City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Neil Residence
Proposal Address:	1438 & 1440 W Lake Sammamish Pkwy NE
Proposal Description:	Critical Areas Land Use Permit approval to demolish and existing single-family residence and construct a new, 5,080 square-foot single-family residence and appurtenances. The proposal is supported by a critical areas report, geotechnical report, and a mitigation plan.
File Number:	20-103303-LO
Applicant:	Alex Pittman, The Watershed Company
Decisions Included:	Process II
Planner:	David Wong, Land Use Planner
State Environmental Policy Act Threshold Determination:	**Exempt**
Department Decision:	**Approval with Conditions** **Rebecca Horner, Director** **Development Services Department** ***Reilly Pittman*** ***Planning Manager*** Elizabeth Stead, Land Use Director Development Services Department

Application Date:	February 11, 2020
Notice of Application Publication Date:	July 23, 2020
Decision Publication Date:	August 24, 2023
Appeal Deadline:	September 7, 2023

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

CONTENTS

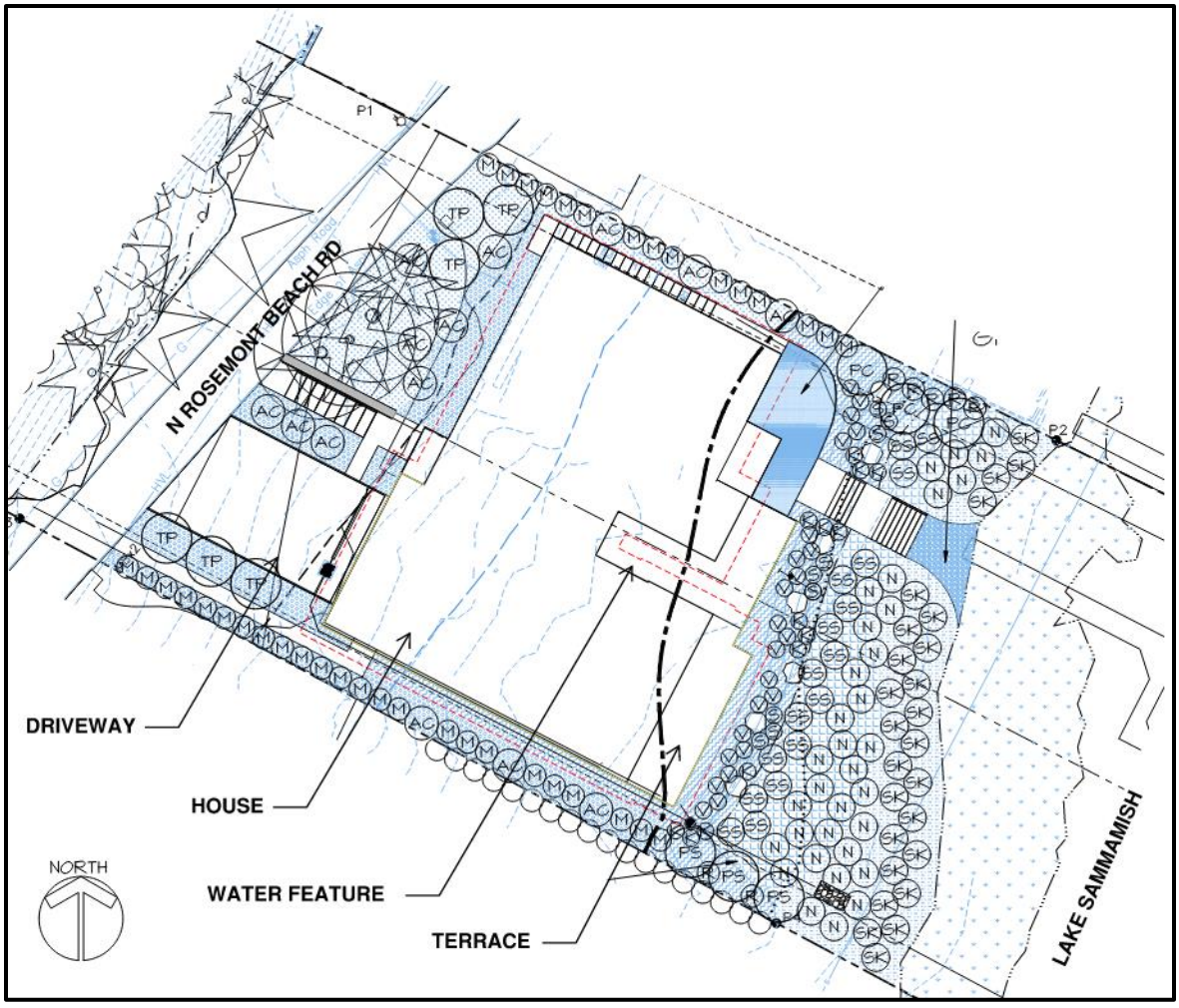
Attachments

1. Site Plan (dated 4/7/2023)
2. Civil Plan (dated 4/5/2023)
3. Mitigation Plan (dated 4/6/2023)
4. Critical Areas Report – The Watershed Company (dated 2/7/2020)
5. Critical Areas Report Addendums – Altmann Oliver Associates, LLC (dated: 7/19/2021, 2/28/2022, 7/28/2022, and 4/6/2023)
6. Geotechnical Engineering Study & Addendum – Geotech Consultants, Inc. (dated: 11/22/2019)

I. Request & Review Process

The applicant has requested a Critical Areas Land Use Permit approval to demolish an existing single-family residence and to construct a new, 5,080 square-foot single-family residence. The new residence includes a driveway, walkways, water feature, and terrace. The proposal includes approximately 6,140 square feet of mitigation, restoration, and enhancement planting to improve degraded slope structures setback, floodplain, and Shoreline Vegetation Conservation Areas (SVCA) conditions. See Figure 1 for proposed site conditions.

Figure 1



Proposals to permanently modify a steep slope structure setback and to work within a floodplain require the approval of a Critical Areas Land Use Permit (CALUP) with Critical Areas Report (CAR) and are subject to the requirements of LUC 20.25H and 20.30P, including but not limited to those sections governing steep slopes, floodplains, Critical Areas Reports (CAR), and mitigation.

II. Site, Zoning, and Land Use Context and Critical Areas Functions and Values

A. Site Context

The subject site is made up of two (2) residential parcels (King County parcels 7430500180 and 7430500182) with approximately 31,906 square-feet of total area above the Lake Sammamish ordinary high water mark (OHWM). The northern lot is currently developed with a single-family residence (*circa* 1970), existing deck, and residential dock. An on-site steep slope with an east-facing aspect is located between N Rosemont Beach Rd and W Lake Sammamish Pkwy NE. The site is adjacent to Lake Sammamish to the east and contains floodplain and a 2,495 square-foot category III wetland. On-site vegetation consists of a variety of native and non-native vegetation, including but not limited to big leaf maple (*Acer macrophyllum*), Douglas-fir (*Pseudotsuga menziesii*), western redcedar (*Thuja plicata*), English ivy (*Hedera helix)*, non-native grass, and ornamental shrubs. Lack of native vegetation cover, non-native species cover, and location of existing single-family residential improvements have been identified within the steep slope structure setback, floodplain, and SVCA. The soils of this site have been identified as Alderwood and Kitsap soils (AkF) according to mapping provided by the Natural Resources Conservation Service (NRCS). See Figure 2 below for the current site**.**

Figure 2

B. Zoning and Subarea

The property is zoned R-2.5 (Single-Family Residential) and is located within the Northeast Bellevue neighborhood area. See Figure 3 for zoning map and Figure 4 for neighborhood area information.

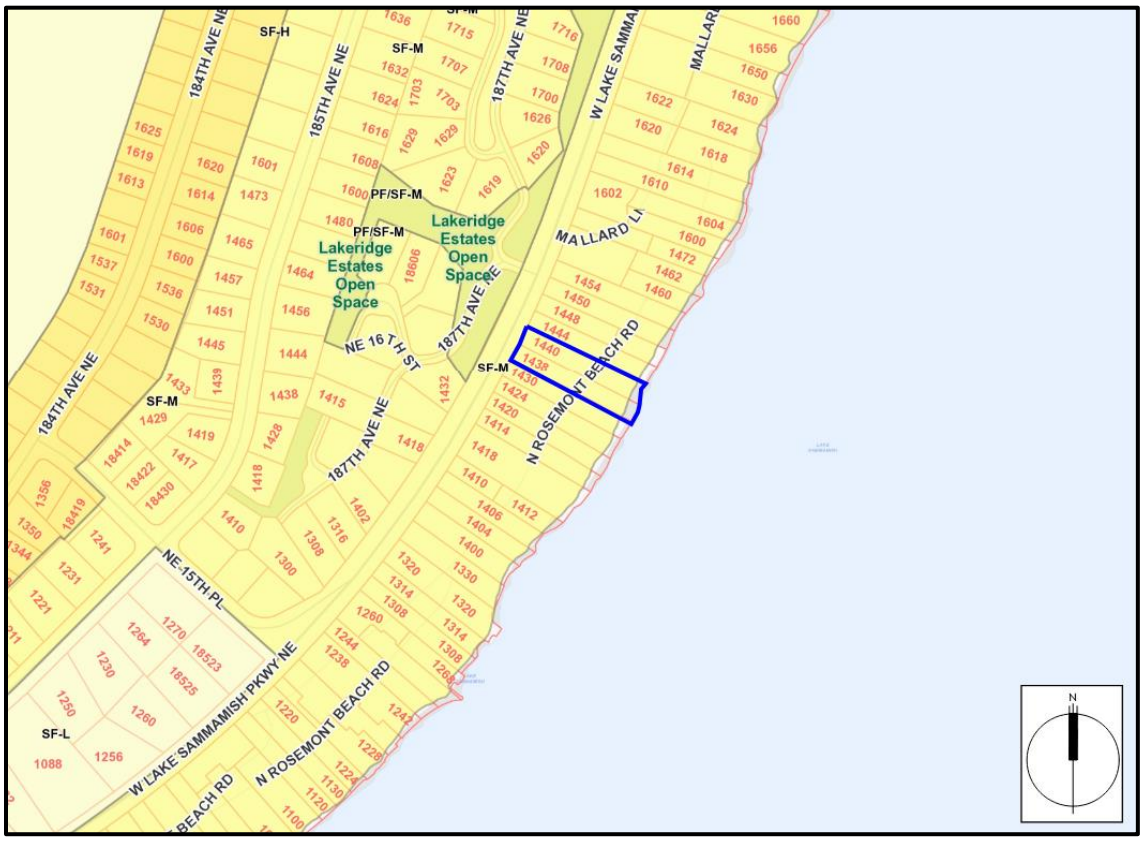
Figure 3

Figure 4

C. Comprehensive Plan and Land Use Context

The site and the surrounding residential lots to the north, south, and west have a Comprehensive Plan designation of Single-Family Medium Density (SF-M). Areas of Park/Single-Family Medium Density (P/SF-M) are located to the west across Lake Sammamish Pkwy NE, and areas of Single-Family Low Density (SF-L) and Single-Family High Density (SF-H) are located in the vicinity to the south and west. See Figure 5 for Comprehensive Plan designation.

Figure 5



D. Shoreline & Critical Areas

i. Shoreline

The site is in the Shoreline Residential shoreline environment designation. Per LUC 20.25E.010, the Shoreline Residential environment is assigned to Bellevue shorelands which are predominantly characterized by residential development or are planned for residential development and exhibit moderate to low levels of ecological functions because of historic shoreline modification activities.

ii. Wetlands

A category III wetland measuring 2,495 square feet and with a habitat score of 4 is located at and below the Lake Sammamish OHWM. Pursuant to LUC 20.25H.095, category III lake-fringe wetlands less than 2,500 square feet and with a habitat score of 5 or less are exempt from a wetland buffer.

iii. Steep Slopes

An east-facing steep slope with approximately 90 feet of elevation change is located between W. Lake Sammamish Pkwy NE and N. Rosemont Beach Rd. The vegetation within the steep slope primarily consists of big leaf maple (*Acer macrophyllum*), Douglas-fir (Pseudotsuga menziesii), western redcedar (*Thuja plicata*), English ivy (*Hedera helix*).

iv. Species of Local Importance

Of the species listed in LUC 20.25H.150, occasional use by bald eagle (*Haliaeetus leucocephalus*), Vaux's swift (*Chaetura vauxi*), merlin (*Falco columbarius*), great blue heron (*Ardea herodias*), osprey (*Pandion haliaetus*), and red-tailed hawk (*Buteo jamaicensis)* was found to be possible (Attachment 4, page 11).

v. Floodplain

A floodplain associated with Lake Sammamish is located on-site above the Lake Sammamish OHWM and extends to elevation 31.6" NAVD 88.

E. Shoreline and Critical Areas Functions and Values

i. Shoreline Environment

Shorelines provide a variety of functions including shade, temperature control, water purification, woody debris recruitment, channel, bank and beach erosion, sediment delivery, and terrestrial-based food supply (Gregory et al. 1991; Naiman et al. 1993; Spence et al.1996). Shorelines provide a wide variety of functions related to aquatic and riparian habitat, flood control and water quality, economic resources, and recreation, among others. Each function is a product of physical, chemical, and biological processes at work within the overall landscape. In lakes, these processes take place within an integrated system (ecosystem) of coupled aquatic and riparian habitats (Schindler and Scheuerell 2002). Hence, it is important to have an ecosystem approach which incorporates an understanding of shoreline functions and values.

ii. Wetlands

Wetlands provide important functions and values for both the human and biological environment—these functions include flood control, water quality improvement, and nutrient production. These "functions and values" to both the environment and the citizens of Bellevue depend on their size and location within a basin, as well as their diversity and quality. While Bellevue's wetlands provide various beneficial functions, not all wetlands perform all functions, nor do they perform all functions equally well (Novitski et al., 1995). However, the combined effect of functional processes of wetlands within basins provides benefits to both natural and human environments.

For example, wetlands provide significant stormwater control, even if they are degraded and comprise only a small percentage of area within a basin.

iii. Steep Slopes and Geologic Hazards

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 provides 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.

iv. 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.

v. Floodplains

The value of floodplains can be described in terms of both the hydrologic and ecological functions that they provide. Flooding occurs when either runoff exceeds the capacity of rivers and streams to convey water within their banks, or when engineered stormwater systems become overwhelmed. Studies have linked urbanization with increased peak discharge and channel degradation (Dunne and Leopold 1978; Booth and Jackson 1997; Konrad 2000). Floodplains diminish the effects of urbanization by temporarily storing water and mediating flow to downstream reaches. The capacity of a floodplain to buffer upstream fluctuations in discharge may vary according to valley confinement, gradient, local relief, and flow resistance provided by vegetation. Development within the floodplain can dramatically affect the storage capacity of a floodplain, impact the hydrologic regime of a basin, and present a risk to public health and safety and to property and infrastructure.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The site is located within the R-2.5 zoning district. All zoning dimensional standards will be confirmed during review of the required Building Permit. See Section X for conditions of approval related to the required Building Permit.

Dimensional Requirement	Standard	Proposed	Compliance
Front Yard Structure Setback (feet)	20	20	Complies
Rear Yard Structure Setback (feet)	25	25	Complies
Side Yard Structure Setback (feet)	5	5	Complies
Combined Side Yard Structure Setback (feet)	15	15	Complies
Building Height (feet)	35	35	Complies
Maximum Lot Coverage (percent)	35	32.8	Complies
Maximum Impervious Surface (percent)	45	20	Complies
Maximum Hard Surface (percent)	75	75	Complies
Minimum Greenspace (percent)	50	50	Complies

Analysis of zoning dimensional standards is based on the area and dimensions of the two lots combined. As such, the proposal will be required to complete a Boundary Line Adjustment to combine the two lots. See Section X for condition of approval related to

boundary line adjustment.

B. Consistency with Land Use Code Shoreline Performance Standards:

i. Shoreline Residential Requirements – 20.25E.065

The site is located in the Shoreline Residential Environment designation. All applicable Shoreline standards will be confirmed during review of the required Exemption from Shoreline Substantial Development Permit. See Section X for conditions of approval related to the required Exemption from Shoreline Substantial Development Permit.

C. Consistency with Land Use Code Critical Areas Performance Standards:

i. Wetland Performance Standards – 20.25H.100

Development on sites with a wetland or wetland critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

1. **Lights shall be directed away from the wetland.**
   No lights are proposed to be directed toward the wetland. Further review of conformance with this standard will occur under the required Building Permit. See Section X for conditions of approval related to the required construction permitting and exterior lighting requirements.

2. **Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques.**
   The site contains an existing single-family structure that will be demolished, and a new single-family structure will be constructed upland of the wetland. As part of the compliance requirements for the Shoreline Master Program (SMP) and Critical Areas Ordinance, the project proposes to improve degraded areas of the floodplain and Shoreline Vegetation Conservation Area (SVCA). The proposed vegetation will help to provide residential use noise attenuation to the wetland.

3. **Toxic runoff from new impervious area shall be routed away from the wetlands.**
   No toxic runoff is proposed to be routed towards the wetland.

4. **Treated water may be allowed to enter the wetland critical area buffer.**
   The wetland contains no buffer and treated water is proposed to be discharged outside of the wetland.

5. **The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.**
   As noted in Standard 2 and 4 of this section, the site contains no wetland buffer and the floodplain area upland of the wetland will be densely vegetated with

exception of the access path to the proposed dock (under separate permitting).

6. **Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.**
   The project does not propose to use pesticides, insecticides, or fertilizers. Any future proposed use will be required to be in accordance with the City of Bellevue's "Environmental Best Management Practices" publication. See Section X for conditions of approval related to pesticide, insecticide, and fertilizer use.

7. **All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code, are met.**
   The Utilities Department has reviewed the proposal and determined the proposal to be compliant with BCC 24.06. See Section V for further Utilities Department technical review.

ii. Consistency with Floodplain Performance Standards – 20.25H.180

Where use or development is allowed pursuant to LUC 20.25H.055, the following general performance standards apply, in addition to the applicable performance standards in subsection C of this section:

1. **No Rise in the Base Flood Elevation (BFE). Any allowed use or development shall not result in a rise in the BFE.**
   The proposal includes removal of an existing retaining wall within the 100-year floodplain and to replace the wall with a soft shoreline designed by an engineer, Civil Engineering Solutions. This design avoids an increase in the BFE and provides greater on-site storage through a net reduction of 25 cubic yards of earthen material within the floodplain. See Figures 6 and 7 for floodplain sections and stabilization.

Figure 6 – North Section

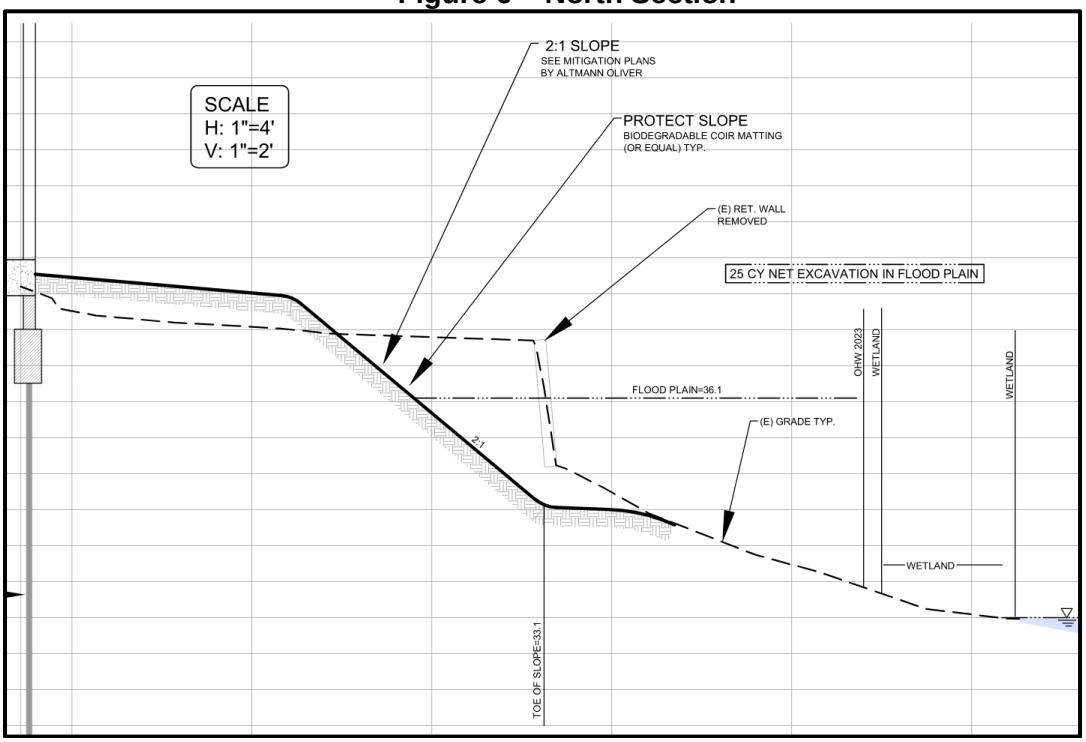
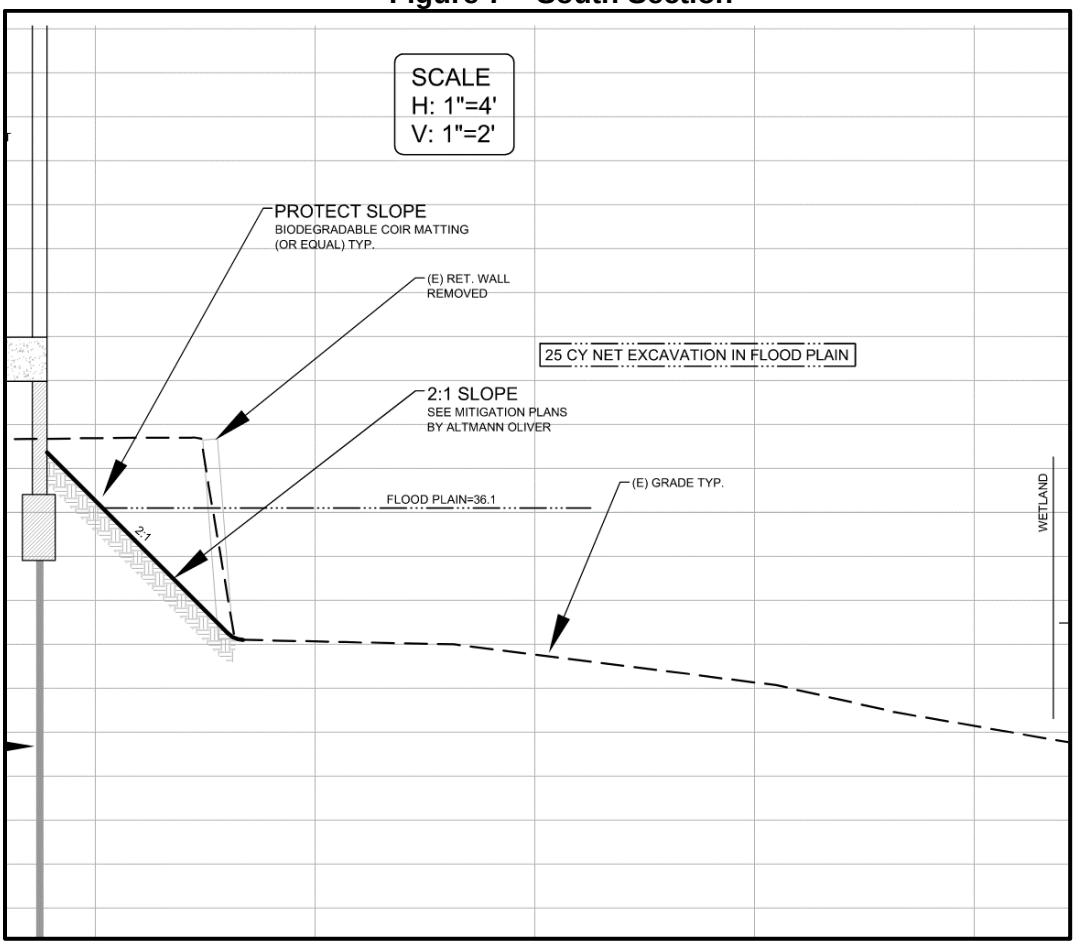


Figure 7 – South Section



2. **Floodplain Ecological Functions. The use or development shall meet National Flood Insurance Program requirements for the protection of floodplain ecological functions in accordance with guidelines established by the Director. Floodplain ecological functions include, but are not limited to, stormwater quality, floodwater storage and conveyance capacity, and habitat.**

   Altmann Oliver Associates, LLC, provided analysis of the FEMA Biological Opinion (BiOp) requirements as part of the Critical Areas Report (CAR). The analysis found the site to be within the range of three federally listed endangered species: Chinook salmon (*Oncorhynchus tshawytscha*), bull trout (*Salvelinus confluentus*), and steelhead (*Oncorhynchus mykiss*). Analysis considered direct, indirect, and cumulative impacts of the proposal per FEMA habitat assessment guidance and found the proposal to result in a *No Effect* on any of the listed species.

D. Consistency with Critical Areas Report LUC 20.25.230.

The applicant supplied a complete critical areas report prepared by Altmann Oliver Associates, LLC and Geotech Consultants, Inc., qualified professionals. The reports met the minimum requirements in LUC 20.25H.250.

IV. Public Notice and Comment

Application Date:	February 11, 2020
Public Notice (500 feet):	July 23, 2020
Minimum Comment Period:	August 24, 2020

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on July 23, 2020. It was mailed to property owners within 500 feet of the project site. Five (5) comments have been received from the public as of the writing of this staff report.

Summary of Comments

Comment: *A 25-foot structure setback from the Lake Sammamish OHWM is not enough to preserve the wetland buffer and conflicts with the SMP.*

Response: The wetland in question is exempt from a wetland buffer pursuant to LUC 20.25H.095.D.1.c. Wetland documentation has been provided to the City which identifies the wetland to be 2,495 square feet in size and containing a habitat score of 4. Lake-fringe wetlands less than 2,500 square feet or, where smaller, contain a habitat score of 5 or less are exempt from the standard buffers noted in LUC 20.25H.095.D.1.a.i.

Applicable shoreline requirements will be reviewed under a separate Exemption from Shoreline Substantial Development Permit. See Section X for conditions of approval related to the Exemption from Shoreline Substantial Development Permit.

Comment: *The compatibility justifications for a 25-foot shoreline structure setback are not applicable.*

Response: Modification of a lake-fringe wetland buffer was initially proposed, however after further investigation and analysis, provided by Altmann and Oliver Associates and in consultation with the Washington Department of Ecology, the wetland was determined to be exempt from a wetland buffer and the proposal no longer needs this modification. As such, the request for Shoreline Variance has been withdrawn by the applicant and decision criteria analysis, including compatibility, is no longer required.

Comment: *Bald eagles, great blue herons, and pileated woodpeckers have been seen using this property. I am concerned about the impacts to these species of local importance.*

Response: The Critical Areas Report (CAR), subsequent addendums and memos, and City staff site visits did not identify any nesting or significant perching sites for the listed species located within the SVCA or near the wetland. The CAR did note occasional use by species of local importance is likely on this site due to the forested conditions within the steep slope area, the presence of a lake-fringe wetland, and the proximity to Lake Sammamish. The CAR also noted trees suitable for bald eagle nest construction are located west of N Rosemont Beach Rd and on the opposite side of the road from the proposed construction, where forested conditions exist, and no impacts from construction are proposed. Furthermore, bald eagles were removed from the State's endangered species list in 2017 and coordination with WDFW for management on specific properties is no longer required.

Tree removal is expected east of N Rosemont Beach Rd in and around the proposed house footprint. As such, the proposal has included a tree replacement plant utilizing native and commonly found species in the vicinity. In addition to tree replacement, much of the remaining SVCA area is proposed to be revegetated with native tree, shrub, and groundcover plant species that are expected to improve habitat opportunities in an area where low vegetative cover exists.

Comment: *Concern that construction of the home too close to the road will create access and parking issues along the road and off-site after the home's construction is completed.*

Response: The project does not include any proposed changes to the road, roadway width, or road configuration. The area to the east of the road and where the house will be located exceeds the minimum setback requirement of 10 feet by providing 20.5 feet at the narrowest dimension and includes a driveway with a minimum length of 31 feet. The area adjacent and to the west of the road are to remain as is.

Comment: *It is recommended to include native bulrush and native willows along the shoreline to improve salmon habitat.*

Response: Sitka willow (*Salix sitchensis*) and Scouler's willow (*Salix scouleriana*) have been incorporated into the shoreline SVCA planting area adjacent to the Lake Sammamish

OHWM. Native bulrush was not included in the updated planting plans and will be required to be included in the final SVCA/mitigation planting plan. See Section X for conditions of approval related to the mitigation planting plan.

V. Summary of Technical Reviews

Clearing and Grading:
The Clearing and Grading Division of the Development Services Department has reviewed the proposed development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development. The geotechnical engineer will be responsible for reviewing the Building Permit plans prior to submittal; will need to provide a memo verifying compliance with the recommendations of the report; and will need to conduct on-site inspections to verify work is completed per recommendations. Work within proximity to the steep slope will be restricted during the rain season unless specifically allowed by Clearing & Grading approval through implementation of specific BMPs. See Section X for Conditions of Approval related to geotechnical review, inspections, and rainy season restrictions.

Utilities:
City of Bellevue Utilities staff has reviewed the proposed development for compliance with City of Bellevue Utilities codes and standards. Utilities staff found no issues with the proposed development.

VI. State Environmental Policy Act (SEPA)

Per BCC 22.02.032 and WAC 197-11-800 (1) construction of a single-family residence and necessary improvements are a categorical exemption from SEPA review.

VII. Changes to Proposal as a Result of City Review

The applicant originally submitted a Shoreline Variance application (COB Permit 20-110244-LS), to achieve the proposed design in what was believed to be partly within a wetland buffer. City staff provided review comments to the applicant related to the lake-fringe wetland located on-site and at the Lake Sammamish OHWM. City staff requested information related to size, category, habitat score, and other features of the wetland to determine whether the wetland is subject to buffer requirements of LUC 20.25H. The project biologist provided the requested documentation supporting the updated wetland typing, cumulative wetland area, and habitat score. As a result, the lake-fringe wetland was found to have a total area under 2,500 square and a habitat score of 4, and therefore is exempt from a wetland buffer. With no wetland buffer the project no longer requires a wetland buffer modification, as requested in the Shoreline Variance application to achieve the proposed design. The applicant has withdrawn the application for Shoreline Variance based on the project review and City staff feedback.

VIII. Decision Criteria

A. Critical Areas Report Decision Criteria - General

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;

Finding: The proposal has been designed to avoid impacts to the steep slope and steep slope buffer and requests a modification of the 75-foot steep slope structure setback, which has been supported by geotechnical analysis. Some tree canopy loss is expected within the steep slope structure setback and the proposal has included a tree replanting plan to help mitigate those impacts.

In addition to the steep slope structure setback, removal of an existing retaining wall and conversion to soft stabilization at the outer limit of the floodplain will require some regrading. These impacts are proposed to occur in areas of low vegetative cover and are proposed to be mitigated through replanting of dense, native vegetative species commonly found along Lake Sammamish and suitable for the on-site conditions.
Strict application of the Land Use Code without modification of the structure setback would result in degraded conditions of the site persisting, as no mitigation would be required for construction of a new, multi-story home within the footprint of the existing home.

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

Finding: The proposal includes a 5-year, annual maintenance and monitoring plan. In addition to required maintenance and monitoring, a maintenance assurance device will be required to be submitted to the City, prior to construction permit issuance, to ensure completion of mitigation and monitoring. An irrigation plan ensuring the successful establishment of all on-site planting will also be required to be submitted with the Building Permit. See Section X for conditions of approval related to mitigation, monitoring, assurance device, and irrigation plans.

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

Finding: As discussed in Section III.B of this staff report, the proposal complies with performance standards for steep slopes and floodplains. The request to modify the 75-foot steep slope structure is supported by geotechnical analysis. Geotechnical analysis of the proposal and slope conditions, and based on application of the recommendations,

found the proposal would "*not adversely impact the stability of the steep slope or toe of slope buffer.*" (Attachment #, pg. 5).

Improvements to the floodplain are intended to provide increased capacity, removal of hard stabilization, and increased native vegetative cover. The proposal also complies with FEMA Biological Opinion requirements and results in a *No Effect* for impacts to ESA-listed species.

Due to the proximity of the proposal to on-site critical areas, a hold harmless agreement will be required to be submitted with the Building Permit application. See Section X for conditions of approval related to the hold harmless agreement.

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

Finding: No change in land use is proposed for this site. The proposed development is to construct a new single-family residence in a single-family zoned district. The adjacent properties contain single-family residences, as do many of the parcels in the nearby vicinity of the site.

B. Critical Areas Land Use Permit Decision Criteria 20.30P

The Director may approve or approve with modifications an application for a critical areas land use permit if:

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

Finding: The applicant will be required to apply for a Building Permit (with Clearing & Grading review) after the approval of the Critical Areas Land Use Permit. See Section X for Conditions of Approval related to Building Permit requirements.

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;

Finding: The proposal is designed to utilize an area of the site in which a single-family residence and deck currently occupy and where degraded conditions exist. No impacts are proposed to the wetland, steep slope, or steep slope buffer, and only restorative impacts of the floodplain are proposed.

3. The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;

Finding: As discussed in Section III.B of this report, the proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable.

4. The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;

Finding: The site is currently served by adequate public facilities and no additional need is anticipated with this proposal.

5. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and

Finding: The proposal includes a mitigation plan that provides native planting consistent with LUC 20.25H.210. The plan also contains a five-year maintenance and monitoring plan to ensure successful establishment of installed planting. In addition to maintenance and monitoring, the project will be required to submit a maintenance assurance device. See Section X for Conditions of Approval related to mitigation, maintenance, monitoring, and maintenance assurance device.

6. The proposal complies with other applicable requirements of this code.

Finding: As discussed in Section III and V of this report, the proposal complies with all other applicable requirements of the Land Use Code.

IX. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the proposal to construct a new, single-family residence and appurtenances as shown on the proposed plans (Attachment 1).

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 Building Permit, Clearing and Grading Permit, or other necessary development permits within one year of the effective date of the approval.

X. 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	Savina Uzunow, 425-452-7860
Utilities Code – BCC 24	Jason Felgar, 425-452-7851
Land Use Code- BCC 20	David Wong, 425-452-4282

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

1. Building Permit Required: Approval of this Critical Areas Land Use Permit does not constitute an approval of a development permit. A Building Permit shall be required and approved. Plans consistent with those submitted as part of this permit application shall be included in the Building Permit application.

Authority: Land Use Code 20.30P.140
Reviewer: David Wong, Land Use

2. Boundary Line Adjustment: To comply with Land Use Code zoning dimensional requirements and Shoreline Master Program shoreline residential environment dimensional requirements, a boundary line adjustment to combine the two residential parcel that make up this site shall be secured prior to issuance of a Building Permit.

Authority: Land Use Code 20.20.010, 20.25E.065
Reviewer: David Wong, Land Use

3. Exemption from Shoreline Substantial Development Permit Required: Approval of this Critical Areas Land Use Permit does not constitute an exemption from Shoreline Substantial Development Permit requirements. An Exemption from Shoreline Substantial Development Permit shall be applied for and issued prior to or in conjunction with Land Use approval of the required Building Permit noted in Condition 1 of this report.

Authority: Land Use Code 20.25E.170.C.7
Reviewer: David Wong, Land Use

4. Geotechnical Analysis: The project geotechnical engineer must review the final construction plans, including all foundation 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 permit.

Authority: Land Use Code 20.25H.125
Reviewer: David Wong, Land Use

5. Hold Harmless Agreement: Prior to building permit approval, the applicant or property owner shall submit a hold harmless agreement releasing the City of Bellevue from any and all liability associated with the steep slope setback modification and improvements with the floodplain and adjacent to the wetland. The agreement must meet city requirements and must be reviewed by the City Attorney's Office for formal approval.

Authority: Land Use Code 20.30P.170
Reviewer: David Wong, Land Use

6. Mitigation Plan: A final mitigation plan in accordance with the conceptual mitigation plan (attachment 3) provided under this application shall be submitted with the Building

Permit application for review and approval by the City of Bellevue prior to issuance of the Building Permit. In addition to those plants listed on Sheet 5/9 of the mitigation plan, native bulrush shall be added to areas at and directly adjacent to the Lake Sammamish OHWM.

Authority: Land Use Code 20.25H.125
Reviewer: David Wong, Land Use

7. Irrigation Plan: To ensure successful establishment of all mitigation planting an irrigation plan detailing the design, location, and watering schedule shall be provided with the mitigation plan. Irrigation is required to be provided through the establishment period or the first three years following planting. Manual watering of all mitigation plants is allowed in lieu of a temporary irrigation system but must comply with a recommended water schedule provided by Altmann Oliver Associates, LLC.

Authority: Land Use Code
Reviewer: David Wong, Land Use

8. Exterior Lighting: All exterior lighting on the Lake Sammamish-facing side of the single-family development shall be directed downward at a narrow angle or away from the lake and wetland. Exterior lighting on the lake-facing and wetland side shall utilize lower frequency warm light bulbs or LEDs. An exterior lighting plan shall be submitted with the Building Permit application and shall identify all exterior lighting sources, fixtures, and standards proposed.

Authority: Land Use Code 20.25H.100
Reviewer: David Wong, Land Use

9. Maintenance & Monitoring: A maintenance & monitoring plan in conformance with the plan submitted under this application shall be submitted with the Building Permit application for review and approval by the City of Bellevue prior to issuance of the Building Permit. The mitigation plan shall be maintained and monitored for a minimum of five (5) years. Annual reporting shall be submitted at the end of each growing season or by December 1 for each of the five years this plan is applicable. Annual reporting shall provide analysis of the site conditions and a determination of compliance with the following annual performance standards:

<u>Year 1</u>:
100% survival of all installed plant materials
15% aerial coverage of woody plantings or native re-colonized species
<10% coverage of King County Class A, B, and C noxious weeds and weeds of concern (except buttercup)

Year 2:
80% survival of all installed plant materials
20% aerial coverage of woody plantings or native re-colonized species
<10% coverage of King County Class A, B, and C noxious weeds and weeds of concern (except buttercup)

Year 3:
80% survival of all installed plant materials
30% aerial coverage of woody plantings or native re-colonized species
<10% coverage of King County Class A, B, and C noxious weeds and weeds of concern (except buttercup)

Year 4:
80% survival of all installed plant materials
45% aerial coverage of woody plantings or native re-colonized species
<10% coverage of King County Class A, B, and C noxious weeds and weeds of concern (except buttercup)

Year 5:
80% survival of all installed plant materials
60% aerial coverage of woody plantings or native re-colonized species
<10% coverage of King County Class A, B, and C noxious weeds and weeds of concern (except buttercup)

All reporting shall be submitted by email to **dwong@bellevuewa.gov** or by mail to:

Environmental Planning Manager
Development Services Department
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

Authority: Land Use Code 20.25H.220.D, 20.25H.220.H
Reviewer: David Wong, Land Use

10. Maintenance and Monitoring Assurance Device: A financial surety is required to be submitted to ensure the mitigation planting successfully establishes. A maintenance assurance device that is equal to 100% of the cost of plants, installation materials, and installation labor, or 20% of the cost of a 5-year maintenance and monitoring contract is required to be held for a period of five (5) years from the date of Final Land Use inspection. A cost estimate providing details of plant material, installation material, and labor costs is required to be provided with the Building Permit application. The financial surety is required to be posted prior to building permit issuance. Release of the surety after the 5-year monitoring period is contingent upon a inspection of the planting by Land Use Staff that finds the maintenance and monitoring plan was successful, annual reporting was submitted by

the required date each year following installation, and the mitigation meets all annual performance standards. Failure to meet any of these requirements may result in the extension of the maintenance and monitoring period in order to ensure required mitigation planting success.

Authority: Land Use Code 20.25H.220.F
Reviewer: David Wong, Land Use

11. Pesticides, Insecticides, and Fertilizers: The applicant must submit as part of the required Building Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

Authority: Land Use Code 20.25H.100
Reviewer: David Wong, Land Use

12. Geotechnical Inspection: The project geotechnical engineer must provide geotechnical inspection during project construction, including subgrades for foundations and footings, and any unusual seepage, slope, or subgrade conditions.

Authority: Bellevue City Code 23.76.050
Reviewer: Savina Uzunow, Clearing & Grading

13. Rainy Season restrictions: Due to the proximity of work occurring and the presence of a steep slope on-site, 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 measures, representing the best available technology must be implemented prior to beginning or resuming site work.

Authority: Bellevue City Code 23.76.093.A,
Reviewer: Savina Uzunow, Clearing & Grading

Attachment 1 - Site Plans

TREE DESCRIPTIONS

ID#	TREE DESCRIPTION	DBH(in)	DRIP(ft)
5914	CEDAR, WESTERN RED (Thuja plicata)	7	9
5915	CEDAR, WESTERN RED (Thuja plicata)	7	8
5916	CEDAR, WESTERN RED (Thuja plicata)	31	15
5917	CEDAR, WESTERN RED (Thuja plicata)	18	12
5918	CEDAR, WESTERN RED (Thuja plicata)	25	12
5919	CEDAR, WESTERN RED (Thuja plicata)	17	11
5920	CHERRY, SPP. (Prunus spp.)	5	0
5921	HAZELNUT (Corylus species)	5	8
5922	CHERRY, SPP. (Prunus spp.)	18	14
5923	DOUGLAS FIR (Pseudotsuga menziesii)	10	8
5924	HORSECHESTNUT (Aesculus hippocastanum)	6	5
5925	CEDAR, WESTERN RED (Thuja plicata)	5	5
5926	CEDAR, WESTERN RED (Thuja plicata)	7	5
5927	CEDAR, WESTERN RED (Thuja plicata)	7	0
5928	MAPLE, BIGLEAF (Acer macrophyllum)	62	15
5929	DOUGLAS FIR (Pseudotsuga menziesii)	22	13
5930	CEDAR, WESTERN RED (Thuja plicata)	12	9
5931	CEDAR, WESTERN RED (Thuja plicata)	27	15
5932	CRABAPPLE, FLOWERING (Malus spp.)	7	8
5933	MULBERRY, SPP (Morus spp.)	17	9
5934	CEDAR, WESTERN RED (Thuja plicata)	9	7
5935	CEDAR, WESTERN RED (Thuja plicata)	5	5
5936	MAPLE, BIGLEAF (Acer macrophyllum)	38	21
5937	FIG, EDIBLE (Ficus carica)	15	7
5938	MAPLE, BIGLEAF (Acer macrophyllum)	18	10
5940	CEDAR, WESTERN RED (Thuja plicata)	17	10
5941	DOUGLAS FIR (Pseudotsuga menziesii)	15	15
5942	MAPLE, BIGLEAF (Acer macrophyllum)	13	10
5943	MAPLE, BIGLEAF (Acer macrophyllum)	25,24,12	18
5944	MAPLE, BIGLEAF (Acer macrophyllum)	55	20
5945	MAPLE, BIGLEAF (Acer macrophyllum)	28	18
5992	CEDAR, WESTERN RED (Thuja plicata)	13	12
5993	MAPLE, BIGLEAF (Acer macrophyllum)	10	14
5994	CEDAR, WESTERN RED (Thuja plicata)	19	20

MERIDIAN
NAD 83-91

GRAPHIC SCALE

-20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

LEGAL DESCRIPTION

LOTS 35 AND 36, ROSEMONT BEACH, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 34 OF PLATS, PAGE 28, RECORDS OF KING COUNTY, WASHINGTON.

APN: 743050-018

EXCEPTIONS

– EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:
RECORDING NO: 3454506
FOR: PRIVATE ROADWAYS

– EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:
RECORDED: APRIL 28, 1941
RECORDING NO: 3161079
IN FAVOR OF: PUGET SOUND ENERGY, INC. A WASHINGTON CORPORATION
FOR: ELECTRIC AND/OR GAS TRANSMISSION AND/OR DISTRIBUTION

– EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:
RECORDING NO: 5892228
IN FAVOR OF: LAKE HILLS SEWER DISTRICT OF KING COUNTY
FOR: SANITARY SEWER LINE OR LINES

– EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:
RECORDING NO: 6184228
IN FAVOR OF: WATER DISTRICT NO. 97
FOR: WATER LINE

– ROAD MAINTENANCE PROVISIONS, AND THE TERMS AND CONDITIONS THEREOF, CONTINED IN STATEMENT:
RECORDING NO: 7112030211

– CONDITIONS, NOTES, EASEMENTS, PROVISIONS AND/OR ENCROACHMENTS CONTAINED OR DELINEATED ON THE FACE OF THE SURVEY RECORDED UNDER RECORDING NO. 8701279026

– EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:
RECORDING NO: 9101180240
IN FAVOR OF: WASHINGTON NATURAL GAS COMPANY, A WASHINGTON CORPORTATION, ITS SUCCESSORS AND ASSIGNS
FOR: GAS PIPELINE OR PIPELINES

– CONDITIONS, NOTES, EASEMENTS, PROVISIONS AND/OR ENCROACHMENTS CONTAINED OR DELINEATED ON THE FACE OF THE SURVEY RECORDED UNDER RECORDING NO. 20060424900009.

– THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "AGREEMENT FOR INTRUSION INTO REQUIRED SETBACK"
RECORDED: JANUARY 24, 2008
RECORDING NO: 200812400109

– THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED" AGREEMENT FOR INTRUSION INTO REQUIRED SETBACK FROM ADJACENT PROPERTY FOR PRIVATE MOORAGE"
RECORDED: OCTOBER 23, 2008
RECORDING NO: 20081023000646

– RIGHTS OF THE STATE OF WASHINGTON IN AND TO THAT PORTION OF SAID PREMISES, IF ANY, LYING IN THE BED OR FORMER BED OF LAKE SAMMAMISH, IF IT IS NAVIGABLE.

– EXCEPTIONS AND RESERVATIONS CONTAINED IN DEED FROM THE STATE OF WASHINGTON PER RECORDING NO: 758601

SURVEY NOTES

INSTRUMENT USED: TRIMBLE S7 EDM
METHOD USED: FIELD TRAVERSE

APPROXIMATE POINT ACCURACY: ±0.05'

SURVEY MEETS OR EXCEEDS STATE STANDARDS PER WAC 332-130-090.

MONUMENTS SHOWN HEREON WERE VISITED ON NOVEMBER 14, 15 & 21, 2018.

THE INFORMATION SHOWN ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE INDICATED DATE AND CAN ONLY BE CONSIDERED AS THE GENERAL EXISTING CONDITION AT THAT TIME.

NO EASEMENTS, RESTRICTIONS OR RESERVATION OF RECORD WHICH WOULD BE DISCLOSED BY A TITLE REPORT ARE SHOWN.

VERTICAL DATUM – NAVD 88
CONTOUR INTERVAL – 2 FEET

SITE BENCH MARK – PROPERTY LINE MARKER "P1" SET ON THE NORTHERLY PROPERTY LINE. ELEV. 53.43

BENCH MARK: Concrete Mon w/ City of Bellevue Brass Cap stamped "H514" & "V493" in Case; Top Mon to Top Rim Case 0.29 Feet Located 10' E E/P W Lake Sammamish Blvd NE 1200' N of 513 near Large Boulder. Elev: 150.7

PARCEL AREAS –

LAND AREA ABOVE WATER LINE = 32,580.0 SQUARE FEET

LAND AREA ABOVE FLAGGED WETLAND LINE = 34,291.3 SQUARE FEET

STEEP SLOPE AREA = 15,946.7 SQUARE FEET

AREA OUTSIDE OF STEEP SLOPE = 16,633.3 SQUARE FEET

PROPERTY CORNERS

P1 Set Tack in Lead w/ Tag, LS 30581, 192.83' O/S E

P2 Set Rebar & Cap on Line, LS 30581, 72.30 O/S W

P3 Set Rebar & Cap, LS 30581, 168.86 O/S E

P4 Set Rebar & Cap on Line, LS 30581, 77.15' O/S W

SURVEY IN THE:
N.E. 1/4, S.W. 1/4 SEC. 30 TWP. 25N., RGE. 6E., W.M.

BRENT L. EBLE — STATE OF WASHINGTON — 30581 — REGISTERED PROFESSIONAL LAND SURVEYOR

TOPOGRAPHIC SURVEY

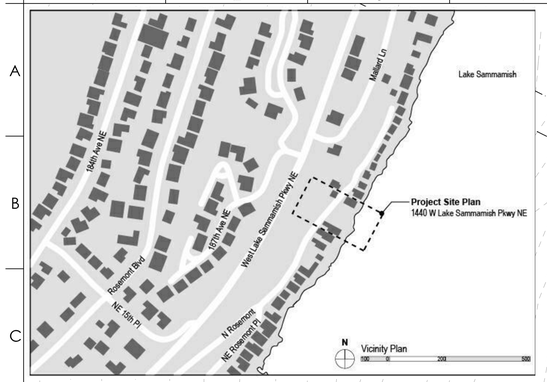
Mike Neil

1440 West Lake Sammamish Parkway Northeast
Bellevue, Wa 98008

EMERALD LAND SURVEYING, INC.
PO BOX 13694 MILL CREEK, WA 98082 PH. (425) 359-7198

DRAWN BY: HMM
CHECKED: BLE
PROJECT: 18685
DATE: 11/10/22

SHEET 1 **OF** 1



VICINITY MAP

LEGAL DESCRIPTION
LOTS 35 AND 36, ROSEMONT BEACH, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 34 OF PLATS, PAGE 28, RECORDS OF KING COUNTY, WASHINGTON.

APN: 743050-018

ZONE: R-2.5

PROPOSED LOT COVERAGE (per LUC 20.20.010)

Lot Area = 32,580 SF
Critical Area and Buffers = 15,946.7 SF
Right-of-ways and Roads = 1,174.4 SF
35% Total Allowable Lot Coverage = (0.35)(32,580 SF - 15,946.7 SF - 1,174.4 SF) = 5,410.6 SF

NEW HOUSE LOT COVERAGE = 5080 SF (32.9%)

MAXIMUM IMPERVIOUS SURFACE (per LUC 20.20.010)

Lot Area = 32,580 SF
45% Total Allowable Impervious Surface = (0.45)32,580 SF = 14,661 SF

NEW HOUSE + HARDSCAPE IMPERVIOUS SURFACE = 6,283 SF (20%)

EXISTING IMPERVIOUS AREA

NAME	AREA
Sheds	395 SF
House	1519 SF
Stairs & Bulkhead	124 SF
Driveway	1165 SF
	3203 SF

IMPERVIOUS SURFACES

NAME	AREA
Hardscape	1203 SF
House	5080 SF
	6283 SF

Drawing Issues:

No.	Phase	Date
1	CALUP Submittal	02.11.20
2	Shoreline Variance	06.16.20
3	Cycle-1 Corrections	07.09.21
4	Variance Updates	08.10.21
5	Cycle-2 Corrections	12.07.21
6	Cycle-2 Response	04.07.23

Owner:
Brandon Ting
562 SW Ellerwood St
Issaquah WA 97027

Architect/Construction Manager
Build llc
Andrew van Leeuwen
5512 1st Avenue NE
Seattle WA 98105
v 206 382 0401 f 206 382 4111

8413 REGISTERED ARCHITECT
ANDREW R. van LEEUWEN
STATE OF WASHINGTON

TING RESIDENCE

1440 W Lake Sam. Pkwy NE
Bellevue, WA 98008

LAND USE SITE PLAN

SCALE: 1" = 10'-0"
DATE: 07 April 2023

A1.1

EXISTING TREE DESCRIPTIONS (trees 8" diameter or greater)

ID#	Tree Description	DBH (in)	Drip (ft)	Status
5916	Cedar, Western Red (Thuja plicata)	31	15' - 0"	Remain
5917	Cedar, Western Red (Thuja plicata)	18	12' - 0"	Remain
5918	Cedar, Western Red (Thuja plicata)	25	12' - 0"	Remain
5919	Cedar, Western Red (Thuja plicata)	17	11' - 0"	Remove
5922	Cherry, Spp (Prunus spp.)	18	14' - 0"	Remove
5923	Douglas Fir (Pseugotsuga menziesii)	10	8' - 0"	Remove
5928	Bigleaf Maple (Acer macrophyllym)	62	15' - 0"	Remove
5929	Douglas Fir (Pseugotsuga menziesii)	22	13' - 0"	Remove
5930	Cedar, Western Red (Thuja plicata)	12	9' - 0"	Remove
5931	Cedar, Western Red (Thuja plicata)	27	15' - 0"	Remove
5933	Mulberry, Spp (Morus spp.)	17	9' - 0"	Remove
5934	Cedar, Western Red (Thuja plicata)	9	7' - 0"	Remove
5936	Bigleaf Maple (Acer macrophyllym)	38	21' - 0"	Remove
5937	Fig, Edible (Ficus carica)	15	7' - 0"	Remove
5938	Bigleaf Maple (Acer macrophyllym)	18	10' - 0"	Remove
5940 - to - 6002	All trees west of NE Rosemont Pl to remain			

REPLACEMENT TREES - REFER TO LANDSCAPE DRAWINGS

RATIO	HEIGHT	LOCATION	REPLACEMENT per 20.25E.065.F.8.c.iii
3:1 Replacement	50'+	25'-50' of OHWM	(1) 2" diam Wester Red Cedar within 200' of OHWM (2) 2" diam Shore Pine within 50' of OHWM
2:1 Replacement	10'	00'-25' of OHWM	(1) 2" diam Shore Pine within 50' of OHWM (1) 2" diam Sikta Spruce within 50' of OHWM
3:1 Replacement	50'+	25'-50' of OHWM	(1) 2" diam Wester Red Cedar within 200' of OHWM (2) 2" diam Sikta Spruce within 50' of OHWM

Per Arborist Report:
Recommended removal due to structural defects and poor health:
5921, 5922, 5928, 5932 & 5936

Recommended removal due to footprint of proposed residence:
5929, 5930, 5931, 5933, 5934, 5935 & 5938

NORTH PROPERTY LINE
Side Yard Setback
SOUTH PROPERTY LINE
Side Yard Setback
NEIGHBOR
APN # 7430500175
1444 W Lake Sammamish Pkwy NE
NEIGHBOR
APN # 7430500190
1430 W Lake Sammamish Pkwy NE
PROJECT SITE
APN # 7430500180
1440 W Lake Sammamish Pkwy NE
EXISTING HOUSE TO BE REMOVED
STEEP SLOPE AREA
REFER TO LANDSCAPE DRAWINGS FOR NEW TREES
Edge of asphalt
Water
NE ROSEMONT PL
High voltage line
Water line
Gas line
Edge of asphalt
Main entrance
50' Steep Slope Setback
DRIVEWAY
GARAGE ENTRANCE
GARAGE FINISH FLOOR = 52'-1"
EXIST 84 SF SHED TO BE REMOVED
EXIST 150 SF SHED TO BE REMOVED
CONDITIONED AREA
TERRACE
BASEMENT FINISH FLOOR = 40'-9"
50' Setback Shoreline VCA
110' Wetland Buffer
Private Road Access Easement Rec #3454006
R.O.W. Centerline
10' Access easement setback
REFER TO LANDSCAPE DRAWINGS FOR NEW TREES
NEW CONC. STEPS
50' Setback Shoreline
REFER TO LANDSCAPE DRAWINGS FOR NEW TREES
EXIST 161 SF SHED WITH CONC. SLAB TO BE REMOVED
100-YEAR FLOODPLAIN = 36.1'
Existing conc. wall to be removed
25' Setback Shoreline
Side Sewer Line
Sanitary Sewer
GRADING & LANDSCAPE PER CIVIL & LANDSCAPE DRAWINGS
WETLAND AREA
Side Sewer Easement
Sanitary Sewer Easement Rec #5892228
Wood dock
North edge of dock aligned with north edge of stairs
NEW JET SKI LIFT (30'-0" min from OHWM)
WETLAND AREA PER WETLAND DELINEATION REPORT
Elec outlet & hosebib
NEW 475 sf DOCK PER DOCK PERMIT
Covered boat lift
EXISTING DOCK TO BE REMOVED
Approximate location of temporary barge
Purpose: dock construction
Size: 24' x 40'
Location: 30' min. from OHWM
Duration: 1 week
Other: barge will incude a crane
REFER TO DOCK PERMIT FOR ADD'L INFO
SANITARY SEWER MAIN (APPROX.) AS LOCATED BY CITY OF BELLEVUE AUGUST 2022. NO BARGE OR ANCHORING TO TAKE PLACE ON/OVER SEWER LINE
Wetland Boundary
Flagged Ordinary High Water Line
Lake water line (11/20/18; 11AM)
REFER TO LANDSCAPE DRAWINGS FOR NEW TREES
100-YEAR FLOOD-PLAIN = 36.1'
Existing conc. wall to be removed
WETLAND AREA
Wood dock

N
SITE PLAN
1 0 2 0 10 20 40

BMC 20.20.010.(44)
Maximum building height for single-family uses in Single-Family Residential Land Use Districts is 30 feet measured from the average elevation of the existing grade around the building to the highest point of a flat roof, or 35 feet to the ridge of a pitched roof.

AVERAGE GRADE CALCULATION

$$\text{AVERAGE GRADE} = \frac{(A \times a) + (B \times b) + (C \times c) + (D \times d)}{a + b + c + d}$$

$$= \frac{(50.5' \times 81.1') + (41.0' \times 71.0') + (38.83' \times 81.1') + (40.58' \times 71.0')}{81.1 + 71.0 + 81.1 + 71.0}$$

= 42.85'

BMC 20.20.010
MAX HEIGHT = 30' FOR FLAT ROOF OR 35' FOR PITCHED ROOF

MAX FLAT ROOF ELEVATION: 42.85' + 30' = 72.85' or 72'-10"
MAX PITCHED ROOF ELEVATION: 42.85' + 35' = 77.85' or 77'-10"

Drawing Issues:

No.	Phase	Date
1	CALUP Submittal	02.11.20
2	Shoreline Variance	06.16.20
3	Cycle-1 Corrections	07.09.21
4	Variance Updates	08.10.21
5	Cycle-2 Corrections	12.07.21
6	Cycle-2 Response	04.07.23

Owner:

Brandon Ting
562 SW Ellerwood St
Issaquah WA 97027

Architect/Construction Manager

Build llc
Andrew van Leeuwen
5512 1st Avenue NE
Seattle WA 98105
v 206 382 0401 f 206 382 4111

8413
REGISTERED ARCHITECT
ANDREW R. van LEEUWEN
STATE OF WASHINGTON

TING RESIDENCE

1440 W Lake Sam. Pkwy NE
Bellevue, WA 98008

AVERAGE GRADE & HEIGHT CALC

SCALE: 1" = 10'-0"
DATE: 07 April 2023

A1.2

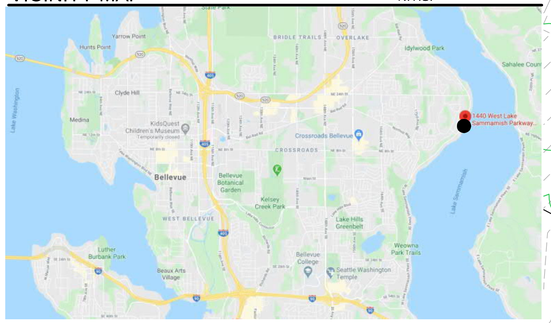
Attachment 2 - Civil Plans

EROSION CONTROL LEGEND

- LIMITS OF DISTURBANCE
- FILTER FABRIC FENCE (SILT FENCE) (SF)
- STABILIZED CONSTRUCTION ENTRANCE (CE)
- CATCH BASIN INLET PROTECTION (IP)
- INTERCEPTOR SWALE SEE COR DWG 504, TYPE A TEMPORARY SWALE (IS)
- TREE PROTECTION FENCING (TP)
- CHECK DAM (CD)
- STRAW WATTLES (SW) — USE AS NEEDED
- PLASTIC COVERING (PC) — COVER EXPOSED AREAS WITHIN BELLEVUE TIME LIMIT

VICINITY MAP

N.T.S.



ALL UTILITIES UNDERGROUND

ALL UTILITIES MUST BE UNDERGROUND TO THE PROPERTY, AND THE OWNER OR CONTRACTOR WILL NEED TO CONTACT ALL UTILITY COMPANIES PRIOR TO NEEDING ANY OF THESE SERVICES. EACH COMPANY WILL NEED TO DESIGN THEIR CONNECTION AND APPLY TO THE CITY FOR A PERMIT

Puget Sound Energy 888-321-7779
Trina.Gallaher@pse.com

CenturyLink, Amy Alliston 580-220-0061
Amy.Alliston@centurylink.com

Comcast, Ronald Grosvenor 253-254-9568
ronald.grosvenor@princetelecom.com

Comcast, Bria Rood 253-263-5590
brianna.rood@princetelecom.com

SOIL AMENDMENT REQUIRED

COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION.

REFERENCE DRAWINGS & REPORTS

SEE C1.1 FOR NOTES
SEE C2.0 FOR DRAINAGE/BMP PLAN
SEE SHORT FORM CWSPPP PREPARED BY C.E.S.
SEE DRAINAGE REPORT PREPARED BY C.E.S.

NO.	DATE	BY	REVISIONS

APPLICANT
BUILD, LLC
ANDREW VAN LEEUWEN
5512 1st AVENUE NE
SEATTLE, WA 98105
PH: 206-940-4314
avl@buildllc.com

DATE: Apr 05, 2023
JOB# 1793
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

Apr 05, 2023
JEFFREY E. RATLIFF
STATE OF WASHINGTON
32760
REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

EROSION CONTROL PLAN

WETLAND & SHORELINE MITIGATION
1440 W LAKE SAMMAMISH PKWY NE, BELLEVUE, WA 98008

DRAWING NO: C1.0

APN 743050-0180

SANITARY SEWER

1
2
4
7

BOUNDARY & TOPO SURVEY

EMERALD LAND SURVEYING, INC.
P.O. BOX 13694
MILL CREEK, WA 98082
PHONE 425-359-7198

INFILTRATION/SOILS SUMMARY

INFILTRATION IS INFEASIBLE PER
BELLEVUE INFILTRATION POTENTIAL MAP

VERTICAL DATUM

NAVD(88)
SEE SURVEY

SOIL AMENDMENT REQUIRED

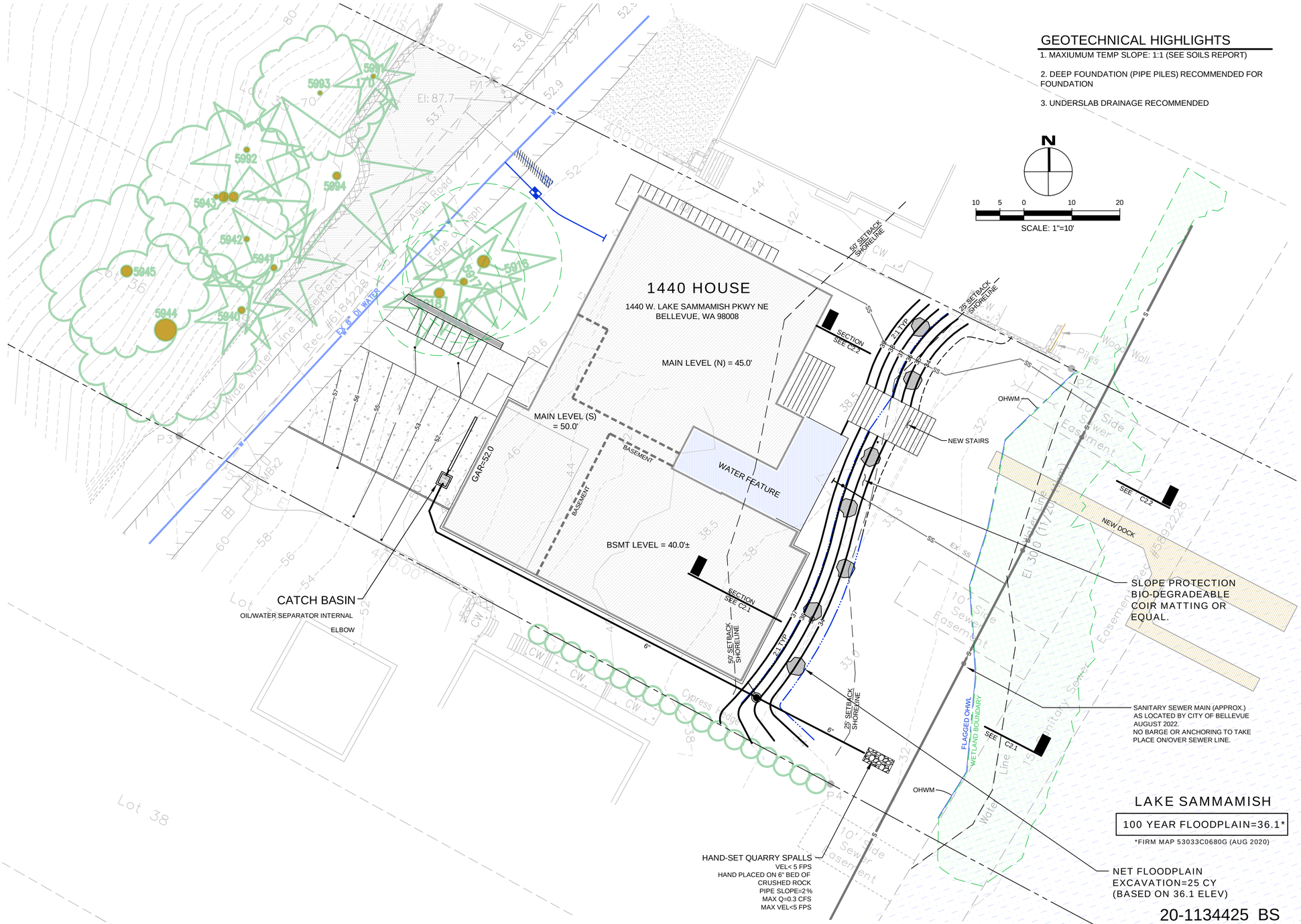
COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION.

GEOTECHNICAL HIGHLIGHTS

1. MAXIUMUM TEMP SLOPE: 1:1 (SEE SOILS REPORT)

2. DEEP FOUNDATION (PIPE PILES) RECOMMENDED FOR FOUNDATION

3. UNDERSLAB DRAINAGE RECOMMENDED



NO.	DATE	BY	REVISIONS

APPLICANT
MIKE NEIL
8002 AVALON PLACE
MERCER ISLAND, WA 98040
425-503-4068

811 Know what's below. Call before you dig.

DATE: Apr 05, 2023
JOB# 1793
DRAFTED: SS DESIGN: DE
DIGITAL SIGNATURE

Apr 05, 2023
JEFFREY E. DUFFY
STATE OF WASHINGTON
20709
REGISTERED
PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

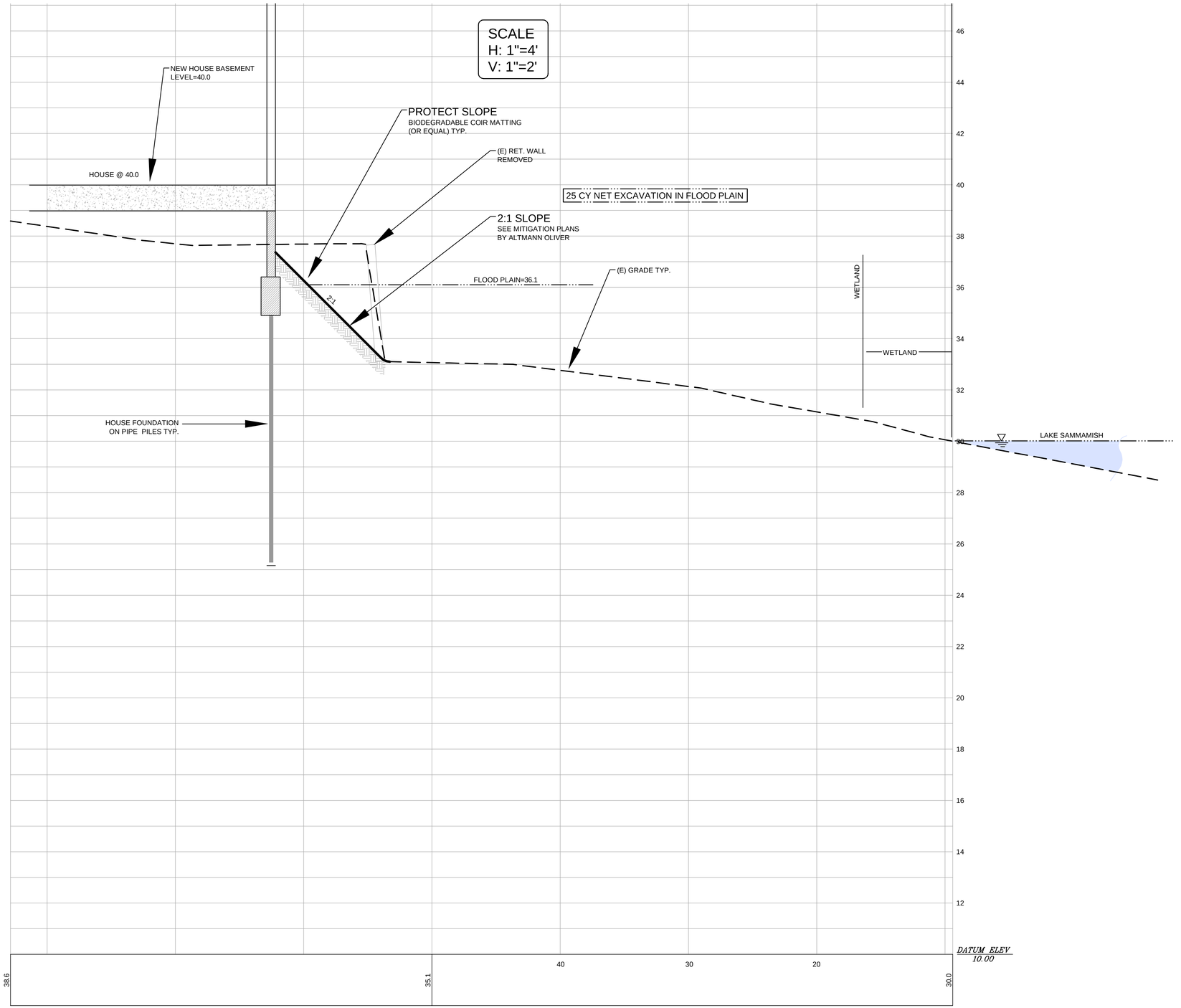
CIVIL SITE PLAN

NEIL RESIDENCE
1440 W LAKE SAMMAMISH PKWY NE, BELLEVUE, WA 98008

DRAWING NO: C2.0

APN 743050-0180

SOUTH SECTION



NO.	DATE	BY	REVISIONS

APPLICANT
BUILD, LLC
ANDREW VAN LEEUWEN
5512 1st AVENUE NE
SEATTLE, WA 98105
PH: 206-940-4314
avl@buildllc.com

DATE: Apr 05, 2023
JOB# 1793
DRAFTED: SS DESIGN: DE
DIGITAL SIGNATURE

Apr 05, 2023
JEFFREY E. DUFFY — STATE OF WASHINGTON — 39798 — REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

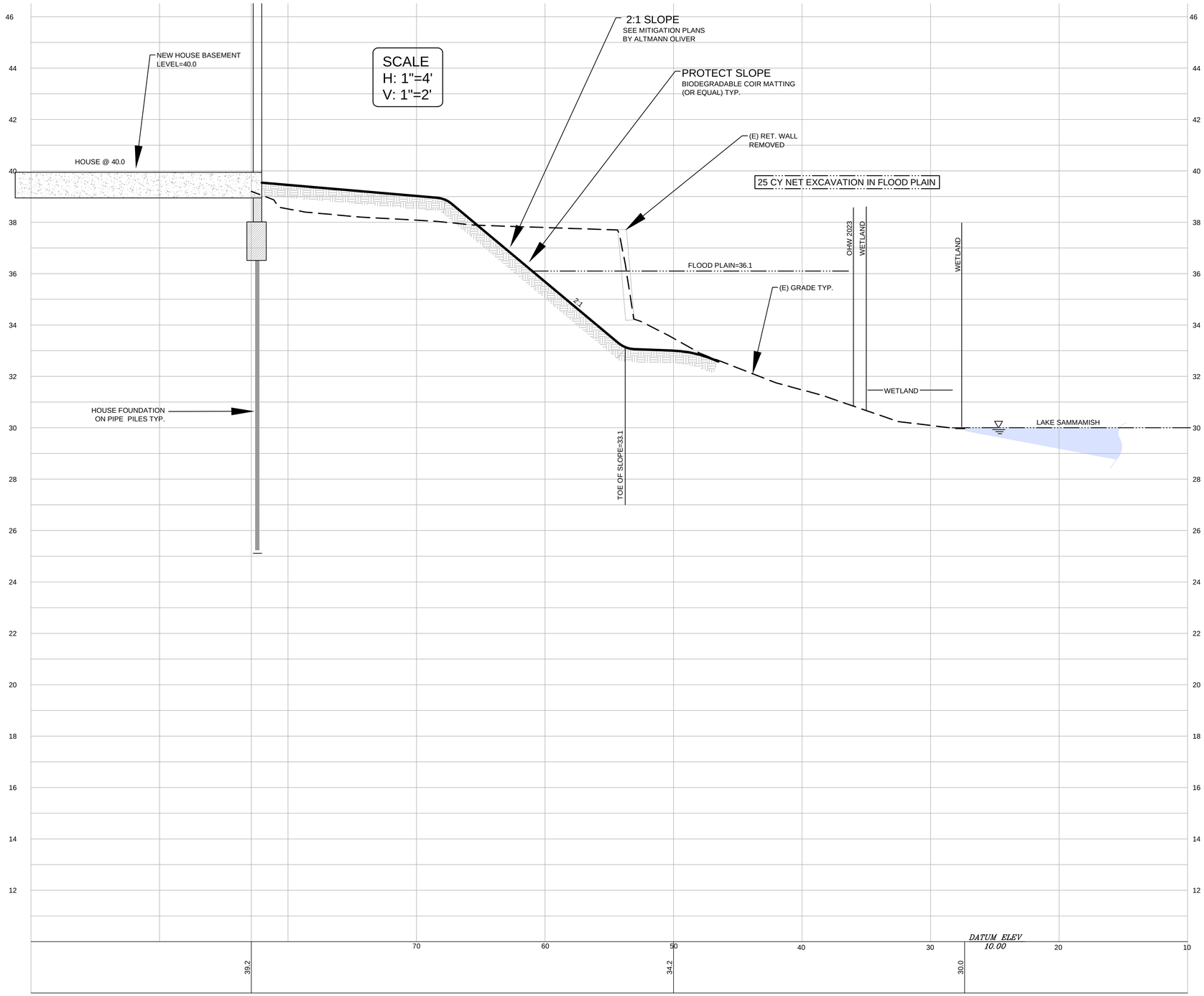
SOUTH SECTION

WETLAND & SHORELINE MITIGATION
1440 W LAKE SAMMAMISH PKWY NE, BELLEVUE, WA 98008

DRAWING NO:
C2.1

APN 743050-0180

NORTH SECTION



NO.	DATE	BY	REVISIONS

APPLICANT
BUILD, LLC
ANDREW VAN LEEUWEN
5512 1st AVENUE NE
SEATTLE, WA 98105
PH: 206-940-4314
avl@buildllc.com

DATE: Apr 05, 2023
JOB# 1793
DRAFTED: SS DESIGN: DE
DIGITAL SIGNATURE

Apr 05, 2023
JEFFREY E. DUFFY
STATE OF WASHINGTON
59709
REGISTERED
PROFESSIONAL ENGINEER

CIVIL ENGINEERING
SOLUTIONS
102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

NORTH SECTION

WETLAND & SHORELINE MITIGATION
1440 W LAKE SAMMAMISH PKWY NE, BELLEVUE, WA 98008

DRAWING NO:
C2.2

APN 743050-0180

Attachment 3 - Mitigation Plans

CRITICAL AREAS LEGEND

- PROPERTY LINE
- OHWM/WETLAND BOUNDARY
- EXISTING FEMA FLOODPLAIN LINE 36.1
- TOP/TOE OF SLOPE (75' BUFFER FROM TOE OF SLOPE)
- STANDARD STEEP SLOPE BUFFER - 75'
- STEEP SLOPE BUFFER PER GEOTECH - 50'
- 25' SHORELINE SETBACK
- 50' SHORELINE STRUCTURE SETBACK (SVCA)
- EXISTING TREES
- 40%+ STEEP SLOPE
- STEEP SLOPE BUFFER (75' FROM TOE OF SLOPE)

BASE OF STEEP SLOPE

50' STEEP SLOPE BUFFER PER GEOTECH

50' SHORELINE STRUCTURE SETBACK

25' SHORELINE SETBACK

SHORELINE OHWM - COINCIDES WITH THE WETLAND BOUNDARY ALONG THE UPPER EDGE - SEE SURVEY

75' STANDARD STEEP SLOPE BUFFER

WETLAND A
2,495 SF

Lake Sammamish

SHEET INDEX

NOTES

1. SURVEY PROVIDED BY EMERALD SURVEYING, INC., P.O. BOX 13694 MILL CREEK, WA 98082, (425) 359-7198.

NORTH

GRAPHIC SCALE
(IN FEET)

0 15 30 45 60 90

SCALE: 1:30

FIGURE 1: EXISTING CONDITIONS MAP
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 7430500-0180 & -0182

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
1/9

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

6489-MIT-04-06-23.dwg

CRITICAL AREAS LEGEND

- PROPERTY LINE
- OHWM/WETLAND BOUNDARY
- PROPOSED FEMA FLOODPLAIN LINE 36.1
- EXISTING FEMA FLOODPLAIN LINE 36.1
- TOP/TOE OF SLOPE (75' BUFFER FROM TOE OF SLOPE)
- STANDARD STEEP SLOPE BUFFER - 75'
- STEEP SLOPE BUFFER PER GEOTECH - 15'
- 25' SHORELINE SETBACK
- 50' SHORELINE STRUCTURE SETBACK (SVCA)
- EXISTING TREES

BASE OF STEEP SLOPE

50' STEEP SLOPE BUFFER PER GEOTECH

50' SHORELINE STRUCTURE SETBACK

25' SHORELINE SETBACK

SHORELINE OHWM - COINCIDES WITH THE WETLAND BOUNDARY ALONG THE UPPER EDGE - SEE SURVEY

75' STANDARD STEEP SLOPE BUFFER

WETLAND A
2,495 SF

Lake Sammamish

NORTH

GRAPHIC SCALE
(IN FEET)

0 15 30 45 60 90

SCALE: 1:30

NOTES

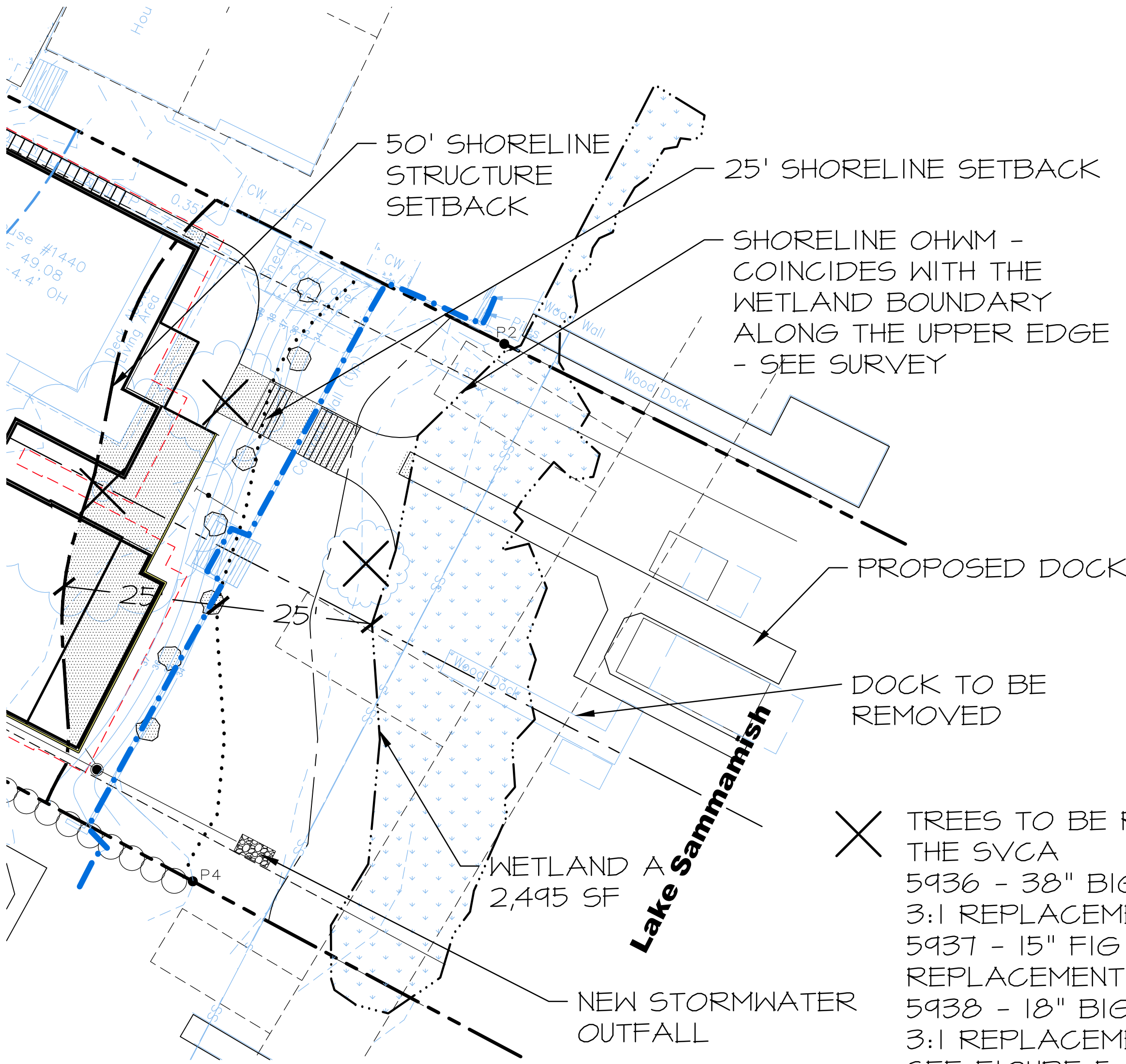
1. SURVEY PROVIDED BY EMERALD SURVEYING, INC., P.O. BOX 13694 MILL CREEK, WA 98082, (425) 359-7198.

FIGURE 2: SITE PLAN
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 7430500180 & -0182

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
2/9

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

6489-MIT-04-06-23.dwg



X TREES TO BE REMOVED WITHIN THE SVCA
5936 - 38" BIG-LEAF MAPLE - 3:1 REPLACEMENT
5937 - 15" FIG - 2:1 REPLACEMENT
5938 - 18" BIG-LEAF MAPLE - 3:1 REPLACEMENT
SEE FIGURE 5 FOR TREE PLANTING LOCATIONS.

SHORELINE IMPACTS

SCALE 1:30

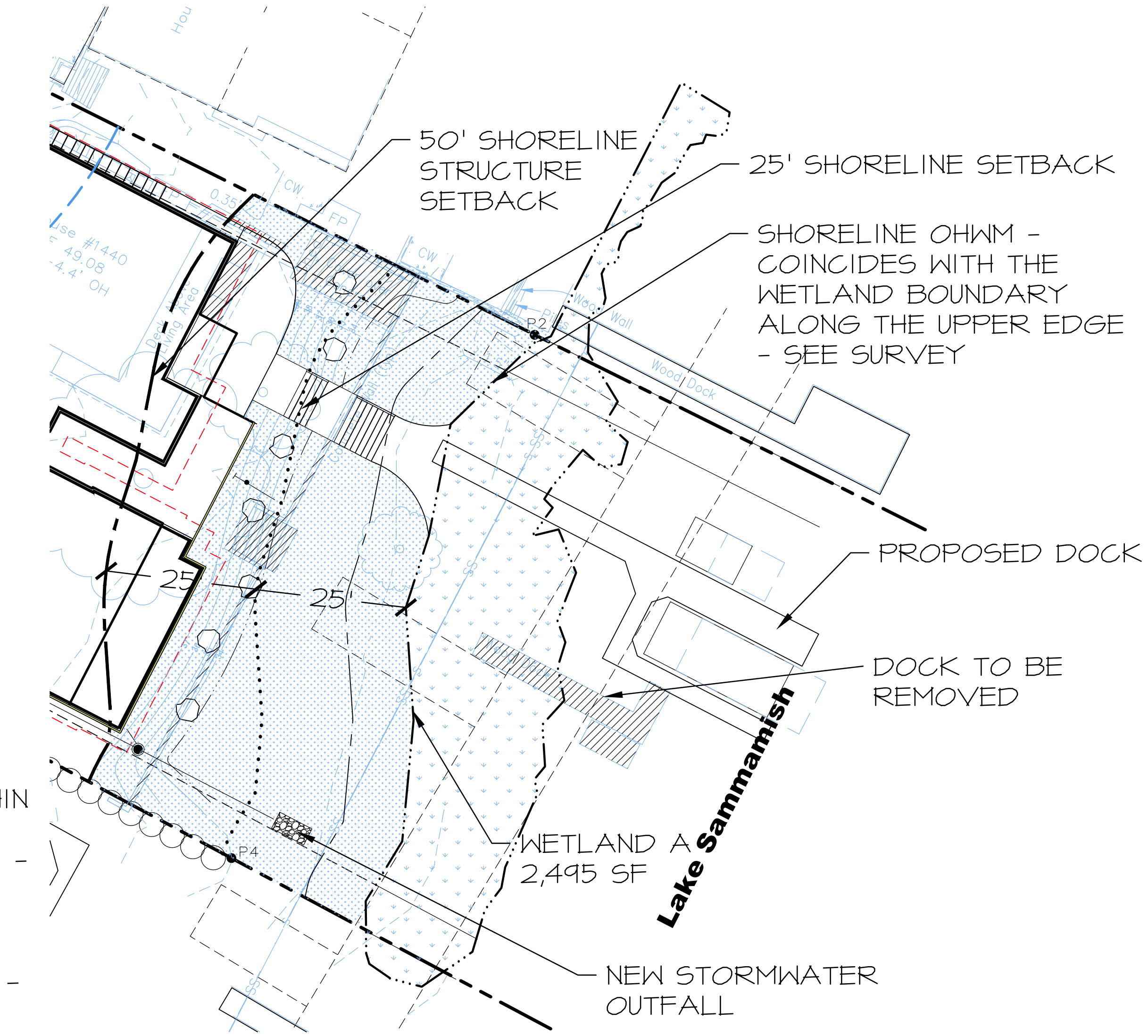
PLAN LEGEND

- PROPERTY LINE
- OHWM/WETLAND BOUNDARY
- 10' FROM OHWL
- EXISTING FEMA FLOODPLAIN LINE 36.1'
- 25' SHORELINE SETBACK
- 50' SHORELINE STRUCTURE SETBACK (SVCA)
- 3' BSBL
- NEW IMPERVIOUS - 951 SF

NOTES

NORTH

1. SURVEY PROVIDED BY EMERALD SURVEYING, INC., P.O. BOX 13694 MILL CREEK, WA 98082, (425) 359-7198.
2. 2. REFER TO CIVIL PLANS FOR BULKHEAD REMOVAL AND GRADING WITHIN THE SVCA AND CUT AND FILL CALCULATIONS WITHIN THE FLOODPLAIN



SHORELINE MITIGATION

SCALE 1:30

PLAN LEGEND

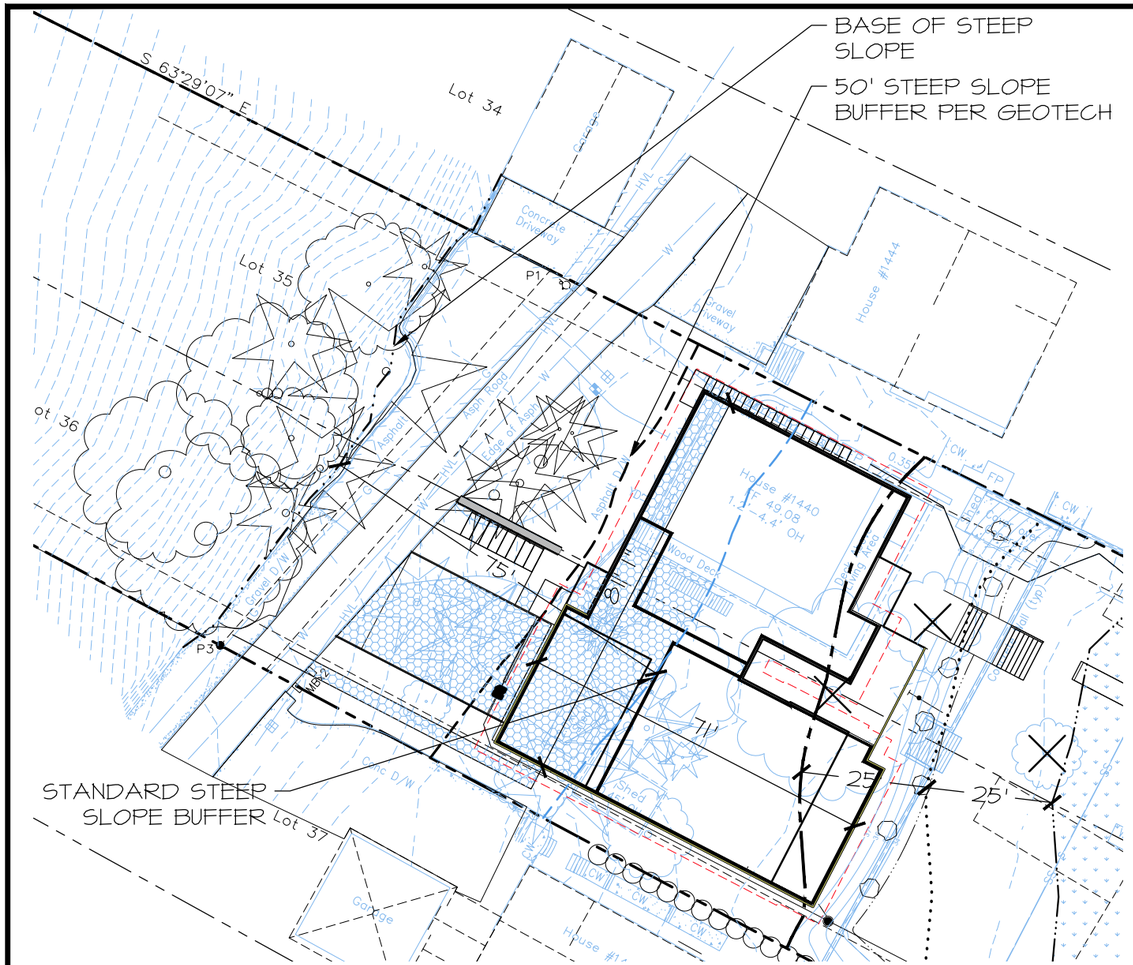
- PROPERTY LINE
- OHWM/ WETLAND BOUNDARY
- 10' FROM OHWL
- PROPOSED FEMA FLOODPLAIN LINE 36.1'
- 25' SHORELINE SETBACK
- 50' SHORELINE STRUCTURE SETBACK (SVCA)
- 3' BSBL
- IMPERVIOUS TO BE REMOVED - 364 SF TO BE NATIVE, 51 SF TO BE LAWN, 130 SF TO BE OPEN WATER
- NATIVE ENHANCEMENT PLANTINGS WITHIN THE SHORELINE AREA - 3,426 SF

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
3/9

FIGURE 3: SHORELINE IMPACTS & MITIGATION PLAN
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 743050-0180 & -0182

Altmann Oliver Associates, LLC
AOA Environmental Planning & Landscape Architecture
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509

6489-MIT-04-06-23.dwg



STEEP SLOPE IMPACTS

SCALE 1:30

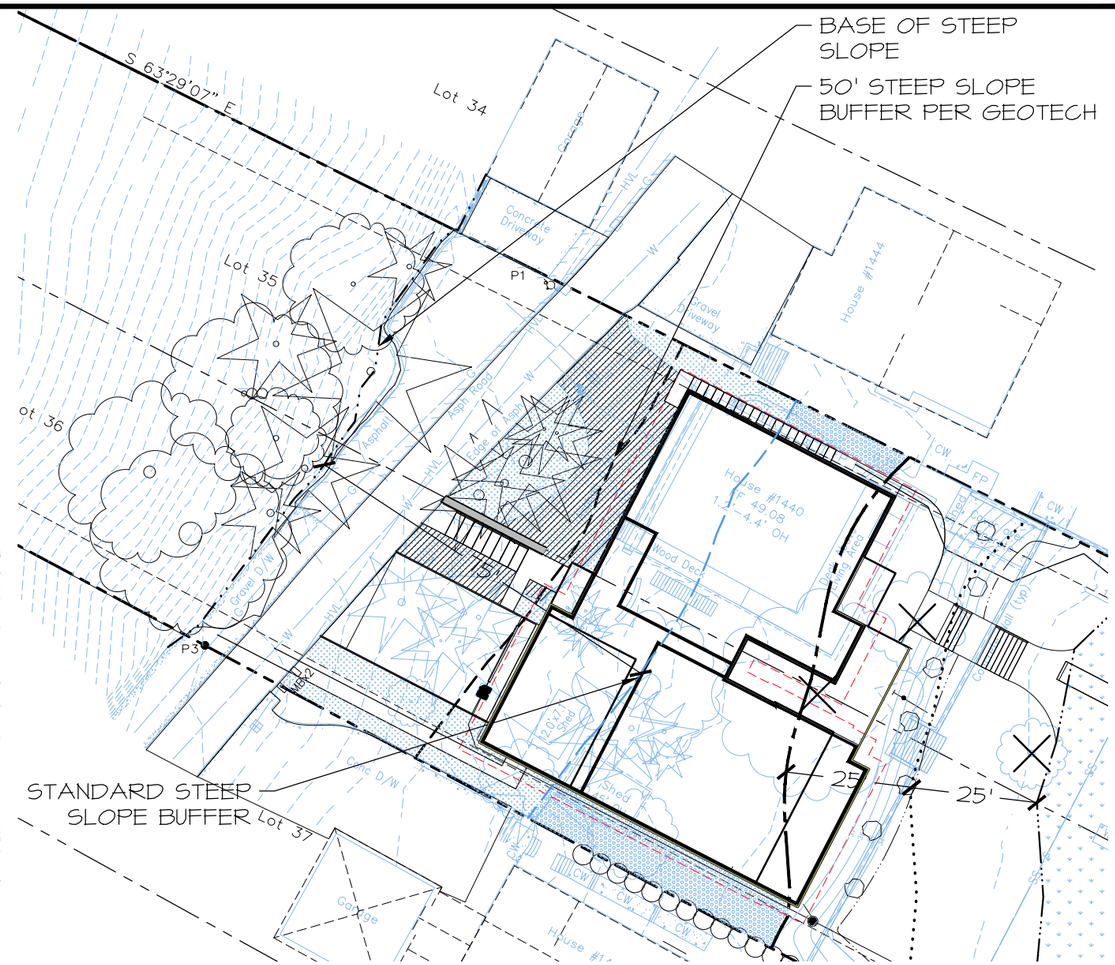
PLAN LEGEND

- PROPERTY LINE
- TOP/TOE OF SLOPE (75' BUFFER FROM TOE OF SLOPE)
- STANDARD STEEP SLOPE BUFFER - 75'
- STEEP SLOPE BUFFER PER GEOTECH - 50'
- 3' BSBL
- NEW IMPERVIOUS - 2,011 SF

NORTH

NOTES

1. SURVEY PROVIDED BY EMERALD SURVEYING, INC., P.O. BOX 13694 MILL CREEK, WA 98082, (425) 359-7198.



STEEP SLOPE MITIGATION

SCALE 1:30

PLAN LEGEND

- PROPERTY LINE
- TOP/TOE OF SLOPE (75' BUFFER FROM TOE OF SLOPE)
- STANDARD STEEP SLOPE BUFFER - 75'
- STEEP SLOPE BUFFER PER GEOTECH - 50'
- 3' BSBL
- IMPERVIOUS TO BE REMOVED - 924 SF
- NATIVE ENHANCEMENT PLANTINGS WITHIN THE STEEP SLOPE BUFFER - 1,923 SF
- NATIVE PLANTINGS OUTSIDE THE STEEP SLOPE AND SHORELINE AREAS - 619 SF

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
4/9

FIGURE 4: STEEP SLOPE IMPACTS & MITIGATION
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 7430500180 & -0182

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

6489-MIT-04-06-23.dwg

PLANT LIST

TREES

KEY	COMMON NAME
PS	SITKA SPRUCE
PC	SHORE PINE
TP	WESTERN RED CEDAR

SHRUBS

KEY	COMMON NAME
AC	VINE MAPLE
SS	SCOULER WILLOW
N	RED-OSIER DOGWOOD
K	BOG LAUREL
M	TALL OREGON GRAPE
SK	SITKA WILLOW
R	CLUSTERED ROSE
S	SNOWBERRY
V	EVERGREEN HUCKLEBERRY

GROUNDCOVER

KEY	COMMON NAME
	LADY FERN
	DEER FERN
	SLOUGH SEDGE
	COAST STRAWBERRY
	SWORD FERN

NORTH

GRAPHIC SCALE
(IN FEET)

0 10 20 30 40 60

SCALE: 1:20

NOTES

1. SURVEY PROVIDED BY EMERALD SURVEYING, INC., P.O. BOX 13694 MILL CREEK, WA 98082, (425) 359-7198.

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
5/9

FIGURE 5: PLANTING PLAN
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 7430500-0180 & -0182

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

6489-MIT-04-06-23.dwg

PLANT SCHEDULE

TREES

KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY.	SIZE (MIN.)	NOTES
PS	PICEA SITCHENSIS	SITKA SPRUCE	10' O.C.	3	5 GAL.	FULL & BUSHY
PC	PINUS CONTORTA	SHORE PINE	10' O.C.	3	5 GAL.	FULL & BUSHY
TP	THUJA PLICATA	WESTERN RED CEDAR	10' O.C.	6	5 GAL.	FULL & BUSHY

SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY.	SIZE (MIN.)	NOTES
AC	ACER CIRCINATUM	VINE MAPLE	6' O.C.	14	2 GAL.	MULTI-STEM (3 MIN.)
N	CORNUS SERICEA	RED-OSIER DOGWOOD	5' O.C.	102	4' CUTTING	1/2" DIA BARK INTACT
K	KALMIA MICROPHYLLA	BOG LAUREL	3' O.C.	13	2 GAL.	MULTI-STEM (3 MIN.)
M	MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	4' O.C.	39	2 GAL.	FULL & BUSHY
R	ROSA PISOCARPA	CLUSTERED ROSE	4' O.C.	7	2 GAL.	MULTI-STEM (3 MIN.)
SS	SALIX SCOULERIANA*	SCOULER WILLOW	5' O.C.	51	4' CUTTING	1/2" DIA BARK INTACT
SK	SLIX SICHENSIS	SITKA WILLOW	5' O.C.	78	4' CUTTING	1/2" DIA BARK INTACT
S	SYMPHORICARPOS ALBUS	SNOWBERRY	3' O.C.	9	2 GAL.	MULTI-STEM (3 MIN.)
V	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	2' O.C.	23	2 GAL.	FULL & BUSHY

*3 CUTTINGS PER SYMBOL

GROUNDCOVER

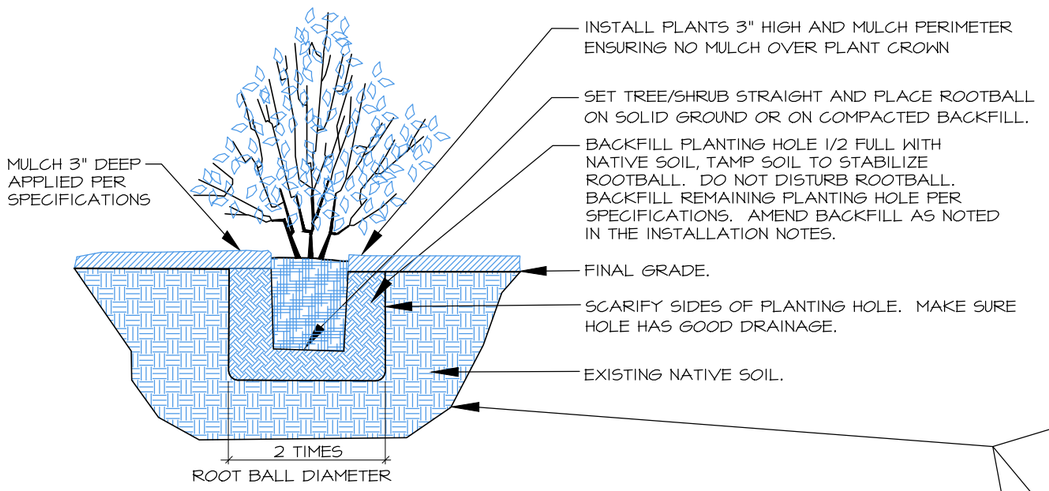
KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY.	SIZE (MIN.)	NOTES
	ATHYRIUM FILIX-FEMINA*	LADY FERN	2' O.C.	29	4" POT	FULL & BUSHY
	BLECHNUM SPICANT	DEER FERN	2' O.C.	246	1 GAL.	FULL & BUSHY
	CAREX OBNUPTA*	SLOUGH SEDGE	1.5' O.C.	74	BAREROOT	FULL & BUSHY
	FRAGARIA CHILOENSIS	COAST STRAWBERRY	2' O.C.	252	4" POT	FULL & BUSHY
	POLYSTICHUM MUNITUM	SWORD FERN	3' O.C.	97	1 GAL.	FULL & BUSHY

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
6/9

FIGURE 6: PLANT SCHEDULE
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 743050-0180 & -0182

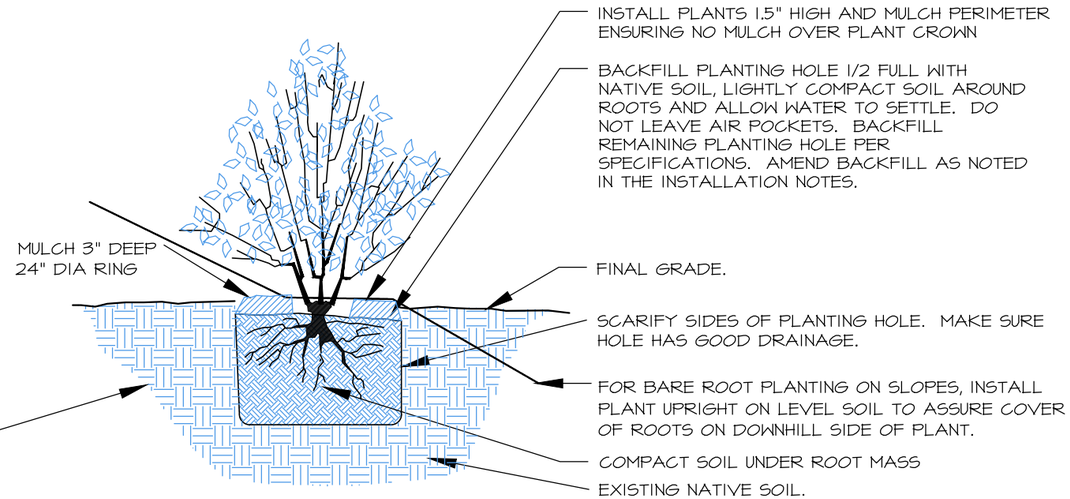
Altmann Oliver Associates, LLC
AOA
Environmental Planning & Landscape Architecture
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509

6489-MIT-04-06-23.dwg



1 CONTAINER TREE/SHRUB PLANTING (TYP.)

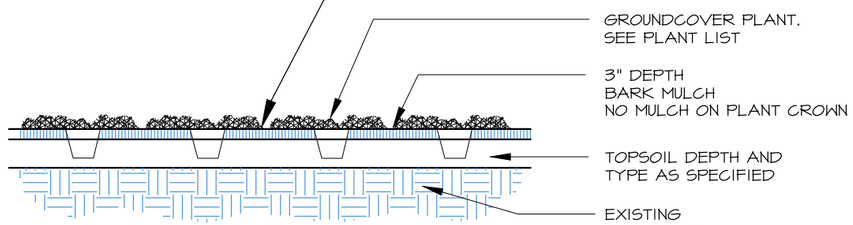
SCALE: NTS

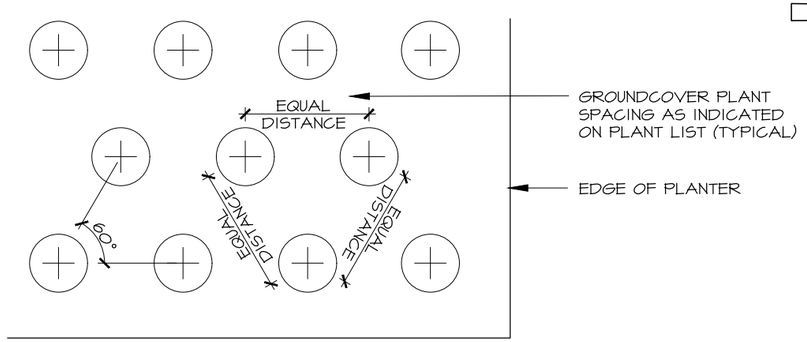


2 BARE-ROOT SHRUB PLANTING (TYP.)

SCALE: NTS

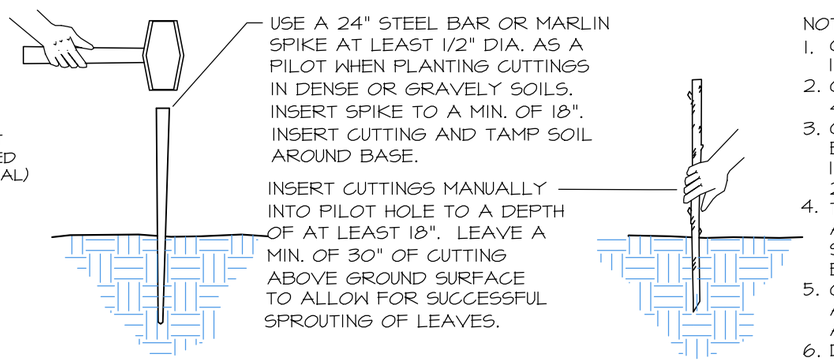
NOTE: AFTER SOIL PLACEMENT AND MULCHING, INSTALL COIR FABRIC PER CIVIL PLANS PRIOR TO INSTALLATION OF CONTAINER PLANT MATERIAL.





3 GROUNDCOVER PLANTING (TYP.)

SCALE: NTS



NOTES:

1. CUTTINGS SHALL BE SPECIES AS NOTED IN THE PLANT SCHEDULE.
2. CUTTINGS SHALL BE AT LEAST 1/2" DIA. AND 4' (min.) IN LENGTH.
3. CUTTINGS MUST BE ALIVE WITH SIDE BRANCHES CLEARLY REMOVED AND BARK INTACT. CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS OF CUTTING.
4. THE BUTT ENDS SHOULD BE CLEANLY CUT AT AN ANGLE FOR EASY INSERTION INTO THE SOIL. THE TOP SHOULD BE CUT SQUARE OR BLUNT.
5. CUTTINGS MUST BE FRESH AND KEPT MOIST AFTER CUTTING. THEY SHOULD BE PRUNED AND INSTALLED THE SAME DAY.
6. DIP BOTTOM OF CUTTING IN A PLANT ROOTING HORMONE PRIOR TO INSERTION INTO THE SOIL.

4 CUTTING INSTALLATION (TYP.)

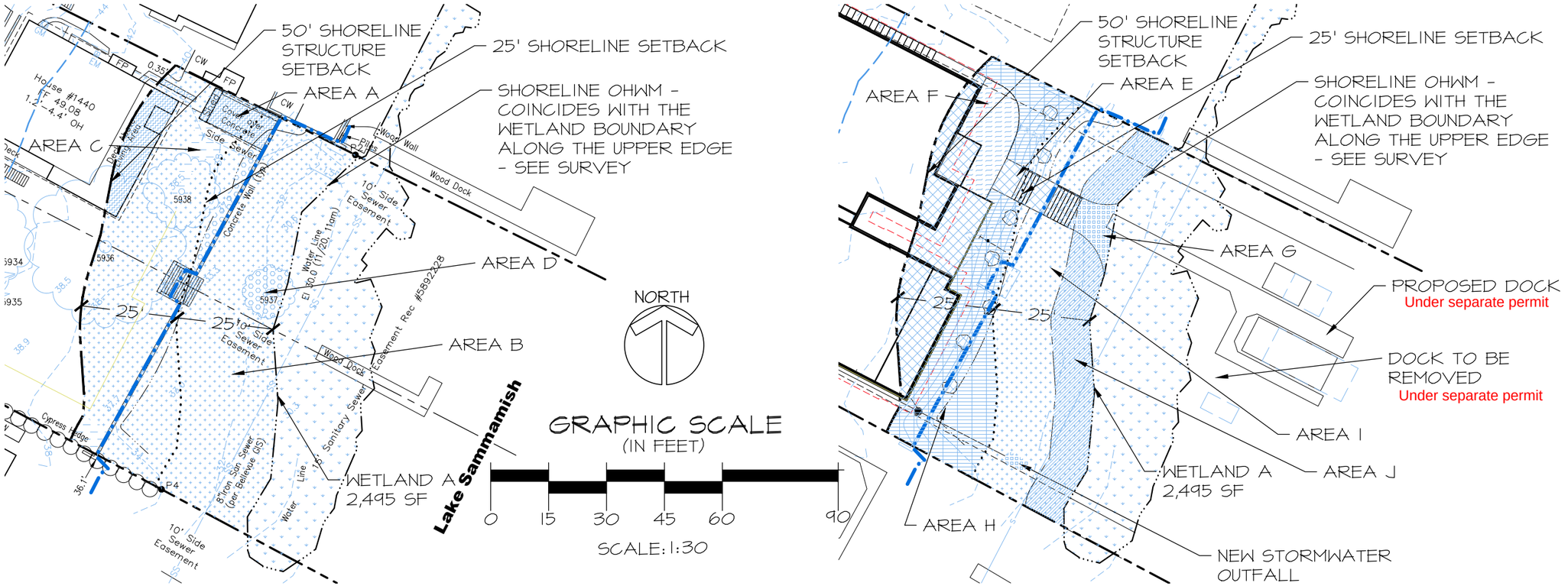
SCALE: NTS

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
7/9

FIGURE 7: CONSTRUCTION DETAILS
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 743050-0180 & -0182

Altmann Oliver Associates, LLC
AOA
Environmental Planning & Landscape Architecture
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4669

6489-MIT-04-06-23.dwg



EXISTING LANDCOVER

NOTE:

CALCULATIONS FOR SHORELINE TYPES AND VALUES PER LUC 20.25E.065.F.8.d.

EXISTING:

- AREA A - IMPERVIOUS (INCLUDES DECK): 576 SF X 0.0 = 0.0
- AREA B - IMPERVIOUS MOWED LAWN, ANNUAL OR PERENNIAL GARDENS, NOXIOUS WEEDS: 4,286 SF X 0.1 = 428.6
- AREA C - NON-NATIVE VEGETATION 25-50' FROM OHWL: 184 SF X 0.25 = 46
- AREA D - NON-NATIVE VEGETATION 0-25' FROM OHWL: 215 SF X 0.3 = 64.5

TOTAL: 539.1

PROPOSED > EXISTING

PROPOSED LANDCOVER

NOTE:

CALCULATIONS FOR SHORELINE TYPES AND VALUES PER LUC 20.25E.065.F.8.d.

PROPOSED:

- AREA E - IMPERVIOUS: 1,167 SF X 0.0 = 0.0
- AREA F - IMPERVIOUS MOWED LAWN, ANNUAL OR PERENNIAL GARDENS, NOXIOUS WEEDS: 289 SF X 0.1 = 28.9
- AREA G - BARE GROUND OR PERVIOUS: 130 SF X 0.15 = 19.5
- AREA H - NATIVE VEGETATION 25-50' FROM OHWL: 1,311 SF X 0.6 = 786.6
- AREA I - NATIVE VEGETATION 0-25' FROM OHWL: 2,374 SF X 0.80 = 1,899.2
- AREA J - NATIVE OVERHANGING VEGETATION, 0-10' FROM OHWL: 952.9 SF X 1.0 = 952.9

TOTAL: 3,687.1

PROPOSED > EXISTING

NOTES

1. SURVEY PROVIDED BY EMERALD SURVEYING, INC., P.O. BOX 13694 MILL CREEK, WA 98082, (425) 359-7198.

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
8/9

FIGURE 8: LANDSCAPE COVER
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 7430500180 & -0182

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

6489-MIT-04-06-23.dwg

SPECIFICATIONS

1. THIS PLAN PERTAINS TO PLANTING PORTION OF THE SITE WORK ONLY, REFER TO CIVIL PLANS FOR BULKHEAD REMOVAL AND GRADING ASSOCIATED WITH THE SVCA.
2. PRIOR TO WORK WITHIN THE FLOODPLAIN, SPOT ELEVATIONS WILL BE SURVEYED AT 15'SPACING TO PROVIDE PRE-CONSTRUCTION ELEVATIONS. UPON COMPLETION OF EXCAVATION, THESE SPOT ELEVATIONS WILL BE RETAKEN TO ENSURE NO NET FILL WITHIN THE FLOODPLAIN OCCURRED. GRADING WILL BE ADJUSTED IF NECESSARY TO DOCUMENT NO NET FILL WITHIN THE FLOODPLAIN PER CIVIL PLANS.
3. 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.
4. 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.
5. TEMPORARY EROSION CONTROL SHALL BE INSTALLED PER CIVIL PLANS PRIOR TO START OF WORK.
6. MITIGATION PLAN SHALL BE IMPLEMENTED WITHIN THE TIME PERIOD OF THE HPA AND CITY PERMITS. CIVIL ENGINEER SHALL REVIEW AT KEY TIMES DURING BULKHEAD AND DOCK REMOVAL, BOULDER PLACEMENT, GRADING, AND COIR INSTALLATION.
7. NEW STEPS DOWN TO BEACH, PER ARCHITECTURAL PLANS, SHALL BE SURVEYED PRIOR TO DEMO OF EXISTING STEPS TO ENSURE NO NET FILL IN FLOODPLAIN. AOA TO REVIEW PRIOR TO DEMO.
8. ALL PLANTING AREAS OUTSIDE THE 100-YEAR FLOODPLAIN SHALL BE OVER-EXCAVATED 12" FOR PLACEMENT OF 9" OF IMPORTED 3-WAY TOPSOIL (DEJONG'S). AOA TO APPROVE TOPSOIL PRIOR TO PLACEMENT. PLANTS INSTALLED BELOW THE FLOODPLAIN SHALL BE INSTALLED WITHIN THE EXISTING BEACH GRAVELS.
9. 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, BUT 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.
10. PRIOR TO INSTALLATION OF PLANT MATERIAL, THE PLANTING AREAS WILL BE LAID OUT BASED ON THE PLANTING PLAN, AND ALL INVASIVE PLANT SPECIES LOCATED IN THE PLANTING AREAS WILL BE REMOVED BY HAND.
11. ALL PLANTS INSTALLED ABOVE THE FLOODPLAIN SHALL BE PIT-PLANTED IN PLANTING PITS EXCAVATED 2X THE DIAMETER OF THE PLANT. PLANTS LOCATED WITHIN THE 100-YEAR FLOODPLAIN SHALL BE INSTALLED WITHIN THE EXISITNG BEACH GRAVELS AFTER INVASIVE REMOVAL. BURY PLANTS WITHIN EXISTING AND REPLACED EXISTING GRAVELS TO 2" FROM TOP. PLANTS SHALL BE INSTALLED 3" HIGH AND SURFACED MULCHED TO A DEPTH OF 3" WITH BEACH GRAVELS REMOVED FROM THE PLANTING HOLE WITHIN THE 100-YEAR FLOODPLAIN, OUTSIDE THE 100-YEAR FLOODPLAIN, MULCH WITH MEDIUM-COURSE BARK MULCH PLACED CONTINUOUSLY THROUGHOUT THE PLANTING BED.
12. 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.
13. PLANT LAYOUT SHALL BE APPROVED BY AOA PRIOR TO INSTALLATION AND APPROVED UPON COMPLETION OF PLANTING.
14. UPON COMPLETION OF PLANTING, ALL PLANTS SHALL BE THOROUGHLY WATERED.
15. UPON APPROVAL OF PLANTING INSTALLATION BY AOA, THE CITY OF BELLEVUE WILL BE NOTIFIED TO CONDUCT A SITE REVIEW FOR FINAL APPROVAL OF CONSTRUCTION.
16. MAINTENANCE SHALL BE REQUIRED IN ACCORDANCE WITH THE CITY OF BELLEVUE SENSITIVE AREAS MITIGATION GUIDELINES AND APPROVED PLANS.
17. DESIGN-BUILD IRRIGATION SYSTEM BY LANDSCAPE CONTRACTOR TO PROVIDE FULL COVERAGE TO ALL PLANTING AREAS.
18. THE ZONE TO THE PLANTING BEDS SHALL BE SET TO PROVIDE 1/2" OF FLOW 2-3 TIMES WEEKLY FROM JUNE 15 - SEPTEMBER 30 THE FIRST YEAR AFTER PLANTING. FLOW SHALL REDUCE TO 1-2 TIMES WEEKLY THE SECOND YEAR AFTER PLANTING AND ONCE WEEKLY THE YEARS 3-5. NO FURTHER IRRIGATION IS NECESSARY AFTER THE THIRD YEAR FOR THE NATIVE PLANTING BEDS.
19. 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		
WATERING - YEAR 1						4	8	8	8			
WATERING - YEAR 2						2	4	4	4			
WATERING - YEARS 3-5												

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

PROJECT 6489
DRAWN SO
SCALE AS NOTED
DATE 4-06-23
REVISED
9/9

FIGURE 9: SPECIFICATIONS
FINAL MITIGATION PLAN
1440 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008
PARCEL 7430500180 & -0182

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

6489-MIT-04-06-23.dwg

PROJECT DESCRIPTION:

REPLACE EXISTING 148 SF RESIDENTIAL DOCK WITH NEW CONFORMING 477 SF DOCK. DOCK FRAMING TO BE ACZA TREATED FIR, STRINGERS TO BE 4" X 8", JOISTS/PILE CAPS TO BE 6" X 8". DECKING TO BE THRUFLOW GRATED PANELS. PILINGS (13) TO BE 6" DIAMETER GALVANIZED STEEL. BOAT LIFT AND CANOPY, AND PWC LIFT TO BE ADDED AS SHOWN.

PROPERTY OWNER:

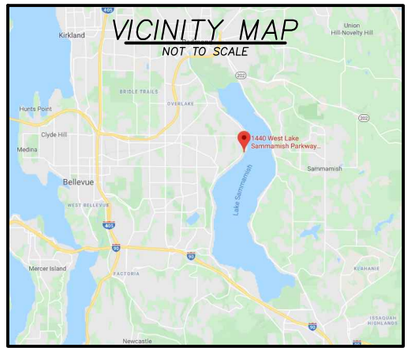
BRANDON TING
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

CONTACT:

IRWIN LAND USE CONSULTING, LLC
P.O. BOX 1715
BELLINGHAM, WA 98227
(360) 410-6745
irwinlanduse@gmail.com

LEGAL DESCRIPTION:

ROSEMONT BEACH ADD



0 30' 60'

1"=30'

APPROXIMATE LOCATION OF TEMPORARY BARGE
PURPOSE: DOCK CONSTRUCTION
SIZE: 24'x40'
LOCATION: 30' MIN. FROM OHWM
DURATION: 1 WEEK
OTHER: BARGE WILL INCLUDE CRANE

SANITARY SEWER LINE PER SURVEY

DOCK CONSTRUCTION UNDER SEPARATE PERMITTING.

W LAKE SAMMAMISH PKWY

±90'

±400'

NE RO

±400'

EXISTING HOUSE PER LAND USE PERMITS 20 103303 LO & 20 110244 LS

PROPOSED DOCK

70'

41'

ADD JET SKI LIFT

EXISTING DOCK TO BE REMOVED

ADD BOAT LIFT AND COVER

32'

SS

ORDINARY HIGH WATER PER SURVEY

SEE MITIGATION/PLANTING PLAN & WETLAND REPORT FROM ALTMANN OLIVER ASSOCIATES

LAKE SAMMAMISH

*LOT DIMENSIONS, BUILDING LOCATIONS AND OHWM PER TOPOGRAPHIC SURVEY PERFORMED BY EMERALD SURVEYING, INC. DATED 4/26/21. DOCK DIMENSIONS AND WATER DEPTHS PER LAKESIDE CONSTRUCTION.

P.O. BOX 525
ISSAQUAH, WA 98027
(206) 850-0250
sales@lakesideseattle.com

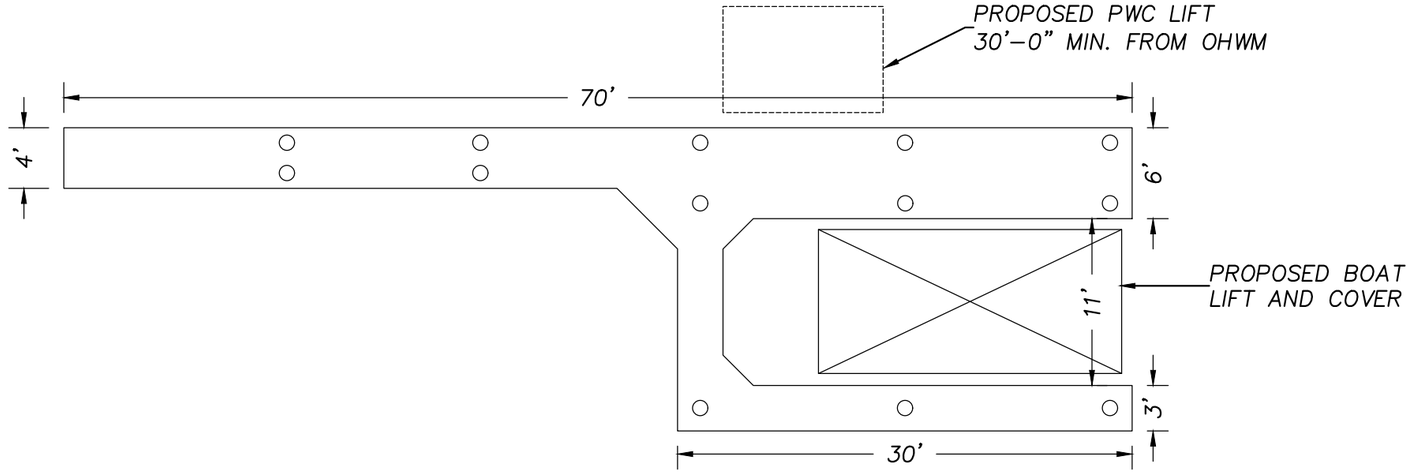
REV	DATE	BY	DESCRIPTION

TING

DOCK REPLACEMENT

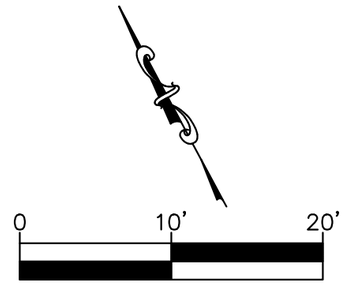
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PROJECT NUMBER:	1952
PARCEL NUMBER:	7430500180
ISSUE DATE:	12/14/2022



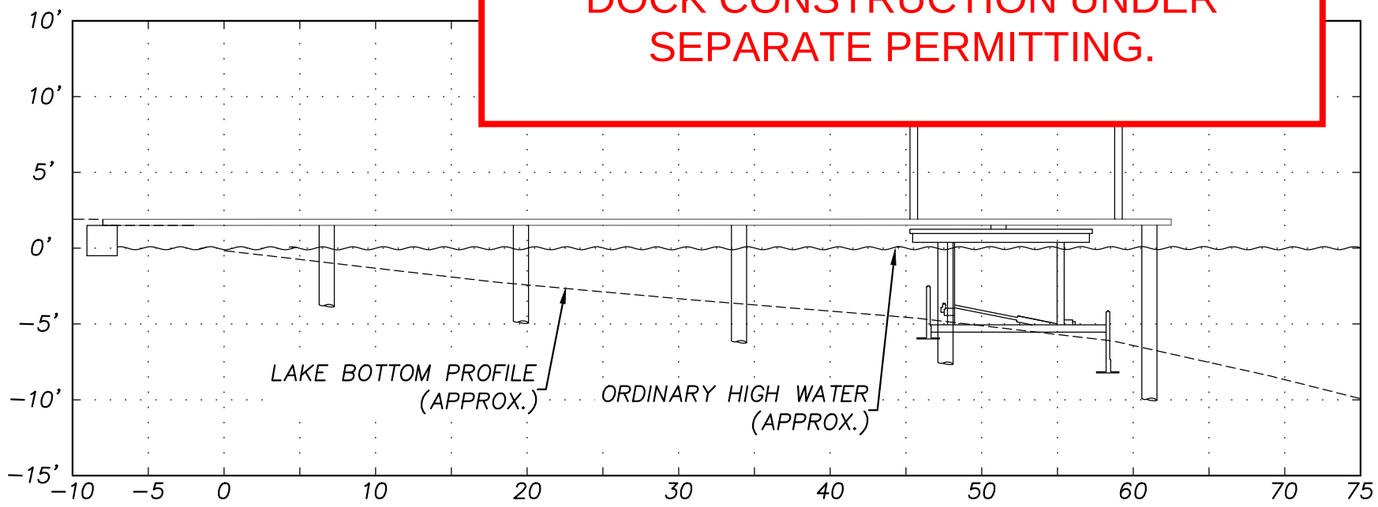
DOCK LAYOUT

SCALE: 1"=10'



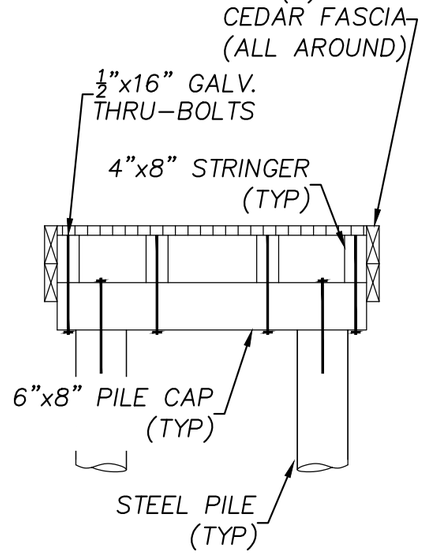
1"=10'

DOCK CONSTRUCTION UNDER SEPARATE PERMITTING.



DOCK PROFILE

SCALE: 1"=10'



PIER END SECTION

NTS

P.O. BOX 525
ISSAQUAH, WA 98027
(206) 850–0250
sales@lakesideseattle.com

REV	DATE	BY	DESCRIPTION

TING

DOCK REPLACEMENT

1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PROJECT NUMBER:	1952
PARCEL NUMBER:	7430500180
ISSUE DATE:	12/14/2022

Attachment 4 - Critical Areas Report

Critical Areas Report

NEIL RESIDENCE
CITY OF BELLEVUE

February 7, 2020

Prepared for:

City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

Prepared on behalf of (applicant):

Mike Neil
8002 Avalon Place
Mercer Island, WA 98040

The Watershed Company

Title-page image: Existing residence on the Neil property on Lake Sammamish. From the southern property boundary looking north.

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, WA 98033

p 425.822.5242
f 425.827.8136

watershedco.com

Reference Number: 190502

Contact: Alex Pittman
Environmental Planner

Table of Contents

List of Figures

List of Tables

1. Introduction

1.1 Background and Purpose

The purpose of this report is to document potential critical area and buffer/setback and shoreline setback impacts associated with the proposed residential redevelopment project located on the shore of Lake Sammamish in the City of Bellevue, Washington (Figure 1). The project area is comprised of a single lot which is bisected by an access road and currently developed with a single-family residence (built in 1970). To the west of the access road is a steep slope, characterized by native vegetation and a robust canopy of large trees. To the east of the access road is the existing primary residential structure and appurtenant structures, including a shed, two small out-buildings set on cinder blocks, a retaining wall, and a wooden frame for a small dock. Portions of proposed improvements will occur within or adjacent to regulated wetlands and steep slopes, as well as within proximity to the shoreline.

The applicant proposes to redevelop the existing residence, driveway and garage, and to construct a new dock on Lake Sammamish. The proposed residence and associated hardscapes would be located within a wetland buffer and a steep slope toe-of-slope setback. Some improvements will also occur within the standard shoreline structure setback and shoreline vegetation conservation area (SVCA).

Bellevue Land Use Code (LUC) 20.25H.230 requires compliance with specific critical areas report criteria as part of any modification to a critical area or critical area buffer/setback, including a demonstration of how the development leads to equivalent or better protection of critical area functions and values. This report fulfills these criteria. Further, pursuant to LUC 20.25H.250(C)(1), this report has been prepared in conjunction with a geotechnical analysis report by Geotechnical Consultants, Inc. For technical details related to geologic hazard areas, reference the project geotechnical report and/or any subsequent documentation addressing geotech-specific City comments. In addition, this report includes a demonstration of compliance with the City's shoreline regulations (LUC 20.25E), including an assessment of impacts within the shoreline structure setback and shoreline vegetation conservation area, as well as impacts associated with the development of a new dock on Lake Sammamish. This report presents a detailed discussion of the habitat and vegetation on-site and how the proposed development can be achieved with no net loss of critical area functions and values.

1.2 Methods

Staff ecologists for The Watershed Company visited the site on May 16, 2019, to evaluate existing site conditions. Vegetative structure and composition, special habitat features, presence

of wildlife species and sign, and human disturbance were assessed, which inform the discussion of habitat presented in this report. Observations of established trees and dominant plant species on-site were utilized in preparation of the associated mitigation plan (Appendix A).

2. Project Site

2.1 Location and Description

The subject project is located at 1440 West Lake Sammamish Parkway NE (parcel #7430500180) in the City of Bellevue. Lake Sammamish borders the project area to the east, West Lake Sammamish Parkway NE borders the project area to the west, and single-family residences are located to the north and south. The parcel is bisected by the private access road, NE Rosemont Place. To the west of the access road is a steep slope, characterized by native vegetation and a robust canopy of large trees. The top of the slope is near West Lake Sammamish Parkway NE to the west, and it slopes downward toward Lake Sammamish to the east. To the east of the access road is the existing primary residential structure and appurtenant structures, including a shed, two small out-buildings set on cinder blocks, a retaining wall, and a wooden frame for a small dock. Vegetation is highly variable throughout this portion of the site. Near the residence there are large areas of mown lawn, ornamental landscaping beds, and a number of large trees. To the east of the retaining wall is a mix of native and invasive herbaceous vegetation along the shoreline of the lake. Existing on-site vegetation is discussed in detail in Section 3 of this report.

The site is situated along the shoreline of Lake Sammamish, in the City-defined Rosemont drainage basin of the Cedar-Sammamish Watershed (WRIA 8). According to the Natural Resources Conservation Service Web Soil Survey, the site is characterized by Alderwood and Kitsap silt loam soils. Any surface or groundwater on the site would be expected to flow east toward the lake. A lake-fringe wetland along Lake Sammamish was identified on-site during field investigations.

Figure 1. Vicinity and street level map (King County iMap).

3. Critical Areas

3.1 Geologic Hazard Areas

The subject property contains areas of steep slopes that meet the City's definition for critical area as a type of geologic hazard area. Areas of regulated steep slope have been determined by the project surveyor. Steep slopes are located to the west of NE Rosemont Place, sloping downward toward Lake Sammamish from West Lake Sammamish Parkway NE. Geologic hazard areas on-site are discussed in the *Geotechnical Engineering Study*, prepared by Geotechnical Consultants, Inc. (November 2019). Vegetation located in and adjacent to these critical areas provides a number of functions, discussed below.

3.2 Wetlands

Along the shoreline of Lake Sammamish is a lake-fringe wetland, identified by both The Watershed Company and Wetland Resources, LLC. This wetland is subject to the City of Bellevue's critical areas regulations, as described below. No other areas that meet the wetland definition established in LUC 20.25H.095(A) were identified on-site. Wetlands on-site are described in the *Neil Residence, Wetland Delineation Study*, prepared by The Watershed Company (December 2019). Vegetation in and adjacent to the on-site wetland is discussed further below.

3.3 Habitat Functions

Vegetation, whether located within or outside of critical areas, inherently provides some habitat functions. Habitat functions of the subject property have been assessed and are discussed in this section, consistent with the requirements of City of Bellevue's Land Use Code.

3.3.1 On-site Habitat

The parcel is bisected by the private access road, NE Rosemont Place. To the west of the access road is a steep slope, characterized by a robust canopy of large trees. A total of fifty-eight (58) significant trees are found in this area. This area is also infested with invasive English ivy, which covers most of the hillside and is growing on many of the trees on the slope. Western red cedar, Big-leaf maple, and Douglas-fir are the most abundant tree species on-site. Vegetation to the east of NE Rosemont Place is more variable. To the east of the access road is the existing primary residential structure and appurtenant structures, including a shed, two small out-buildings set on cinder blocks, a retaining wall, and a wooden frame for a small dock. Vegetation is highly variable throughout this portion of the site. Near the residence there are large areas of mown lawn, bare ground, ornamental landscaping beds, and a number of large trees. To the east of the retaining wall is a mix of native and invasive herbaceous vegetation along the shoreline of the lake, including horsetail, reed canarygrass, and bulrush.

Significant Trees. As described in the *Arborist Report* prepared by Davey Resource Group (November 2019), the site includes a total of eighty-three (83) significant trees. Twenty-five (25) of these trees occur to the east of NE Rosemont Place, while the remaining fifty-eight (58) occur in the steep slope area to the west of NE Rosemont Place.

Figure 2. Lake-fringe wetland and Lake Sammamish shoreline.

Figure 3. Forested steep slope to the west of NE Rosemont Place.

Figure 4. Areas of lawn, bare ground, and non-native landscaping to the south of the existing residence.

Figure 5. Existing residence, trees, and lawn areas.

Figure 6. Existing retaining wall, with shoreline area in the foreground and trees to the south of the existing residence in the background.

3.3.2 Off-site Habitat

The opportunity for the subject property to provide habitat is dependent upon the potential for the greater vicinity to act as a source for wildlife. Therefore, the presence or absence of habitat patches in the landscape surrounding the subject property is considered in this assessment.

The general habitat type used to categorize the study area vicinity is Urban and Mixed Environs in the Medium-density Zone (Johnson and O'Neil 2001). This habitat type may contain light industry mixed with dense residential development and some natural open spaces.

The area surrounding the subject property is urban and dominated by developed single-family residential land uses. Habitat areas within approximately 1/4 mile of the project site include Lake Sammamish and undeveloped parcels to the northwest. These parcels are larger and/or include more retained significant trees, resulting in some areas of interconnecting canopy cover. However, these habitat patches in the vicinity are mostly disconnected from on-site habitat by roads and development.

3.3.3 Wildlife

Wildlife species expected to utilize the project site most are species that are adapted to living in urban settings. These species generally include raccoons, opossums, Eastern gray squirrel, rats, mice, bats, and a number of birds like crows, starlings, robins, chickadees, and sparrows, to name a few.

During site investigations, no species of local importance were observed on the subject property, nor was habitat observed that is expected to have a primary association with any species of local importance given the local- and landscape-level conditions. However, wildlife

use of the property was observed during site investigations. These observations included a family of ducks in the immediate nearshore and lake-fringe wetland and deer foraging near the existing residence. Deer scat and browse were also observed in the lake-fringe wetland.

3.4 Water Quality, Hydrology, and Slope Stability Functions

In addition to habitat functions, vegetation also provides important water quality and hydrology functions. The ability of the site to perform these functions well is dependent upon the vegetation present (e.g., forested versus mowed lawn). Non-developed portions of the site to the west of the access road are vegetated with native trees and an understory of invasive English ivy. Areas closer to the residence include significant areas of lawn and ornamental landscaping. The immediate shoreline and wetland area, to the east of the retaining wall, contain a mix of native and non-native herbaceous vegetation. Vegetated (non-lawn) areas of the site are expected to intercept, allow for infiltration, and uptake rain and surface water, thereby functioning well to both filter water and reduce the quantity of water flowing down-gradient.

Furthermore, when located on slopes, vegetation can function to prevent soil erosion and improve slope stability. During heavy rain events, live vegetation and dead plant parts (e.g., dead stems, branches, leaves, etc.) prevent concentrated and potentially erosive flows from developing on steep slopes through rainwater interception. Vegetation growing on slopes also has the opportunity to provide slope stability through establishment of deep, inter-woven plant roots. Most native trees, shrubs, and groundcover plants perform this function well, while shallow-rooted weeds like Himalayan blackberry and English ivy, do not.

3.5 Species of Local Importance

The City of Bellevue designates habitat associated with species of local importance as a critical area [LUC 20.25H.150(B)]. As noted in Section 3.3.3, wildlife use on site is expected to be limited to mainly urban species. However, it is possible that some habitat on site could occasionally be used by species of local importance. Species of local importance [LUC 20.25H.150(A)] for which suitable habitat exists on the study property are bald eagle, pileated woodpeckers, Vaux's swift, merlin, great blue heron, osprey, and red-tailed hawk. The likelihood of each of these species utilizing the property is discussed below.

Bald eagles are common foragers over Lake Sammamish, and active nests are known in the lake area. Eagle nests are most commonly built near broken tops of tall trees, and in western Washington, nests in forks of large deciduous trees are also common. Potential nesting trees are located on the subject property, particularly to the west of NE Rosemont Place, but nearby areas provide more suitable nesting habitat, with greater tree density and less human disturbance. No

eagles or nests were observed on site during the site visit. Bald eagles were removed from the State's endangered species list in 2017 and the Washington Department of Fish and Wildlife (WDFW) no longer maps known bald eagle nests nor requires coordination on bald eagle plans for specific properties.

Pileated woodpeckers commonly use large conifers for drumming and foraging. The species is often spotted in suburban areas in King County. Individuals may occasionally use the large trees on the property, although the species' preferred large snags are not present. Suitable nesting sites for this species do not exist on the property.

Vaux's swifts forage in open skies over forests, lakes, and rivers, where insects are abundant. Lake Sammamish provides suitable foraging habitat, and the species may be present at times over the study area. Nesting normally takes place in old-growth forest where large, hollow snags are available. The study parcel does not provide nesting habitat for this species.

Merlins occur throughout western Washington in winter and during migration. Breeding birds are rare in the state. Occurrences are spotty but not uncommon in suburban areas, and the study parcel may provide a small amount of suitable hunting or perching area in the non-breeding season.

Purple martin is Washington State's least common swallow. The species forages over open water and could potentially use the lake area adjacent to the study property for foraging. There are no suitable standing snags available on the subject property for cavity-nesting.

Great blue herons are widespread in western Washington. Outside of breeding, which occurs in tall trees, commonly away from human disturbance, the birds are most often observed in and along rivers, lakes, and wetlands. The adjacent waters of Lake Sammamish are likely used by foraging and resting herons throughout the year.

Osprey are very common over Lake Sammamish. Osprey typically nest in trees adjacent and above water. No significant trees occur immediately adjacent to the shoreline, though two trees occur within 50 feet of the shoreline and could be used for perching.

Red-tailed hawks nest in large trees, and although no active nests are present, the on-site trees may be suitable for the species. However, nests are generally located in more extensive woodlands than the site offers. Red-tailed hawks are ubiquitous in this area and are likely to occasionally perch on or fly over the property.

Common loons prefer large, secluded lakes in the eastern part of the state for breeding. In winter, the species is most common on the coast and in saltwater bays and inlets, but can be seen on freshwater lakes near the coast as well. The open waters of Lake Sammamish are commonly used by wintering loons, but the species is unlikely to enter the study parcel.

Chinook and coho salmon migrate through Lake Sammamish. The lake itself does not provide spawning habitat. The lake is used by juveniles for migration, as well as rearing. Lake temperatures are warmer than preferred by these species, particularly in shallow areas, and the shoreline area provides no cover for hiding or cooling. The lake area immediately adjacent to the property is unlikely to be used extensively by these species.

Bull trout are rare or non-existent in Lake Sammamish. The species has a narrow temperature tolerance range, and is very unlikely to occur near the shallow waters adjacent to the study area.

River lamprey have been identified in Lake Sammamish. According to the U.S. Fish and Wildlife Service, the species has declined, present status is unknown, and little is known about their biology.

4. Local Regulations

4.1 Critical Areas

The City of Bellevue regulates wetland and steep slope critical areas, and their associated buffers/setbacks, in Chapter 20.25H (Critical Areas Overlay Districts) of the Bellevue Land Use Code (LUC). The footprint of the existing primary structure is excluded from being within critical areas, buffers, or setbacks [LUC 20.25H.035(B)]. Impacts within critical areas, buffer, and/or setbacks are also subject to the mitigation sequencing criteria of LUC 20.25H.215.

Steep Slopes

In Bellevue, steep slope critical areas are regulated in Part 20.25H (Critical Areas Overlay District) of the LUC. According to LUC 20.25H.120(A)(2), slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area are designated as geologic hazard areas and therefore subject to the regulations of LUC 20.25H.120 through 20.25H.145. According to LUC 20.25H.120(B)(1)(b), steep slope critical areas require a top-of-slope buffer of 50 feet. Further, pursuant to LUC 20.25H.120(C)(2), steep slopes standard require a toe-of-slope setback of 75 feet. A large portion of the subject property is encumbered by steep slopes and/or buffers and setbacks.

Wetlands

Wetlands in shoreline jurisdiction are regulated under Part 20.25H (Critical Areas Overlay District) of Bellevue's Land Use Code (LUC). The lake-fringe wetland is classified as a Category II wetland with a habitat score of 5 points, and therefore requires a regulatory buffer of 110 feet. A structure setback of 20 feet is required from the edge of the buffer. The footprint of the existing primary structure is excluded from the regulatory wetland buffer and structure

setback. Impacts to wetland buffers can be authorized through the City's critical areas report process and are subject to a mitigation ratio of one-to-one.

4.1.1 Critical Area Functions Based on Application of Code Standards

If the regulations and standards of the LUC were applied to this site, the existing single-family residence would remain and existing vegetated areas would continue to be available for wildlife use. Lawn and ornamental landscaping areas would remain, and the site would likely remain void of woody, overhanging vegetation along the shoreline. Non-native and invasive species present would presumably remain and may proliferate, potentially degrading habitat over time. These species would be expected to have detrimental effects on the native vegetation present by out-competing native plants for light, nutrients, and/or water resources. Overall, critical area functions and values would be expected to decrease with time if the property was maintained in its current state.

4.1.2 Modification

Critical areas standards for wetlands, steep slopes, and their associated buffers/setbacks can only be modified through an approved critical areas report. The applicant must demonstrate that the modifications to the critical area, buffer, and setback, combined with any restoration efforts, will result in equivalent or better protection of critical area functions and values than would result from adhering to the standard application of the regulations (LUC 20.25H.230). Restoration activities would require monitoring and maintenance in accordance with LUC 20.25H.220, consistent with an approved restoration plan.

4.2 Habitat Associated with Species of Local Importance

As noted above, habitat associated with species of local importance are also regulated as a critical area according to LUC 20.25H.150(B). In this context, "habitat" is defined as "the place, including physical and biotic conditions, where a plant or animal usually occurs and is fundamentally linked to the distribution and abundance of species."

As described in Section 3.5, there is no on-site evidence of the presence of habitat associated with species of local importance, other than Lake Sammamish itself, which has known Chinook and coho salmon use, and which may be used for foraging and resting for bird species. Some of the trees on site could also occasionally support migrating or foraging bird species. However, the habitat on site, including the lake area immediately adjacent to the property, is unlikely to be used extensively by any of these species. Furthermore, WDFW Priority Habitat Species (PHS) data does not show the presence of any priority species within the vicinity. Therefore, it is The Watershed Company's opinion that the site is unencumbered by critical area habitat that has a primary association with species of local importance.

4.3 Shorelines

Work within 200 feet of the ordinary high water mark (OHWM) of Lake Sammamish is subject to the standards and provisions of LUC 20.25E. The subject parcel is located within the Shoreline Residential environment designation and includes a standard 50-foot shoreline structure setback, measured from the OHWM. Additionally, the site includes a 50-foot shoreline vegetation conservation area (SVCA), also measured from the OHWM. Any significant trees removed within 50 feet of the OHWM require replacement pursuant to LUC 20.25E.065(F)(8)(b) and LUC 20.25E.065(F)(8)(c)(iii).

Dimensional standards for the development of new residential docks are provided in LUC 20.25E.065(H)(a). These standards limit the total area for docks on Lake Sammamish to 480 SF, the maximum length to 150 feet, and the width to 4 feet within 30 feet of the OHWM and 6 feet beyond 30 feet of the OHWM. Ells are allowed 30 feet waterward of the OWHM. Docks may include up to four boat or watercraft lifts and one open-side structural boat moorage cover.

4.3.1 Modification

The shoreline structure setback can be reduced to a minimum of 25 feet, subject to the provisions of LUC 20.25E.065(F). Impacts within the SVCA must be calculated and offset pursuant to the debit/credit system outlined in LUC 20.25E.065(F)(8). Reduction of the shoreline structure setback and/or impacts within the SVCA do not require preparation of a critical areas report or shoreline special report; however, compliance with the specific shoreline provisions will be discussed in this report.

5. Project

5.1 Description

The proposed project involves redevelopment of the residential parcel by removing the existing outdated single-family structure and constructing a modern single-family residence. The existing retaining wall to the east of the house will be partially replaced with sections of stone wall and completely removed in areas, increasing the area of natural gradient from the shoreline of Lake Sammamish. The existing driveway will be reconfigured to provide access to the updated garage entry point. The proposed residence will encompass the footprint of the existing residence and will extend further to the south and east of the existing residence. The closest point of the residence will extend to within approximately 25 feet of the OHWM.

A new dock will also be constructed to facilitate recreation within Lake Sammamish in accordance with the dimensional standards identified in LUC 20.25E.065(H)(a). The total area of

the dock will be 455 SF, with a length of 70 feet and a walkway width of 4 feet within 30 feet of the OHWM. Approximately 40 feet waterward the OHWM, the walkway width is expanded to 6 feet. One boat lift and one jetski lift are proposed, including one open-side boat moorage cover. One ell is included on the dock, approximately 44 feet waterward of the OHWM.

Unavoidable impacts to wetland and steep slope critical area buffers/setbacks will occur through site development. In addition, the residence will encroach within both the standard shoreline structure setback and SVCA. To compensate for these impacts, on-site mitigation is proposed.

5.2 Mitigation Sequencing

Pursuant to LUC 20.25H.215, attempts to avoid and minimize impacts to the shoreline and on-site steep slopes and wetlands, including their buffers and setbacks, have been taken.

Avoidance. As previously mentioned, the entirety of the subject property is encumbered by critical areas and associated buffers/setbacks, and the shoreline setback/SVCA. Therefore, in order to redevelop the site with a new modern residence and dock structure that is consistent with the scale and character of existing homes in the vicinity, full avoidance of impacts is not possible. No direct impacts to the on-site wetland and steep slope critical areas are proposed.

Minimization. Minimization techniques were utilized during the design process in order to limit impacts. Design of the proposed residence utilizes the full extent of the existing residential footprint, while the driveway is relocated and represents a reduction of 412 SF in impervious surface area relative to the existing driveway. Expanded areas of the proposed single-family residence are to be constructed in an area partially comprised of low functioning lawn/bare ground/non-native vegetation. All existing sheds and outbuildings, all of which are located within the wetland buffer and one of which is also located within the shoreline setback/SVCA, will be removed. The proposed pier deck will be fully grated. Invasive species will be removed throughout the site and native plantings will comprise the entirety of the site's landscape plan. Portions of the existing retaining wall will be removed, increasing the area of natural gradient from the shoreline of Lake Sammamish. Furthermore, standard best management practices, including temporary erosion and sediment control measures, will be implemented during construction.

Mitigation. As mitigation for unavoidable, permanent impacts to critical areas, critical area buffer/setbacks, Lake Sammamish, and the shoreline setback/SVCA, 4,710 SF of the site will be enhanced through invasive weed removal and native plant installation (see details in Section 5.4 and Appendix A).

5.3 Impacts

5.3.1 Critical Area Impact Assessment

Project impacts to critical areas, buffers, and setbacks are summarized in Table 1, below, and discussed in detail in the following sub-sections. Impacts associated with the shoreline structure setback and SVCA are described in detail in Section 5.3.2.

Table 1. Project impact summary (quantities in square feet).

Critical Area Types	Existing Impacts	Proposed Impacts	Net Impact
110-ft Wetland Buffer	2,954 SF	6,205 SF	+ 3,251 SF
75-ft Standard Toe of Slope Setback Area	1,807 SF	2,661 SF	+ 854 SF

5.3.1.1 *Direct Impacts*

Permanent impacts, totaling 6,668 SF, are proposed to the wetland buffer and steep slope setback on-site. Of these impacts, a total of 5,558 SF occur within the wetland buffer, and a total of 2,661 SF occur within the standard steep slope setback. This compares to impacts associated with existing site conditions of 3,151 SF sitewide, including 2,954 SF of impacts within the wetland buffer and 1,807 SF of impacts within the steep slope setback. Therefore, the proposed project will result in a net increase of 3,517 SF of sitewide impacts, including a net increase of 3,251 SF of wetland buffer impacts and 854 SF of steep slope setback impacts. A total of eleven (11) significant trees will be removed from critical area buffers/setbacks as part of proposed activities.

These impacts have the potential to reduce the critical area functions discussed in Sections 3.3 and 3.4 (habitat, water quality, hydrology, and slope stability). Furthermore, the project has been developed in coordination with a geotechnical expert to ensure slope stability is maintained or improved.

5.3.1.2 *Indirect Impacts*

Disturbances associated with the proposed redevelopment of the property, like increased light and noise, are types of indirect effects on wildlife and habitat on-site. Introduction of domestic pets and fertilizer/herbicide use in landscape areas are also potential sources of indirect effects to wildlife/habitat from the proposed use. However, indirect impacts are not likely to significantly increase since the parcel is currently developed with a single-family residence and redevelopment is not expected to substantially change the use patterns of the site. The new residence will be larger than the existing residence and impervious/hardscape surfaces will increase. However, modern techniques and other low-impact development measures will be

implemented where feasible. This includes the use of concrete pavers, limitations to native vegetation only, and a decrease in lawn area (and corresponding potential for fertilizer/herbicide use). Replacement of significant trees with smaller mitigation trees will result in a temporal loss as new trees mature. Attempts to offset the temporal loss include maximizing the on-site mitigation area to be restored.

5.3.1.3 *Cumulative Impacts*

Impacts that result from collective changes over the landscape have the potential to affect habitat over time. The area within the vicinity of the project site is almost entirely developed with single-family residences. While some development or re-development can be expected, the overall character of the urban setting in not likely to change substantially. Residential neighborhoods, and other urban areas, do trend toward less mature native vegetation and more ornamental vegetation and impervious surface. The proposed project is consistent with this trend in that some vegetated areas will be replaced with development and increased impervious surface. However, the functions of retained habitat will be improved, not further degraded, once proposed mitigation activities are considered. Retained habitat is not likely to be developed further because of the presence of regulatory critical areas (wetlands and steep slopes) and shoreline areas.

In the event that nearby, undeveloped land is developed in a manner similar to what is proposed for this project, anticipated changes to habitat in the landscape may include a reduction in habitat quantity, increased habitat fragmentation and disturbance, and improved quality of retained habitat areas. Overall, the cumulative impacts to urban habitat from relatively small development proposals like this one are expected to be minor. This is primarily due to the fact that the majority of the surrounding area has already been developed and is unlikely to substantially change in the foreseeable future. Additionally, similar proposals may require restoration of degraded habitat areas (as does this one), in which case, wildlife habitat would benefit.

5.3.2 Shoreline Impact Assessment

Proposed improvements will occur within the standard 50-foot shoreline structure setback, as well as the 50-foot SVCA. Specifically, the proposed residence is to be situated approximately 25 feet from the OHWM. Exterior hardscape surfaces will occur adjacent to the residence, also within both the structure setback and SVCA. Impacts are to be calculated pursuant to LUC 20.25E.065(F)(8)(c)(i). Table 2 below summarizes proposed impact calculations.

Table 2. Shoreline Debit Calculations

Existing Land Cover of Areas to be Impacted	Area (SF)	Existing Value	Final Value	Change in Land Cover Value	Total Debit
0-25 ft from OHWM					
Impervious from Lawn	32	0.1	0.0	0.1	3.2
25-50 ft from OHWM					
Impervious from Lawn	994	0.1	0.0	0.1	99.4
				GRAND TOTAL:	**102.6**

As seen in Table 2 above, a total of 102.6 shoreline debits will result from proposed activities. This includes portions of the redeveloped single-family residence and associated hardscape surfaces within the standard shoreline structure setback and SVCA. Impacts will occur over areas meeting the criteria established in Chart 20.25E.065(F)(8)(d) of the LUC for existing impervious surface and lawn for the purposes of shoreline debit calculations, though small portions of impacted areas included areas of bare ground and native/non-native vegetation (all smaller than 200 square feet each). Two significant trees will be removed within the 50-foot SVCA, one of which occurs within 25 feet of the OHWM. In addition to on-site impacts to the shoreline setback and SVCA, 455 square feet of overwater impacts in Lake Sammamish are also proposed to develop a new residential dock.

5.4 Mitigation

The proposed mitigation plan (Appendix A) seeks to enhance a total of 4,794 SF of the site through invasive species removal and the planting of native trees, shrubs, and groundcover plants within the wetland buffer and steep slope setback. These restoration actions will serve as mitigation for the 3,517 SF of new structural/impervious coverage within the shoreline structure setback/SCVA and wetland and steep slope critical area buffers/setbacks, as well as for 455 SF of overwater impacts associated with the construction of a new dock. Of this total, 455 SF of the total mitigation area will account for overwater impacts, while the remaining 4,339 SF will account for upland impacts.

Upland impacts on-site occur within an overlapping set of regulatory buffers/setbacks. As such, mitigation planting areas serving as mitigation for upland impacts may fulfill mitigation requirements for wetland buffers, steep slope setbacks, and the shoreline setback/SVCA, concurrently.

5.4.1 Critical Area Mitigation

A mitigation ratio of one-to-one is required for impacts to wetland buffers [LUC 20.25H.105(C)(3)]. As discussed in Section 5.3.1, net impacts to the wetland buffer total 3,251 SF. A total of 4,069 SF of mitigation planting is proposed within the wetland buffer. A portion of this total area (455 SF) serves as mitigation for the proposed overwater impacts to Lake Sammamish (discussed in Section 5.3.2). As such, the remaining 3,614 SF of mitigation area within the wetland buffer serves to compensate for 3,251 SF of new impacts to the wetland buffer, exceeding the required mitigation ratio of one-to-one.

Additionally, a total of 2,053 SF of the proposed mitigation planting will occur within the standard steep slope setback, to compensate for 854 SF of impacts to the setback associated with the proposed redevelopment. In addition to the plantings which will occur directly within the setback, the remainder of the sitewide mitigation plantings will serve to enhance the habitat connectivity and functional value of the steep slope itself.

Overall, proposed mitigation measures will result in no net loss of critical area functions.

5.4.2 Shoreline Mitigation

As mitigation for shoreline impacts summarized in Table 2, a total of 1,232.9 shoreline credits are proposed. Shoreline credits will include the planting of native vegetation adjacent to the shoreline (0-10 feet from the OHWM) as well as slightly further landward (10-25 and 25-50 feet from the OHWM). Plantings will include native trees, shrubs, and groundcover. Shoreline credits are summarized in Table 3 below.

Table 3. Shoreline Credit Calculations

Proposed Land Cover Types	Area (SF)	Existing Value	Final Value	Change in Land Cover Value	Total Credit
Native vegetation, 25-50 from OHWM (from lawn)	531	0.1	0.6	0.5	265.5
Native vegetation, 25-50 feet from OHWM (from impervious)	128	0.0	0.6	0.6	76.8
Native vegetation, 25-50 feet from OHWM (from non-native)	255	0.25	0.6	0.35	89.2
Native vegetation, 0-25 feet from OHWM (from non-native)	1,030	0.25	0.8	0.55	566.5
Native vegetation, 0-25 from OHWM (from lawn)	187	0.1	0.8	0.7	130.9

Native vegetation, 0-25 feet from OHWM (from impervious)	130	0.0	0.8	0.8	104
SUBTOTAL:	2,261			TOTAL:	**1,232.9**
Native overhanging vegetation, 0-10 feet from the OWHM (pursuant to LUC 20.25E.065.F.8.c.iv)	75	---	---	---	---
GRAND TOTAL:	2,336				

Proposed shoreline credits, totaling 1,232.9, account for necessary mitigation to offset proposed impacts of 102.6 debits, pursuant to LUC 20.25E.065(F)(8)(c). Corresponding planting area within the shoreline structure setback/SVCA equates to 2,261 SF. An additional 75 SF of plantings will also occur within 0-10 feet of the OHWM, pursuant to LUC 20.25E.065(F)(8)(c)(iv). Proposed plantings will comply with the standards of LUC 20.25E.065(F)(8)(g).

In accordance with LUC 20.25E.065(F)(8)(c)(iii), a total of nine (9) replacement trees are proposed within shoreline jurisdiction to mitigate for the removal of two (2) significant trees within the 50-foot SVCA. Pursuant to LUC 20.25E.065(F)(8)(b), three (3) of the proposed replacement trees will be located within 50-feet of the OHWM to compensate for the removal of one (1) significant tree within 25-feet of the OHWM.

As mitigation for the development of a new 455 square foot dock, an additional 455 SF of mitigation planting is proposed on the subject property, pursuant to LUC 20.25E.060(D)(4), to enhance existing shoreline functions and values.

Overall, proposed mitigation measures will result in no net loss of shoreline ecological functions.

5.5 Critical Area Functional Lift Analysis

The proposed project, with incorporation of mitigation activities, will improve the functions of on-site critical areas. A qualitative analysis of the change in critical area functions is provided below. This analysis pertains to critical area/buffer/setback impacts only; shoreline specific mitigation compliance is discussed in the preceding section.

5.5.1 Water Quality, Hydrology, and Slope Stability

Existing Conditions. Existing vegetation within critical area buffer/setback areas is variable. The steep slope to the west of NE Rosemont Place is characterized by a robust canopy of native trees, with an understory of invasive English ivy. Near the residence there are large areas of mown lawn, bare ground, ornamental landscaping beds, and a number of large trees. To the east of the retaining wall is a mix of native and invasive herbaceous vegetation along the

shoreline of the lake, including horsetail, reed canarygrass, and bulrush. Functions currently provided by vegetation on-site include rain and surface water interception and transpiration. Vegetation also improves soil quality, which generally improves water infiltration into the soil. Vegetation on slopes aids in slope stability. However, shallow rooted, invasive plants (i.e., English ivy) provide limited slope stabilization functions. English ivy impairs slope stability functions by destabilizing trees growing on slopes.

Proposed Conditions. Redevelop the site with a modern residence in accordance with geotechnical recommendations and stormwater regulations. Replace areas of lawn, bare ground, invasive species, and ornamental landscaping with native trees, shrubs, and groundcovers throughout the site. Vegetation on the steep slope is retained.

Net Result. Slope stability is maintained and water quality and hydrology functions are improved, resulting in an overall net benefit to these functions on-site. New native plantings will have deeper root systems than the current areas of ornamental landscaping, lawn, and bare ground, reducing erosion potential and increasing soil stability. Additional rigid vegetation on-site will slow surface water flowing toward the wetland and shoreline.

5.5.2 Habitat

Existing Conditions. Existing vegetation within shoreline and critical area buffer/setback areas is variable. The steep slope to the west of NE Rosemont Place is characterized by a robust canopy of native trees, with an understory of invasive English ivy. Near the residence there are large areas of mown lawn, bare ground, ornamental landscaping beds, and a number of large trees. To the east of the retaining wall is a mix of native and invasive herbaceous vegetation along the shoreline of the lake, including horsetail, reed canarygrass, and bulrush. The existing vegetation assemblage, although largely disconnected from larger areas of vegetation, provides some habitat value to urban wildlife.

Proposed Conditions. Redevelop the site with a modern residence in accordance with geotechnical recommendations and stormwater regulations. Replace areas of lawn, bare ground, invasive species, and ornamental landscaping with native trees, shrubs, and groundcovers throughout the site. Vegetation on the steep slope is retained.

Net Result. Decrease in the quantity of vegetated areas available to provide wildlife habitat. Increase the habitat functions of retained vegetated areas, thereby improving habitat quality. Alteration of foraging, perching, and nesting opportunities for wildlife through tree removal and native plant installation. New native trees, shrubs and groundcover will be installed. Overall, the quality of habitat will be increased by replacing lawn, bare ground, invasive species, and ornamental landscaping with a dense and diverse native plant assemblage

appropriate to the eco-region and growing conditions on-site. New plantings will provide food, cover, and nesting opportunities for wildlife.

6. Critical Areas Report Criteria

As previously mentioned, critical areas and their associated buffers/setbacks, may be modified pursuant to LUC 20.25H.230. The Director may approve modifications if it can be shown that, through restoration, the modification will result in equivalent or better protection of critical area functions and values. The existing project site contains areas of low-functioning critical area buffers/setbacks.

Per the LUC, the critical areas report must meet specific decision criteria in order for the Director to approve a proposal to modify the regulated wetland and steep slope critical area buffers/setbacks. Compliance with the relevant critical areas report criteria is addressed below.

LUC 20.25H.250(B) – Minimum Report Requirements

1. *Identification and classification of all critical areas and critical area buffers on the site;*
2. *Identification and characterization of all critical areas and critical area buffers on those properties immediately adjacent to the site;*

Critical areas and buffers located on or adjacent to the subject property are described in Sections 3 and 4, respectively.

3. *Identification of each regulation or standard of this code proposed to be modified;*

The subject site contains a Category II lake-fringe wetland, as defined by LUC 20.25H.095(A), and one area of steep slope, as defined by LUC 20.25H.120(A)(2). Pursuant to LUC 20.25H.095(D)(1)(a)(i), a 110-foot buffer is required for Category II wetlands with a habitat score of five to seven. Pursuant to LUC 20.25H.120(B)(1)(b) and 20.25H.120(C)(2)(b), a 50-foot top-of-slope buffer and 75-foot toe-of-slope setback are required. The applicant proposes to demolish the existing residence and redevelop a new modern residence within portions of the wetland and steep slope critical area buffer/setback areas. Reconfigured paved areas and hardscapes will also occur within these areas.

3. *A habitat assessment consistent with the requirements of LUC 20.25H.165;*

Habitat is assessed in Section 3.3. Referenced requirements are addressed below under the Habitat Assessment subsection.

4. *An assessment of the probable cumulative impacts to critical areas resulting from development of the site and the proposed development;*

Cumulative impacts are discussed in Section 5.3.1.3.

5. *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;*
    b. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development; and*
    c. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through the modifications and performance standards included in the proposal over the anticipated life of the proposed development;*

Discussion of current critical area functions is provided in Section 3. Critical area functions and values expected through application of standard regulations is provided in Section 4.1.1. The anticipated improvement of functions is provided in the functional lift evaluation in Section 5.5.

6. *A discussion of the performance standards applicable to the critical area and proposed activity pursuant to LUC 20.25H.160, and recommendation for additional or modified performance standards, if any;*

No species of local importance have been determined to have a primary association with the habitat available on the property, therefore additional performance standards (WDFW recommendations) do not apply. No additional or modified performance standards are proposed.

7. *A discussion of the mitigation requirements applicable to the proposal pursuant to LUC 20.25H.210, and a recommendation for additional or modified mitigation, if any; and*

A mitigation plan has been developed to meet the requirements of the LUC. No additional or modified mitigation is proposed.

8. *Any additional information required for the specific critical area as specified in the sections of this part addressing that critical area.*

None at this time.

LUC 20.25H.165(A) – Habitat Assessment

1. *Detailed description of vegetation and habitat on and adjacent to the site;*

See Section 3.3.

2. *Identification of any species of local importance that have a primary association with habitat on or adjacent to the site and assessment of potential project impacts to the use of the site by the species;*

No species of local importance have a primary association with on-site habitat. See Sections 3.5 and 4.2.

3. *A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the site;*

Since no species have a primary association, special management recommendations do not apply.

4. *A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts to water quality;*

See Section 5.3.

5. *A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed use or activity and to be conducted in accordance with the mitigation sequence set forth in LUC 20.25H.215; and*

Mitigation sequencing is demonstrated in Section 5.2.

6. *A discussion of ongoing management practices that will protect habitat after the site has been developed, including proposed monitoring and maintenance programs.*

A mitigation plan has been developed, described in Section 5.4, and included as Appendix A, which includes five years of mitigation site monitoring and maintenance.

LUC 20.25H.255 – Critical areas report – Decision criteria

To allow a critical area, buffer, or setback modification through an approved critical areas report, the Director must also find compliance with the decision criteria established in LUC 20.25H.255(A) and (B). Compliance with the relevant sections listed in LUC 20.25H.255(A) and (B) is addressed below.

A. General.

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.*

See functional lift analysis in Section 5.5.

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

The mitigation plan specifies appropriate species for planting and planting techniques, describes proper maintenance activities, and sets forth performance standards to be met yearly during monitoring to ensure that restoration plantings will be maintained, monitored, and successfully established within the first five years following implementation. Furthermore, to ensure that the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, if required, the applicant will post an Installation Assurance Device and a Maintenance Assurance Device prior to building permit issuance.

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.*

Proposed mitigation will improve the functions of on-site critical areas and buffers/setbacks. Mitigation activities will have positive effects on nearby off-site areas as well by replacing invasive species and low-functioning areas of lawn and ornamental landscaping with native trees, shrubs, and groundcover, which will improve habitat, water quality, hydrology, and slope stability functions.

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

The proposed structure is compatible with adjacent properties and surrounding development within the same land use district. Adjacent properties include residential land uses.

B. *Decision Criteria – Proposals to Reduce Regulation Critical Area Buffer*

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 mitigation plan is included as Appendix A and a functional lift analysis is provided in Section 5.5.

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.*

See functional lift analysis in Section 5.5.

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

See functional lift analysis in Section 5.5.

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

The mitigation plan specifies appropriate species for planting and planting techniques, describes proper maintenance activities, and sets forth performance standards to be met yearly during monitoring to ensure that restoration plantings will be maintained, monitored, and successfully established within the first five years following implementation. Furthermore, to ensure that the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, if required, the applicant will post an Installation Assurance Device and a Maintenance Assurance Device prior to building permit issuance.

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*

Proposed mitigation will improve the functions of on-site critical areas and buffers/setbacks. Mitigation activities will have positive effects on nearby off-site areas as well by replacing invasive species and low-functioning areas of lawn and ornamental landscaping with native trees, shrubs, and groundcover, which will improve habitat, water quality, hydrology, and slope stability functions.

6. *The resulting development is compatible with other uses and development in the same land use district. (Ord. 5680, 6-26-06, § 3)*

The proposed residence is compatible with adjacent properties and surrounding development within the same land use district. Adjacent properties include single-family residences of a similar scale and character.

Additional LUC 20.25H Criteria

Additional decision criteria related to geologic hazard areas is concurrently being addressed by Geotechnical Consultants, Inc. in their geotechnical report, including the following sections:

- LUC 20.30P.140 – Critical areas report – Additional provisions for landslide hazards and steep slopes
- LUC 20.25H.125 – Performance standards – Landslide hazards and steep slopes
- LUC 20.25H.145 – Critical areas report – Approval of modification

7. Summary

Redevelopment is proposed on a property entirely encumbered by wetland and steep slope critical areas and associated buffers/setbacks, as well as a shoreline structure setback and SVCA. The existing residence on the parcel will be removed and replaced with a modern residence. The driveway and other paved areas on-site will be re-configured, and a new dock will be constructed. Proposed activities will result in new permanent impacts to critical areas, buffers, setbacks, as well as the shoreline structure setback and SVCA.

Impacts to the shoreline structure setback and SVCA will be fully compensated for through the installation of native plantings adjacent to the shoreline. This approach is consistent with the criteria of the City's shoreline master program and will result in no net loss of shoreline ecological functions.

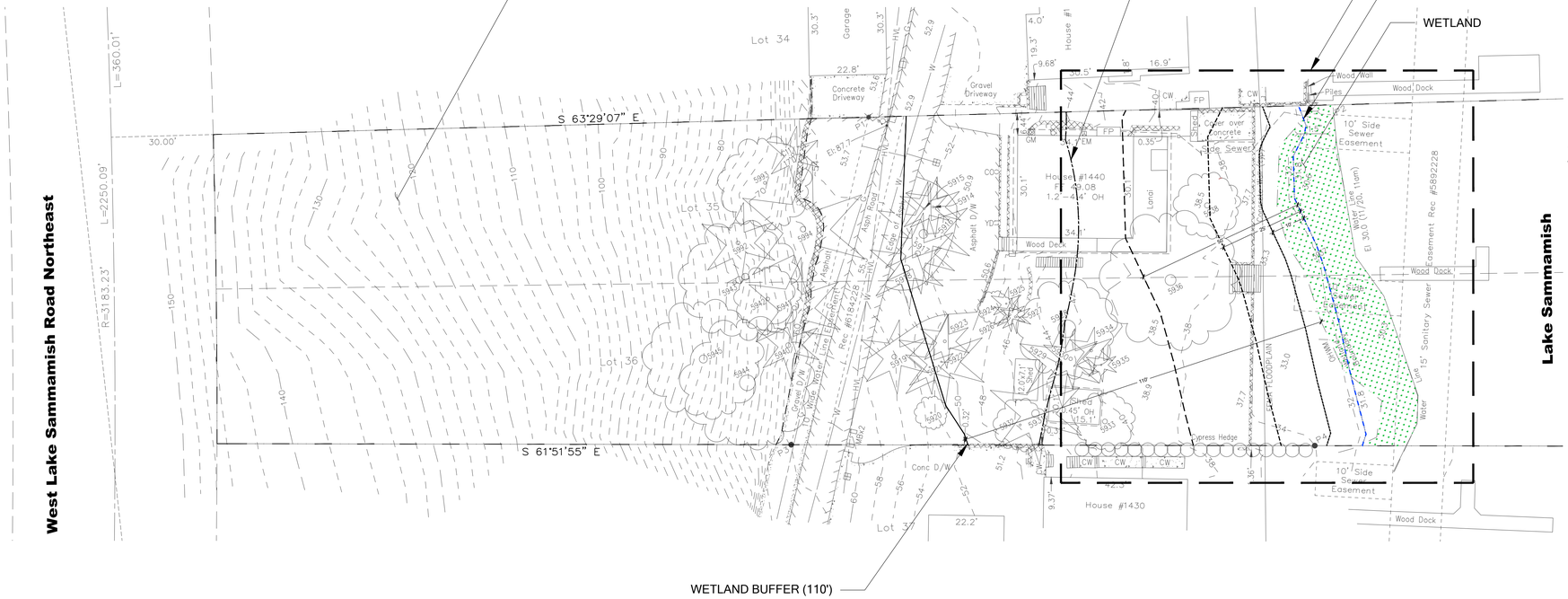
As mitigation for proposed impacts to shoreline and critical area buffers and setbacks, a significant portion of the site will be enhanced with native vegetation. This approach follows the City's critical areas report process, as described within this document. The proposed planting plan complies with shoreline vegetation conservation regulations and results in better protection of critical area functions and values than would be provided by the standard application of the wetland and geologic hazard area regulations. No loss of shoreline or critical area ecological function is expected as a result of proposed actions. Overall a net gain in shoreline and critical area buffer/setback functions and values is proposed both on- and off-site.

References

Johnson, D.H. and T.A. O'Neil. 2001. Wildlife-Habitat Relations in Oregon and Washington. Oregon State University Press. Corvallis, OR.

Appendix A

MITIGATION PLAN



VICINITY MAPS

LEGEND

- PROPERTY LINE
- WETLAND
- WETLAND BUFFER (110')
- SHORELINE OHWM (31.8' NAVD 88 PER LUC 20.25E.050.B2)
- 10' FROM OHWM
- INNER SHORELINE SETBACK (25' FROM OHWM)
- SHORELINE SETBACK/SVCA (50' FROM OHWM)
- STEEP SLOPE - TOE OF SLOPE
- STEEP SLOPE SETBACK (75' FROM TOE OF SLOPE)

SHEET INDEX

NOTES

1. CRITICAL AREAS DELINEATED BY WETLAND RESOURCES, INC. ON NOVEMBER 19, 2018. DELINEATION CONFIRMED BY THE WATERSHED COMPANY ON MAY 19, 2019.
2. SURVEY DATED 01/04/19, BY EMERALD LAND SURVEYING, INC. RECEIVED FROM BUILD LLC.

EXISTING CONDITIONS

SCALE 1:20

0' 10' 20' 40' 80'

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland WA 98033

p 425.822.5242
www.watershedco.com

Science & Design

NEIL MITIGATION PLAN

BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02-11-20	CALUP	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W1 OF 7

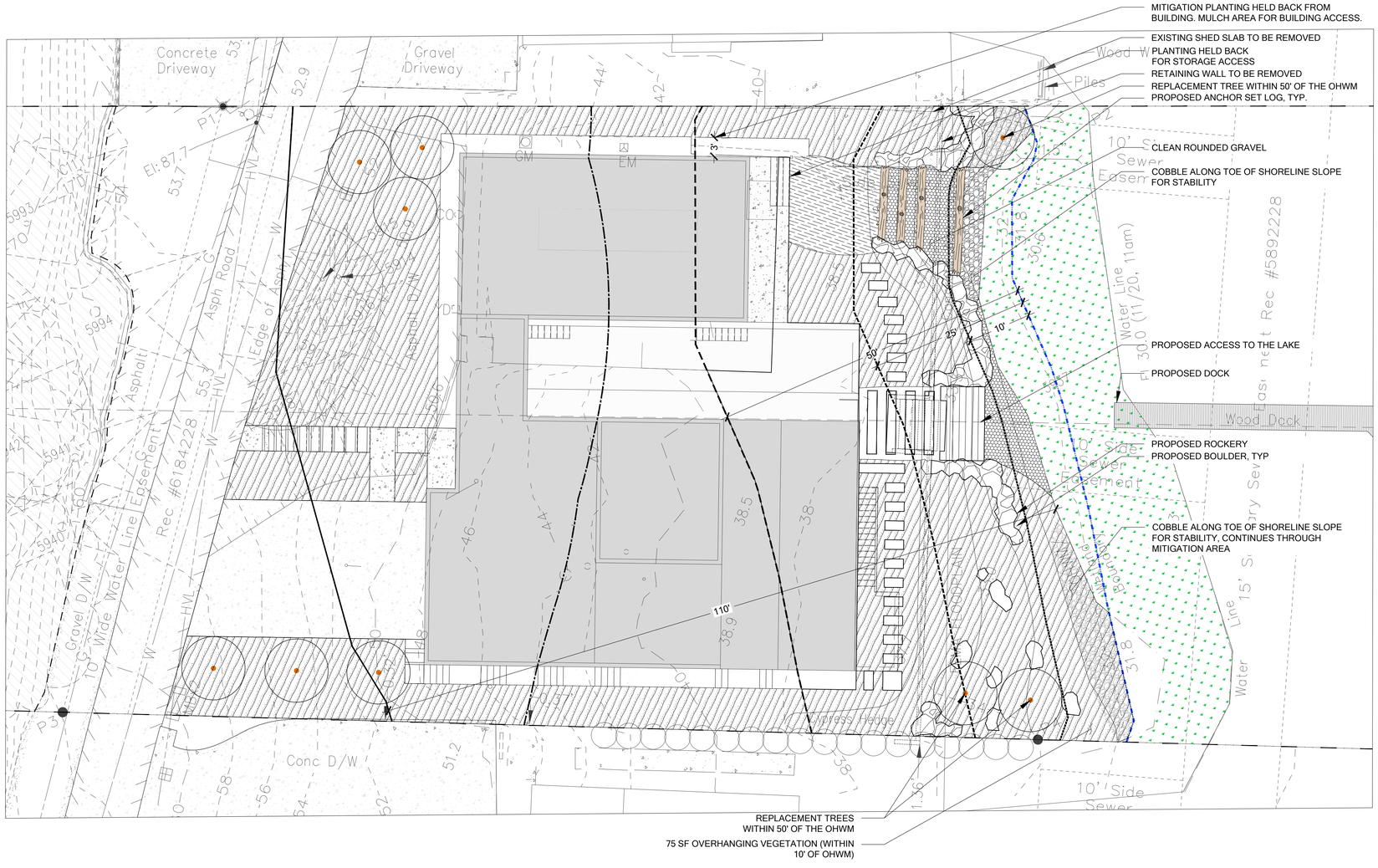
FILENAME
PRINTED BY
DATE

IMPACTS

1. TOTAL SITE AREA WITHIN 110' WETLAND BUFFER = 6,205 SF (3,251 SF OF NEW IMPACTS)
2. TOTAL SITE AREA WITHIN STEEP SLOPE, 75' TOE OF SLOP SETBACK = 2,661 SF (854 SF OF NEW IMPACTS)

LEGEND

- PROPERTY LINE
- WETLAND
- WETLAND BUFFER (110')
- SHORELINE OHWM (SURVEYED)
- 10' FROM OHWM
- INNER SHORELINE SETBACK (25' FROM OHWM)
- SHORELINE SETBACK/SVCA (50' FROM OHWM)
- STEEP SLOPE - TOE OF SLOPE
- STEEP SLOPE SETBACK (75' FROM TOE OF SLOPE)
- PROPOSED MITIGATION PLANTING AREA
  - 4,069 SF WITHIN WETLAND BUFFER
  - 2,053 SF WITHIN SLOPE SETBACK



PROPOSED SITE PLAN AND IMPACTS ANALYSIS

SCALE 1:10

0' 5' 10' 20' 40'

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

NEIL MITIGATION PLAN

BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

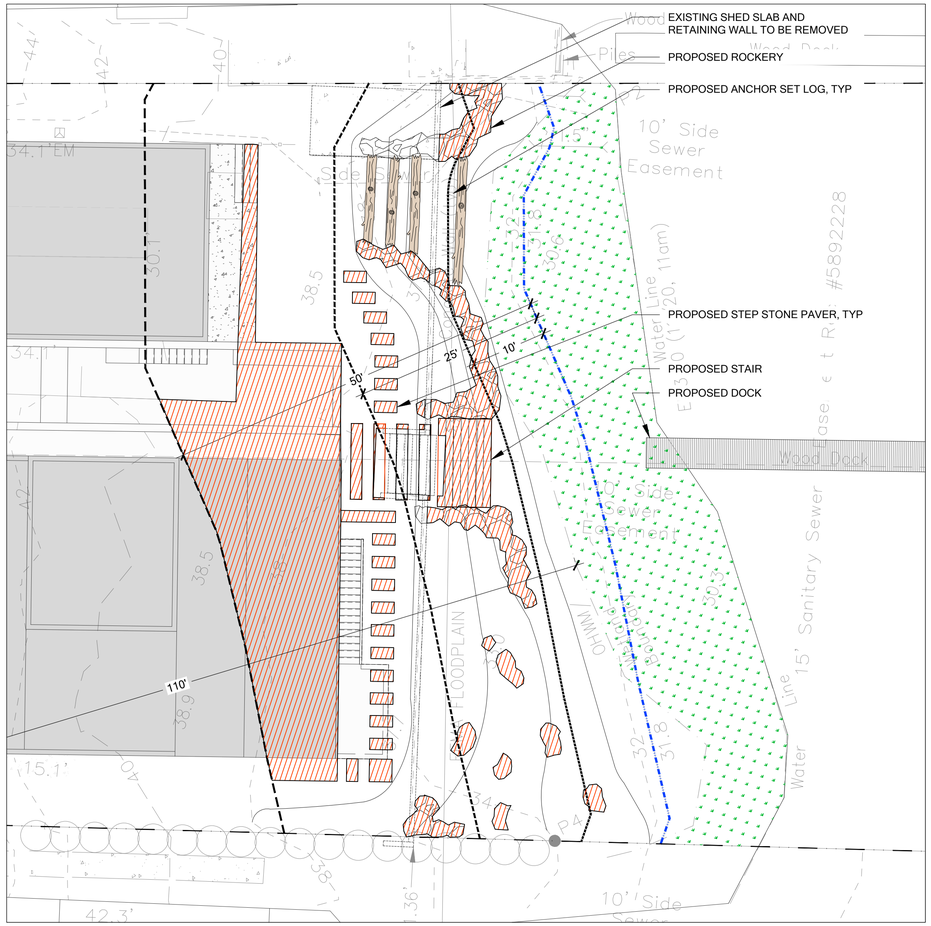
SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02-11-20	CALUP	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

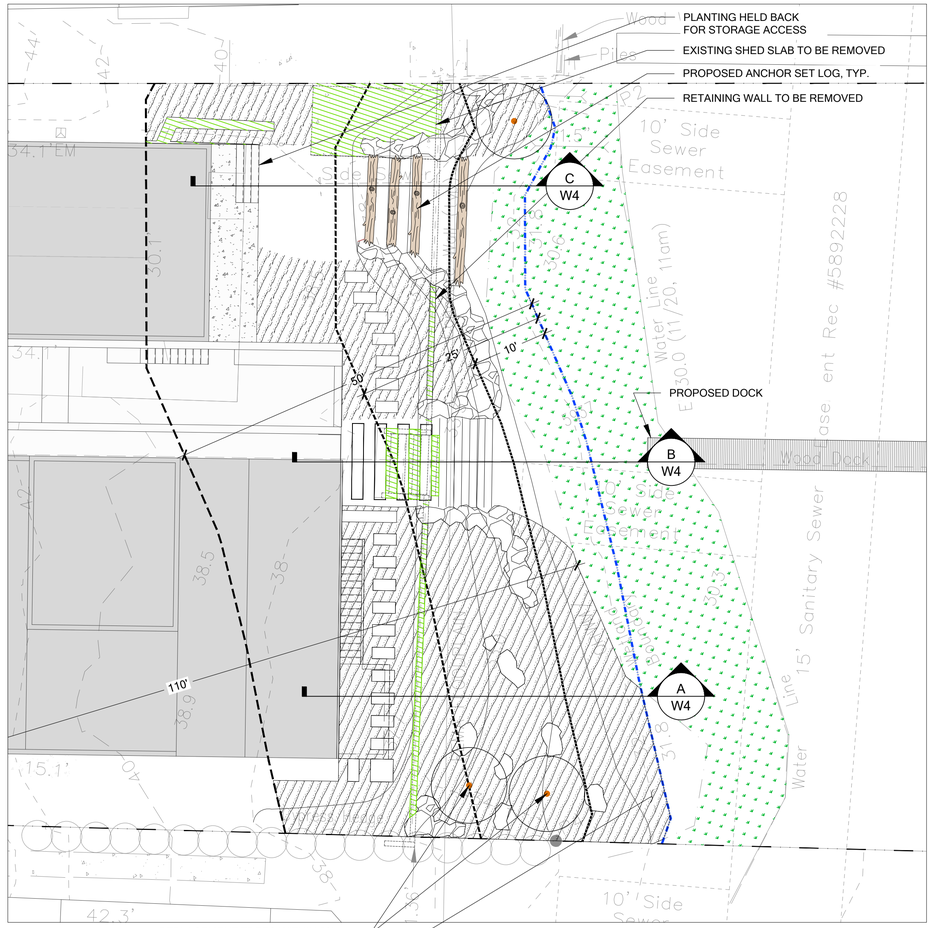
PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W2 OF 7

FILENAME
PRINTED BY
DATE



SHORELINE IMPACTS (DEBITS) INSET PLAN

SCALE 1:10



SHORELINE MITIGATION (CREDITS) INSET PLAN

SCALE 1:10

LEGEND

- PROPERTY LINE
- WETLAND
- SHORELINE OHWM
- 10' FROM OHWM
- INNER SHORELINE SETBACK (25' FROM OHWM)
- SHORELINE SETBACK/SVCA (50' FROM OHWM)
- PROPOSED CHANGE:
  - NON NATIVE/LAWN TO IMPERVIOUS

SHORELINE CREDIT CALCULATIONS

Proposed Land Cover Types	Area (SF)	Existing Value	Final Value	Change in Land Cover Value	Total Credit
Native vegetation, 25-50 from OHWM (from lawn)	531	0.1	0.6	0.5	265.5
Native vegetation, 25-50 feet from OHWM (from impervious)	128	0.0	0.6	0.6	76.8
Native vegetation, 25-50 feet from OHWM (from non-native)	255	0.25	0.6	0.35	89.2
Native vegetation, 0-25 feet from OHWM (from non-native)	1,030	0.25	0.8	0.55	566.5
Native vegetation, 0-25 from OHWM (from lawn)	187	0.1	0.8	0.7	130.9
Native vegetation, 0-25 feet from OHWM (from impervious)	130	0.0	0.8	0.8	104
SUBTOTAL:	2,261			TOTAL:	**1,232.9**
Native overhanging vegetation, 0-10 feet from the OWHM (pursuant to LUC 20.25E.065.F.8.c.iv)	75	---	---	---	---
GRAND TOTAL:	2,336				

LEGEND

- PROPERTY LINE
- WETLAND
- SHORELINE OHWM
- 10' FROM OHWM
- INNER SHORELINE SETBACK (25' FROM OHWM)
- SHORELINE SETBACK/SVCA (50' FROM OHWM)
- PROPOSED MITIGATION:
  - IMPERVIOUS TO NATIVE PLANTING
  - NONNATIVE/LAWN TO NATIVE PLANTING

SHORELINE IMPACTS AND MITIGATION PLAN

SCALE 1:10

0' 5' 10' 20' 40'

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

NEIL MITIGATION PLAN
BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

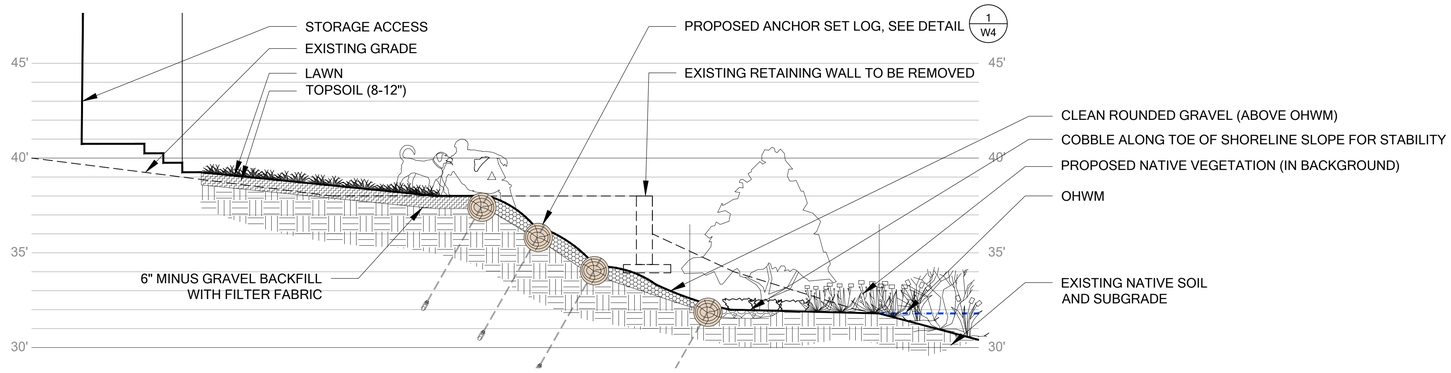
SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02-11-20	CALUP	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

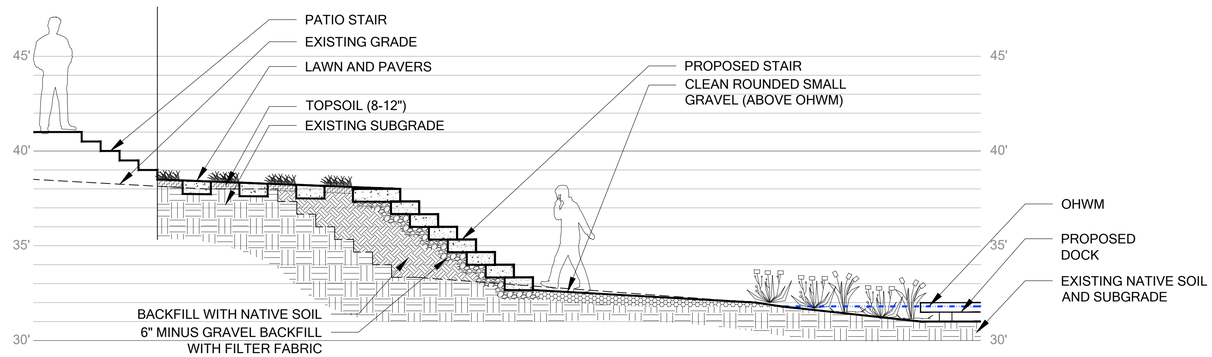
PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W3 OF 7

FILENAME
PRINTED BY
DATE



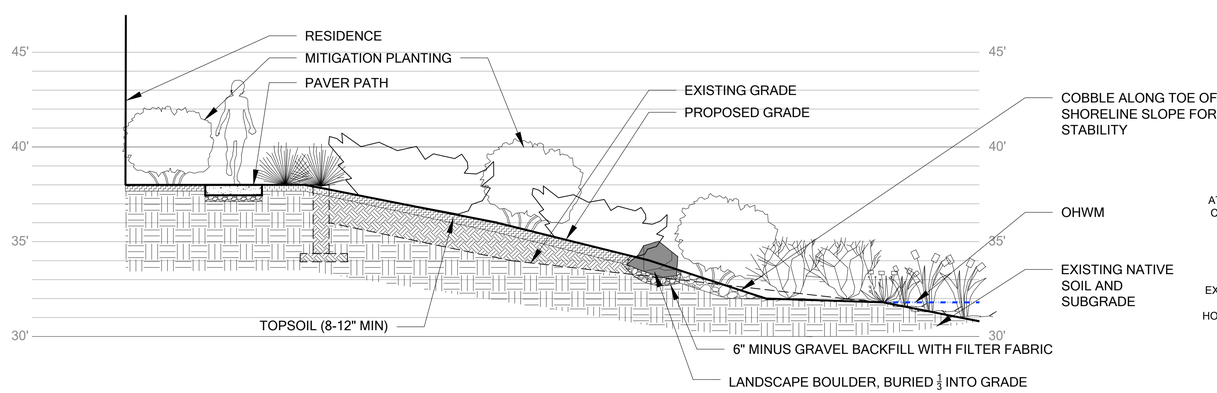
C SHORELINE SECTION

SCALE 1/4" = 1'-0"



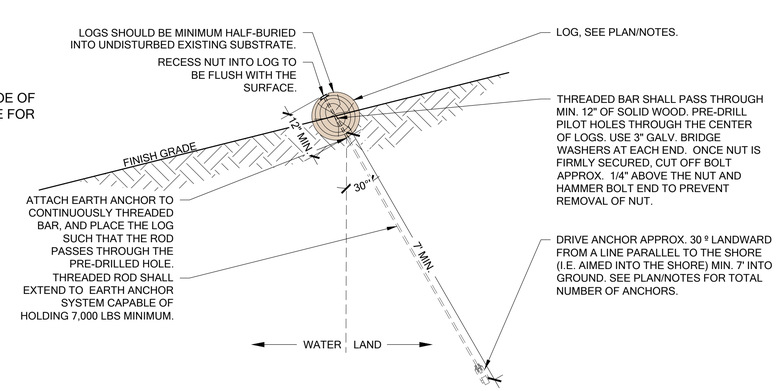
B SHORELINE SECTION

SCALE 1/4" = 1'-0"



A SHORELINE SECTION

SCALE 1/4" = 1'-0"



1 LOG ANCHORING DETAIL

SCALE: NTS

SHORELINE SECTIONS AND DETAILS

SCALE AS SHOWN

0' 2' 4' 8' 16'

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

NEIL MITIGATION PLAN
BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

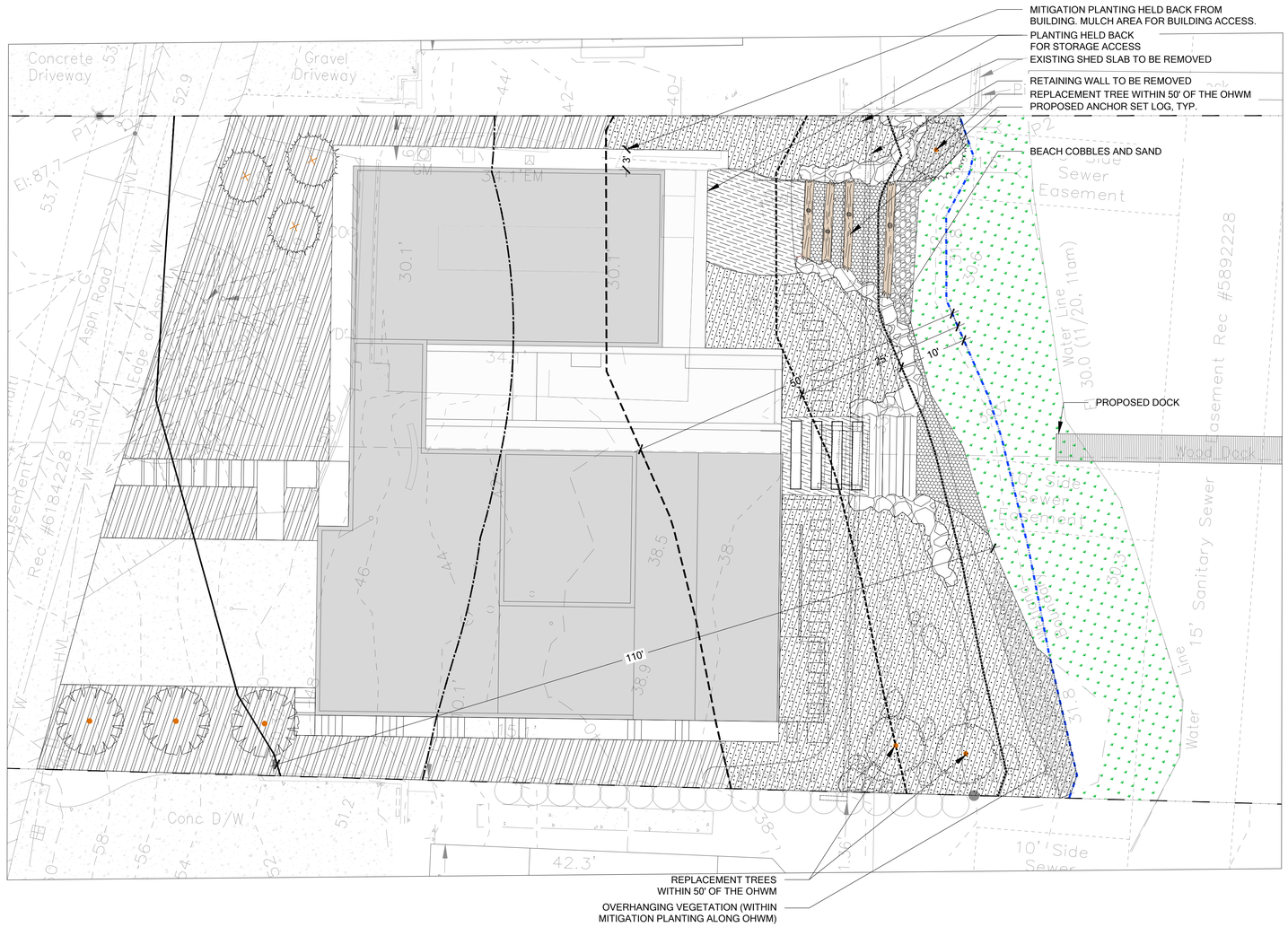
SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02-11-20	CALUP	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W4 OF 7

FILENAME
PRINTED BY
DATE



PLANTING PLAN AND SCHEDULE

SCALE 1:10

LEGEND

- PROPERTY LINE
- WETLAND
- WETLAND BUFFER (110')
- SHORELINE OHWM
- 10' FROM OHWM
- INNER SHORELINE SETBACK (25' FROM OHWM)
- SHORELINE SETBACK/SVCA (50' FROM OHWM)
- STEEP SLOPE - TOE OF SLOPE
- STEEP SLOPE SETBACK (75' FROM TOE OF SLOPE)

PLANT SCHEDULE

TREES	COMMON / BOTANICAL NAME	QTY	SIZE	SPACING
	SITKA SPRUCE / PICEA SITCHENSIS	3	2 GALLON	PER PLAN
	SHORE PINE / PINUS CONTORTA	1	2 GALLON	PER PLAN
	DOUGLAS FIR / PSEUDOTSUGA MENZIESII	3	2 GALLON	PER PLAN
	WESTERN RED CEDAR / THUJA PLICATA	2	2 GALLON	PER PLAN
	LAWN	291 SF		
	SHORELINE SHRUBS			
	SERVICEBERRY / AMELANCHIER ALNIFOLIA	21	1 GALLON	48" OC
	RED-OSIER DOGWOOD / CORNUS SERICEA	21	1 GALLON	48" OC
	BLACK TWINBERRY / LONICERA INVOLUCRATA	21	1 GALLON	48" OC
	SWEET GALE / MYRICA GALE	21	1 GALLON	48" OC
	MOCK ORANGE / PHILADELPHUS LEWISII	22	1 GALLON	48" OC
	PACIFIC NINEBARK / PHYSOCARPUS CAPITATUS	22	1 GALLON	48" OC
	RED-FLOWERING CURRANT / RIBES SANGUINEUM	22	1 GALLON	48" OC
	SUBALPINE SPIREA / SPIRAEA DENSIFLORA	22	1 GALLON	48" OC
	UPLAND SHRUBS			
	SERVICEBERRY / AMELANCHIER ALNIFOLIA	26	1 GALLON	48" OC
	MOCK ORANGE / PHILADELPHUS LEWISII	25	1 GALLON	48" OC
	PACIFIC NINEBARK / PHYSOCARPUS CAPITATUS	25	1 GALLON	48" OC
	RED-FLOWERING CURRANT / RIBES SANGUINEUM	25	1 GALLON	48" OC
	CLUSTERED WILD ROSE / ROSA PISOCARPA	25	1 GALLON	48" OC
	SNOWBERRY / SYMPHORICARPOS ALBUS	25	1 GALLON	48" OC
	EVERGREEN HUCKLEBERRY / VACCINIUM OVATUM	25	1 GALLON	48" OC
	SHORELINE GROUNDCOVERS			
	NODDING ONION / ALLIUM CERNUUM	47	1 GALLON	24" OC
	WESTERN COLUMBINE / AQUILEGIA FORMOSA	47	1 GALLON	24" OC
	LADY FERN / ATHYRIUM FILIX-FEMINA	47	1 GALLON	24" OC
	WESTERN LARKSPUR / DELPHINIUM MENZIESII	47	1 GALLON	24" OC
	TUFTED HAIRGRASS / DESCHAMPSIA CESPITOSA	47	1 GALLON	24" OC
	ROEMER'S FESCUE / FESTUCA IDAHOENSIS	47	1 GALLON	24" OC
	BEACH STRAWBERRY / FRAGARIA CHILOENSIS	47	4" POT	15" OC
	OREGON IRIS / IRIS TENAX	47	1 GALLON	24" OC
	DWARF CHECKERBLOOM / SIDALCEA MALVIFLORA	45	1 GALLON	24" OC
	BLUE-EYED GRASS / SISYRINCHIUM IDAHOENSE	45	4" POT	15" OC
	YELLOW-EYED GRASS / SISYRINCHIUM CALIFORNICUM	45	4" POT	15" OC
	UPLAND GROUNDCOVERS			
	KINNIKINNICK / ARCTOSTAPHYLOS UVA-URSI	43	1 GALLON	24" OC
	DEER FERN / BLECHNUM SPICANT	43	1 GALLON	24" OC
	TUFTED HAIR GRASS / DESCHAMPSIA CESPITOSA	43	1 GALLON	24" OC
	BLEEDING HEART / DICENTRA FORMOSA	43	1 GALLON	24" OC
	WOODLAND STRAWBERRY / FRAGARIA VESCA	43	1 GALLON	24" OC
	SALAL / GAULTHERIA SHALLON	43	1 GALLON	24" OC
	TIGER LILY / LILIUM COLUMBIANUM	44	4" POT	15" OC
	BIGLEAF LUPINE / LUPINUS POLYPHYLLUS	44	1 GALLON	24" OC
	LOW OREGON-GRAPE / MAHONIA NERVOSA	44	1 GALLON	24" OC
	WOOD SORREL / OXALIS OREGANA	44	4" POT	15" OC
	SWORD FERN / POLYSTICHUM MUNITUM	44	1 GALLON	24" OC
	MEADOW CHECKERBLOOM / SIDALCEA CAMPESTRIS	44	1 GALLON	24" OC

0' 5' 10' 20' 40'

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

NEIL MITIGATION PLAN
BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02-11-20	CALUP	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W5 OF 7

FILENAME
PRINTED BY
DATE

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 2018 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS
1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION
1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS
1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES
1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES
1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS
1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

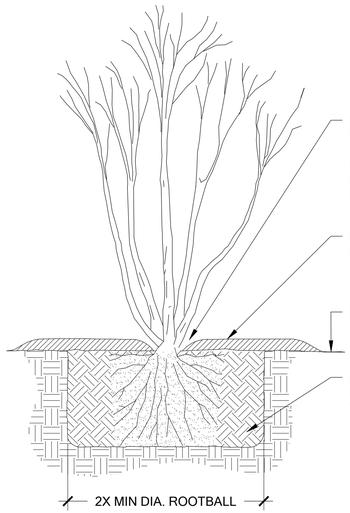
REPLACEMENT
1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT
1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.



NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
3. SOAK PLANTING PIT AFTER PLANTING

REMOVE FROM POT OR BURLAP & ROUGH-UP ROOT BALL BEFORE INSTALLING. UNTANGLE AND STRAIGHTEN CIRCLING ROOTS - PRUNE IF NECESSARY. IF PLANT IS EXCEPTIONALLY ROOT-BOUND, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE

SPECIFIED MULCH LAYER. HOLD BACK MULCH FROM TRUNK/STEMS

FINISH GRADE

REMOVE DEBRIS AND LARGE ROCKS FROM PLANTING PIT AND SCARIFY SIDES AND BASE. BACKFILL WITH SPECIFIED SOIL. FIRM UP SOIL AROUND PLANT.

1 CONTAINER PLANTING DETAIL

Scale: NTS

PLANTING SPECIFICATIONS AND DETAILS

SCALE AS NOTED

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

NEIL MITIGATION PLAN
BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02-11-20	CALUP	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W6 OF 7

FILENAME
PRINTED BY
DATE

MITIGATION PLAN NOTES

THE PROPOSED MITIGATION PLAN SEEKS TO ENHANCE PORTIONS OF THE ON-SITE CRITICAL AREA BUFFERS SHORELINE SETBACK IN ACCORDANCE WITH BELLEVUE LAND USE CODE CHAPTER 20.25E.060.D - MITIGATION REQUIREMENTS AND SEQUENCING. PURSUANT TO LUC 20.25E.065.F.8.C.IV, 75 SQUARE FEET OF NATIVE VEGETATION WILL BE PLANTED WITHIN 0-10 FEET OF THE OHWM. TO FULFILL THE REQUIREMENTS OF SHORELINE MITIGATION OUTLINED IN LUC 20.25E.065.F.8.C, 2,336 SQUARE FEET OF NATIVE PLANTINGS WILL BE ESTABLISHED WITHIN THE 50' SHORELINE SETBACK. SITEWIDE MITIGATION AREA EQUALS 4,794 SQUARE FEET. SPECIES INCORPORATED IN THE NATIVE PLANT PLAN INCLUDE (NOT LIMITED TO): SHORE PINE, DOUGLAS FIR, SALIX LUCIDA, PHYSOCARPUS CAPITATUS, VACCINIUM OVATUM, POLYSTICHUM MUNITUM, AND ARCTOSTAPHYLOS UVA-URSI.

MAINTENANCE AND MONITORING PLAN

THE SITE SHALL BE MAINTAINED AND MONITORED FOR FIVE YEARS FOLLOWING SUCCESSFUL INSTALLATION. COMPONENTS OF THE 5-YEAR MAINTENANCE AND MONITORING PLAN ARE DETAILED BELOW.

GOALS:

1. ESTABLISH DENSE NATIVE VEGETATION THAT IS APPROPRIATE TO THE ECO-REGION AND SITE.
2. LIMIT INVASIVE AND/OR NOXIOUS WEED COVER ON-SITE.
3. INCREASE OVERHANGING NATIVE VEGETATION ON LAKE SAMMAMISH.
4. PROVIDE PERCHING, NESTING AND FORAGING HABITAT FOR NATIVE BIRDS.

PERFORMANCE STANDARDS

THE STANDARDS LISTED BELOW WILL BE USED TO JUDGE THE SUCCESS OF THE INSTALLATION OVER TIME. IF PERFORMANCE STANDARDS ARE MET AT THE END OF YEAR 5, THE SITE WILL THEN BE DEEMED SUCCESSFUL AND THE PERFORMANCE SECURITY BOND WILL BE ELIGIBLE FOR RELEASE BY THE CITY OF BELLEVUE.

1. SURVIVAL:
   a. ACHIEVE 100% SURVIVAL OF INSTALLED PLANTS BY THE END OF YEAR 1. THIS STANDARD CAN BE MET THROUGH PLANT ESTABLISHMENT OR THROUGH REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   b. ACHIEVE 80% SURVIVAL OF ALL PLANTED TREES AND SHRUBS IN YEARS 2 THROUGH 5 AFTER PLANTING. THIS STANDARD CAN BE MET THROUGH PLANT ESTABLISHMENT OR THROUGH REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
2. NATIVE PLANT COVER:
   a. ACHIEVE OVERALL 80% AREA COVERAGE OF NATIVE VEGETATION BY YEAR 5.
   b. DEMONSTRATE A MINIMUM COMBINED 5-YEAR TREE AND SHRUB COVERAGE OF 60%.
   c. NATIVE, OVERHANGING VEGETATION (0-10 FEET FROM OHWM): PACIFIC WILLOW AND DOGWOOD SHALL COMPOSE AT LEAST 80% OF THE TOTAL PLANTED AREA BASED ON COVERAGE BY YEAR 5.
3. INVASIVE COVER: AERIAL COVER FOR ALL NON-NATIVE, INVASIVE AND NOXIOUS WEEDS WILL NOT EXCEED 10% AT ANY YEAR DURING THE MONITORING PERIOD. INVASIVE PLANTS INCLUDE BUT ARE NOT LIMITED TO HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS), CUT LEAF BLACKBERRY (RUBUS LACINIATUS) KNOTWEEDS (POLYGONUM CUSPIDATUM AND OTHERS), REED CANARY GRASS (PHALARIS ARUNDINACEA), CHERRY (HEDGE) LAUREL (PRUNUS LAUROCERASUS), ENGLISH HOLLY (ILEX AQUIFOLIUM), AND IVY SPECIES (HEDERA SPP.)

MONITORING METHODS

THIS MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE MITIGATION SITE OVER TIME AND TO MEASURE THE DEGREE TO WHICH THE SITE IS MEETING THE PERFORMANCE STANDARDS OUTLINED IN THE PRECEDING SECTION.

AN AS-BUILT PLAN WILL BE PREPARED BY THE RESTORATION PROFESSIONAL PRIOR TO THE BEGINNING OF THE MONITORING PERIOD. THE AS-BUILT PLAN WILL BE A MARK-UP OF THE PLANTING PLANS INCLUDED IN THIS PLAN SET. THE AS-BUILT PLAN WILL DOCUMENT ANY DEPARTURES IN PLANT PLACEMENT OR OTHER COMPONENTS FROM THE PROPOSED PLAN.

MONITORING WILL TAKE PLACE ONCE ANNUALLY IN THE FALL FOR FIVE YEARS. YEAR-1 MONITORING WILL COMMENCE IN THE FIRST FALL SUBSEQUENT TO INSTALLATION. THE FORMAL MONITORING VISIT SHALL RECORD AND REPORT THE FOLLOWING IN AN ANNUAL REPORT SUBMITTED TO THE CITY OF BELLEVUE:

1. VISUAL ASSESSMENT OF THE OVERALL SITE.
2. YEAR-1 COUNTS OF LIVE AND DEAD PLANTS BY SPECIES. YEAR-2 THROUGH YEAR-5 COUNTS OF ESTABLISHED NATIVE TREES AND SHRUBS BY SPECIES, TO THE EXTENT FEASIBLE.
3. COUNTS OF DEAD PLANTS WHERE MORTALITY IS SIGNIFICANT IN ANY MONITORING YEAR.
4. ESTIMATE OF NATIVE COVER IN THE MITIGATION AREA.
5. ESTIMATE OF NON-NATIVE, INVASIVE WEED COVER IN THE MITIGATION AREA.
6. TABULATION OF ESTABLISHED NATIVE SPECIES, INCLUDING BOTH PLANTED AND VOLUNTEER SPECIES
7. PHOTOGRAPHIC DOCUMENTATION FROM AT LEAST THREE FIXED REFERENCE POINTS.
8. ANY INTRUSIONS INTO OR CLEARING OF THE PLANTING AREAS, VANDALISM, OR OTHER ACTIONS THAT IMPAIR THE INTENDED FUNCTIONS OF THE MITIGATION AREA.
9. RECOMMENDATIONS FOR MAINTENANCE OR REPAIR OF ANY PORTION OF THE MITIGATION AREA.

MAINTENANCE

THE SITE WILL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FOR AT LEAST FIVE YEARS FOLLOWING COMPLETION OF CONSTRUCTION:

1. FOLLOW THE RECOMMENDATIONS NOTED IN THE PREVIOUS MONITORING SITE VISIT.
2. GENERAL WEEDING FOR ALL PLANTED AREAS:
   a. AT LEAST TWICE YEARLY, REMOVE ALL COMPETING WEEDS AND WEED ROOTS FROM BENEATH EACH INSTALLED PLANT AND ANY DESIRABLE VOLUNTEER VEGETATION TO A DISTANCE OF 18 INCHES FROM THE MAIN PLANT STEM. WEEDING SHOULD OCCUR AT LEAST TWICE DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY, LOWER PLANT REPLACEMENT COSTS, AND INCREASED LIKELIHOOD THAT THE PLAN MEETS PERFORMANCE STANDARDS BY YEAR-5.
   b. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLANT INSTALLATION.
   c. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER/WEED EATER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
   d. SELECTIVE APPLICATIONS OF HERBICIDE MAY BE NEEDED TO CONTROL INVASIVE WEEDS, ESPECIALLY WHEN INTERMIXED WITH NATIVE SPECIES. HERBICIDE APPLICATION, WHEN NECESSARY, SHALL BE CONDUCTED ONLY BY A STATE-LICENSED APPLICATOR.
3. APPLY SLOW-RELEASE, GRANULAR FERTILIZER TO EACH INSTALLED PLANT ANNUALLY IN THE SPRING (BY JUNE 1) OF YEAR-2 THROUGH YEAR-5.
4. REPLACE MULCH AS NECESSARY TO MAINTAIN A 4-INCH-THICK LAYER, RETAIN SOIL MOISTURE, AND LIMIT WEEDS.
5. REPLACE EACH PLANT FOUND DEAD IN THE MONITORING VISITS DURING THE UPCOMING DORMANT SEASON (OCTOBER 15 TO MARCH 1), FOR BEST SURVIVAL RESULTS.
6. THE PROPERTY OWNER WILL ENSURE THAT WATER IS PROVIDED FOR THE ENTIRE PLANTED AREA WITH A MINIMUM OF 1 INCH OF WATER PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION, THROUGH HAND-WATERING OR THE OPERATION OF A TEMPORARY OR PERMANENT IRRIGATION SYSTEM. LESS WATER IS NEEDED FROM JANUARY THROUGH MAY AND OCTOBER THROUGH DECEMBER.
7. PROPERTY OWNER WILL ENSURE THAT LOGS AND LOG ANCHORS ARE IN PLACE.

GENERAL WORK SEQUENCE

SITE PREPARATION

1. INSTALL EROSION CONTROL MEASURES PER PLANS OR USE ADDITIONAL BEST MANAGEMENT PRACTICES AS NEEDED.
2. MANUALLY CLEAR LAWN AND ORNAMENTAL VEGETATION FROM MITIGATION AREA DURING SPRING AND/OR SUMMER MONTHS (I.E., AVOID CREATING EXPOSED SOIL CONDITIONS DURING THE WINTER STORM SEASON).
   a. REMOVE INVASIVE SPECIES (I.E., HIMALAYAN BLACKBERRY, ENGLISH IVY) THAT MAY BE PRESENT, IN ACCORDANCE WITH KING COUNTY NOXIOUS WEED BEST MANAGEMENT PRACTICES. FOR MORE INFORMATION: *HTTPS://KINGCOUNTY.GOV/SERVICES/ENVIRONMENT/ANIMALS-AND-PLANTS/NOXIOUS-WEEDS.ASPX*.
   b. AVOID AND MINIMIZE DISTURBANCE AND/OR COMPACTION TO ROOTS OF ESTABLISHED NATIVE TREES TO BE RETAINED WHEN REMOVING VEGETATION FROM WITHIN TREE DRIPLINES.
3. INSTALL SITE FEATURES INCLUDING BOULDERS AND LOGS PER PLAN.
4. BLANKET-MULCH CLEARED AREAS OR RING MULCH AROUND INSTALLED AND EXISTING NATIVE PLANTS WITH WOOD MULCH, FOUR INCHES THICK.
   a. ENSURE MULCH DOES NOT TOUCH STEMS OF EXISTING (OR INSTALLED) VEGETATION. SEE PLANTING DETAIL ON SHEET W5.

MITIGATION PLANTING AND IRRIGATION

1. INSTALL MITIGATION PLANTS DURING THE DORMANT SEASON FOR BEST SURVIVAL (OCTOBER 15 - MARCH 1).
   a. PREPARE A PLANTING PIT FOR EACH PLANT THROUGH BLANKET WOOD MULCH AND INSTALL PER THE PLANTING DETAILS.
2. INSTALL A TEMPORARY OR PERMANENT, ABOVE GROUND IRRIGATION SYSTEM TO PROVIDE FULL COVERAGE TO ALL INSTALLED PLANTS WITHIN THE MITIGATION AREA. ALTERNATIVELY, THE HOMEOWNER SHALL ENSURE ADEQUATE HAND WATERING DURING DRY MONTHS.

MATERIAL SPECIFICATIONS AND DEFINITIONS

1. WOODCHIP MULCH: 9-14.4(3) BARK OR WOOD CHIPS- WSDOT STANDARD SPEC.

   BARK OR WOOD CHIP MULCH SHALL BE DERIVED FROM DOUGLAS FIR, PINE, OR HEMLOCK SPECIES. IT SHALL NOT CONTAIN RESIN, TANNIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. SAWDUST SHALL NOT BE USED AS MULCH.

   BARK OR WOOD CHIPS WHEN TESTED SHALL BE ACCORDING TO WSDOT TEST METHOD T 123 PRIOR TO PLACEMENT AND SHALL MEET THE FOLLOWING LOOSE VOLUME GRADATION:

SIEVE SIZE	PERCENT PASSING	
	MINIMUM	MAXIMUM
2″	95	100
NO. 4	0	30

   APPROX. QUANTITY REQUIRED: 60 CUBIC YARDS.

2. COMPOST: CEDAR GROVE COMPOST OR EQUIVALENT "COMPOSTED MATERIAL" PER WASHINGTON ADMIN. CODE 173-350-220. QUANTITY REQUIRED: 35 CUBIC YARDS
3. FERTILIZER: SLOW-RELEASE, PHOSPHOROUS-FREE GRANULAR FERTILIZER. MOST COMMERCIAL NURSERIES CARRY THIS PRODUCT. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR USE. KEEP FERTILIZER IN WEATHER-TIGHT CONTAINER WHILE ON-SITE. FERTILIZER IS ONLY TO BE APPLIED IN YEARS TWO AND THREE, NOT IN YEAR ONE.
4. RESTORATION SPECIALIST: QUALIFIED PROFESSIONAL ABLE TO EVALUATE AND MONITOR THE CONSTRUCTION OF ENVIRONMENTAL RESTORATION PROJECTS.
5. TOPSOIL: REQUIRED TO MEET 14" DEPTH THROUGHOUT PLANTING AREAS. AFTER TOPSOIL PLACEMENT, LEVEL WILL EXCEED FINISHED GRADES TO ALLOW FOR SETTLING; DESIRED DEPTH AFTER SETTLING IS 8-12". IMPORT TOPSOIL SHALL BE CEDAR GROVE TWO-WAY TOPSOIL OR AN APPROVED EQUIVALENT AS DETERMINED BY THE PROJECT REPRESENTATIVE TO MEET THE APPROVED EQUIVALENT REQUIREMENTS LISTED IN THIS SPECIAL PROVISION.

   APPROVED EQUIVALENT REQUIREMENTS-- CONTRACTOR MUST PROVIDE FROM THE MANUFACTURER A RECENT COPY OF A SOIL REPORT WITH A REQUIRED SAMPLE THAT IS NOT MORE THAN 6 MONTHS OLD. THE SOIL REPORT MUST DEMONSTRATE THE TOPSOIL MEETS ALL OF THE REQUIREMENTS CONTAINED HEREIN. TOPSOIL FOR PLANTING BEDS SHALL BE A MIXTURE OF APPROXIMATELY 33-50% COMPOST AND 50-65% SAND OR SANDY LOAM, EACH MEETING THE REQUIREMENTS BELOW.
   a. LOAM SHALL BE SANDY LOAM PER USDA GRADATION, MEETING THE REQUIREMENTS TABLE 2; AND BE FREE OF PHYTO-TOXIC MATERIALS, AND VIABLE SEEDS, RHIZOMES OR ROOTS OF STATE-LISTED NOXIOUS WEEDS.
   b. SAND SHALL MEET THE REQUIREMENTS IN TABLE 2; AND BE FREE OF PHYTO-TOXIC MATERIALS; VIABLE SEEDS, RHIZOMES OR ROOTS OF STATE-LISTED NOXIOUS WEEDS.
   c. MIX SHALL CONTAIN 10 TO 20% ORGANIC MATTER, BY WEIGHT (LOSS ON IGNITION).
   d. PH SHALL BE BETWEEN 6.0 AND 7.5
   e. SOLUBLE SALT CONTENTS SHALL BE LESS THAN 3.0 MMHOS/CM.
   f. APPROVED PRODUCTS INCLUDE CEDAR GROVE 2-WAY TOPSOIL.

TOPSOIL HORTICULTURAL VALUES	
MIX	SAND-COMPOST
ORGANIC MATTER DRY WT	12-18%
CONDUCTIVITY MMHS/CM	<4
PH	6.0-7.5
CEC	>10 MEQ/100G
USDA TEXTURE	LOAMY SAND
WAC METALS	PASS

6. GRAVEL: CLEAN WASHED ROUNDED GRAVEL TO BE APPROVED BY PROJECT REPRESENTATIVE
7. FERTILIZER (FOR NEAR AQUATIC ENVIRONMENTS): SLOW-RELEASE, PHOSPHOROUS-FREE GRANULAR FERTILIZER. LABEL MUST INDICATE THAT PRODUCT IS SAFE FOR AQUATIC ENVIRONMENTS. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR USE. KEEP FERTILIZER IN WEATHER-TIGHT CONTAINER WHILE ON-SITE. FERTILIZER IS ONLY TO BE APPLIED IN YEARS TWO AND THREE, NOT IN YEAR ONE.

CONTINGENCIES

IF THERE IS A SIGNIFICANT PROBLEM WITH THE MITIGATION AREAS MEETING PERFORMANCE STANDARDS, A CONTINGENCY PLAN WILL BE DEVELOPED AND IMPLEMENTED. CONTINGENCY PLANS CAN INCLUDE, BUT ARE NOT LIMITED TO: SOIL AMENDMENT, ADDITIONAL PLANT INSTALLATION, AND PLANT SUBSTITUTIONS OF TYPE, SIZE, QUANTITY, AND LOCATION.

PERMIT SET - NOT FOR CONSTRUCTION

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

NEIL MITIGATION PLAN
BUILDING PERMIT SET
PREPARED FOR MIKE NEIL
PARCEL # 7430500180
1440 W LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

SUBMITTALS & REVISIONS

NO.	DESCRIPTION	DATE	BY
1	CALUP	02-11-20	GM

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:
DESIGNED:
DRAFTED:
CHECKED:
JOB NUMBER:
190502
SHEET NUMBER:
W7 OF 7

FILENAME
PRINTED BY
DATE

MITIGATION NOTES

Attachment 5 - Critical Areas Report Addendums

Altmann Oliver Associates, LLC

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

AOA
Environmental
Planning &
Landscape
Architecture

July 19, 2021

AOA-6489

David Wong
DWong@bellevuewa.gov

SUBJECT: **Wetland Rating for Lots 35 and 36, Plat of Rosemont Beach, Assessor Parcels 743050-0180 and -0182, 1440 W. Lake Sammamish Pkwy NE, Bellevue, WA**

Dear David:

On July 15, 2021, I conducted a reconnaissance on the subject property to rate the wetland (Wetland A) located along the shoreline of Lake Sammamish per current site conditions. The western boundary of the wetland is synonymous with the previously delineated and surveyed Ordinary High Water Mark (OHWM) of the lake. The area above the OHWM consists entirely of gravel and small rocks.

According to the current site conditions, Wetland A meets the criteria for a Category III wetland with 4 Habitat points (**Attachment A**). Category III wetlands >2,500 s.f. in size require a standard 60-foot buffer per LUC 20.25H.095.D.1.a.i. If the wetland is less than 2,500 s.f. in size, then the wetland is exempt from a wetland buffer per LUC 20.25H.095.D.1.c and only the Shoreline vegetation conservation standards per Part 20.25E apply.

Also, per LUC 20.25H.095.D.1.b, *Where a primary structure legally established on a site prior to August 1, 2006, encroaches into the critical area buffer or structure setback established in this section, the critical area buffer and/or structure setback shall be modified to exclude the footprint of the existing primary structure. Expansion of any existing primary structure into the critical area buffer or critical area structure setback shall be allowed only pursuant to the provisions of LUC 20.25H.055 (single-family primary structures) or LUC 20.25H.230 (all other primary structures).*

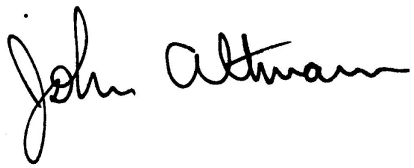
Recommendation

It is my recommendation that following approval of the current wetland rating, the eastern extent of herbaceous vegetation within the lake be surveyed to determine an exact wetland size and buffer requirement.

If you have any questions regarding the wetland rating, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachment

Wetland name or number A

Attachment A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 1440 W. Lake Samm. Pkwy NE Date of site visit: 7/15/2021

Rated by John Altmann Trained by Ecology? ☑ Yes ☐ No Date of training 03/08 & 03/15

HGM Class used for rating Lake Fringe Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map King County GIS 2019 Aerial

OVERALL WETLAND CATEGORY III (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

_____ **Category I** - Total score = 23 - 27
_____ **Category II** - Total score = 20 - 22
X **Category III** - Total score = 16 - 19
_____ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	H	L	L	
Landscape Potential	H	H	M	
Value	H	M	L	**Total**
Score Based on Ratings	9	6	4	**19**

Score for each function based on three ratings (*order of ratings is not important*)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	**X**

Wetland name or number A

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods*)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (*can be added to another figure*)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	E
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	E
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	L 2.2	B
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	A
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	C
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	D

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☑ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
- ☑ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
- ☑ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☐ NO - go to 4 ☑ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The wetland is on a slope (*slope can be very gradual*),
- ☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- ☐ The water leaves the wetland **without being impounded.**

☐ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- ☐ The overbank flooding occurs at least once every 2 years.

☐ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number A

LAKE FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

L 1.0. Does the site have the potential to improve water quality?		
L 1.1. Average width of plants along the lakeshore (*use polygons of Cowardin classes):*		3
Plants are more than 33 ft (10 m) wide	points = 6	
Plants are more than 16 ft (5 m) wide and < 33 ft	points = 3	
Plants are more than 6 ft (2 m) wide and < 16 ft	points = 1	
Plants are less than 6 ft wide	points = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. *These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed.*		6
Cover of herbaceous plants is > 90% of the vegetated area	points = 6	
Cover of herbaceous plants is > $^2/_3$ of the vegetated area	points = 4	
☐ Cover of herbaceous plants is > $^1/_3$ of the vegetated area	points = 3	
☐ Other plants that are not aquatic bed > $^2/_3$ unit	points = 3	
Other plants that are not aquatic bed in > $^1/_3$ vegetated area	points = 1	
Aquatic bed plants and open water cover > $^2/_3$ of the unit	points = 0	
Total for L 1	Add the points in the boxes above	**9**

Rating of Site Potential If score is: ☑ **8 - 12 = H** ☐ **4 - 7 = M** ☐ **0 - 3 = L** *Record the rating on the first page*

L 2.0. Does the landscape have the potential to support the water quality function of the site?		
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0	1
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?	Yes = 1 No = 0	1
L 2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfoil?	Yes = 1 No = 0	1
Total for L 2	Add the points in the boxes above	**3**

Rating of Landscape Potential If score is: ☑ **2 or 3 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

L 3.0. Is the water quality improvement provided by the site valuable to society?		
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	1
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0	1
L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the lake or basin in which the unit is found.*	Yes = 2 No = 0	2
Total for L 3	Add the points in the boxes above	**4**

Rating of Value If score is: ☑ **2 - 4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

LAKE FRINGE WETLANDS

Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion

L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include Aquatic bed): *Choose the highest scoring description that matches conditions in the wetland.*		2
> ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 6	
☐ > ¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 4	
☐ > ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4	
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)	points = 2	
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 0	

Rating of Site Potential If score is: ☐ **6 = M** ☑ **0 - 5 = L** *Record the rating on the first page*

L 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	1
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	1
Total for L 5	Add the points in the boxes above	**2**

Rating of Landscape Potential If score is: ☑ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

L 6.0. Are the hydrologic functions provided by the site valuable to society?		
L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.		1
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit	points = 2	
☑ There are nature trails or other paths and recreational activities within 25 ft of OHWM	points = 1	
☐ Other resources that could be impacted by erosion	points = 1	
There are no resources that can be impacted by erosion along the shores of the unit	points = 0	

Rating of Value If score is: ☐ **2 = H** ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:
Area within 25 fee tof OHWM is yard.

Wetland name or number A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- ☐ Aquatic bed
- ☑ Emergent
- ☐ Scrub-shrub (areas where shrubs have > 30% cover)
- ☐ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points - 1
1 structure: points = 0

If the unit has a Forested class, check if:

- ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- ☐ Permanently flooded or inundated
- ☐ Seasonally flooded or inundated
- ☐ Occasionally flooded or inundated
- ☐ Saturated only

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 types present: points = 0

- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☐ Seasonally flowing stream in, or adjacent to, the wetland
- ☑ **Lake Fringe wetland** **2 points**
- ☐ **Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

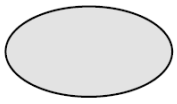
Count the number of plant species in the wetland that cover at least 10 ft^2.
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:
- > 19 species — points = 2
- 5 - 19 species — points = 1
- < 5 species — points = 0

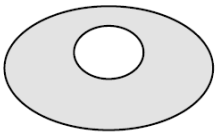
1

H 1.4. Interspersion of habitats

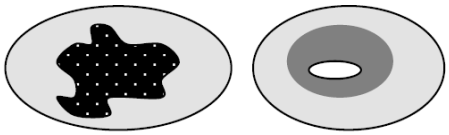
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

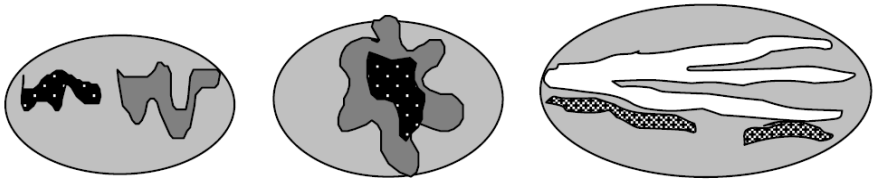


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3 points



0

Wetland name or number A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☑ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☑ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 — Add the points in the boxes above	**5**

Rating of Site Potential If Score is: ☐ **15 - 18 = H** ☐ **7 - 14 = M** ☑ **0 - 6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 0% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 2.3 % undisturbed habitat + (56 % moderate & low intensity land uses / 2) = 30.3% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	2
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	0
Total for H 2 — Add the points in the boxes above	**2**

Rating of Landscape Potential If Score is: ☐ **4 - 6 = H** ☑ **1 - 3 = M** ☐ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated*. Site meets ANY of the following criteria: — points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If Score is: ☐ **2 = H** ☐ **1 = M** ☑ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.
http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here:
http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests**: Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs**: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs**: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes - Go to **SC 1.1** ☐ No = **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = **Category I** ☐ No - Go to **SC 1.2**	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina* , see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☐ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☐ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions*** . SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes - Go to **SC 3.3** ☐ No - Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes - Go to **SC 3.3** ☐ No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = **Is a Category I bog** ☐ No - Go to **SC 3.4** **NOTE**: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☐ No = **Is not a bog**	

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

☐ Yes = **Category I** ☐ No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

☐ Yes - Go to **SC 5.1** ☐ No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

☐ Yes = **Category I** ☐ No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109

☐ Yes - Go to **SC 6.1** ☐ No = **Not an interdunal wetland for rating**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?

☐ Yes = **Category I** ☐ No - Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?

☐ Yes = **Category II** ☐ No - Go to **SC 6.3**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?

☐ Yes = **Category III** ☐ No = **Category IV**

Category of wetland based on Special Characteristics

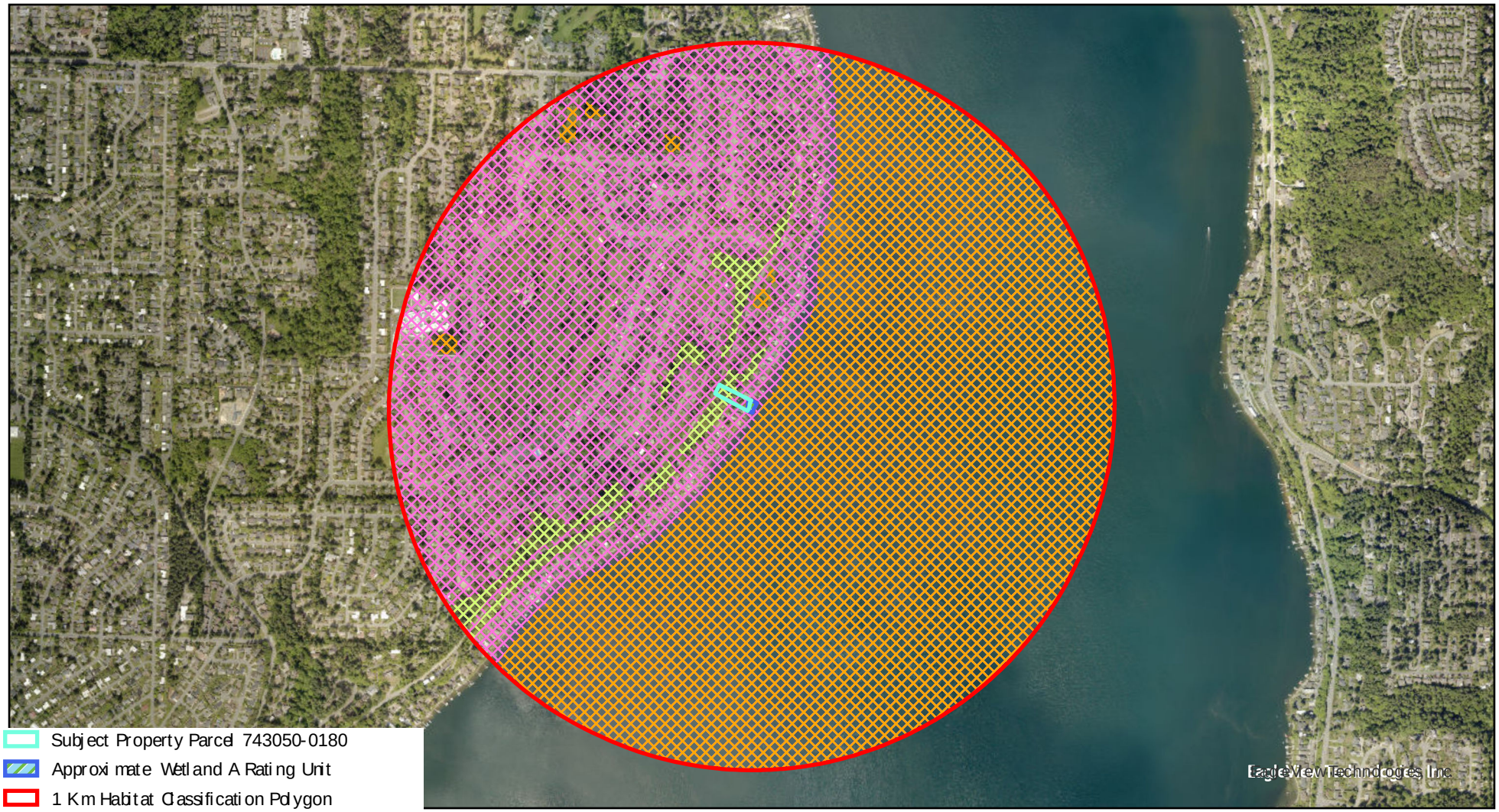
If you answered No for all types, enter "Not Applicable" on Summary Form

Altmann Oliver Associates, LLC
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509
AOA Environmental Planning & Landscape Architecture

King County
Parcel: 743050-0180

Figure A

AOA - 6489

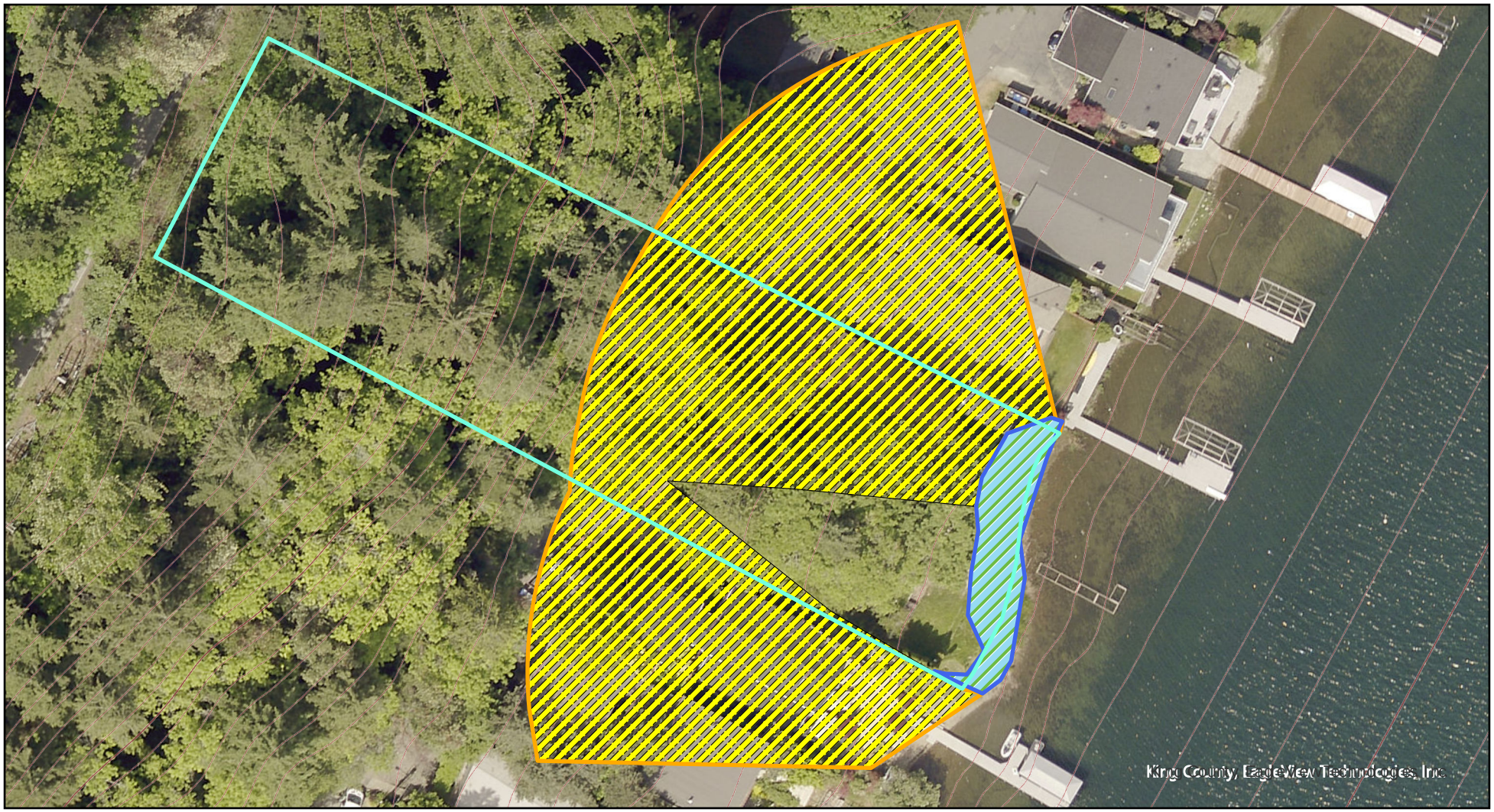


Altmann Oliver Associates, LLC
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509
AOA
Environmental
Planning &
Landscape
Architecture

King County
Parcel: 743050-0180

Figure B

AOA - 6489



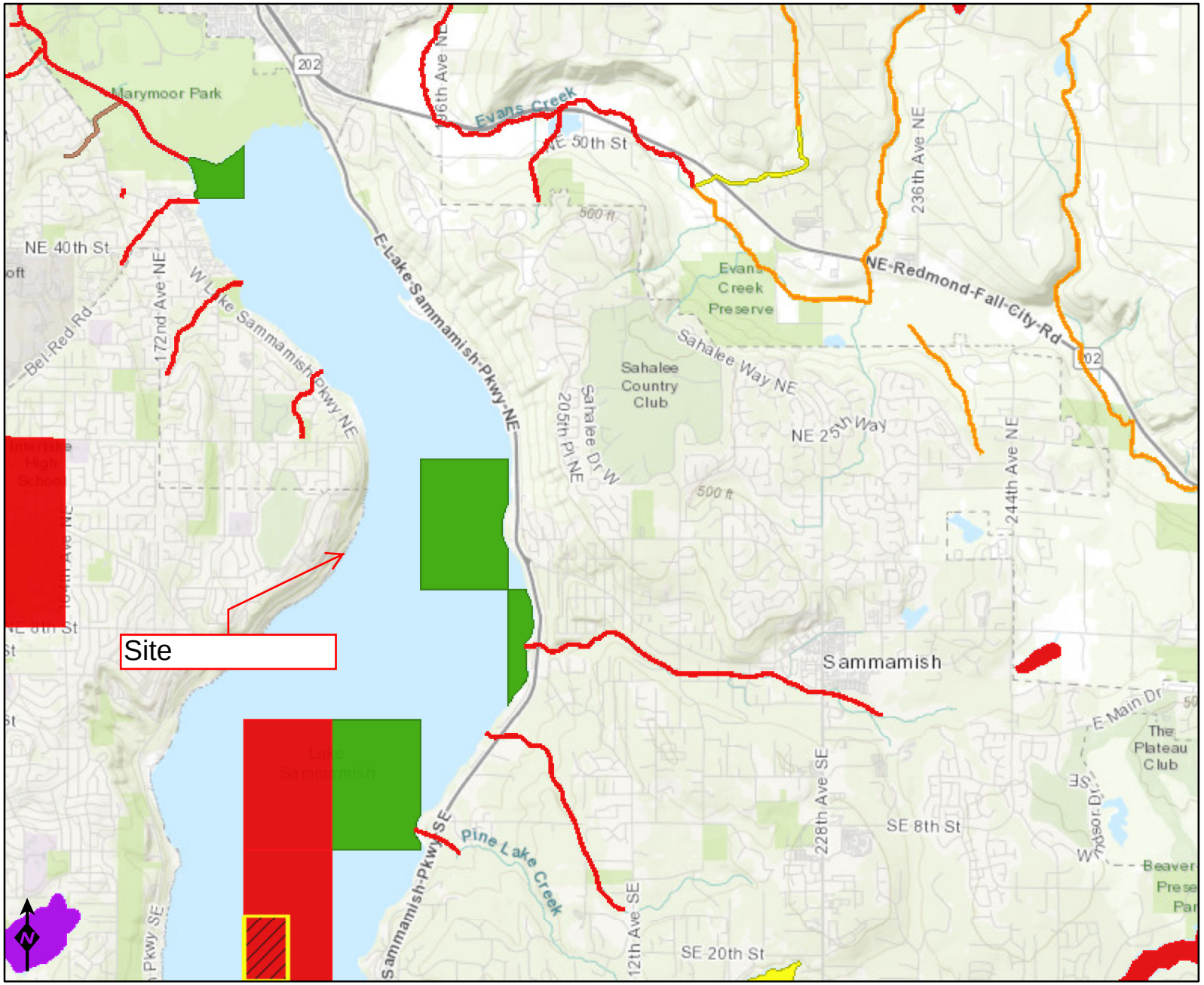
Subject Property Parcel 743050-0180
Approximate Wetland A Rating Unit
150' Pollution Assessment Polygon
Pollution Generating Surfaces 89.9 %

0 20 40 80 120 160
US Feet

N

July 16, 2021

Figure C



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

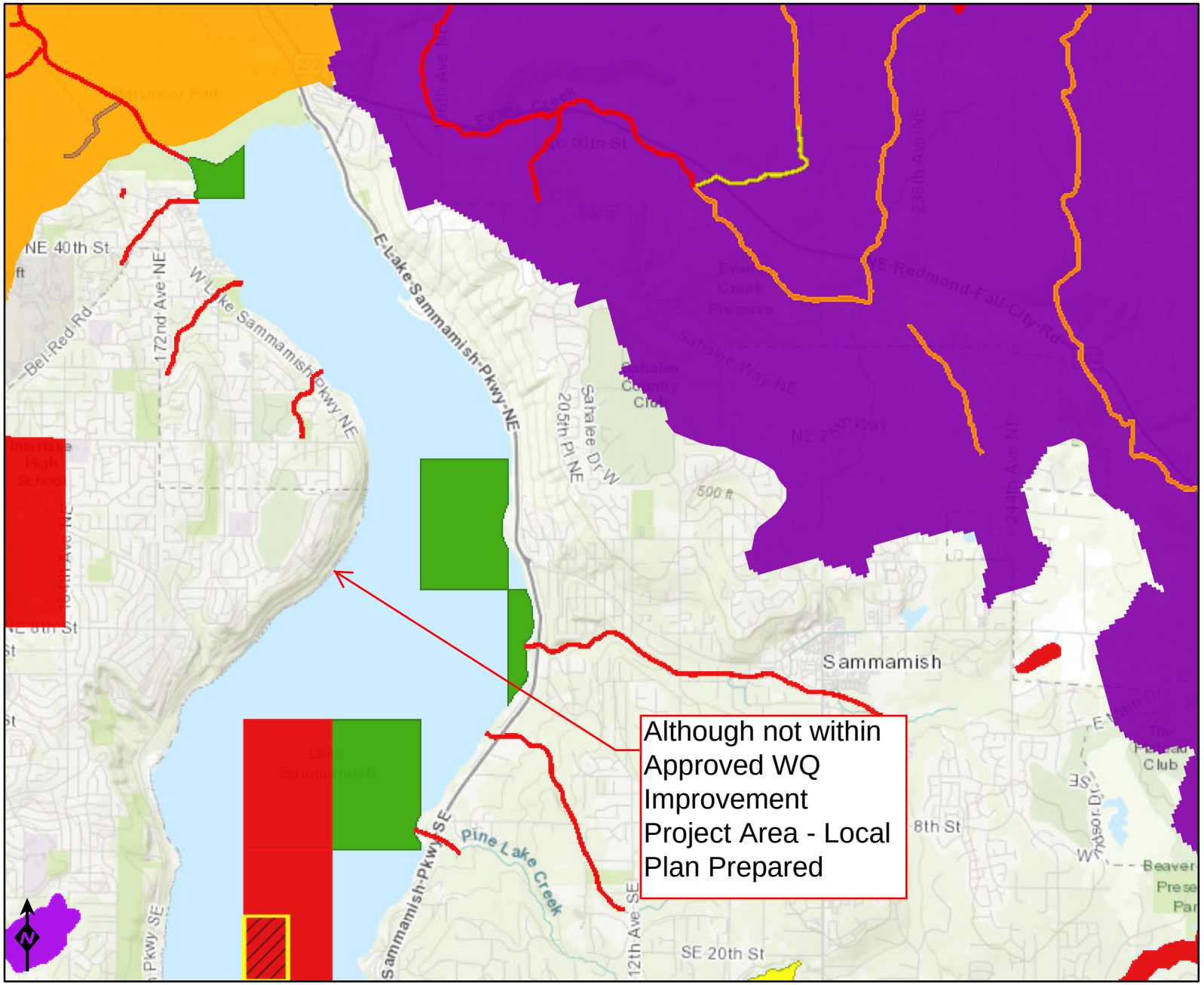
Miles
0 0.5 1 2

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

DEPARTMENT OF ECOLOGY
State of Washington

July 16, 2021

Figure D



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

WQ Improvement Projects
- Approved
- In Development

Miles
0 0.5 1 2

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

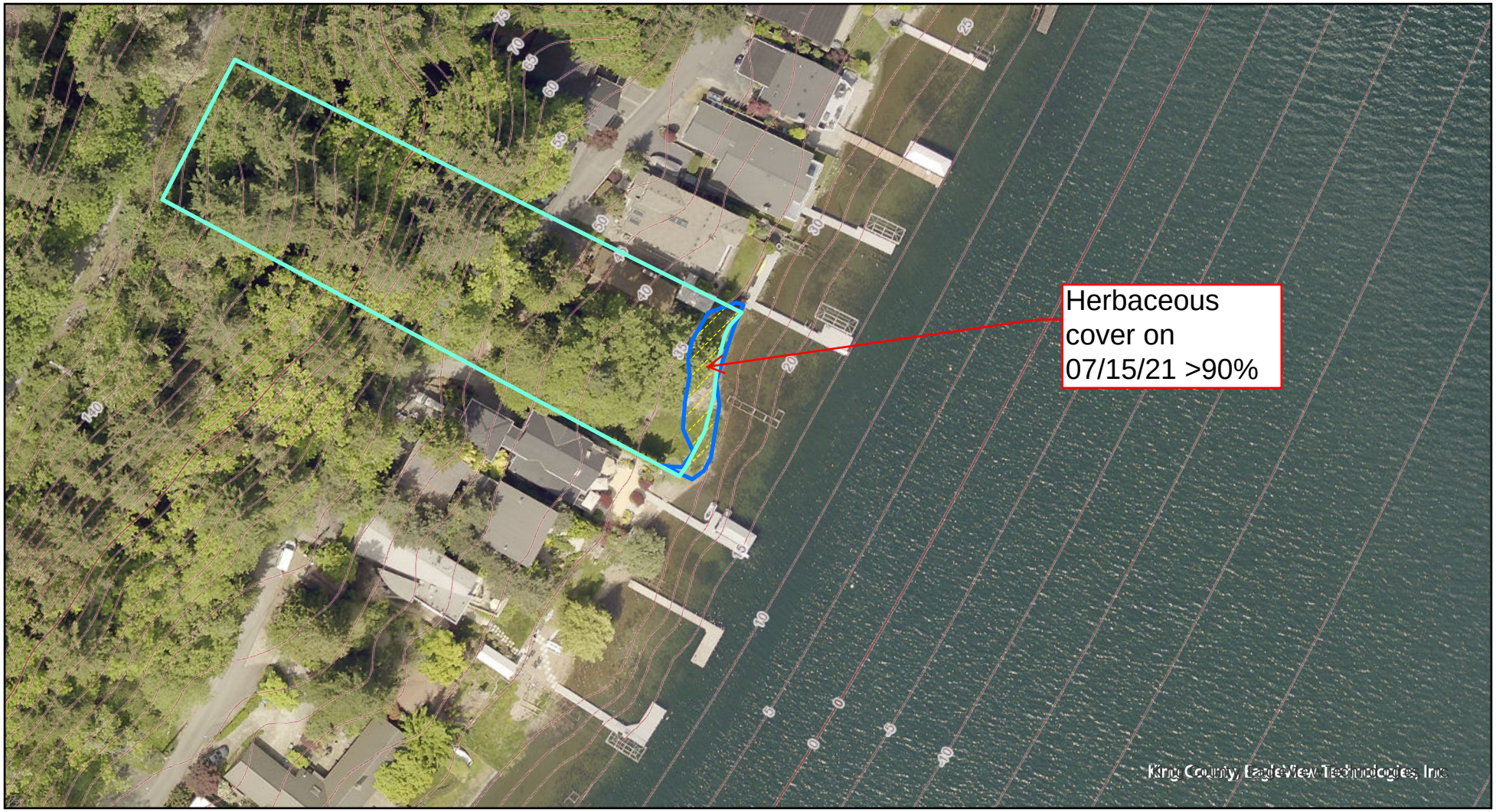
DEPARTMENT OF ECOLOGY
State of Washington

Altmann Oliver Associates, LLC
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509
AOA Environmental Planning & Landscape Architecture

King County
Parcel: 743050-0180

Figure E

AOA - 6489



Subject Property Parcel 743050-0180
Approximate Wetland A Rating Unit
PEM

0 30 60 120 180 240
US Feet

N

Altmann Oliver Associates, LLC

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

AOA
Environmental
Planning &
Landscape
Architecture

February 28, 2022

AOA-6489

David Wong
DWong@bellevuewa.gov

SUBJECT: **Wetland Delineation and Rating Comment Response:**
Lots 35 and 36, Plat of Rosemont Beach, Assessor Parcels 743050-0180 and -0182, 1440 W. Lake Sammamish Pkwy NE, Bellevue, WA
City File #s 20-110244 LS & 20-103303 LO

Dear David:

I have reviewed the comments relating to the wetland delineation and rating presented in your February 11, 2022 email to Andrew Van Leeuwen. The two primary areas of additional review were: 1) potential for increased wetland size on north side of dock within northern portion of wetland and 2) potential for priority snags or logs on hillside to west of the existing access road.

On February 18, 2022, I conducted another site review to address these comments. The area north of the dock within the northern portion of the wetland consisted almost entirely of open water with a thin (approximately 3 feet wide) strip of emergent vegetation within the rocks at the base of the bulkhead. Although I could not confirm if the area is a wetland, adding that vegetation to the wetland increases the size of the wetland from 2,274 s.f. to no more than 2,458 s.f.

I also walked the entire hillside west of the access road within a minimum of 100 meters of the wetland and did not observe any snags or logs that meet the definition of a Priority Habitat Feature as defined by the WA State Department of Fish and Wildlife, including the areas identified on your “snags and logs” sketch.

A defined by the WDFW, Priority Snags and Logs*: Snags and logs occur within a variety of habitat types that support trees. Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and > 30 cm (12 in) in eastern Washington, and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. Abundant snags and logs can be found in oldgrowth and mature forests or unmanaged forests of any age; in damaged, burned, or diseased*

forests; and in riparian areas. Priority snag and log habitat includes individual snags and/or logs, or groups of snags and/or logs of exceptional value to wildlife due to their scarcity or location in a particular landscape. Areas with abundant, well-distributed snags and logs are also considered priority snag and log habitat. Examples include large, sturdy snags adjacent to open water, remnant snags in developed or urbanized settings, and areas with a relatively high density of snags.

Although several head cut trees were observed with binoculars within the yard off-site to the northwest, no habitat features meeting the definition of Priority Snags and Logs were observed.

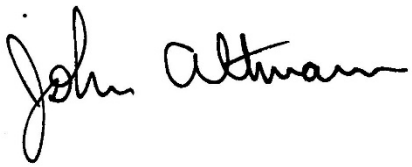
View of thin strip of vegetation within rocks to north of dock at north end of wetland. Note open water beyond vegetation.

Based on this additional field investigation it is my conclusion that the results of the rating and regulatory status of Wetland A as described in my December 6, 2021 report remain valid. I would be happy to conduct a site review with you if necessary.

If you have any questions regarding the comment response, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachment

POTENTIAL WETLAND
AREA: 184 SF

WETLAND
AREA: 2,274 SF

Wood Wall

Wood Dock

Piles

CW

Cover over Concrete

Side Sewer

1.5"

10' Side Sewer Easement

Concrete Wall (typ)

38

37.7

38.5

5938

32

30.6

1-2

Water Line

Water Line (11/20, 11am)

El 30.0

5937

1-3

1-4

33.3

Wood Dock

10' Side Sewer Easement

Easement Rec #5892228

Lake Sammamish

1-5

30.3

Ordinary High Water

Flagged

1-6

15' Sanitary Sewer Line

33.0

37.7

32

1-7

34

P4

ypress Hedge

38

36'

Wood Dock

N

1440 Wetland Study

10 2 0 10 20

SCALE: 1" = 10'

Altmann Oliver Associates, LLC

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

AOA
Environmental
Planning &
Landscape
Architecture

July 28, 2022

AOA-6489

David Wong
DWong@bellevuewa.gov

SUBJECT: **Wetland Delineation and Rating Comment Response:**
Lots 35 and 36, Plat of Rosemont Beach, Assessor Parcels 743050-0180 and -0182, 1440 W. Lake Sammamish Pkwy NE, Bellevue, WA
City File #s 20-110244 LS & 20-103303 LO

Dear David:

Thank you and Peter Rosen for meeting with Brandon Ting and me on the site on July 19, 2022. The two primary reasons for the site review were: 1) potential for increased wetland size on north side of dock within northern portion of wetland and 2) review potential priority snag on hillside to the northwest of the existing access road.

Maximum Wetland Area

The off-site area north of the dock consisted almost entirely of open water with a thin strip of emergent vegetation within the rocks at the base of the bulkhead. Although we have not conclusively confirmed if this area is a wetland, adding that vegetation as well as the area under the dock and off-site boat ramp to the wetland increases the maximum size of the wetland to no more than 2,495 s.f. (**Attachment A**).

Potential Priority Snag

During the site review we obtained permission to access private property on the steep hillside to the northwest of the subject property to assess a western red cedar snag that you had identified that is in excess of 20-inches diameter at breast height (DBH). This snag was not readily observable from the roadway since it does not extend above the canopy of the adjacent big-leaf maple trees. The location of the snag is separated from the site by the roadway as well as several residences and appears to be close to 100 meters from the wetland and would likely be greater than 100 meters from the wetland if measured on the ground surface.

Regardless of the distance to the snag from the wetland, it is my professional opinion that this snag does not provide a functional benefit to wildlife species that may be utilizing the wetland (including the 23 species of local importance listed in LUC 20.25H.150) and would not be considered a Priority Habitat by the WA State Department of Fish and Wildlife (WDFW).

I have assessed the potential utilization of the snag by the species of local importance that typically have a primary association with large snags, including the bald eagle, red-tailed hawk, pileated woodpecker, western big-eared bat, Keen's myotis, long-legged myotis, and long-eared myotis.

Raptors such as the bald eagle and red-tailed are unlikely to utilize this snag as a perching site since it does not extend above the adjacent canopy.

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 the snag could be used for periodic foraging, no pileated woodpecker feeding indicators were observed during the site review.

The four species of bats (western big-eared and three myotis species) are all typically found in a wide variety of larger forested and undisturbed habitats, but not in smaller remnant patches within suburban environments. Although possible, it is highly unlikely that any of these bat species have a primary association with the snag.

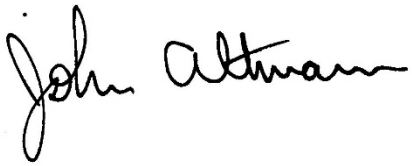
Therefore, due to: 1) the distance of the snag to the wetland, 2) the separation of the snag from the wetland by the existing road and several residences, and 3) the unlikely utilization of the snag by any species of local importance, it is my opinion that the snag should not be considered a Priority Habitat as associated with the wetland as defined by the WDFW.

Based on this assessment it is my conclusion that the results of the rating and regulatory status of Wetland A as described in my December 6, 2021 report remain valid.

If you have any questions, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachment

Attachment A

MAXIMUM POSSIBLE
WETLAND AREA: 2,495 SF
Calculation includes:
Area at north property
Area at south property
Area under dock
Area under boat ramp

Wood Wall
Wood Dock
Piles
CW
Cover over Concrete
Side Sewer
Concrete Wall (typ)
10' Side Sewer Easement
1.5"
Water Line
Water Line (11/20, 11am)
El 30.0
Easement Rec #5892228
Wood Dock
10' Side Sewer Easement
Ordinary High Water Line
Flagged
15' Sanitary Sewer
Lake Sammamish
Cypress Hedge
5938
5937
38
37.7
32
30.6
30.35
33.0
34
33.3

N

1440 Wetland Study

10 2 0 10 20

SCALE: 1" = 10'

Altmann Oliver Associates, LLC

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

AOA
Environmental
Planning &
Landscape
Architecture

April 6, 2023

AOA-6489

David Wong
DWong@bellevuewa.gov

SUBJECT: **Critical Areas Report Addendum and FEMA Biological Opinion**
Ting (Formerly Neil) Residence Shoreline Substantial Development and Critical Areas Land Use Permit, 1440 W. Lake Sammamish Pkwy NE, Bellevue, WA, Parcels 743050-0180 and -0182
City File #s 20-108437-WG and 20-103303-LO

Dear David:

We have prepared this critical areas report addendum to address the comments presented in your September 30, 2022 request for information letter. The primary comments included: 1) revising plans and report with updated wetland and ordinary high water delineation and classifications, 2) addressing dock access, and 3) preparing a FEMA Biological Opinion (BiOP) for work within the FEMA floodplain.

1.0 ORDINARY HIGH WATER DELINEATION

On April 20, 2021, I conducted an initial wetland reconnaissance on the subject property utilizing the methodology outlined in the May 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).* .

During the reconnaissance, the Ordinary High Water Mark (OHWM) of the lake was delineated with pink flagging labelled OHW 1-1 through OHW 1-7. The OHWM was subsequently surveyed and is depicted on the attached drawing (**Figure 1**). The OHWM was delineated per the methodology outlined in the October 2016 *Determining the Ordinary High Water for Shoreline Management Act Compliance in Washington State* prepared by the WA State Department of Ecology (DOE). No wetlands were observed above the OHWM of the lake during the field investigation and one wetland (Wetland A) is located below the OHW.

As defined in the City of Bellevue's LUC 20.25E.280 and RCW 90.58.030(2)(c), "*Ordinary High Water Mark" on all lakes, streams, and tidal water is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland,*

in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department.

The entire shoreline on the site consisted of a sandy gravel beach with some larger rocks observed below the OHWM. Vegetation along the shoreline at the time of the delineation consisted primarily of herbaceous species including bulrush (*Scirpus* sp.) and yellow iris (*Iris pseudacorus*), as well as small scattered willow saplings (*Salix* sp.) and a pruned common fig tree (*Ficus carica*).

Using DOE guidance, the OHWM delineation on the site was based primarily on geomorphic indicators including a slight topographic break and surface staining of gravel/rocks below the OHWM line. The presence of surface staining below the OHW indicates a seasonally high water level that was higher than the lake level at the time of the delineation. Absence of surface staining above the OHWM line indicates that water levels above the OHWM are not seasonally present. In addition, biologic indicators such as the presence of the pruned common fig tree typically found in more mesic environments (FACU) was also utilized to a lesser degree to determine the OHWM.

Typical view of OHWM (pink flags) looking north. Note Continuation of gravel beach above OHWM.

Typical view of OHWM (pink flags) looking south. Note pruned fig tree just above OHWM at right and larger exposed rocks with bulrush below OHWM at left.

2.0 WETLAND DELINEATION AND RATING

Since the eastern boundary of Wetland A located within the lake is determined entirely by vegetation, a drone was used to map the obvious outer extent of vegetation out into the lake. This boundary was then digitized onto the wetland map. Based on this, the size of Wetland A was calculated at a maximum of 2,495 s.f.

According to the current site conditions, Wetland A meets the criteria for a Category III wetland with 4 Habitat points. Category III wetlands less than 2,500 s.f. in size are exempt from wetland buffer requirements per LUC 20.25H.095.D.1.c and only the Shoreline vegetation conservation standards per Part 20.25E apply.

3.0 DOCK REPLACEMENT

The proposed project includes the removal of the existing dock and adding a replacement dock to the north of the existing dock (see dock plans). The new dock access will be extended west to bridge over Wetland A and the OHW of the lake. Also, as noted on the dock plan no barge or anchoring will take place on or over the existing sewer line during dock installation.

4.0 FEMA FLOODPLAIN BIOLOGICAL OPINION

The 100-Year floodplain of Lake Sammamish on the site extends to the edge of the existing retaining wall at elevation 36.1. The Floodplain above the OHW and wetland consists primarily of a sparsely vegetated gravel and rock beach. Significant vegetation in the floodplain above the wetland was limited to one heavily pruned common fig tree (*Ficus carica*).

4.1 ESA Listed Species

The project site is located along the western shoreline of Lake Sammamish, which lies within the geographic range of three federally listed species of salmonids: 1) Chinook salmon (*Oncorhynchus tshawytscha*), 2) bull trout (*Salvelinus confluentus*) and 3) steelhead (*Oncorhynchus mykiss*).

All grading associated with work within the floodplain on the site will occur above the OHW of the lake and no work will occur within designated critical habitat for any of these fish species.

All of the above species may be present in the action area during a portion of their life cycle. Further descriptions of each species and its occurrence near the project area are provided below.

Chinook Salmon

One demographically independent population of Chinook salmon is recognized in the Sammamish River watershed. A portion of this population spawns in tributaries of the Sammamish River (e.g., North Creek, Bear Creek and Little Bear Creek), and another portion migrates through Lake Sammamish on the way to the Issaquah Creek Hatchery or spawning grounds in lower Issaquah Creek. Adult Chinook salmon begin migrating into freshwater in August, and most spawning in tributaries to Lake Sammamish occurs from late September through October. Chinook salmon spawning has not been documented in Lake Sammamish.

In Lake Sammamish juvenile Chinook salmon typically rear in shallow nearshore areas (<18-inch depth), and they show a preference for areas with emergent vegetation or small woody debris. By June when juveniles are larger, they move away from the shoreline into deeper waters.

Although adult Chinook salmon may occur near the site area from late August to November, Chinook salmon spawning is not anticipated to occur within the action area. Juvenile Chinook salmon may rear along the shoreline of the site from January through June.

With the exception of the replacement dock no work will occur below the OHW of the lake. Since the work within the floodplain above the OHW of the lake consists primarily of the removal of an existing retaining wall and re-vegetating the shoreline with a variety of native plant species, the proposed project would not negatively impact Chinook salmon.

Bull Trout

Bull trout are rare or non-existent in Lake Sammamish and there is no known resident population of bull trout in Lake Sammamish or its tributaries. If any spawners occurred in the lake system, they would likely begin upstream migrations from April through July, and immature fish would be likely to migrate upstream with the spawners to avoid the summer/fall high temperatures in Lake Sammamish. Thus, bull trout presence in the shallow nearshore of the project site would be unlikely year round, and particularly unlikely from late spring through fall and the proposed project would not negatively impact bull trout.

Steelhead

Steelhead historically occurred throughout the Lake Washington basin and likely spawned in Lake Sammamish tributaries, primarily Issaquah Creek. The steelhead spawning period throughout the basin extends from mid-December through early June and juveniles generally migrate seaward as smolts in March to early June after two years of stream residence.

Summer surface temperatures in Lake Sammamish greatly exceed the thermal preferences of most salmonids, including steelhead. Neither juvenile nor adult steelhead are expected to occupy nearshore waters from June through September, and although juvenile and adult steelhead may migrate along the shoreline area throughout the year, they would be uncommon to rare in the summer months.

Work within the floodplain above the OHW of the lake includes the removal of the existing retaining wall and re-vegetating the shoreline with a variety of native plant species and the proposed project would not negatively impact steelhead.

4.2 Proposed Project Impacts

Proposed work in the floodplain will include: 1) the replacement dock, 2) a required small quarry spall stormwater outfall, 3) the removal of the existing retaining wall and the softening of the shoreline with grading and restoration plantings, and 4) replacement steps to the shoreline and dock. Per the civil engineer there will be no net gain in fill within the floodplain.

The following primary elements were included in the review as part of the determination of effect on listed species.

Removal of Vegetation
No significant native vegetation would be removed within the floodplain of the lake. Vegetation removal in the floodplain above the OHW is limited to temporary removal of herbaceous vegetation as part of re-grading and the removal of one heavily pruned common fig tree.

Bank Armoring or Straightening
No bank armoring or straightening is proposed and work in the floodplain includes removal of the retaining wall and softening the shoreline.

Isolation or Trapping of Fish
The proposed work would not result in the creation of any depressions that could potentially trap fish or other aquatic species.

Loss of Flood Storage Capacity
Per the civil engineer, the proposed work would not result in any loss of flood storage capacity.

Impact on Water Quality
It is my understanding that all work on this project will be in accordance with Washington State and City of Bellevue regulations for runoff and erosion control. It is not anticipated that the project will have a significant negative impact on water quality in the lake.

Noise and Impact Vibration Pollution
No noise or impact vibration impacts are anticipated as part of the project.

4.3 Effects Determination
The following potential effects to ESA listed species were also reviewed per the FEMA habitat assessment guidance.

A. Direct effects

1. *First primary constituent element (e.g., freshwater spawning sites);*

Except for the replacement dock no work would be conducted below the OHW of the lake or within any key habitat component of any listed species so there should be no impact to any first primary constituent element.

2. *Second primary constituent element (e.g., freshwater rearing sites);*

As part of the proposed action, except for the dock no work would be conducted below the OHW of the laker or within any key habitat component of any listed species so there should be no impact to any second primary constituent element.

3. *Third primary constituent element (e.g., freshwater migration corridors);*

As part of the proposed action, except for the dock no work would be conducted below the OHW of the laker or within any key habitat component of any listed species so there should be no impact to any third primary constituent element.

4. *Essential Fish Habitat designated by the National Marine Fisheries Service;*

Except for the replacement dock no work would be conducted below the OHW of the lake or within any key habitat component of any listed species so there should be no impact to Essential Fish Habitat as designated by the National Marine Fisheries Service.

5. Fish and Wildlife Conservation Areas;

Except for the replacement dock no work would be conducted below the OHW of the lake or within any other Fish and Wildlife Conservation Areas.

6. Vegetation communities and habitat structures;

As part of the proposed action no significant native vegetation, plant communities, or habitat features would be removed so there should be no impact to any significant vegetation communities or habitat structures.

7. Water Quality;

It is my understanding that a Temporary Erosion and Sediment Control Plan (TESCP) will be required as part of the permit submittal. Although there are no significant anticipated erosion concerns all work would be conducted during the allowed timing window as appropriate. Implementation of the TESCP plan should ensure that there are no long or short term impacts to water quality.

8. *Water quantity, including flood and low flow depths, volumes and velocities*;

Per the civil engineer, the proposed work would not result in any loss of flood storage capacity so there are no anticipated impacts to water quantity.

9. The channel's planform pattern and migration processes;

There is no channel associated with the shoreline of the lake.

10. Spawning substrate, if applicable; and/or

The proposed action would have no impact on potential spawning substrate.

11. Floodplain refugia, if applicable

The proposed action should increase floodplain refugia over time with the establishment of the native plantings.

B. Indirect effects

The proposed project consists of the construction of a replacement single-family residence. The new residence would be constructed completely outside of the floodplain and there should be no long-term or indirect effects as a result of the project on any of the 11 items discussed above. The project would not:

- Block any habitat corridors
- Increase water temperatures
- Disturb shoreline vegetation
- Move any large woody debris
- Destabilize banks or modify salmonid migration
- Modify wetlands or hydrology

C. Effects from interdependent and interrelated actions

The only action currently proposed is the single-family residence. No other activities that may impact listed species are anticipated in the future from the project.

D. Cumulative Effects

Although it is understood that even relatively minor developments can cumulatively impact ESA listed species, the proposed project would have no impact on any of the evaluated short- or long-term potential areas of effect. Thus the contribution from this project on any cumulative negative effect to listed species is negligible. Furthermore, any unlikely future development on the site that may occur within the floodplain will require a Habitat Assessment and would presumably be denied if there were determined to be a negative impact (including cumulative) on any listed species.

E. Effects determination

Based on a review of potential impacts, the proposed work will have **No Effect** on any of the three federally listed salmonid species identified within the geographic range of Lake Sammamish.

F. Summary

The **No Effect** determination on any ESA listed species was based on an assessment of both potential direct and indirect effects, as well as on any cumulative effects or effects from any interdependent or interrelated actions.

5.0 SHORELINE MITIGATION

Mitigation for work within the shoreline structure setback will occur through the removal of the existing retaining wall and re-grading the shoreline above the OHW of the lake. Restoration would then include planting a variety of trees, shrubs, and groundcover species within the degraded shoreline to increase the habitat value of the shoreline environment.

Planting the area with native species would increase the plant species and structural diversity over existing conditions and will increase food chain support by increasing the biological production of both vegetation and insects. This in turn should provide food and cover for a variety of songbirds and other wildlife and increase the habitat function of the shoreline. The plantings should also provide some natural shade to the lake and create some overhead cover while contributing detritus and other desirable allochthonous inputs into the aquatic environment.

5.1 Goal, Objectives, and Performance Standards for Mitigation Areas

The primary goal of the mitigation plan is to increase the habitat functions of the planted areas. 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 mitigation areas.

Performance Standard: There will be 100% survival of all woody planted species throughout the mitigation area at the end of the first year of planting. For Years 2-5, success will be based on an 80% survival rate or similar number of recolonized native woody plants. Areal coverage of woody 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 mitigation area.
Performance Standard: After construction and following every monitoring event for a period of five years, all King County Class A, B, and C noxious weeds and weeds of concern (with the exception of creeping buttercup) will be maintained at levels below 10% total cover in the designated mitigation areas.

5.2 Construction Management

Prior to commencement of any work in the mitigation areas, the clearing limits will be staked and any 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 mitigation 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

The monitoring program will be conducted for a period of five years, with annual reports submitted to the City. Vegetation monitoring will include 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 mitigation area. Review of the photos over time will provide a visual representation of the success of the mitigation plan.

5.4 Maintenance Plan

Maintenance will be conducted on a routine, year-round basis. Additional maintenance needs will be identified and addressed following periodic maintenance reviews. 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.

5.5 Weed Control

Routine removal and control of non-native and other invasive plants within the designated mitigation areas shall be performed by manual means. Undesirable and

weedy exotic plant species shall be maintained at levels below 10% total cover within all mitigation areas during the monitoring period.

5.6 General Maintenance Items
Routine maintenance of planted trees and shrubs shall be performed. Measures include resetting plants to proper grades and upright positions. Tall grasses and other competitive weeds shall be weeded at the base of plants to prevent engulfment. Weed control should be performed by hand removal.

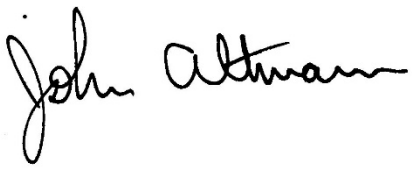
5.7 Contingency Plan
All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the mitigation plan. Plant material shall meet the same specifications as originally installed material. Replanting will not occur until after the reason for failure has 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.

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

If you have any questions regarding the addendum or BiOP, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachments

King County iMap

Date: 4/3/2023 Notes:

N

King County

Attachment 6 - Geotechnical Report

GEOTECH
CONSULTANTS, INC.

2401 10th Ave E
Seattle, Washington 98102
(425) 747-5618

November 22, 2019

JN 18530

Michael Neil
8002 Avalon Place
Mercer Island, Washington 98040
via email: michaellneil@yahoo.com

Subject: **Transmittal Letter – Geotechnical Engineering Study**
Proposed Neil Residence
1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

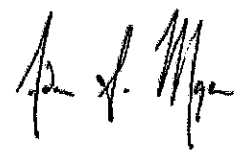
Dear Mr. Neil:

Attached to this transmittal letter is our geotechnical engineering report for the proposed Neil residence to be constructed in Bellevue. The scope of our services consisted of exploring site surface and subsurface conditions, and then developing this report to provide recommendations for general earthwork, stormwater infiltration considerations, and design considerations for foundations, retaining walls, subsurface drainage, and temporary excavations and shoring. This work was authorized by your acceptance of our proposal, P-10209, dated November 6, 2018.

The attached report contains a discussion of the study and our recommendations. Please contact us if there are any questions regarding this report, or for further assistance during the design and construction phases of this project.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.



Adam S. Moyer
Geotechnical Engineer

cc: **Build LLC** – Andrew van Leeuwen
via email: avl@buildllc.com

ASM/MRM:kg

GEOTECHNICAL ENGINEERING STUDY
Proposed Neil Residence
1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed single-family residence to be located along the western edge of West Lake Sammamish Parkway Northeast in Bellevue.

Development of the property is in the planning stage. We were provided with a conceptual site plan and a topographic map. Build LLC developed the site plan, which is dated September 26, 2019. The topographic map was developed by Emerald Land Surveying, Inc. and dated January 4, 2019. Based on the provided site plan, we understand that the existing house will be demolished, and a new larger residence will be constructed on the eastern portion of the site. The proposed residence will generally be located in the same location as the existing house, however it will extend farther to the south. We anticipate that the new residence will have a finished floor elevation near the lower eastern yard grade of approximately 38 feet elevation. The provided site plan indicates the residence will have setbacks of approximately 7.5 feet from the northern and southern property lines. Small deck/patios are proposed off the eastern side of the residence, and a lap pool is proposed through the central eastern portion of the residence footprint.

A tall steep slope is located on the western half of the subject site that rises from Northeast Rosemont Place to West Lake Sammamish Parkway Northeast to the west. Based on the provided site plan, the proposed residence will have a 50-foot setback from the toe of the western steep slope. We expect that a Critical Land Use Permit (CALUP) will be applied for to allow this toe-of-slope buffer, which is less than the prescriptive 75-foot buffer contained in Bellevue's Critical Areas code. No disturbance of the steep slope is planned.

If the scope of the project changes from what we have described above, we should be provided with revised plans in order to determine if modifications to the recommendations and conclusions of this report are warranted.

SITE CONDITIONS

SURFACE

The Vicinity Map, Plate 1, illustrates the general location of the site in Bellevue. The subject lot is located between West Lake Sammamish Parkway Northeast to the west and Lake Sammamish to the east. The long, narrow, roughly rectangular-shaped subject site has dimensions of 91 to 99 feet in the north-south direction and approximately 320 to 324 feet in the east-west direction.

The site can be divided into eastern and western halves by a private road (Northeast Rosemont Place). The western, upslope half of the site contains an undeveloped, 100-foot-tall steep slope that descends from West Lake Sammamish Parkway Northeast to near the edge of Northeast Rosemont Place. Based on the provided topographic map, the upper, western half of this slope has an inclination of approximately 33 to 41 percent; and the eastern half of the slope steepens to an inclination of up to approximately 65 percent. However, it appears that Northeast Rosemont Place was cut into the toe of the slope, over-steepening the toe along this street. A 3-foot-tall modular block wall has been constructed in front of the cut made into the toe of the steep slope. Similar cuts

and walls or rockeries have been completed at the base of the steep slope for many of the properties in the neighborhood. No signs of deep-seated instability were observed during our site visit; however, signs of minor shallow soil creep were observed at the toe of the slope. The steep slope is predominantly covered by mature evergreen trees and underbrush. We are aware of previous episodes of shallow instability on steep slopes in the general site vicinity that have involved improperly placed fill or loose, weathered soils. There is no history of deep-seated instability affecting the underlying glacially compressed soils.

The area of the subject site east, and downslope, of Northeast Rosemont Place slopes moderately to gently towards Lake Sammamish to the east and is developed. A one-story house is located in the northeast corner of the property overlying a basement that daylights to the east. The floor of the daylight basement has an elevation near 39 feet. An asphalt circular driveway provides access to the residence from Northeast Rosemont Place to the west. Two small sheds are located south of the house and a third shed is located northeast of the house. A 4-foot-tall concrete bulkhead is located along the eastern edge of a grass lawn east of the residence. Several mature maple and cedar trees are located on the eastern, downslope side of the property around the residence.

Residential properties similar in shape and size to the subject site border the subject site to the north and south. Both adjacent residences have approximate 10-foot setbacks from the subject site and overlie basements that daylight to the east.

SUBSURFACE

The subsurface conditions were explored by drilling five test borings at the approximate locations shown on the Site Exploration Plan, Plate 2. Our exploration program was based on the proposed construction, anticipated subsurface conditions and those encountered during exploration, and the scope of work outlined in our proposal.

The test borings were drilled on December 6, 2018 using both a small track-mounted, hollow-stem auger drill and a portable Acker drill. The Acker drill system utilizes a small, gasoline-powered engine to advance a hollow-stem auger to the sampling depth. Samples were taken at approximate 2.5- and 5-foot intervals with a standard penetration sampler. This split-spoon sampler, which has a 2-inch outside diameter, is driven into the soil with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler a given distance is an indication of the soil density or consistency. A geotechnical engineer from our staff observed the drilling process, logged the test borings, and obtained representative samples of the soil encountered. The Test Boring Logs are attached as Plates 3 through 7.

Soil Conditions

Three test borings were conducted around the proposed residence; Test Borings 2 and 3 were conducted downslope of the residence directly upslope of the existing concrete bulkhead and Test Boring 4 was conducted between the upslope side of the proposed residence and Northeast Rosemont Place. Test Borings 2 and 3 encountered loose gravelly sand lake deposits beneath the ground surface. Approximately 3 feet of loose silty sand fill (backfill of the adjacent concrete bulkhead) was encountered in Test Boring 3 above the loose native sand. The native sand became medium-dense below depths of 7.5 to 10 feet and dense below depths of 15 to 20 feet. Very dense sand was encountered at depths of 30 to 35 feet below the ground surface. On the upslope side of the proposed residence, Test Boring 4 encountered 4.5 feet of medium-dense to dense fill soils consisting of silty sand of

gravel. Loose native silty sand was encountered beneath the fill and extended to a depth of 7 feet. Loose/stiff silt with occasional wood and sand seams was revealed below 7 feet. The native silt became medium-dense to dense below 15 feet and very dense sand was revealed 18 feet to the termination depth of 21.5 feet.

Test Borings 1 and 5 were conducted on, and at the toe of the tall steep slope that rises from Northeast Rosemont Place to West Lake Sammamish Parkway Northeast. Test Boring 1 encountered 15 feet of loose interbedded layers of silt, sand, and silty sand beneath the ground surface. Dense, glacially-compressed silt with occasional organics was revealed between 12 and 15 feet overlying dense, glacially-compressed, slightly silty sand. The underlying slightly silty sand became very dense at a depth of 25 feet. At the toe of the tall steep slope, Test Boring 5 encountered medium-dense sand beneath the ground surface. Dense, glacially-compressed silt with trace wood was encountered between 8 and 18 feet overlying very dense glacially-compressed sand.

No obstructions were revealed by our explorations. However, debris, buried utilities, and old foundation and slab elements are commonly encountered on sites that have had previous development. Although our explorations did not encounter cobbles or boulders, they are often found in soils that have been deposited by glaciers or fast-moving water.

Groundwater Conditions

Groundwater seepage was observed below 5 to 6.5 feet in Test Borings 2 and 3 alongside Lake Sammamish. Test Boring 1 encountered groundwater seepage below a depth of 19 feet. The test borings were left open for only a short time period. Therefore, the seepage levels on the logs represent the location of transient water seepage and may not indicate the static groundwater level. Groundwater levels encountered during drilling can be deceptive, because seepage into the boring can be blocked or slowed by the auger itself.

It should be noted that groundwater levels vary seasonally with rainfall and other factors.

The stratification lines on the logs represent the approximate boundaries between soil types at the exploration locations. The actual transition between soil types may be gradual, and subsurface conditions can vary between exploration locations. The logs provide specific subsurface information only at the locations tested. If a transition in soil type occurred between samples in the borings, the depth of the transition was interpreted. The relative densities and moisture descriptions indicated on the test boring logs are interpretive descriptions based on the conditions observed during drilling.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

THIS SECTION CONTAINS A SUMMARY OF OUR STUDY AND FINDINGS FOR THE PURPOSES OF A GENERAL OVERVIEW ONLY. MORE SPECIFIC RECOMMENDATIONS AND CONCLUSIONS ARE CONTAINED IN THE REMAINDER OF THIS REPORT. ANY PARTY RELYING ON THIS REPORT SHOULD READ THE ENTIRE DOCUMENT.

The test borings conducted for this study encountered 10 to 15 feet of loose fill and native sand beneath the ground surface in the area of the proposed residence. Conventional shallow foundations constructed on top of these loose soils would experience significant amounts of post-

construction settlement as the loose soils compress over time. Furthermore, the loose to medium-dense native sand encountered below the groundwater table on the eastern end of the subject site may be susceptible to seismic liquefaction during a large seismic event. Therefore, we recommend the proposed residence be supported on a deep foundation system consisting of small-diameter pipe piles embedded into the dense underlying soils. We recommend any settlement-sensitive elements such as floor slabs, decks, exterior stairs, and the proposed pool be supported on pipe piles. These are typical foundation recommendations for homes being constructed along the lake shore in this area.

Temporary excavation for the proposed residence in the loose upper soils will be an important geotechnical consideration for the project. Temporary excavations in the loose upper soils above the groundwater level should be inclined no steeper than a 1:1 (Horizontal:Vertical). Groundwater was encountered in Test Borings 2 and 3 along the eastern end of the site at depths of 5 to 6 feet below the ground surface. Any excavation below the groundwater elevation will require excavation shoring and substantial dewatering. Based on the provided preliminary site plan, the proposed residence will have 7.5-foot setbacks from the northern and southern property lines. We anticipate that the proposed residence will include a daylight basement similar to the existing house, with a finished floor near an elevation of 38 feet. If temporary open excavations cannot be maintained within the property lines, temporary excavation easements onto the northern and southern adjacent properties will be required. It will be important that un-shored excavations do not extend below a 1.5:1 (H:V) line extending down from the neighboring house's footings. A daylight basement as anticipated will very likely require temporary excavation shoring. The ***Soldier Pile Retaining Walls*** section of this report provides additional temporary shoring recommendations.

Due to the proximity of the anticipated lowest finished floor elevation of the proposed residence to the elevation of Lake Sammamish and the groundwater encountered in our downslope test borings, we recommend an underslab drainage system be installed beneath the basement floor slab. This is discussed further in the ***Drainage Considerations*** of this report.

The site plan provided to us indicates a pool may be included within the new residence footprint. Groundwater was encountered in our test borings at a depth of 5 to 6 feet, near the elevation of Lake Sammamish. It should be noted that the groundwater elevation will vary seasonally with rainfall and other factors. It will be important to bottom the proposed pool several feet above the groundwater elevation and provide sufficient drainage below the pool to prevent hydrostatic uplift pressure from "pushing" the pool out of the ground. As discussed above, we recommend the pool be supported on pipe piles to prevent it from settling and cracking over time.

As previously described, the western half of the subject site contains an undeveloped slope that descends from Lake Sammamish Parkway Northeast to Northeast Rosemont Place. Based on the provided topographic map of the subject site, the upper portion of this slope has an inclination ranging from 33 to 41 percent; however, the eastern toe of the slope becomes steeper. The eastern approximately 65 feet of the slope has an inclination of 65 to 105 percent over a vertical rise of 15 to 20 feet. The portion of the slope with an inclination greater than 40 percent is defined as a Steep Slope Critical Area by the City of Bellevue. We conducted Test Boring 1 on the western steep slope near a ground surface elevation of approximately 74 feet. Test Boring 5 was conducted at the toe of the slope near an elevation of 54 feet. Medium-dense to dense, glacially-compressed sand was encountered at an elevation of 52 feet in Test Borings 1 and 5. Based on our test borings, dense glacially-compressed soils comprise the core of the Steep Slope; however, interbedded layers of loose to medium-dense silt, sand, and silty sand were encountered in the upper 12 feet in Test Boring 1 on the steep slope. Considering the high strength of the dense, glacially-compressed soils that comprise the core of the western steep slope, it is our professional that the reduced buffer of 50

feet from the toe of the western steep slope is appropriate and the proposed construction will not adversely impact stability of the steep slope. The 50-foot toe-of-slope setback will provide sufficient run-out room for protection of the residence from any shallow slides that may affect the near-surface soils in the future. The installation of the driveway, pedestrian walkways, and landscaping between Northeast Rosemont Place and the house within the 50-foot buffer will not adversely impact the stability of the steep slope or the toe-of-slope buffer.

The erosion control measures needed during the site development will depend heavily on the weather conditions that are encountered during the site work. The location of the site on the shore of Lake Sammamish will make proper erosion control implementation important to prevent adverse impacts to the lake. However, we have been associated with numerous waterfront projects that have avoided siltation of the lake and surrounding properties by exercising care and being pro-active with the maintenance and potential upgrading of the erosion control system through the entire construction process. One of the most important considerations, particularly during wet weather, is to immediately cover any bare soil to prevent accumulated water or runoff from the work area from becoming silty in the first place. Silty water cannot be discharged to the lake, so a temporary holding tank should be planned for wet weather earthwork. A wire-backed silt fence bedded in compost, not native soil or sand, should be erected as close as possible to the planned work area, and the existing vegetation between the silt fence and the lake left in place. Rocked construction access and staging areas should be established wherever trucks will have to drive off of pavement, in order reduce the amount of soil or mud carried off the property by trucks and equipment. It will also be important to cap any existing drain lines found running toward the lake until excavation is completed. This will reduce the potential for silty water finding an old pipe and flowing into the lake. Covering the base of the excavation with a layer of clean gravel or rock is also prudent to reduce the amount of mud and silty water generated. Utilities reaching between the house and the lake should not be installed during rainy weather, and any disturbed area caused by the utility installation should be minimized by using small equipment. Cut slopes and soil stockpiles should be covered with plastic during wet weather. Soil stockpiles should be minimized. Following rough grading, it may be necessary to mulch or hydroseed bare areas that will not be immediately covered with landscaping or an impervious surface.

The drainage and/or waterproofing recommendations presented in this report are intended only to prevent active seepage from flowing through concrete walls or slabs. Even in the absence of active seepage into and beneath structures, water vapor can migrate through walls, slabs, and floors from the surrounding soil, and can even be transmitted from slabs and foundation walls due to the concrete curing process. Water vapor also results from occupant uses, such as cooking, cleaning, and bathing. Excessive water vapor trapped within structures can result in a variety of undesirable conditions, including, but not limited to, moisture problems with flooring systems, excessively moist air within occupied areas, and the growth of molds, fungi, and other biological organisms that may be harmful to the health of the occupants. The designer or architect must consider the potential vapor sources and likely occupant uses, and provide sufficient ventilation, either passive or mechanical, to prevent a build up of excessive water vapor within the planned structure.

The foundations of the adjacent single family residences likely were constructed atop loose, compressible soils, and we anticipate that many of the residences in the surrounding vicinity have experienced, or continue to experience moderate to excessive settlement. Contractors working on the demolition and construction of your home must be cautioned to avoid strong ground vibrations, which could cause additional settlement in the neighboring foundations. Installation of pipe piles is a loud process, but it does not generate strong ground vibrations. During demolition, strong pounding on the ground with the excavator, which is often used to break up debris and concrete, should not occur. Any of these factors can potentially translate into noticeable damage of

surrounding on-grade elements, such as foundations and slabs. As with any project that involves demolition of existing site buildings and/or extensive excavation and shoring, there is a potential risk of movement on surrounding properties. This can potentially translate into noticeable damage of surrounding on-grade elements, such as foundations and slabs. However, the demolition, shoring, and/or excavation work could just translate into *perceived* damage on adjacent properties. Unfortunately, it is becoming more and more common for adjacent property owners to make unsubstantiated damage claims on new projects that occur close to their developed lots. Therefore, we recommend making an extensive photographic and visual survey of the project vicinity, prior to demolition activities, installing shoring, and/or commencing with the excavation. This documents the condition of buildings, pavements, and utilities in the immediate vicinity of the site in order to avoid, and protect the owner from, unsubstantiated damage claims by surrounding property owners. Additionally, any adjacent structures should be monitored during demolition and construction to detect soil movements. To monitor their performance, we recommend establishing a series of survey reference points to measure any horizontal deflections of the shoring system. Control points should be established at a distance well away from the walls and slopes, and deflections from the reference points should be measured throughout construction by survey methods.

Geotech Consultants, Inc. should be allowed to review the final development plans to verify that the recommendations presented in this report are adequately addressed in the design. Such a plan review would be additional work beyond the current scope of work for this study, and it may include revisions to our recommendations to accommodate site, development, and geotechnical constraints that become more evident during the review process.

We recommend including this report, in its entirety, in the project contract documents. This report should also be provided to any future property owners so they will be aware of our findings and recommendations.

CRITICAL AREA REPORT COMPONENTS

The following are our replies to specific items in the Bellevue Land Use Code (LUC 20.25H.125 and 20.25H.145) that are related to steep slope performance standards and Critical Areas Report (CAR) requirements.

LUC 20.25H.125:

A. We anticipate that the project will include minimal re-grading or altering of the existing topography outside of the building footprints.
B. The proposed residence will be located on the eastern portion of the property, with a 50-foot buffer from the Steep Slope that covers the western half of the site. We understand that the steep slope located west of Northeast Rosemont Place will remain undisturbed.
C. The recommendations presented in this report are intended to prevent the planned development from adversely impacting the stability of the neighboring properties. This work will not necessitate increased buffers on the surrounding lots.
D. We recommend any fill placed on the subject site be retained by an engineered retaining wall bearing on the glacially-compressed soils or supported on small-diameter pipe piles driven into the dense underlying soils.
E. While the proposed development is in the early planning stages and detailed plans have not yet been provided to us, minimizing impervious areas downslope of the Steep Slope will have no positive or negative benefit with regard to stability of the slope.

F. Although detailed plans have not been provided to us, we recommend any fill placed on the site be retained by an engineered retaining wall as discussed above. No grading should occur along the toe of the Steep Slope, unless specifically evaluated by the Geotechnical Engineer of Record.
G. We anticipate that the western perimeter foundation of the proposed residence will retain the soil directly upslope of it. Rockeries or landscape walls are expected to be minimal.
H. As previously discussed, there is no planned development within the Steep Slope on the western half of the subject site.
I. Deck structures are not expected in the Steep Slope area.
J. A restoration plan for the development area will be included as a part of the permit application for this project.

LUC 20.25H.145:

A. As discussed above, the proposed development will be offset 50 feet from the toe of the Steep Slope, and will not increase the geologic hazard to either the surrounding properties or the site itself, including the Steep Slope.
B. The proposed work will not adversely impact other critical areas if completed in general accordance with our recommendations.
C. The recommendations of this report are intended to mitigate the risks posed by the Steep Slope to a level that would exist if the critical area buffer was not modified.
D. The recommendations of this report are intended to prevent the planned development from adversely impacting stability of the critical areas, and to make the completed project safe under the anticipated surface and subsurface conditions.
E. This *Geotechnical Engineering Study* follows the guidelines of the City of Bellevue submittal requirements for geotechnical reports.
F. The planned development should comply with our recommendations.
G. To the best of our knowledge, the planned work is not expected to adversely impact habitat associated with species of local importance.

SEISMIC CONSIDERATIONS

In accordance with the International Building Code (IBC), the site class within 100 feet of the ground surface is best represented by Site Class Type D (Stiff Soil). As noted in the USGS website, the mapped spectral acceleration value for a 0.2 second (S_s) and 1.0 second period (S_1) equals 1.27g and 0.49g, respectively.

The IBC and ASCE 7 require that the potential for liquefaction (soil strength loss) during an earthquake be evaluated for the peak ground acceleration of the Maximum Considered Earthquake (MCE), which has a probability of occurring once in 2,475 years (2 percent probability of occurring in a 50-year period). The MCE peak ground acceleration adjusted for site class effects (F_{PGA}) equals 0.51g. The saturated, loose to medium-dense sand beneath the site are susceptible to seismic liquefaction under the ground motions of the MCE. The proposed residence will be supported on small-diameter pipe piles embedded into the dense underlying soils not susceptible to seismic liquefaction.

PIPE PILES

Three- or 4-inch-diameter pipe piles driven with a 850- or 1,100- or 2,000-pound hydraulic jackhammer to the following final penetration rates may be assigned the following compressive capacities.

INSIDE PILE DIAMETER	FINAL DRIVING RATE (850-pound hammer)	FINAL DRIVING RATE (1,100-pound hammer)	FINAL DRIVING RATE (2,000-pound hammer)	ALLOWABLE COMPRESSIVE CAPACITY
3 inches	10 sec/inch	6 sec/inch	2 sec/inch	6 tons
4 inches	16 sec/inch	10 sec/inch	4 sec/inch	10 tons

Note: The refusal criteria indicated in the above table are valid only for pipe piles that are installed using a hydraulic impact hammer carried on leads that allow the hammer to sit on the top of the pile during driving. If the piles are installed by alternative methods, such as a vibratory hammer or a hammer that is hard-mounted to the installation machine, numerous load tests to 200 percent of the design capacity would be necessary to substantiate the allowable pile load. The appropriate number of load tests would need to be determined at the time the contractor and installation method are chosen.

As a minimum, Schedule 40 pipe should be used. The site soils are not highly organic, and are not located near salt water. As a result, they do not have an elevated corrosion potential. Considering this, it is our opinion that standard "black" pipe can be used, and corrosion protection, such as galvanizing, is not necessary for the pipe piles.

We understand that the City of Bellevue has adopted the use of Seattle Director's Rule 10-2009 contains several prescriptive requirements related to the use of pipe piles having a diameter of less than 10 inches. Under Director's Rule 10-2009, load tests are required on 3 percent of the installed piles up to a maximum of 5 piles, with a minimum of one pile load test on each project. Additionally, full-time observation of the pile installation by the geotechnical engineer-of-record is required by Director's Rule 10-2009.

Pile caps and grade beams should be used to transmit loads to the piles. Isolated pile caps should include a minimum of two piles to reduce the potential for eccentric loads being applied to the piles. Subsequent sections of pipe can be connected with slip or threaded couplers, or they can be welded together. If slip couplers are used, they should fit snugly into the pipe sections. This may require that shims be used or that beads of welding flux be applied to the outside of the coupler.

Lateral loads due to wind or seismic forces may be resisted by passive earth pressure acting on the vertical, embedded portions of the foundation. For this condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level compacted fill. We recommend using a passive earth pressure of 300 pounds per cubic foot (pcf) for this resistance. If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate. We recommend a safety factor of at least 1.5 for the foundation's resistance to lateral loading, when using the above ultimate passive value.

If lateral resistance from fill placed against the foundations is required for this project, the structural engineer should indicate this requirement on the plans for the general and earthwork contractor's information. Compacted fill placed against the foundations can consist of on-site/imported soil that is tamped into place using the backhoe or is compacted using a jumping jack compactor. It is

necessary for the fill to be compacted to a firm condition, but it does not need to reach even 90 percent relative compaction to develop the passive resistance recommended above.

FOUNDATION AND RETAINING WALLS

Retaining walls backfilled on only one side should be designed to resist the lateral earth pressures imposed by the soil they retain. The following recommended parameters are for walls that restrain level backfill:

PARAMETER	VALUE
Active Earth Pressure *	40 pcf (level backfill) 60 pcf (sloped backfill)
Passive Earth Pressure	300 pcf
Coefficient of Friction	0.40
Soil Unit Weight	130 pcf

Where: pcf is Pounds per Cubic Foot, and Active and Passive Earth Pressures are computed using the Equivalent Fluid Pressures.

*** For a restrained wall that cannot deflect at least 0.002 times its height, a uniform lateral pressure equal to 10 psf times the height of the wall should be added to the above active equivalent fluid pressure. This applies only to walls with level backfill.**

The design values given above do not include the effects of any hydrostatic pressures behind the walls and assume that no surcharges, such as those caused by slopes, vehicles, or adjacent foundations will be exerted on the walls. If these conditions exist, those pressures should be added to the above lateral soil pressures. Where sloping backfill is desired behind the walls, we will need to be given the wall dimensions and the slope of the backfill in order to provide the appropriate design earth pressures. The surcharge due to traffic loads behind a wall can typically be accounted for by adding a uniform pressure equal to 2 feet multiplied by the above active fluid density. Heavy construction equipment should not be operated behind retaining and foundation walls within a distance equal to the height of a wall, unless the walls are designed for the additional lateral pressures resulting from the equipment.

The values given above are to be used to design only permanent foundation and retaining walls that are to be backfilled, such as conventional walls constructed of reinforced concrete or masonry. It is not appropriate to use the above earth pressures and soil unit weight to back-calculate soil strength parameters for design of other types of retaining walls, such as soldier pile, reinforced earth, modular or soil nail walls. We can assist with design of these types of walls, if desired.

The passive pressure given is appropriate only for a shear key poured directly against undisturbed native soil, or for the depth of level, well-compacted fill placed in front of a retaining or foundation wall. The values for friction and passive resistance are ultimate values and do not include a safety factor. Restrained wall soil parameters should be utilized the wall and reinforcing design for a distance of 1.5 times the wall height from corners or bends in the walls, or from other points of restraint. This is intended to reduce the amount of cracking that can occur where a wall is restrained by a corner.

Wall Pressures Due to Seismic Forces

The surcharge wall loads that could be imposed by the design earthquake can be modeled by adding a uniform lateral pressure to the above-recommended active pressure. The recommended surcharge pressure is 8**H** pounds per square foot (psf), where **H** is the design retention height of the wall. Using this increased pressure, the safety factor against sliding and overturning can be reduced to 1.2 for the seismic analysis.

Retaining Wall Backfill and Waterproofing

Backfill placed behind retaining or foundation walls should be coarse, free-draining structural fill containing no organics. This backfill should contain no more than 5 percent silt or clay particles and have no gravel greater than 4 inches in diameter. The percentage of particles passing the No. 4 sieve should be between 25 and 70 percent.

The purpose of these backfill requirements is to ensure that the design criteria for a retaining wall are not exceeded because of a build-up of hydrostatic pressure behind the wall. Also, subsurface drainage systems are not intended to handle large volumes of water from surface runoff. The top 12 to 18 inches of the backfill should consist of a compacted, relatively impermeable soil or topsoil, or the surface should be paved. The ground surface must also slope away from backfilled walls at one to 2 percent to reduce the potential for surface water to percolate into the backfill.

Water percolating through pervious surfaces (pavers, gravel, permeable pavement, etc.) must also be prevented from flowing toward walls or into the backfill zone. Foundation drainage and waterproofing systems are not intended to handle large volumes of infiltrated water. The compacted subgrade below pervious surfaces and any associated drainage layer should therefore be sloped away. Alternatively, a membrane and subsurface collection system could be provided below a pervious surface.

It is critical that the wall backfill be placed in lifts and be properly compacted, in order for the above-recommended design earth pressures to be appropriate. The recommended wall design criteria assume that the backfill will be well-compacted in lifts no thicker than 12 inches. The compaction of backfill near the walls should be accomplished with hand-operated equipment to prevent the walls from being overloaded by the higher soil forces that occur during compaction. The section entitled ***General Earthwork and Structural Fill*** contains additional recommendations regarding the placement and compaction of structural fill behind retaining and foundation walls.

The above recommendations are not intended to waterproof below-grade walls, or to prevent the formation of mold, mildew or fungi in interior spaces. Over time, the performance of subsurface drainage systems can degrade, subsurface groundwater flow patterns can change, and utilities can break or develop leaks. Therefore, waterproofing should be provided where future seepage through the walls is not acceptable. This typically includes limiting cold-joints and wall penetrations, and using bentonite panels or membranes on the outside of the walls. There are a variety of different waterproofing materials and systems, which should be installed by an experienced contractor familiar with the anticipated construction and subsurface conditions. Applying a thin coat of asphalt emulsion to the outside face of a wall is not considered waterproofing, and will only help to reduce moisture generated from water vapor or capillary action from seeping through the concrete. As with any project, adequate ventilation of basement and crawl space areas is important to prevent

a buildup of water vapor that is commonly transmitted through concrete walls from the surrounding soil, even when seepage is not present. This is appropriate even when waterproofing is applied to the outside of foundation and retaining walls. We recommend that you contact an experienced envelope consultant if detailed recommendations or specifications related to waterproofing design, or minimizing the potential for infestations of mold and mildew are desired.

The ***General***, ***Slabs-On-Grade***, and ***Drainage Considerations*** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

FLOOR SLABS

We recommend that the floor slabs for the residence be supported on piles due to the compressible soils encountered below grade in the area of the residence.

As discussed in the ***General*** section, an underslab drainage system should be installed below the residence's lowest finished floor slab.

Even where the exposed soils appear dry, water vapor will tend to naturally migrate upward through the soil to the new constructed space above it. This can affect moisture-sensitive flooring, cause imperfections or damage to the slab, or simply allow excessive water vapor into the space above the slab. All interior slabs-on-grade should be underlain by a capillary break drainage layer consisting of a minimum 4-inch thickness of clean gravel or crushed rock that has a fines content (percent passing the No. 200 sieve) of less than 3 percent and a sand content (percent passing the No. 4 sieve) of no more than 10 percent. Pea gravel or crushed rock are typically used for this layer. This capillary break/drainage layer is not necessary if an underslab drainage system is installed.

As noted by the American Concrete Institute (ACI) in the *Guides for Concrete Floor and Slab Structures*, proper moisture protection is desirable immediately below any on-grade slab that will be covered by tile, wood, carpet, impermeable floor coverings, or any moisture-sensitive equipment or products. ACI recommends a minimum 10-mil thickness vapor retarder for better durability and long term performance than is provided by 6-mil plastic sheeting that has historically been used. A vapor retarder is defined as a material with a permeance of less than 0.3 perms, as determined by ASTM E 96. It is possible that concrete admixtures may meet this specification, although the manufacturers of the admixtures should be consulted. Where vapor retarders are used under slabs, their edges should overlap by at least 6 inches and be sealed with adhesive tape. The sheeting should extend to the foundation walls for maximum vapor protection.

If no potential for vapor passage through the slab is desired, a vapor *barrier* should be used. A vapor barrier, as defined by ACI, is a product with a water transmission rate of 0.01 perms when tested in accordance with ASTM E 96. Reinforced membranes having sealed overlaps can meet this requirement.

We recommend that the contractor, the project materials engineer, and the owner discuss these issues and review recent ACI literature and ASTM E-1643 for installation guidelines and guidance on the use of the protection/blotter material.

The ***General***, ***Permanent Foundation and Retaining Walls***, and ***Drainage Considerations*** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

EXCAVATIONS AND SLOPES

Recommendations for temporary excavation slopes are presented above in the ***General*** section.

The above-recommended temporary slope inclinations are based on the conditions exposed in our explorations, and on what has been successful at other sites with similar soil conditions. It is possible that variations in soil and groundwater conditions will require modifications to the inclination at which temporary slopes can stand. Temporary cuts are those that will remain unsupported for a relatively short duration to allow for the construction of foundations, retaining walls, or utilities. Temporary cut slopes should be protected with plastic sheeting during wet weather. It is also important that surface runoff be directed away from the top of temporary slope cuts. Cut slopes should also be backfilled or retained as soon as possible to reduce the potential for instability. Please note that sand or loose soil can cave suddenly and without warning. Excavation, foundation, and utility contractors should be made especially aware of this potential danger. These recommendations may need to be modified if the area near the potential cuts has been disturbed in the past by utility installation, or if settlement-sensitive utilities are located nearby.

All permanent cuts into native soil should be inclined no steeper than 2.5:1 (H:V). Water should not be allowed to flow uncontrolled over the top of any temporary or permanent slope. All permanently exposed slopes should be seeded with an appropriate species of vegetation to reduce erosion and improve the stability of the surficial layer of soil.

SOLDIER PILE RETAINING WALLS

This section presents design considerations for temporary and permanent cantilevered soldier pile walls. Cantilevered soldier pile systems have proven to be an efficient and economical method for providing excavation shoring where the depth of excavation is less than 15 feet.

Soldier pile walls would be constructed after making planned cut slopes, and prior to commencing the mass excavation, by setting steel H-beams in a drilled hole and grouting the space between the beam and the soil with concrete for the entire height of the drilled hole. Based on the perched groundwater and loose soils encountered in our test borings, the contractor should be prepared to case the holes or use the slurry method if caving soil is encountered. Excessive ground loss in the drilled holes must be avoided to reduce the potential for settlement on adjacent properties. If water is present in a hole at the time the soldier pile is poured, concrete must be tremied to the bottom of the hole.

As excavation proceeds downward, the space between the piles should be lagged with timber, and any voids behind the timbers should be filled with pea gravel, or a slurry comprised of sand and fly ash. Treated lagging is usually required for permanent walls, while untreated lagging can often be utilized for temporary shoring walls. Temporary vertical cuts will be necessary between the soldier piles for the lagging placement. The prompt and careful installation of lagging is important, particularly in loose or caving soil, to maintain the integrity of the excavation and provide safer working conditions. Additionally, care must be taken by the excavator to remove no more soil between the soldier piles than is necessary to install the lagging. Caving or overexcavation during

lagging placement could result in loss of ground on neighboring properties. Timber lagging should be designed for an applied lateral pressure of 30 percent of the design wall pressure, if the pile spacing is less than three pile diameters. For larger pile spacings, the lagging should be designed for 50 percent of the design load.

If permanent building walls are to be constructed against the shoring walls, drainage should be provided by attaching a geotextile drainage composite with a solid plastic backing, similar to Miradrain 6000, to the entire face of the lagging, prior to placing waterproofing and pouring the foundation wall. These drainage composites should be hydraulically connected to the foundation drainage system through weep holes placed in the foundation walls.

Soldier Pile Wall Design

Temporary soldier pile retaining walls that are cantilevered, and that have a level backslope, should be designed for an active soil pressure equal to that pressure exerted by an equivalent fluid with a unit weight of 35 pounds per cubic foot (pcf). If soldier pile walls will permanently retain soil, they should be designed for earth pressures presented in the ***Permanent Foundation and Retaining Walls*** section.

Traffic surcharges can typically be accounted for by increasing the effective height of the shoring wall by 2 feet. Existing adjacent buildings will exert surcharges on the proposed shoring wall, unless the buildings are underpinned. Slopes above the shoring walls will exert additional surcharge pressures. These surcharge pressures will vary, depending on the configuration of the cut slope and shoring wall. We can provide recommendations regarding slope and building surcharge pressures when the preliminary shoring design is completed.

It is important that the shoring design provides sufficient working room to drill and install the soldier piles, without needing to make unsafe, excessively steep temporary cuts. Cut slopes should be planned to intersect the backside of the drilled holes, not the back of the lagging.

Lateral movement of the soldier piles below the excavation level will be resisted by an ultimate passive soil pressure equal to that pressure exerted by a fluid with a density of 350 pcf. No safety factor is included in the given value. This soil pressure is valid only for a level excavation in front of the soldier pile; it acts on two times the grouted pile diameter. Cut slopes made in front of shoring walls significantly decrease the passive resistance. This includes temporary cuts necessary to install internal braces or rakers. The minimum embedment below the floor of the excavation for cantilever soldier piles should be equal to the height of the "stick-up." Plate 8 attached to this report presents a typical cantilevered soldier pile retaining wall detail.

DRAINAGE CONSIDERATIONS

We anticipate that permanent foundation walls may be constructed against the shoring walls. Where this occurs, a plastic-backed drainage composite, such as Miradrain, Battledrain, or similar, should be placed against the entire surface of the shoring prior to pouring the foundation wall. Weep pipes located no more than 6 feet on-center should be connected to the drainage composite and poured into the foundation walls or the perimeter footing. A footing drain installed along the inside of the perimeter footing will be used to collect and carry the water discharged by the weep

pipes to the storm system. Isolated zones of moisture or seepage can still reach the permanent wall where groundwater finds leaks or joints in the drainage composite. This is often an acceptable risk in unoccupied below-grade spaces, such as parking garages. However, formal waterproofing is typically necessary in areas where wet conditions at the face of the permanent wall will not be tolerable. If this is a concern, the permanent drainage and waterproofing system should be designed by a specialty consultant familiar with the expected subsurface conditions and proposed construction. Plate 9 presents typical considerations for foundation drains at shoring walls.

Footing drains placed inside the building, outside of the building, or behind backfilled walls should consist of 4-inch, perforated PVC pipe surrounded by at least 6 inches of 1-inch-minus, washed rock wrapped in a non-woven, geotextile filter fabric (Mirafi 140N, Supac 4NP, or similar material). At its highest point, a perforated pipe invert should be at least 6 inches below the level of a crawl space or the bottom of a floor slab, and it should be sloped slightly for drainage. All roof and surface water drains must be kept separate from the foundation drain system.

Footing drains outside of the building should be used where: (1) crawl spaces or basements will be below a structure; (2) a slab is below the outside grade; or, (3) the outside grade does not slope downward from a building. A typical footing drain detail is attached to this report as Plate 10. Clean-outs should be provided for potential future flushing or cleaning of footing drains.

As discussed in the ***General*** section, an underslab drainage system should be installed below the residence's lowest finished floor slab. A typical detail for underslab drainage is attached to this report as Plate 11.

As a minimum, a vapor retarder, as defined in the **Slabs-On-Grade** section, should be provided in any crawl space area to limit the transmission of water vapor from the underlying soils. Crawl space grades are sometimes left near the elevation of the bottom of the footings. As a result, an outlet drain is recommended for all crawl spaces to prevent an accumulation of any water that may bypass the footing drains. Providing a few inches of free draining gravel underneath the vapor retarder is also prudent to limit the potential for seepage to build up on top of the vapor retarder.

Groundwater was observed during our field work. If seepage is encountered in an excavation, it should be drained from the site by directing it through drainage ditches, perforated pipe, or French drains, or by pumping it from sumps interconnected by shallow connector trenches at the bottom of the excavation.

The excavation and site should be graded so that surface water is directed off the site and away from the tops of slopes. Water should not be allowed to stand in any area where foundations, slabs, or pavements are to be constructed. Final site grading in areas adjacent to walls and foundations should slope away at least one to 2 percent, except where the area is paved. Surface drains should be provided where necessary to prevent ponding of water behind foundation or retaining walls. A discussion of grading and drainage related to pervious surfaces near walls and structures is contained in the ***Foundation and Retaining Walls*** section.

GENERAL EARTHWORK AND STRUCTURAL FILL

All building and pavement areas should be stripped of surface vegetation, topsoil, organic soil, and other deleterious material. It is important that existing foundations be removed before site development. The stripped or removed materials should not be mixed with any materials to be used as structural fill, but they could be used in non-structural areas, such as landscape beds.

Structural fill is defined as any fill, including utility backfill, placed under, or close to, a building, or in other areas where the underlying soil needs to support loads. All structural fill should be placed in horizontal lifts with a moisture content at, or near, the optimum moisture content. The optimum moisture content is that moisture content that results in the greatest compacted dry density. The moisture content of fill is very important and must be closely controlled during the filling and compaction process.

The allowable thickness of the fill lift will depend on the material type selected, the compaction equipment used, and the number of passes made to compact the lift. The loose lift thickness should not exceed 12 inches, but should be thinner if small, hand-operated compactors are used. We recommend testing structural fill as it is placed. If the fill is not sufficiently compacted, it should be recompacted before another lift is placed. This eliminates the need to remove the fill to achieve the required compaction. The following table presents recommended levels of relative compaction for compacted fill:

LOCATION OF FILL PLACEMENT	MINIMUM RELATIVE COMPACTION
Beneath slabs or walkways	95%
Filled slopes and behind retaining walls	90%
Beneath pavements	95% for upper 12 inches of subgrade; 90% below that level

Where: Minimum Relative Compaction is the ratio, expressed in percentages, of the compacted dry density to the maximum dry density, as determined in accordance with ASTM Test Designation D 1557-91 (Modified Proctor).

Structural fill that will be placed in wet weather should consist of a coarse, granular soil with a silt or clay content of no more than 5 percent. The percentage of particles passing the No. 200 sieve should be measured from that portion of soil passing the three-quarter-inch sieve.

LIMITATIONS

The conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our exploration and assume that the soil and groundwater conditions encountered in the test borings are representative of subsurface conditions on the site. If the subsurface conditions encountered during construction are significantly different from those observed in our explorations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. Unanticipated conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking samples in test borings. Subsurface conditions can also vary between exploration locations. Such unexpected conditions frequently require making additional expenditures to attain a properly constructed project. It is recommended that the owner consider providing a contingency fund to accommodate such potential extra costs and risks. This is a standard recommendation for all projects.

The recommendations presented in this report are directed toward the protection of only the proposed structure from damage due to slope movement. Predicting the future behavior of steep slopes is an inexact and imperfect science that is currently based mostly on the past behavior of

slopes with similar characteristics. Landslides and soil movement can occur on steep slopes before, during, or after the development of property. The owner of any property containing, or located close to, steep slopes must ultimately accept the possibility that some slope movement could occur, resulting in possible loss of ground or damage to the facilities around the proposed buildings.

This report has been prepared for the exclusive use of Michael Neil and his representatives, for specific application to this project and site. Our conclusions and recommendations are professional opinions derived in accordance with our understanding of current local standards of practice, and within the scope of our services. No warranty is expressed or implied. The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Our services also do not include assessing or minimizing the potential for biological hazards, such as mold, bacteria, mildew and fungi in either the existing or proposed site development.

ADDITIONAL SERVICES

In addition to reviewing the final plans, Geotech Consultants, Inc. should be retained to provide geotechnical consultation, testing, and observation services during construction. This is to confirm that subsurface conditions are consistent with those indicated by our exploration, to evaluate whether earthwork and foundation construction activities comply with the general intent of the recommendations presented in this report, and to provide suggestions for design changes in the event subsurface conditions differ from those anticipated prior to the start of construction. However, our work would not include the supervision or direction of the actual work of the contractor and its employees or agents. Also, job and site safety, and dimensional measurements, will be the responsibility of the contractor.

During the construction phase, we will provide geotechnical observation and testing services when requested by you or your representatives. Please be aware that we can only document site work we actually observe. It is still the responsibility of your contractor or on-site construction team to verify that our recommendations are being followed, whether we are present at the site or not.

The following plates are attached to complete this report:

Plate 1	Vicinity Map
Plate 2	Site Exploration Plan
Plates 3 - 7	Test Boring Logs
Plate 8	Soldier Pile Retaining Wall Detail
Plate 9	Typical Foundation Drain Detail
Plate 10	Typical Footing Drain Detail
Plate 11	Typical Underslab Drainage Detail

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions, or if we can be of further assistance.

Respectfully submitted,

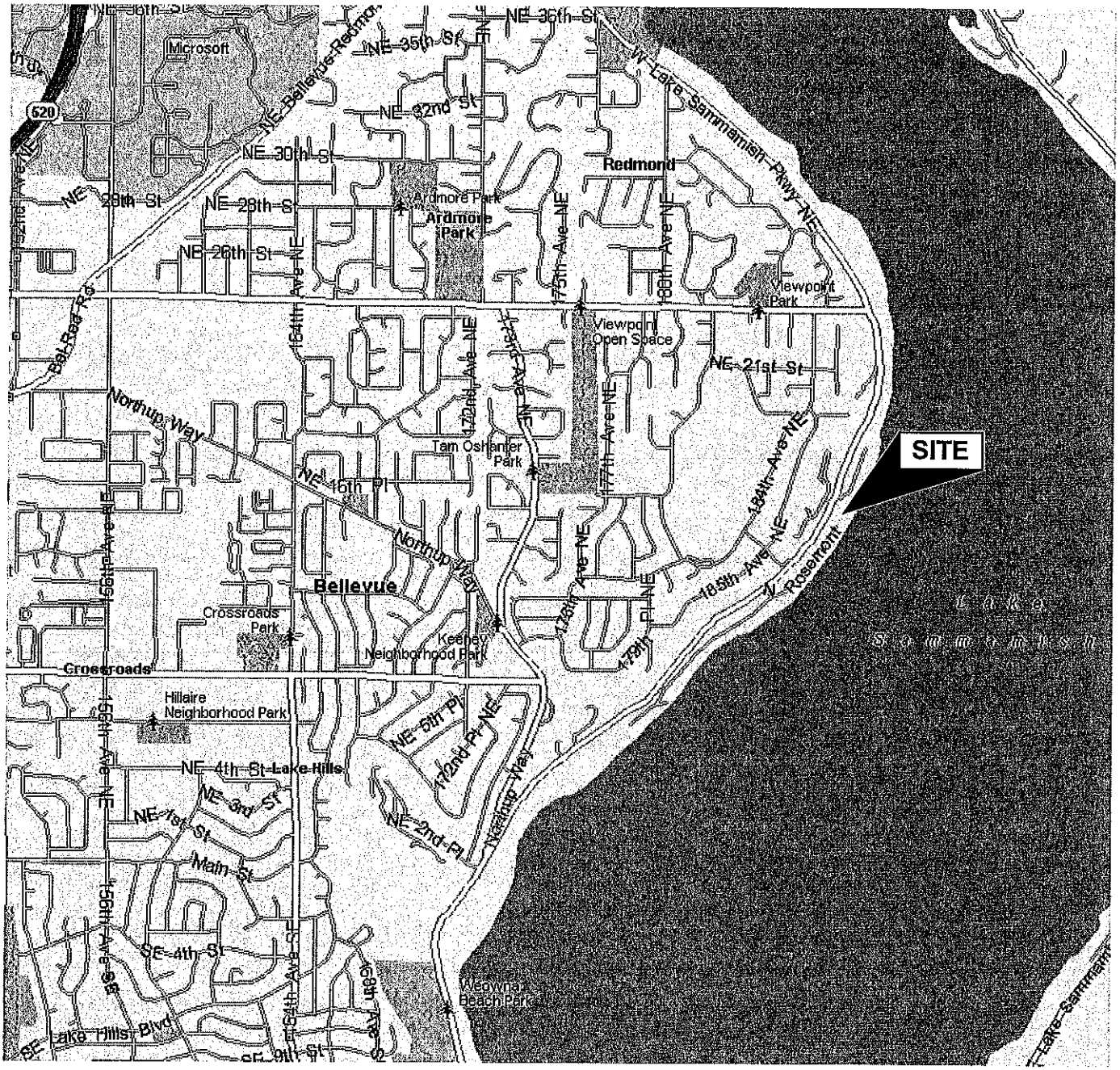
GEOTECH CONSULTANTS, INC.

Adam S. Moyer
Geotechnical Engineer

11/21/19

Marc R. McGinnis, P.E.
Principal

ASM/MRM:kg



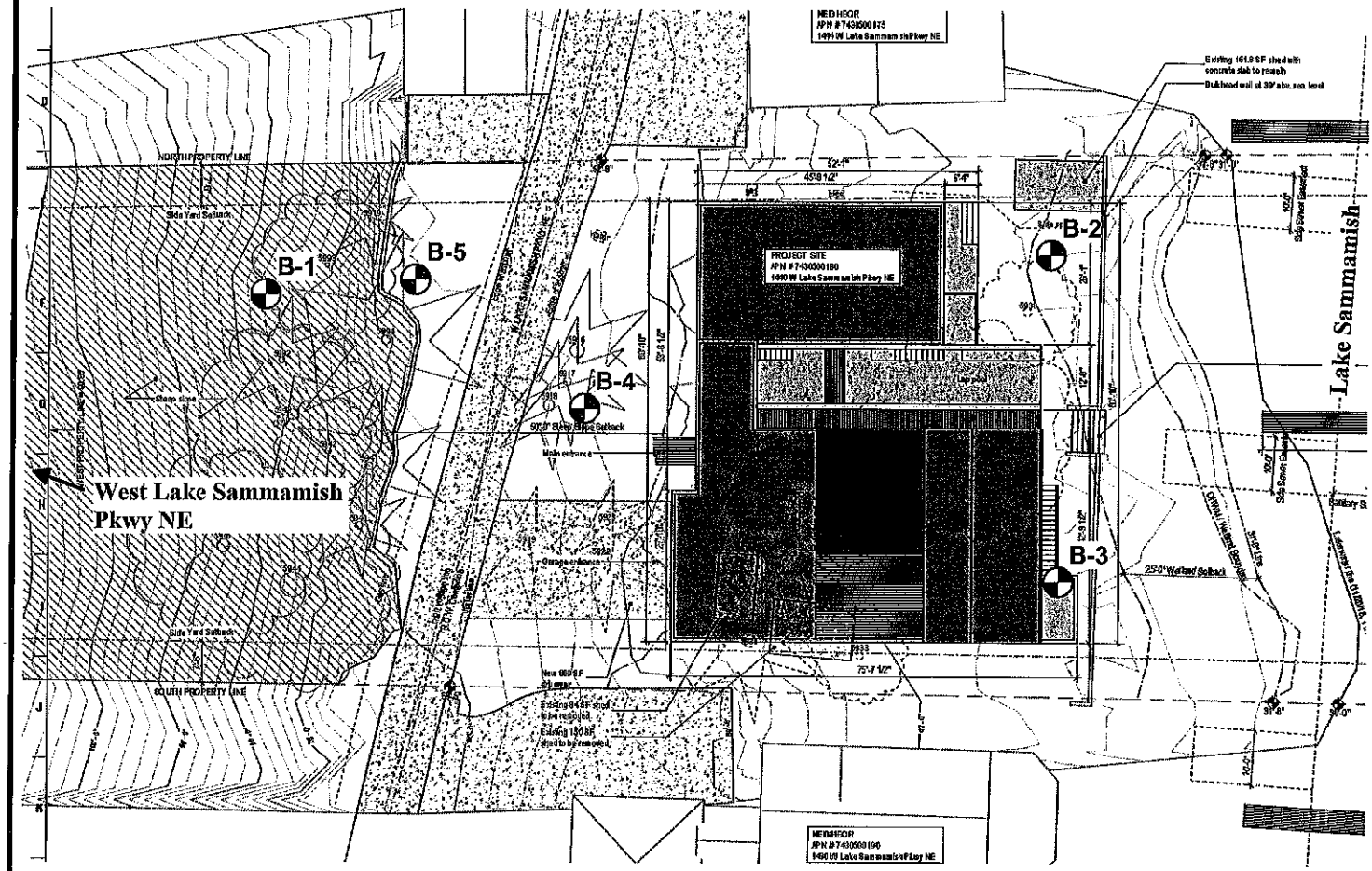
(Source: Microsoft MapPoint, 2013)

GEOTECH CONSULTANTS, INC.

VICINITY MAP

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job No:	Date:		Plate:
18530	Nov. 2019		1



Legend:

- Test Boring Location

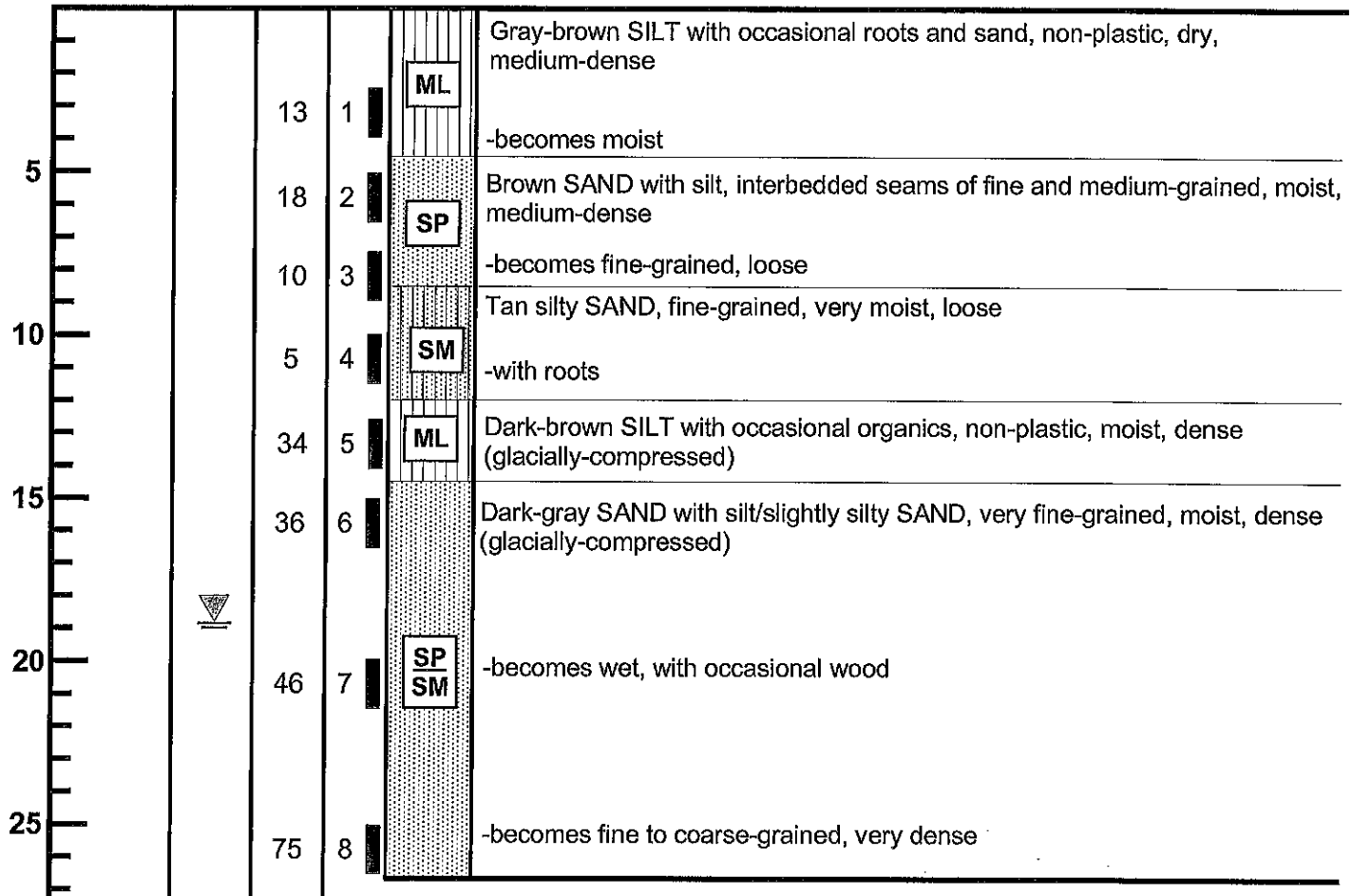
GEOTECH CONSULTANTS, INC.

SITE EXPLORATION PLAN

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job No:	Date:		Plate:
18530	Nov. 2019	No Scale	2

BORING 1



* **Test boring was terminated on December 6, 2018 at 26.5 feet.**

* **Groundwater was encountered below 19 feet during drilling.**

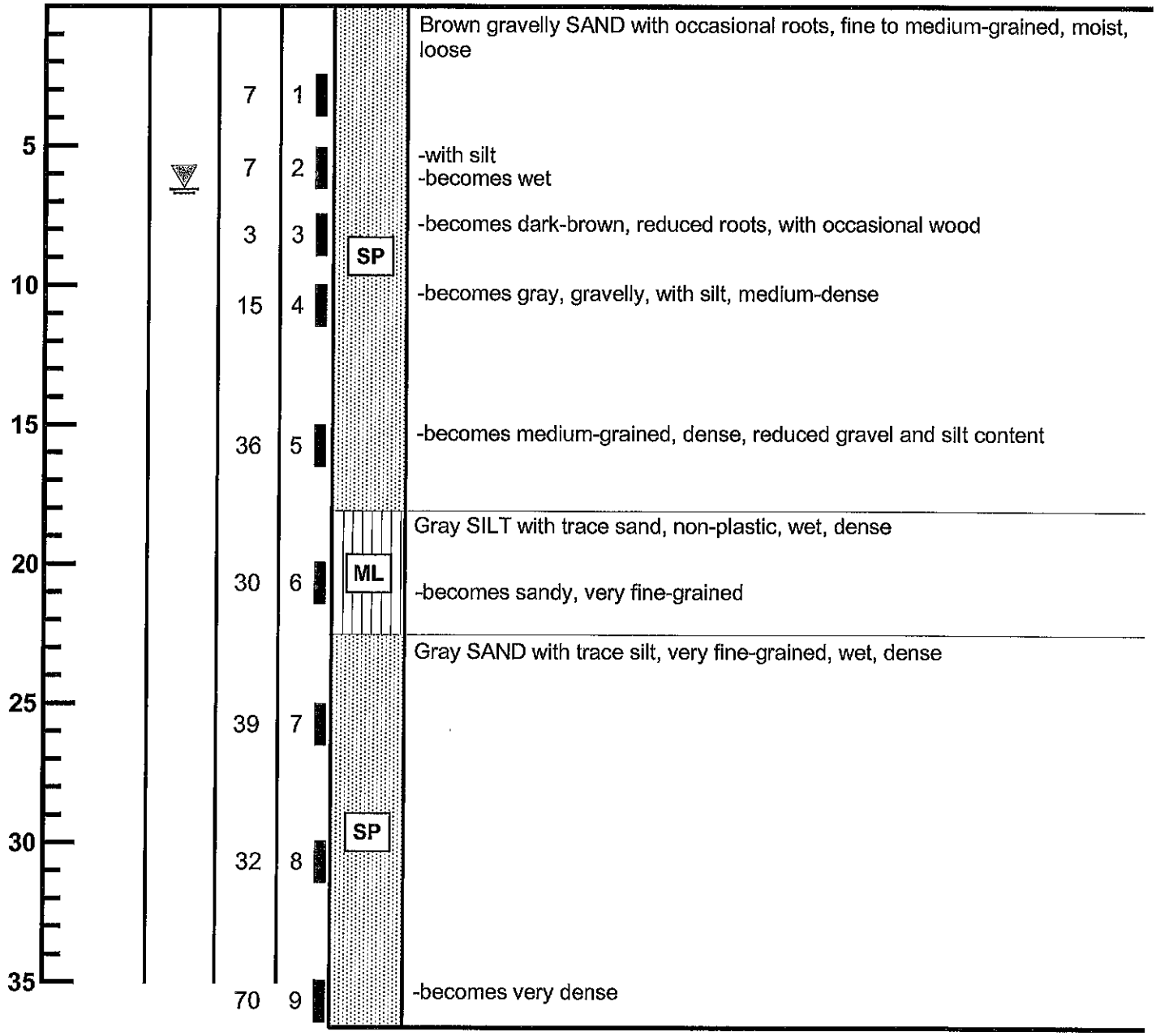
GEOTECH CONSULTANTS, INC.

TEST BORING LOG

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job	Date:	Logged by:	Plate:
18530	Nov. 2019	ASM	3

BORING 2



*** Test boring was terminated on December 6, 2018 at 36.5 feet.**
*** Groundwater was encountered below 6.5 feet during drilling.**

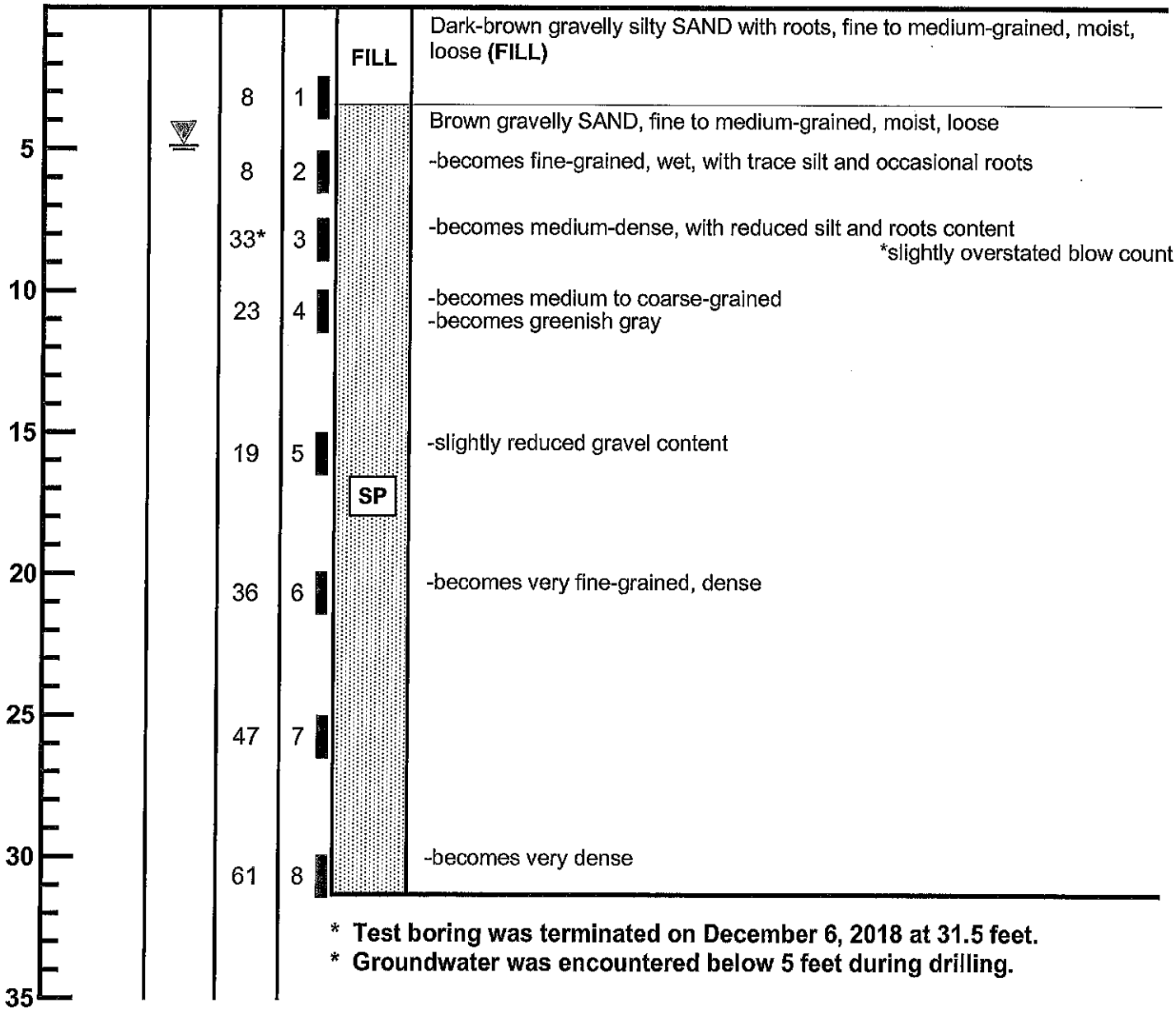
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job	Date:	Logged by:	Plate:
18530	Nov. 2019	ASM	4

BORING 3



* **Test boring was terminated on December 6, 2018 at 31.5 feet.**
* **Groundwater was encountered below 5 feet during drilling.**

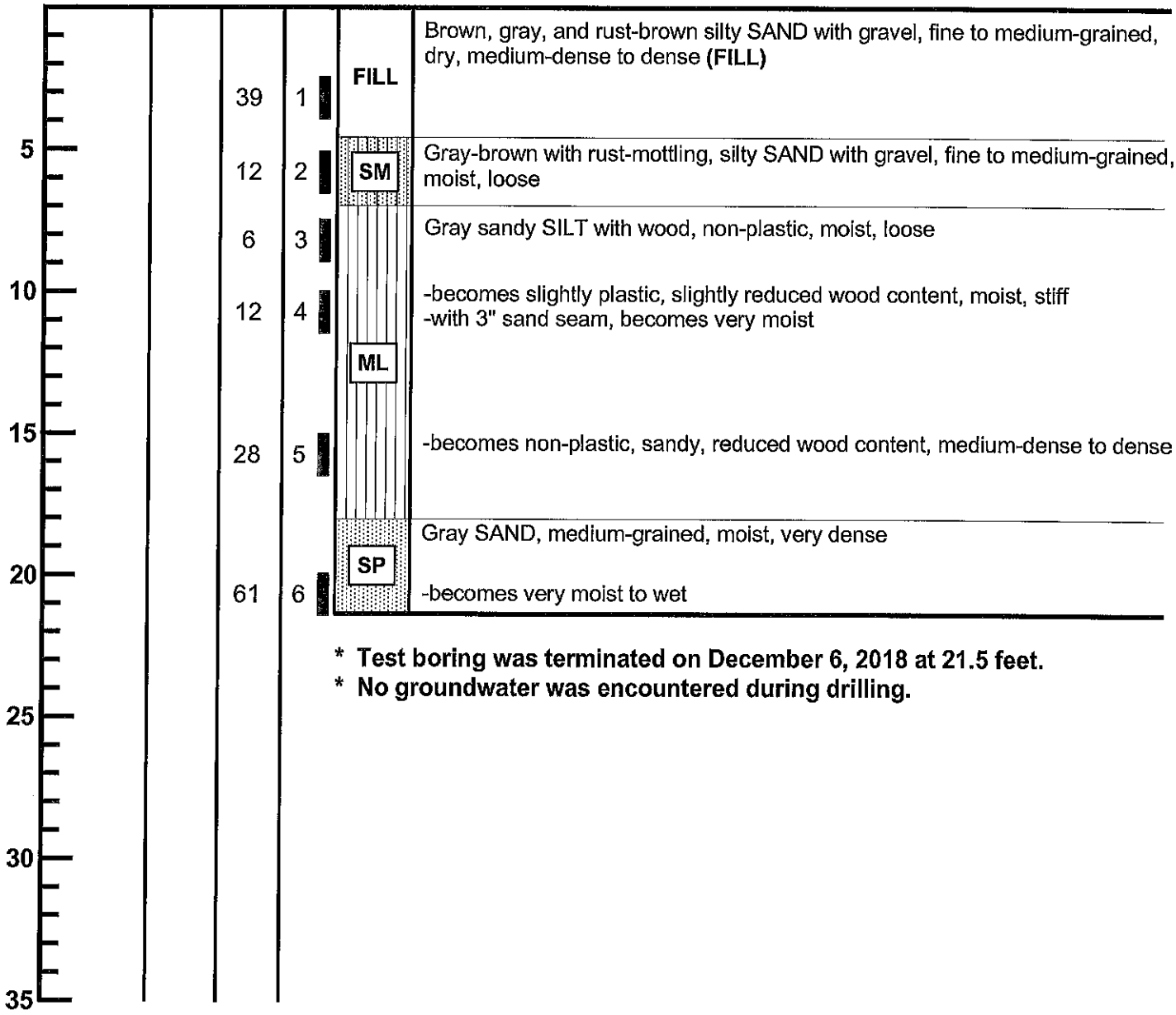
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job	Date:	Logged by:	Plate:
18530	Nov. 2019	ASM	5

BORING 4



* **Test boring was terminated on December 6, 2018 at 21.5 feet.**
* **No groundwater was encountered during drilling.**

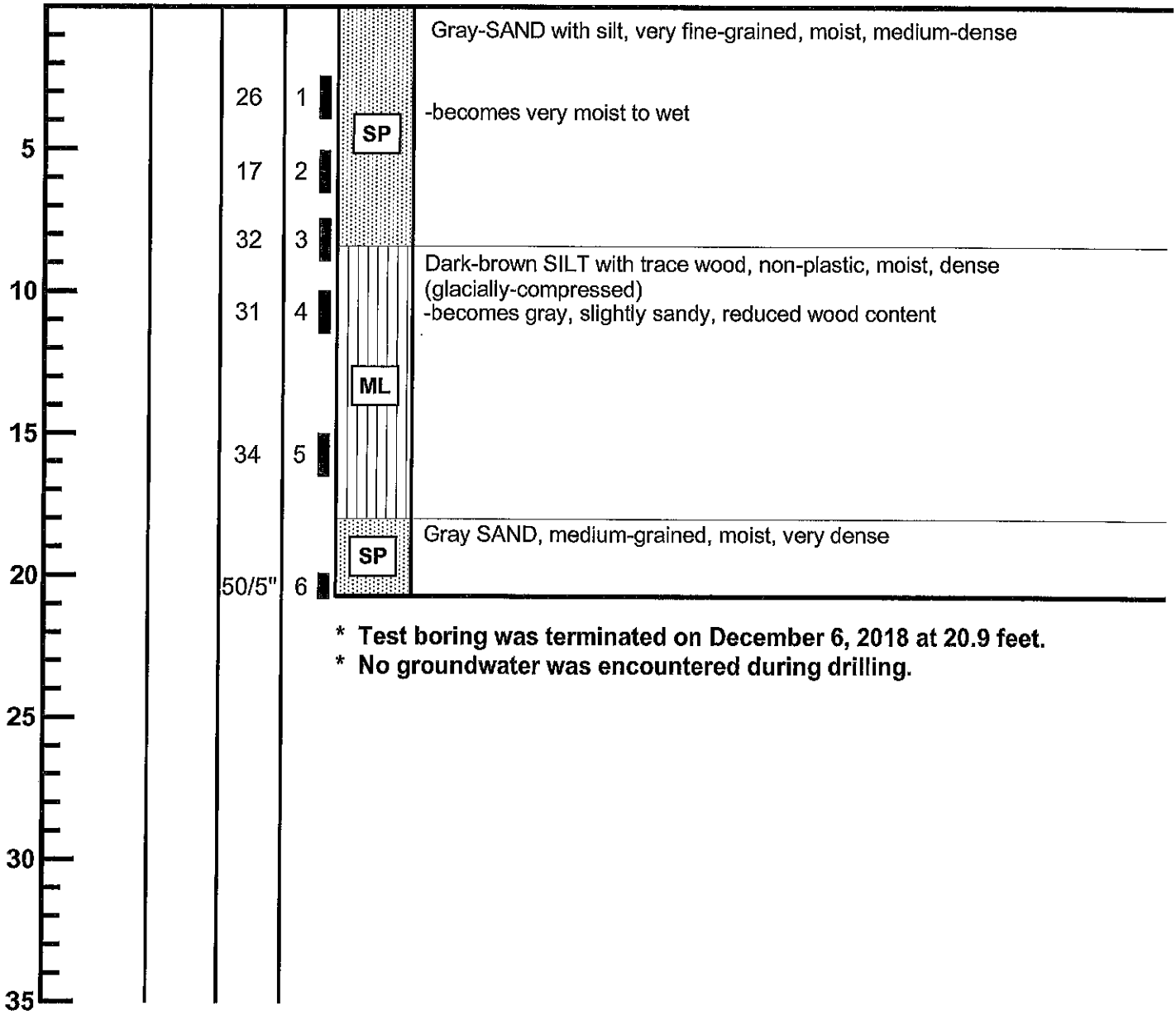
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job	Date:	Logged by:	Plate:
18530	Nov. 2019	ASM	6

BORING 5



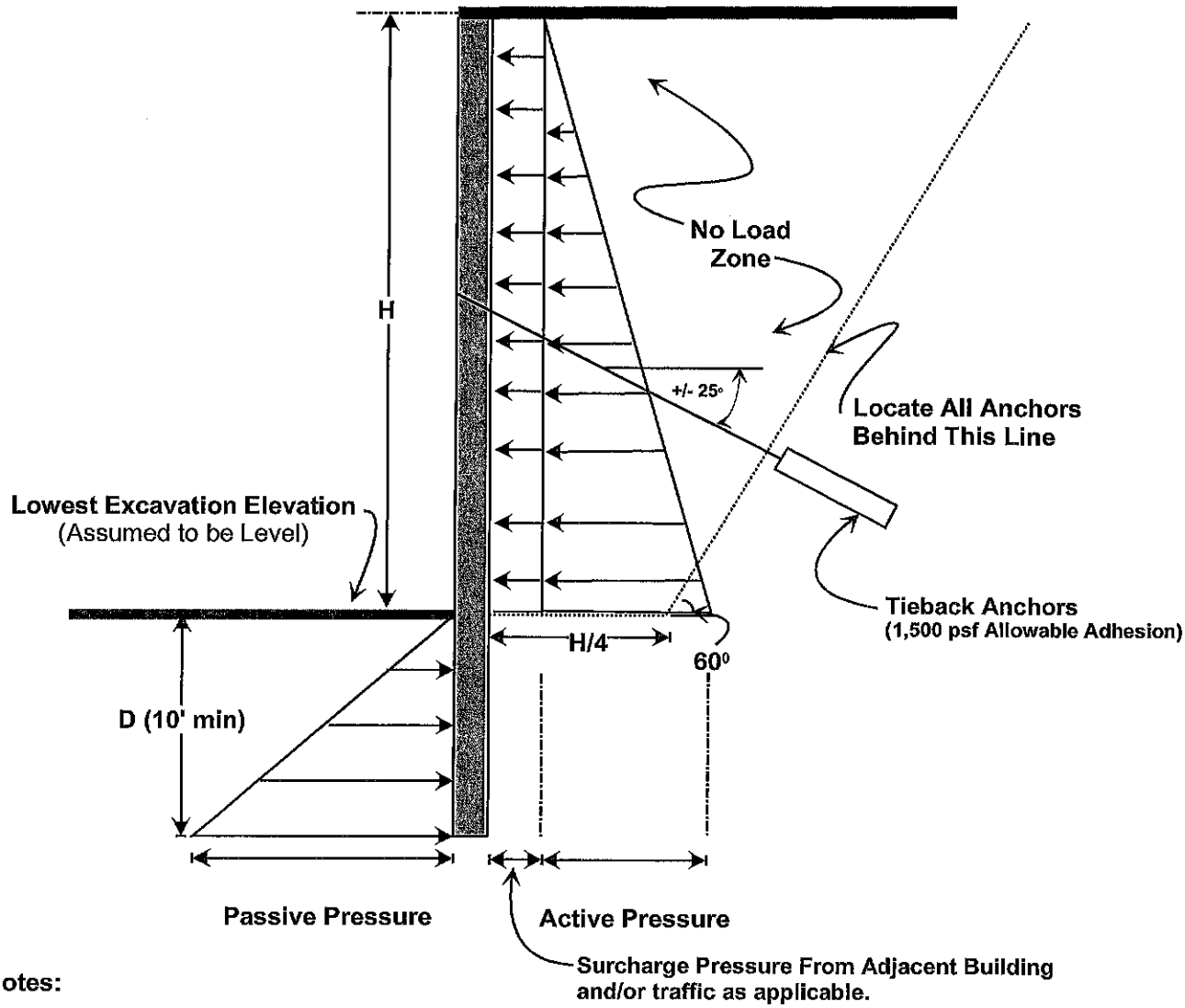
* **Test boring was terminated on December 6, 2018 at 20.9 feet.**
* **No groundwater was encountered during drilling.**

GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job	Date:	Logged by:	Plate:
18530	Nov. 2019	ASM	7



Notes:

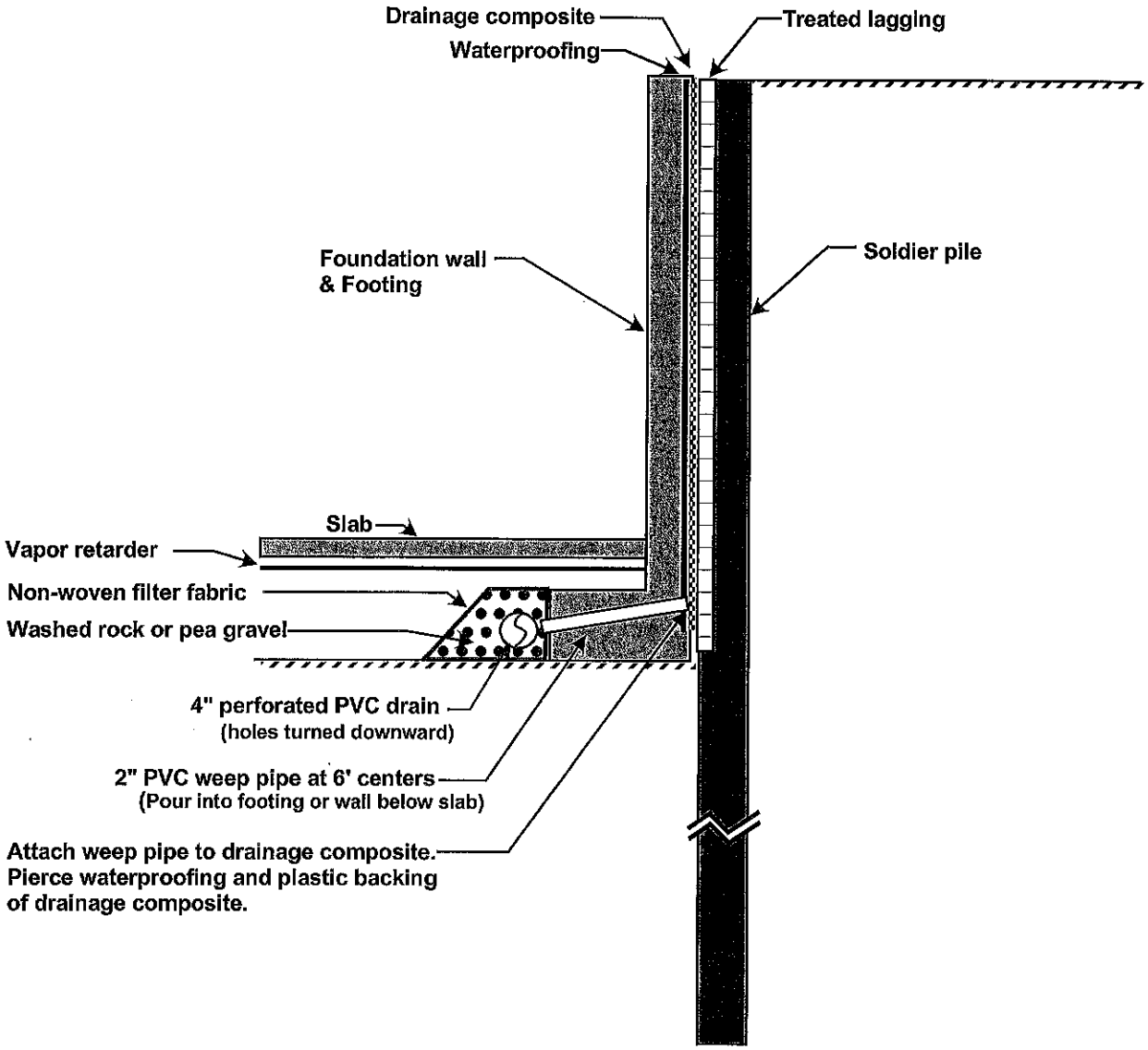
(1) The report should be referenced for specifics regarding design and installation.
(2) Active pressures act over the pile spacing.
(3) Passive pressures act over twice the grouted soldier pile diameter or the pile spacing, whichever is smaller.
(4) It is assumed that no hydrostatic pressures act on the back of the shoring walls.
(5) Cut slopes or adjacent structures positioned above or behind shoring will exert additional pressures on the shoring wall.

GEOTECH
CONSULTANTS, INC.

SOLDIER PILE RETAINING WALL DETAIL

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job No:	Date:		Plate:
18530	Nov. 2019		8



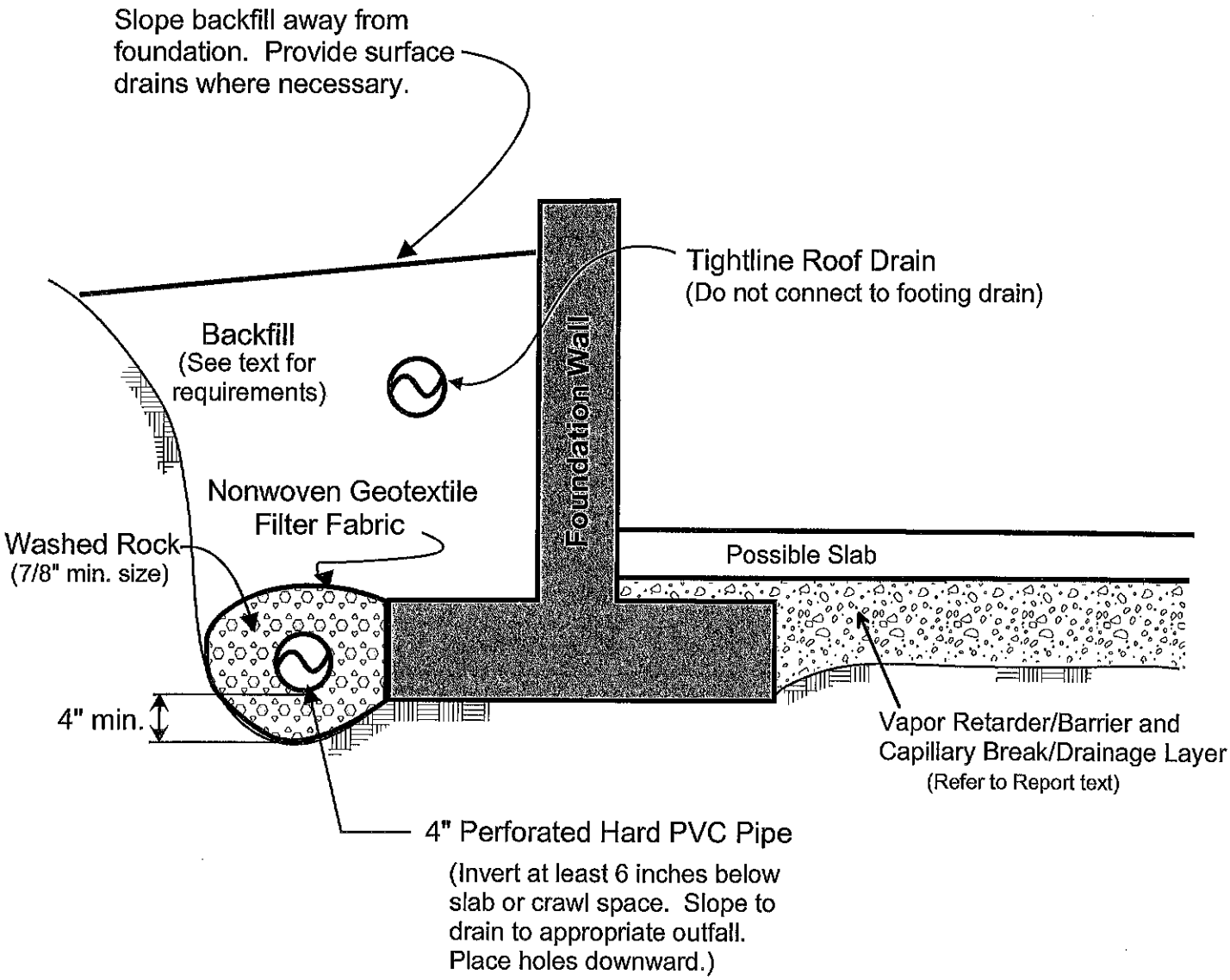
Note - Refer to the report for additional considerations related to drainage and waterproofing.

GEOTECH
CONSULTANTS, INC.

FOUNDATION DRAIN DETAIL

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job No:	Date:		Plate:
18530	Nov. 2019		9



NOTES:

(1) In crawl spaces, provide an outlet drain to prevent buildup of water that bypasses the perimeter footing drains.

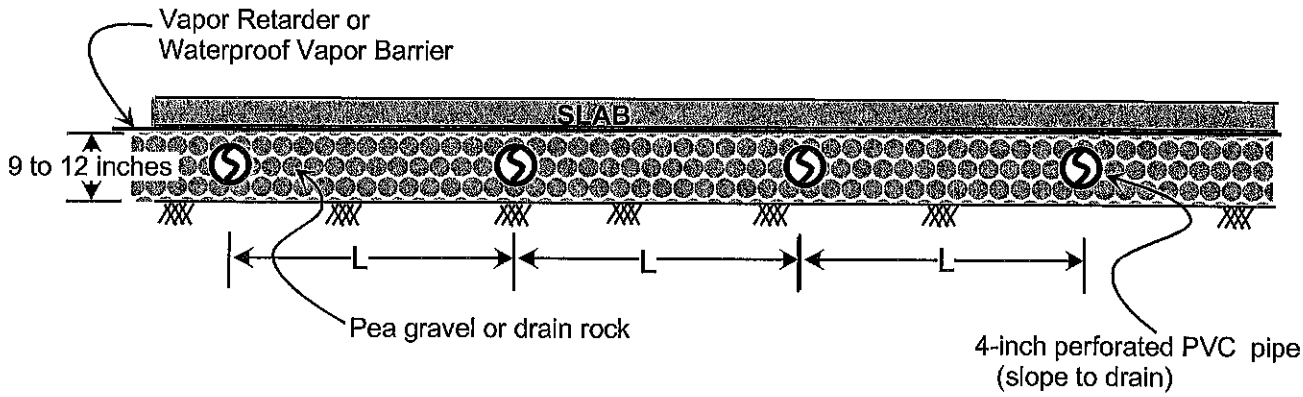
(2) Refer to report text for additional drainage, waterproofing, and slab considerations.

GEOTECH
CONSULTANTS, INC.

FOOTING DRAIN DETAIL

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job No:	Date:		Plate:
18530	Nov. 2019		10



NOTES:

(1) Refer to the report text for additional drainage and waterproofing considerations.
(2) The typical maximum underslab drain separation (L) is 15 to 20 feet.
(3) No filter fabric is necessary beneath the pipes as long as a minimum thickness of 4 inches of rock is maintained beneath the pipes.
(4) The underslab drains and foundation drains should discharge to a suitable outfall.

GEOTECH
CONSULTANTS, INC.

TYPICAL UNDERSLAB DRAINAGE

1440 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Job No:	Date:		Plate:
18530	Nov. 2019		11