acer rubrum Red Maple	varies		●	●			●		Great fall color; tolerant of poorly drained soils. Forms narrow to oval vase shape.
Betula nigra River Birch	40/25		●	●	●			●	This pyramidal tree has attractive yellow fall foliage.
Betula jacquemontii Jacquemontii Birch	40/30		●	●					Bright white bark is featured on this tree.
Carpinus betulus 'Fastigiata European Hornbeam	35/25		●	●	●		●		Once established, this tree tolerates drought well. Narrow form widens with age.
Quercus rubra Red Oak	50/45			●			●		Fast-growing and wide, this tree needs space and deep, well-drained soils. Red fall color.

Deciduous Trees	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Cercidiphyllum japonicum Katsura Tree	40/40			●	●		●		With graceful branding and heart-shaped leaves, this tree prefers rich moist (not wet) soil.
Cercis canadensis Eastern Redbud	35/25	●		●	●		●		This small horizontal-branched tree has purple-pink flowers and yellow fall foliage.
Cornus kousa Japanese Dogwood	20/20			●	●		●		Best in well-drained soils, this dogwood grows horizontally and has large white flowers.
Cornus mas Cornelian Cherry	25/20			●	●		●		A little taller and oval shaped, this yellow flowering dogwood is adaptable to all soils.
Crataegus x lavallei Lavalle Hawthorne	28/20	●		●	●		●		Has an irregular vase shape, dark green leaves, and orange fruit that hold on during early winter.
Crataegus phaenopyrum Washington Thorn	25/20	●		●			●		A popular tree because of its white blooms, red fruit, and orange/red fall color.
Fraxinus pennsylvanica Seedless Ash	varies	●	●	●			●		Forms vary from narrow (Summit Ash) to broadly oval (Marshall Seedless Ash). Good yellow fall color.
Ginkgo biloba Maiden Hair Tree	40/15	●		●			●		The Princeton Sentry variety is best as it is seedless and has better form.
Gleditsia triacanthos Honey Locust	45/35	●		●	●		●		Shademaster variety has a vase shape and open upright branching; very small leaflets; yellow in fall.
Liquidambar styraciflua Sweet Gum	55/45		●	●	●				Great fall color with red, orange, and purple leaves that hold until December. Palo Alto variety is preferred.
Liriodendron tulipifera Tulip Tree	60/30			●			●		Very different from the Magnolias, this Tulip Tree has smaller yellow flowers.
Malus spp. Flowering Crabapple	20/20	●	●	●	●		●		Crabapples are now grown for their resistance to disease and improved form. Among several good varieties are Robinson and Snowdrift.
Prunus spp. Flowering Cherry	varies			●	●		●		Sargent and Mount Fuji cherries are tougher and more disease resistant. Narrow to rounded forms; most have aggessive roots
Stewartia pseudocamellia Japanese Stewartia	30/20	●		●	●		●		Unusual attractive peeling bark, white flowers, and yellow/red/purple fall colors make this a good garden tree.

Evergreen Trees	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Arbutus menziesii Madrone	50/30	●		●				●	Difficult to transplant. Very susceptible to overwatering. Hard to find. Prefers sandy, dry, and sunny locations.
Calocedrus decurrens Incense Cedar	40/15	●		●					Narrow and columnar. Very drought tolerant; native to Oregon.
Cedrus deodara Deodar Cedar	50/45	●		●			●		A true "Cedar" with needles. Compare with Libani and Atlas Cedars. Trees vary from wide to very wide and need lots of room.
Chamaecyparis obtusa Hinoki Cypress	25/15		●	●			●		Small and slow-growing. Attractive layered branching.
Chamaecyparis lawsoniana Port Orford Cypress	60/25			●	●		●		Native to Oregon; looks similar to Western Red Cedar. Subject to root fungus problems.
Chamaecyparis nootkatensis Alaskan Yellow Cedar	60/25			●	●		●		Narrow, graceful; often pendulous and irregular form
Cupressocyparis X. leylandii Leyland False Cypress	45/20	●		●			●		Subject to phytothera root rot. Fast growing; dull green color.
Juniperus virginiana Eastern Red Cedar	40/20	●		●			●		Although named Red Cedar, it is actually a narrow Juniper.
Magnolia grandiflora St. Mary's Southern Magnolia	40/25			●			●		Small and narrow. Large glossy leaves and fragrant flowers.
Pinus nigra Austrian Black Pine	40/20	●		●			●		Massive and dark. Susceptible to the Pine Shoot Moth.
Pinus sylvestris Scotch Pine	50/25			●			●		The world's most common Pine. Orange to red-tinged bark.
Pinus thunbergiana Japanese Black Pine	40/25			●			●		Graceful, informal shape.
Pseudotsuga menziesii Douglas Fir	80+/25			●	●			●	Our most common native tree. It can grow rapidly to heights over 100'.
Sequoia sempervirens Coast Redwood	100+/40			●	●		●		Requires moist soil in a large grove area; not for use as a solitary tree.

Evergreen Trees	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Sequoiadendron gigantea Giant Sequoia	100+/45			●					With ample room, this tree will form a giant cone pyramid.
Thuja plicata Western Red Cedar	80+/25				●			●	The largest member of the Cypress family. Great for screening; grows 80- 200 feet in height and retains its lower branches. Prefers moist soils.
Tsuga heterophylla Western Hemlock	60+/20				●	●		●	This native is harder to use than Douglas Fir or Western Red Cedar. Intolerant of full sun.
Tsuga mertensiana Mountain Hemlock	30/18			●	●		●	●	Slow-growing and narrow. Prefers sun.
Umbellularia californica Bay Laurel	30/25	●			●	●			Native to Oregon and California. Leaves from this tree are used in cooking.

ATTACHMENT 6 - ASSUMPTIONS & LIMITING CONDITIONS

1. A field examination of the site was made for this report (date referenced in report.) Care has been taken to obtain all information from reliable sources in a timely fashion. Therefor all data has been verified to the best of my knowledge, the certified/consulting arborist can neither guarantee or be held responsible for the accuracy of information provided by any outside sources.
2. Any and all information provided in this report covers only the tree's that were examined and reflects the condition of those tree(s) at the time of inspection. This inspection is limited to a visual method of the trees in question, excluding any core sampling, probing, dissection, aerial inspection, or excavation unless noted in writing and contingent upon the appropriate fee being authorized in writing. There is no guarantee nor warranty, expressed or implied that any deficiencies or problems of the mentioned trees may not arise in the future.
3. All drawings, sketches, and photographs submitted with this report, are intended as visual aids only, and are not exact to scale. They should not be construed as engineering or architectural report of surveys unless noted and specified.
4. The certified arborist/consulting arborist is not required to give any testimony or to attend court for any reason considering this report unless subsequent contractual agreements are made.
5. Any alterations made to this report or loss automatically invalidates this report.
6.This document is protected by copy right laws©. Unless required by law or otherwise, possession of this report, or a copy of this report, does not imply right of publication or use for any purpose by anyone other than the person for whom it was created for. This report and all attachments, enclosures, and references are confidential and are for the use of the client concerned. They may not be reproduced, used in any way, or disseminated in any form without the prior consent of the client and expressed written permission and verbal consent of A.B.C. Consulting Arborists LLC.
7. The report and values/opinions expressed, represent the opinion of the certified/consulting arborist, and the arborist fees are in no way contingent upon reporting any specified values, stipulated results, the occurrence of a subsequent event, nor upon finding to be reported.

ATTACHMENT 7 - REFERENCES

1. Matheny, Nelda P. and Clark, James R. *Trees & Development, A Technical Guide to Preservation of Trees During Land Development*. Savoy: The International Society of Arboriculture Press, 1998.

2. Mattheck, Claus and Breloer, Helge. *The Body Language of Trees, A Handbook for Failure Analysis.* London: HMSO, 1994.

3. Smiley, E. Thomas, Watson, Gary, and Larry Costello, *Root Management, ANSI A300 Part 8: Tree, Shrub, and Other Woody Plant Management—Standard Practices (Root Management).* The International Society of Arboriculture Press. Champaign. IL. 2012.

4. Smiley, E. Thomas, Nelda Matheny, and Sharon Lilly, *Managing Trees During Construction, ANSI A300 Part 5: Tree, Shrub, and Other Woody Plant Management—Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, And Construction).* The International Society of Arboriculture Press. Champaign. IL. 2012.

5. Watson, Gary W., and Neely, Dan, eds. *Trees & Building Sites*. Savoy: The International Society of Arboriculture Press, 1995.

City of Bellevue
Post Office Box 90012 • Bellevue, Washington • 98009 9012

April 22, 2021

David Hall
9827 128th Ave. NE
Kirkland, WA 98033

Re: Permit # 20 123627 DC
803 140th Ave. SE
Bellevue, WA 98007

Dear David:
City of Bellevue Transportation Department Right of Way Division will permit a standard driveway for a single-family development to the Lake Hills Connectors as illustrated on the drawing that was submitted to the permit dashboard. However, the proposed driveway shall be designed in accordance with COB Design Manual section 5 Driveways and Driveway and will be restricted to the following restrictions:

1- *The proposed driveway will be limited to Right in Right out,*
2- *COB will not allow backing into Lake Hills Connector,*
3- *Construction of hammerhead/turn around will be required to ensure that vehicles are not backing into Lake Hills Connecter.*

For additional information regarding the City of Bellevue Permits you may visit the City of Bellevue Development Services website at https://development.bellevuewa.gov/permits-and-inspections or you may submit your specific questions along with the required fees for the land Use review.

Note that that approval of the access does not grant you an access if it appears that the property deed indicates any access restriction to the Lake Hills Connectors.

MAZEN WALLAIA
City of Bellevue
Senior Right of Way Engineer
Transportation Department

Narrative

Proposal Name	Bellevue Connector West Lot Variance
Proposal Address	804 Lake Hills Connector
Proposal lot #	0324059047
Proposal Description	Land Use Code Variance to: 1. Reduce the required 30' front setback to 10' 2. Reduce the required 25' rear setback to 10' Increase height limit from 15' to 27'-6"
Applicant	David Hall
Planner **Date**	Jordan Borst, was Drew Folsom and Leah Chulsky May 6, 2024

1 Introduction

The applicant presents a legally created non-conforming lot, the proposed project, the kinds of variances needed for construction and the reasons why those variances are needed. It explores comparable homes to demonstrate that this request is not without precedent and, finally, discusses how this variance fits within City of Bellevue's Decision Criteria.

2 Site Description and Context

This irregularly shaped, bifurcated, legal, conforming lot of record per the City of Bellevue sits on the south side of Lake Hills Connector ~200' west of 140th Ave SE. The lot was originally platted with King County prior to Lake Hills Connector (LHC) being built. This lot was cut down to its present odd shape in the 1950's so that LHC could be built.

Updated information: Building height calculation added

Potential Building Area = (lot less the area of the lot's minimum setback requirements) = 0 sf

Total Lot Area = 44,431 sf

C = Potential Building Area / Total Lot Area = 0 sf / 44,431 sf = 0.0

H = the general height requirement otherwise applicable to the lot = 30'

Building Height = 2 x C x H = 2 x 0.0 x 30 = 0'

In no event shall the building height imposed be less than 15'. The computed building height (0') is less than 15' so the building height limit is 15'.

Figure 2: Subject Parcel Street View

3 Neighborhood Description and Trends

3.1 House Size & Configuration Statistics

Houses in the neighborhood are very large and almost exclusively 2 stories.

The following observations in Table 1: House Size & Configuration Statistics are based on the data in ⚑ Updated Table: Splits size out as combination of above and below ground living areas Table 4: House data for all 97 homes zoned R-1.8 within 1/4 mile of subject lot in the 9 Appendix.

Table 1: House Size & Configuration Statistics

Average size of all 40 homes built this millennium	3,930 square feet AGLA
Average size of all 20 homes built within the last 10 years	4,275 square feet AGLA
Average size of all 10 homes built within the last 5 years	4,649 square feet AGLA
Average size of 3 largest homes	5,227 square feet AGLA
Average size of Basement Living Area	924 square feet
Number of homes built since 2009	25
Number of 2-story homes built since 2009	23
Number of 1-story homes built since 2009	1

3.2 House Size Trends

The trend in neighborhood house sizes is rising strongly, as seen in Figure 3: House sizes trending up.

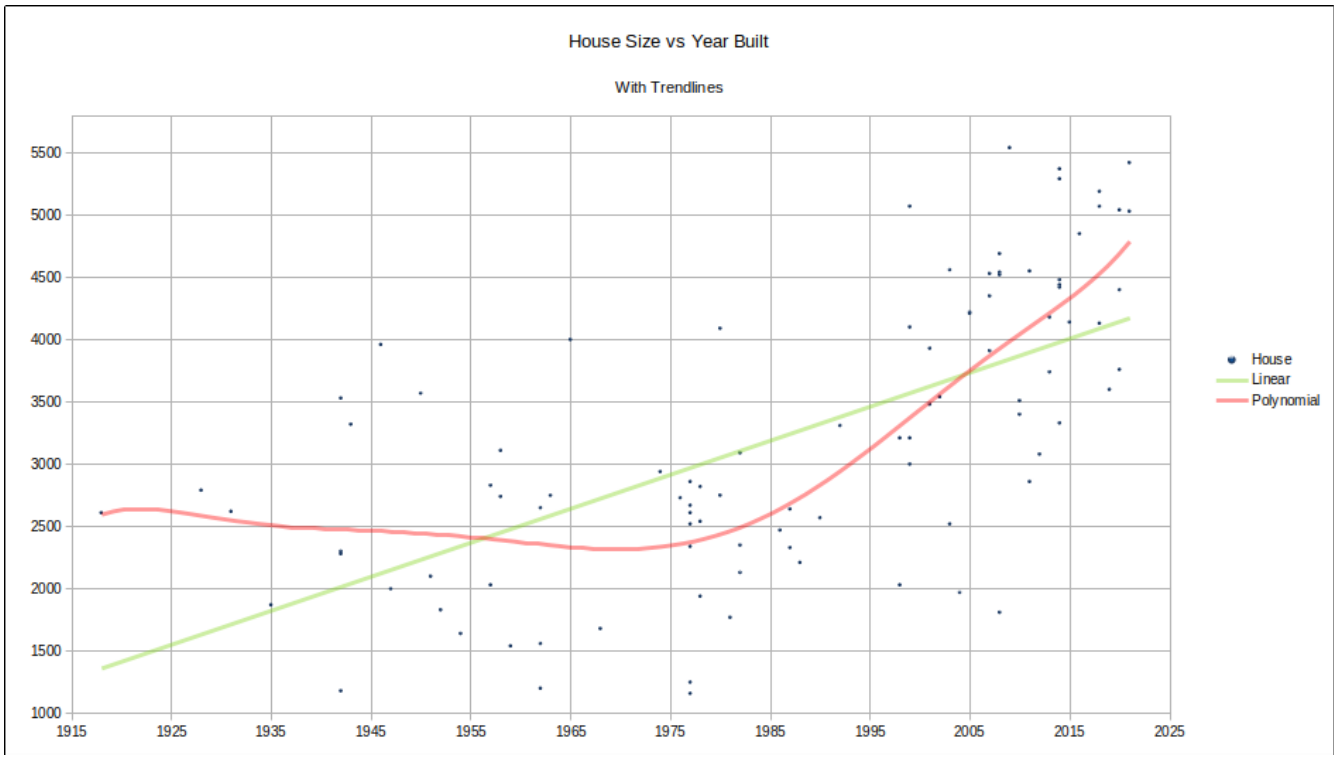


Figure 3: House sizes trending up

Several factors contribute to this growing house size trend that aren't likely to abate anytime soon.

First, the local tech industry is expanding over the long term. According to Geekwire[1], "Amazon expects to ultimately have as many as 25,000 workers in its Bellevue offices". And Google recently announced[2] "plans to invest approximately $9.5 billion in [its] U.S. offices and data centers in 2022", specifically mentioning Kirkland and Seattle.

Second, the need for dedicated working space in the home is growing due to companies allowing remote work as a permanent policy[3].

Third, many foreign-born technology workers enjoy hosting parents / family from their home country for extended stays and, accordingly, prefer extra living space to accommodate their guests.

For these reasons, new construction should size larger in anticipation of this trend continuing so that the home matches the character of the neighborhood now and in the future.

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[1]https://www.geekwire.com/2021/amazons-second-chance-bellevue-gives-tech-giant-an-opportunity-to-reshape-its-regional-legacy/

[2]https://blog.google/inside-google/company-announcements/investing-america-2022/

[3]Seattle Times, October 11, 2021, Amazon will allow many employees to work remotely, indefinitely

4 Project Description

Updated Section: Values updated for accuracy, consistency and clarity

The proposed project is a Single Family Residence with 2 above-grade stories having roof footprint of 1,940 square feet providing 3,870 square feet of Above Ground Living Area (AGLA) and 1,129 square feet of basement living area.

This size represents a good compromise between the lot's constraints and the neighborhood's predominantly very large homes. And with the well-entrenched trend of growing house sizes, this house should fit well for many years to come.

A 2-story configuration is optimal for two reasons. First, it is nearly ubiquitous in the vicinity. And second, it is the best configuration to balance setback and height sensitivities while still achieving a house size that fits well in the neighborhood.

The proposed residence conforms to side setbacks.

5 Variance

The owner was not involved in the creation of any of the circumstances creating the lot's various non-conformities. Accordingly, the applicant requests variance approvals outlined in Table 2: Requested Variance.

Table 2: Requested Variance

Variance	From	To
Max Building Height	15'	27'-6"
Lake Hills Connector front setback	30'	10'
Rear setback	25'	10'

5.1 Comparable Homes

Two of the following properties used in this comparison are not within the subject property's R-1.8 zone because it is difficult to find lots of a similar size and shape within this zone.

Table 3: Comparable Homes

Address	Parcel	Zone
4839 LAKEHURST LN	4134300020	R-4
4003 177TH AVE SE	8043700030	R-5
2435 KILLARNEY WAY	0824059257	R-1.8

5.2 Decision Criteria

5.2.1 Necessary

This variance is necessary because of special circumstances relating to the size, shape, topography, location and surroundings of the subject property to provide it with the use rights and privileges permitted to other properties in the vicinity and in the land use district of the subject property.

Strict compliance with the required 30' front and 25' rear setback would prevent all use of the lot since those setbacks collectively consume over 100% of the lot's building site.

This variance is necessary in order to construct a home large enough to fit with the character and trends of the neighborhood as discussed in 3 Neighborhood Description and Trends.

New Paragraph
At 3,870 square feet AGLA, the proposed project is under the average of all 40 homes built this millennium (3,930 sf). At 4,649 sf, the average size of all homes built in the last decade is 20% larger than the proposed project. (See Table 1: House Size & Configuration Statistics)

New Section

5.2.1.1 Max Building Height

As calculated in 2 Site Description and Context, with no variance our structure would be limited to 15' in height. There are several reasons this 15' height limitation needs to be raised.

First, it would force a single story home, which is clearly out of favor. Since 2009 only one single story home has been built. See Table 1: House Size & Configuration Statistics in 3 Neighborhood Description and Trends.

Second, even with the proposed 10' front / rear setbacks, because of the lot's severe critical slope constraint, the maximum size a single story house could achieve is only 1,930 sf AGLA. This size is 4.2 standard deviations below the average neighborhood house built in the last decade.

A multi-story structure is the only way to develop a home sized in step with recent trends. Raising the height limitation to 27'-6" is necessary to enable a 2-story home which in turn allows reasonable building setbacks while still achieving the 3,870 square foot size needed.

5.2.1.2 Front and Rear Setbacks

Reducing the front setback to 10' is necessary to reduce proximity to the southern property line and minimize impact to the critical slope. A front setback of 10' matches the front setback being requested for parcel 0324059087 which is being designed and constructed in a tightly integrated manner with the subject lot to reduce critical impacts.

This setback reduction is necessary to allow a building envelope large enough to fit with the character of the neighborhood.

Reducing the rear setback to 10' is necessary to shift the building envelope southward. Doing so minimizes impact to the critical slope and pulls the structure away from Lake Hills Connector while enabling a footprint to build a home large enough to fit with the character of the neighborhood.

New Section

The lot's northern property line is its front, which has a standard setback of 30'. The lot's southern property line is its rear, which has a standard setback of 25'.

Because this lot is only ~47' deep, the standard front and rear setbacks collectively consume 100% of the lot making all development impossible.

And only reducing the front setback to 25' likewise leaves the entire lot unbuildable.

New Section

Structure Width

Reducing the front and rear setbacks to 20' produces a structure that is ~7 wide which does not meet building code.

A neighborhood analysis was performed to investigate recent house width trends.

Using King County's iMap tool, a visual inspection was made to conclude which dimension of the structure was the narrowest, and then a rough measurement was taken to determine how narrow the structure was. All 19 R-1.8 homes built since 2013 within ¼ mile of the subject property were analyzed this way.

The result was that the Narrowest Structure Dimension (i.e. NSD, aka width) average of these 19 homes was 55' with a standard deviation of 8.9'. Please see Table 5: Narrowest Structure Dimension for all R-1.8 homes built in last decade within 1/4 mile of subject lot.

A reduction of front and rear setbacks to 15' would force a structure that is only 16.6' wide which is not enough for a 2 car garage and badly out of sync with recent trends, being 4.3 standard deviations below this average.

A front and rear setback of 10' allows a home that is 26.6' wide. Given that this width is about ½ the recent neighborhood average, a strong case can be made for requesting only 5' setbacks.

Nevertheless, the proposal requests 10' setbacks in an effort to find the optimal balance between the competing constraints of a narrow lot, critical steep slope, neighborhood home width trends and matching the 10' LHC setback proposed for the new home to the east, parcel # 0324059087.

Please see Table 6: Front Setback Impact vs. Last Decade Neighborhood Builds for supporting data.

New Section

Living Area

Front and rear setbacks of 20' or greater are impossible for reasons previously discussed.

Assuming the building height variance is granted, setbacks of 15' produce a 2,435 sf AGLA home that is 3.4 standard deviations below the recent neighborhood average. Assuming a normal distribution, that would make the new home smaller than 99.85% of recently built homes in the neighborhood. And, if the trend of homes getting larger persists, this home would grow even more out of sync with the surrounding area.

Even with the proposed 10’ front setbacks, the living area is still almost one standard deviation below the mean.

Please see Table 6: Front Setback Impact vs. Last Decade Neighborhood Builds for supporting data.

New Section

Trees

Reducing the setbacks to the proposed 10’ does have an unfortunate impact on some trees. However, to address concerns about tree removal, both an arborist and ecologist were contracted to develop a comprehensive Tree Protection Plan. The plan ensures the retention of over 30% of existing trees, exceeding the city's canopy goals. Please see their attached reports for more information.

5.2.2 No Special Privilege

This variance will not constitute a grant of special privilege inconsistent with the limitation upon uses of other properties in the vicinity and land use district of the subject property.

New Section

5.2.2.1 Max Building Height

Like the subject property, both 4003 177TH AVE SE and 4839 LAKEHURST LN are less than 70% of the minimum lot area and, thus, subject to the height restrictions of 20.20.070.B.

4003 177TH was subject to a maximum height of 15 feet but a variance was approved for a maximum height of 33.4 feet. 4839 LAKEHURST had a variance approved for a maximum height of 30.4 feet.

The approved maximum height variances of these comparables are 21% and 11% higher, respectively, than the 27'-6" maximum height proposed by the present applicant.

Thus, no special privilege would be granted by raising the applicant’s maximum building height to 27'-6".

5.2.2.2 Front and Rear Building Setbacks

The LAKEHURST LN and 177TH AVE SE properties are setback from a public right of way while the KILLARNEY WAY property is setback from a private access.

The applicant’s requested front setback variance from 30’ to 10’ along LHC is consistent with the front setbacks maintained by each of the three comparison homes, all of which maintain front setbacks less than or equal to 5’.

The requested 10’ rear setback is similar to the KILLARNEY WAY property which maintains a rear setback of approximately 9’ or less.

Thus, no special privilege would be granted by reducing the applicant’s front and rear setbacks to 10’.

5.2.3 No Material Detriment

The granting of the variance will not be materially detrimental to the public welfare or injurious to the property or improvements in the vicinity and land use district in which the subject property is located.

The subject lot only has a single adjacent neighbor home, located at 809 140TH AVE SE. This home is a 1,180 square foot, single story constructed in 1942. The proposed new home will likely provide a favorable deadening of ambient LHC traffic noise for this neighbor's home. The variance will cause no detriment to the use of LHC and will provide for cars to be parked on the subject property out of the public right-of-way.

5.2.4 Consistent with Comprehensive Plan

Nothing about the planned development nor variances are inconsistent with the Comprehensive Plan.

New Section

6 Driveway & Auto Court

The driveway and auto court were carefully designed to serve both new homes while minimizing impact to the heavily trafficked LHC.

Access was granted by City of Bellevue Right of Way with restrictions that vehicles cannot back out or turn left onto LHC. Given that the driveway serves two homes there is an increased possibility of some traffic seeking to enter the driveway while other traffic seeks to exit the driveway. In such a scenario, if the driveway only allowed single way traffic, the vehicle on LHC would have to stop and wait while the exiting traffic cleared the driveway. Stopping on LHC like this creates a safety hazard.

To prevent this safety hazard, Right of Way requires the driveway serve two way traffic so that under no circumstances will traffic entering the driveway be forced to stop on LHC.

The proposed driveway width (20') is the minimum necessary to serve the required two way traffic. Any reduction in width would reduce safety.

The driveway cannot be located anywhere else. The Right of Way department will not allow the driveway any closer to the intersection of LHC and 140th St SE to minimize adverse interactions between the new driveway and the traffic light.

Also, locating the driveway any further eastward would add impervious surface to that lot which is already near its maximum.

Locating the driveway any further west would increase impact to the critical slope.

The auto court size cannot be reduced because there must be adequate room for hammer head turnarounds since backing onto LHC is not allowed. This turnaround includes the need to allow emergency vehicles to safely turnaround on the property.

New Section

7 Eastern Lot Line Setback

The eastern property line of this lot represents a side yard only subject to a 5' setback.

Locating the new home 5' from that line would lower the impact to the critical areas.

However that is not possible because, as discussed in the previous section, the shared driveway must be located on this lot and must be 20’ wide.

Furthermore, since the driveway is shared, it has an easement and that easement requires a 10’ building setback.

Consequently, 30’ is the closest the new proposed home can be to the eastern property line.

8 Conclusion

This narrative presents a highly constrained, legal, non-conforming lot and the variances needed to build a home that will fit well in the vicinity for many years to come. The applicant requests the City of Bellevue approve this variance without reservation.

9 Appendix

Updated Table: Splits size out as combination of above and below ground living areas

Table 4: House data for all 97 homes zoned R-1.8 within 1/4 mile of subject lot

Parcel	Year Built	Stories	Size (AGLA)	Size (total)	Basement
3425059091	1918	1	1,540	2,610	1,070
3425059173	1928	2	2,790	2,790	0
3425059037	1931	1	2,620	2,620	0
3425059046	1935	1	1,170	1,870	700
0324059045	1942	1	1,180	1,180	0
3425059042	1942	1.5	1,700	2,300	600
3425059160	1942	1.5	2,280	2,280	0
3425059175	1942	2	3,530	3,530	0
3425059157	1943	1	3,320	3,320	0
3425059044	1946	1	3,960	3,960	0
2077700004	1947	1	1,200	2,000	800
3425059067	1947	1	2,000	2,000	0
2077700071	1950	1	2,200	3,570	1,370
2077700010	1951	1	1,500	2,100	600
3425059053	1952	2	1,830	1,830	0
2077700032	1954	1	1,640	1,640	0
2077700007	1957	1	2,030	2,030	0
3425059058	1957	1	2,830	2,830	0
2077700050	1958	1	3,110	3,110	0
3425059148	1958	1	1,980	2,740	760
3425059045	1959	1	1,540	1,540	0
2077700035	1962	1	1,200	1,200	0
2077700036	1962	1	1,600	2,650	1,050
2077700037	1962	1	1,040	1,560	520
3425059164	1963	2	2,750	2,750	0
3425059183	1965	2	4,000	4,000	0
2077700076	1968	1	1,680	1,680	0
3425059201	1974	1.5	2,940	2,940	0
3425059063	1976	2	2,730	2,730	0
2077700005	1977	1	1,160	1,160	0
3425059017	1977	2	2,670	2,670	0
3425059050	1977	2	2,610	2,610	0
3425059191	1977	1	1,730	1,250	-480
3425059216	1977	1	1,940	2,340	400
3425059217	1977	1	1,620	2,520	900
3425059218	1977	1	1,640	2,860	1,220
2077700006	1978	2	2,820	2,820	0
3425059068	1978	1	1,610	2,540	930

3425059214	1978	1	1,360	1,940	580
3425059227	1980	2	2,840	4,090	1,250
3425059228	1980	2	2,750	2,750	0
2077700077	1981	1	1,770	1,770	0
2077700047	1982	2	2,130	2,130	0
3425059055	1982	2	2,090	3,090	1,000
3425059229	1982	1.5	2,350	2,350	0
2077700052	1986	2	1,890	2,470	580
2077700042	1987	2.5	2,330	2,330	0
3425059126	1987	2	2,640	2,640	0
2077700043	1988	2	2,210	2,210	0
3425059060	1990	2	2,570	2,570	0
3425059242	1992	2	3,310	3,310	0
2077700046	1998	1	1,350	2,030	680
3425059265	1998	2	3,210	3,210	0
3425059176	1999	1	2,680	4,100	1,420
3425059264	1999	1	3,000	3,000	0
3425059266	1999	2	5,070	5,070	0
3425059267	1999	1	3,210	3,210	0
2077700082	2001	2	3,480	3,480	0
2077700084	2001	2	3,930	3,930	0
3425059279	2002	2	3,540	3,540	0
3425059034	2003	1	1,410	2,520	1,110
3425059057	2003	2	4,560	4,560	0
2077700041	2004	1	700	1,970	1,270
3425059290	2005	2	4,210	4,210	0
3425059291	2005	2	4,220	4,220	0
2077700070	2007	1	3,910	3,910	0
3425059048	2007	2	4,530	4,530	0
3425059294	2007	2	4,350	4,350	0
2077700045	2008	1	1,340	1,810	470
3425059036	2008	2	3,650	4,540	890
3425059051	2008	2	4,520	4,520	0
3425059286	2008	2	4,690	4,690	0
3425059287	2009	2	4,010	5,540	1,530
2077700030	2010	2	3,400	3,400	0
2077700031	2010	2	3,510	3,510	0
2077700025	2011	2	4,550	4,550	0
3425059285	2011	2	2,860	2,860	0
2077700080	2012	2	3,080	3,080	0
2077700058	2013	2	3,740	3,740	0
2077700065	2013	2	4,180	4,180	0
2077700055	2014	2	4,280	5,290	1,010

2077700057	2014	2	4,440	4,440	0
2077700060	2014	2	4,420	4,420	0
2077700062	2014	2	4,480	4,480	0
3425059069	2014	3	3,330	3,330	0
3425059185	2014	2	4,060	5,370	1,310
3425059066	2015	2	4,140	4,140	0
2077700056	2016	2	4,850	4,850	0
2077700008	2018	2	4,130	4,130	0
3425059052	2018	2	5,070	5,070	0
3425059215	2018	2	5,190	5,190	0
3425059054	2019	1	3,600	3,600	0
3425059031	2020	2	3,760	3,760	0
3425059043	2020	2	5,040	5,040	0
3425059196	2020	2	4,400	4,400	0
2077700075	2021	2	5,420	5,420	0
3425059305	2021	2	5,030	5,030	0

🚩 New Table: Helps compare width of proposed structure to neighborhood statistics

Table 5: Narrowest Structure Dimension for all R-1.8 homes built in last decade within 1/4 mile of subject lot

Parcel #	Year Built	AGLA	AGLA Mean	AGLA Stdev	Narrowest Structure Dimension (NSD)	NSD Mean	NSD Stdev
2077700058	2013	3740	4398	581	54	55	8.9
2077700065	2013	4180			53		
2077700055	2014	4280			54		
2077700057	2014	4440			58		
2077700060	2014	4420			55		
2077700062	2014	4480			54		
3425059069	2014	3330			49		
3425059185	2014	4060			45		
3425059066	2015	4140			54		
2077700056	2016	4850			72		
2077700008	2018	4130			43		
3425059052	2018	5070			65		
3425059215	2018	5190			58		
3425059054	2019	3600			70		
3425059031	2020	3760			39		
3425059043	2020	5040			50		
3425059196	2020	4400			56		
2077700075	2021	5420			69		
3425059305	2021	5030			50		

🚩 New Table: Looks at width of proposed structure as a function of various front setback distances and compares to neighborhood statistics

Table 6: Front Setback Impact vs. Last Decade Neighborhood Builds

Front Setback	Buildable Envelope	Narrowest Structure Dimension	Narrowest Structure Dimension Stdevs Below Mean	Garage Space	Basement Footprint	Basement Envelope Less Garage	Basement Living Area	AGLA (15' building height)	AGLA (23' 3-3/4" building height)	AGLA Stdevs Below Mean
10	1996	26.6	3.21	689	1930	1241	1129	1930	3870	0.91
15	1256	16.6	4.34	430	1214	784	1032	1214	2435	3.38
20	516	6.6	5.46	171	499	328	424	499	1000	5.85
25	0	0	6.20	0	0	0	0	0	0	7.57