DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
11511 MAIN ST., P.O. BOX 90012
BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: Martin Vowels

LOCATION OF PROPOSAL: 708 Shoreland Drive SE

NAME & DESCRIPTION OF PROPOSAL: Vowels Soldier Pile Wall

This is a proposal to construct a soldier pile wall within a steep slope critical area. The wall is designed to stabilize the toe-of-slope and provide a catchment to mitigate the hazard of future landslides damaging the existing single-family residence.

FILE NUMBER: 10-112050-LO

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by 5:00 p.m. on _____.

☒ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on 8-19-10.

☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5 p.m. on _____.

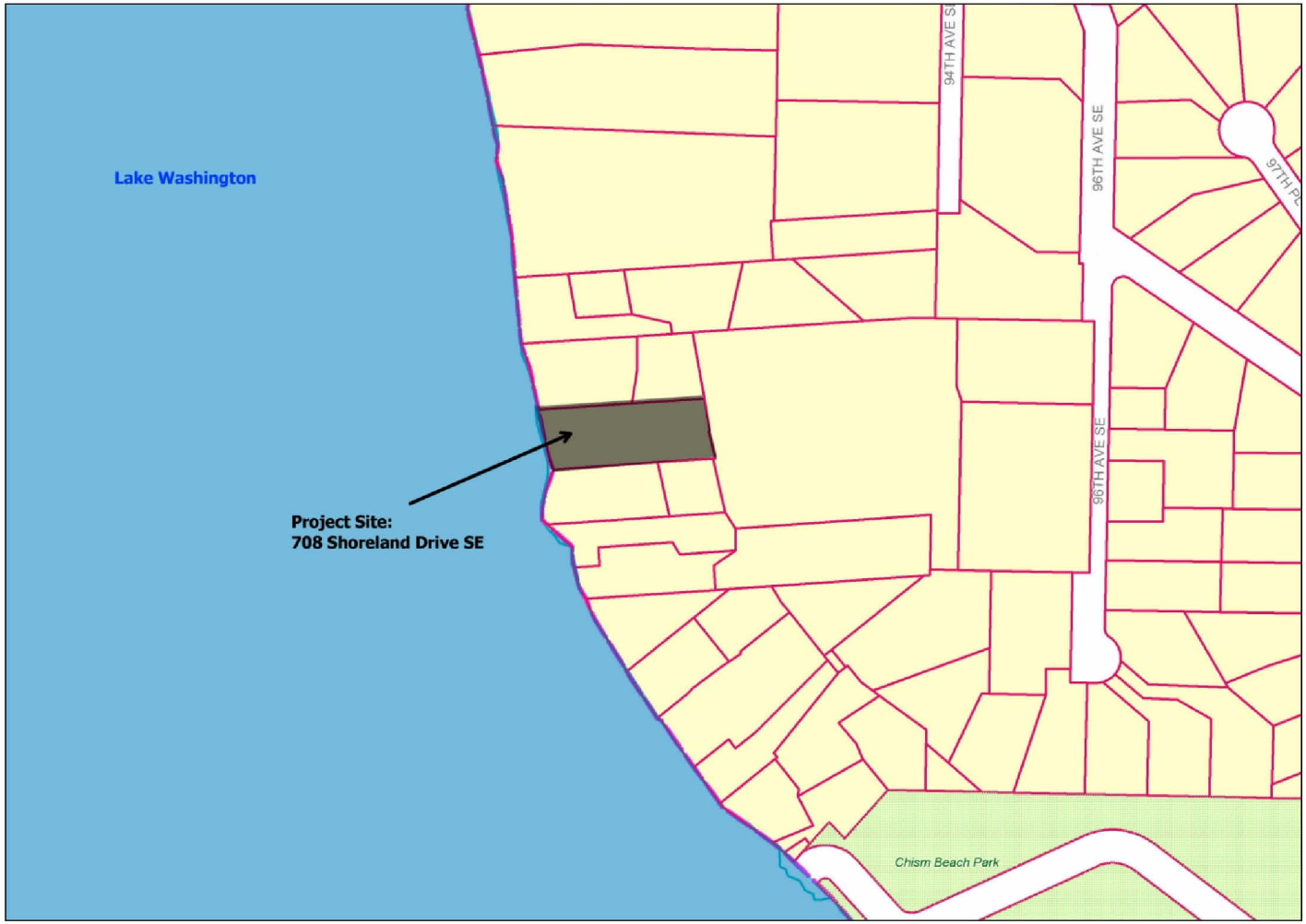
This DNS may be withdrawn at any time if the proposal is modified so that it is likely to have significant adverse environmental impacts; if there is significant new information indicating, or on, a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Environmental Coordinator

8-5-10
Date

OTHERS TO RECEIVE THIS DOCUMENT:
State Department of Fish and Wildlife
State Department of Ecology,
Army Corps of Engineers
Attorney General
Muckleshoot Indian Tribe

Vowels Soldier Pile Wall Vicinity Map
File Number: 10-112050-LO



City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Vowels Soldier Pile Wall
Proposal Address:	708 Shoreland Drive SE
Proposal Description:	Land Use review of a Critical Areas Land Use Permit to construct a soldier pile wall within a steep slope critical area and modification of a toe-of-slope structure setback for improvements to existing structures.
File Number:	10-112050-LO
Applicant:	Martin Vowels, Property Owner
Decisions Included	Critical Areas Land Use Permit (Process II. 20.30P)
Planner:	Reilly Pittman, Land Use Planner
State Environmental Policy Act Threshold Determination:	**Determination of Non-Significance** Carol V. Helland, Environmental Coordinator Development Services Department
Director's Decision:	**Approval with Conditions** Michael A. Brennan, Director Development Services Department By: Carol V. Helland, Land Use Director

Application Date:	May 5, 2010
Notice of Application Date:	May 20, 2010
Decision Publication Date:	August 5, 2010
Project/SEPA Appeal Deadline:	August 19, 2010

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.

I. Proposal Description

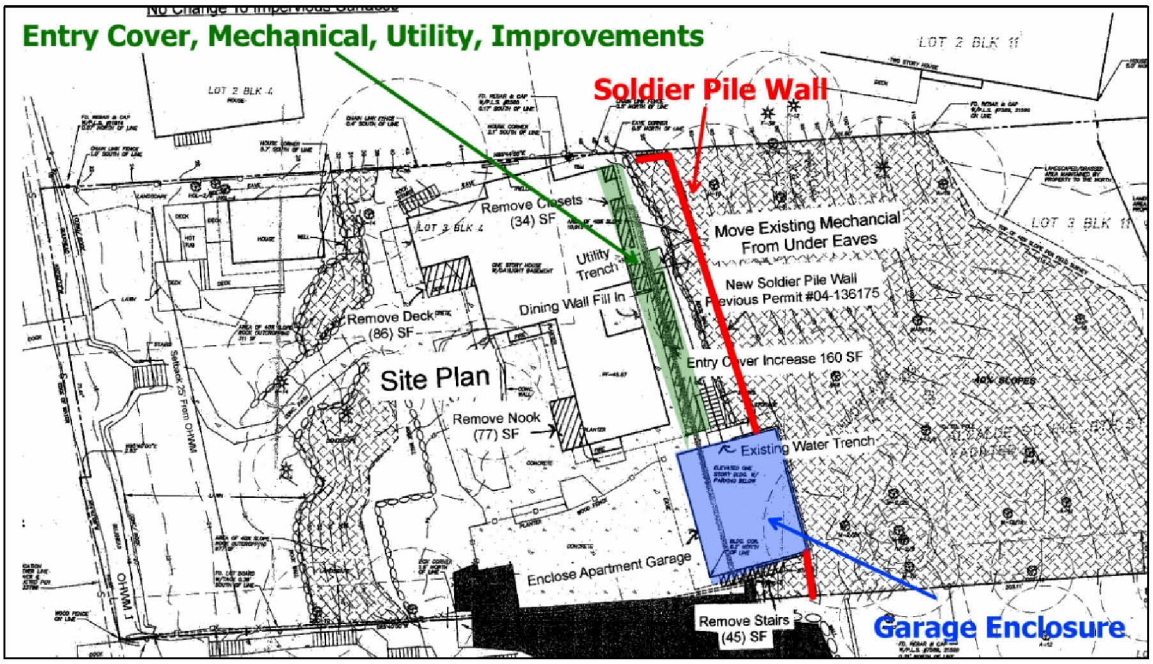
The applicant proposes to construct a soldier pile wall for stabilization of the toe-of-slope of a steep slope critical area which has had past near-surface landslides into the adjacent, existing house. Given site constraints from the steepness of the slope and the proximity of existing development the wall will be placed within the steep slope critical area. Construction will effectively relocate the toe-of-slope to the wall.

Reduction of the 75 toe-of-slope structure setback is also proposed to allow for:

- The creation of a breezeway/entry cover
- Enclosure of a space below an existing detached garage
- Installation of mechanical equipment, utilities, and other improvements as needed

Slope stabilization is an allowed use in a critical area per LUC 20.25H.055. The reduction of a toe-of-slope structure setback requires a geotechnical report which reviews the proposed reduction. This proposal requires the approval of a Critical Areas Land Use Permit for the above activities to be allowed. See Figure 1 below for a site plan showing the proposed activities.

Figure 1



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

A. Site Description

The project site is located at 708 Shoreland Drive SE in the West Bellevue subarea. The site is located in the SE quadrant of Section 31, Township 25 North, Range 5 East. The site is surrounded by other single-family zoned property to the north, east, and south, and has shoreline frontage on Lake Washington to the west. The site has grades significantly greater than 40 percent, sloping down from the access driveway along the eastern property line. Almost the entire eastern half of the property is steep slope critical areas; at the middle

of the property the grade flatens at the toe of the slope where the existing development begins. From the toe-of-slope the grade to the lake is approximately 20 percent with another small, steep area west of the house. See figure 2 for existing site condition and figure 3 for view of the slope adjacent to the house and garage.

Figure 2

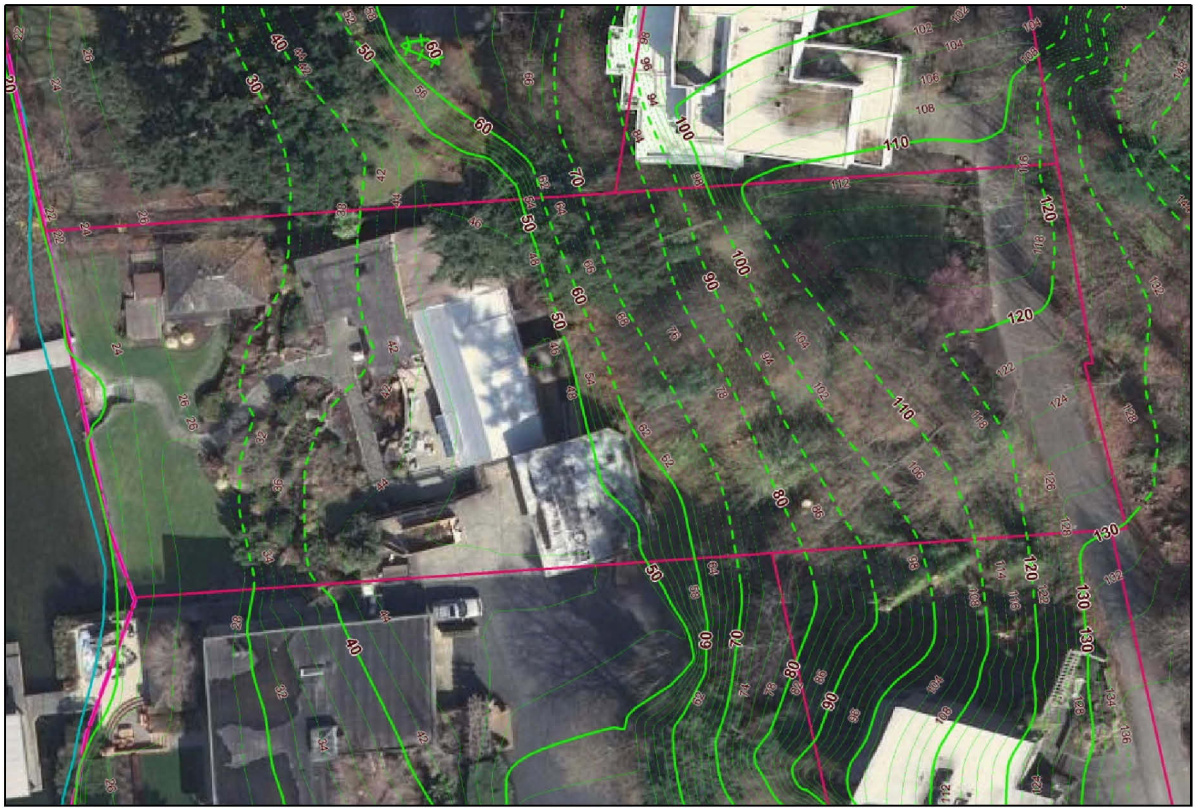


Figure 3

Looking North

Looking South

B. Zoning

The property is zoned R-2.5, single-family residential and is located in the Critical Areas Overlay District. The properties to the north and south are also zoned R-2.5, but the surrounding area is zoned R-1.8 which is due in part to the steep slopes which characterized this area of Bellevue. The proposed work is allowed in the R-2.5 zone.

C. Land Use Context

The property has a Comprehensive plan Land Use Designation of SF-M (Single Family Medium Density).

D. Critical Areas On-Site and Regulations

i. Geologic Hazard Areas

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

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

ii. Critical Areas Overlay District/Critical Areas Land Use Permit

A Critical Areas Land Use Permit (CALUP) is required as the applicant is requesting to construct a solider pile wall within a steep slope and reduce a toe-of-slope and 75-foot toe-of-slope setback. Slope stabilization is an allowed use in LUC 20.25H.055, provided certain performance standards are met. Reduction of a structure setback can only be approved through a critical area report submitted under a CALUP.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The proposal generally meets the R-2.5 zoning dimensional requirements found in LUC 20.20.010. The proposed soldier pile wall is in a side-yard structure setback required by zoning and is over 30 inches in height. The wall is intended to protect the existing house from future landslides which have occurred in the past, damaging the house and improvements.

The steepness of the slope and the location of existing improvements determined the location and height of the proposed solider pile wall. The house is located 2 feet from the

north property line, in the required side-yard setback, and 5 to 10 feet from the toe-of-slope. As a result, the wall must also be within the required structure setback, between the house and slope to protect the house from slides. Reducing the height, relocating the wall, or terracing the wall would create additional disturbance of the slope that could cause instability and not protect the house as intended. To construct the wall in a confined area and with minimal disturbance to the slope a soldier pile wall was chosen as this wall type requires minimal excavation to build. In consideration of these factors the wall can be allowed to be located within the side-yard setback from the north property line due to the steep grade changes and confined area available.

The solider pile wall, entry cover, utilities and mechanical work, and other improvements will be evaluated for conformance with zoning requirements as part of the required building permit review but all proposed improvements appear to meet zoning requirements. See Conditions of Approval in Section X of this report.

B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes performance standards and procedures that apply to development on any site which contains in whole or in part any portion designated as steep slope critical area or structure setback from a toe-of-slope. LUC 20.25H.055 establishes certain uses which are allowed in critical areas. The proposed soldier pile wall is stabilization which is an allowed use, provided certain requirements are met. The project is subject to the performance standards found in LUC 20.25H as specified in the table below

Critical Area	**Geologic Hazard-Steep Slopes**
Performance Standards	20.25H.055.C.3.M 20.25H.125 20.25H.230

i. Consistency with Land Use Code 20.25H.055.C.3.M

The following performance standards, when applicable, shall be incorporated in the design of development on sites with steep slope geologic hazard critical areas, buffers, or structure setbacks. The submitted geotech reports address these performance standards

a. When Allowed. New or enlarged stabilization measures shall be allowed only to protect existing primary structures and infrastructure, or in connection with uses and development allowed pursuant to subsection B of this section. Stabilization measures shall be allowed only where avoidance measures are not technically feasible.

Part of this proposal is to construct a soldier pile wall to stabilize the toe-of-slope and protect an existing single family primary structure. Due to the location of the slope avoidance is not possible and stabilization is allowed.

b. Type of Stabilization Measure Used. Where a stabilization measure is allowed, soft stabilization measures shall be used, unless the applicant demonstrates that soft stabilization measures are not technically feasible. An applicant asserting that soft stabilization measures are not technically feasible shall provide the information relating to each of the factors set forth in this section for a determination of technical feasibility by the Director. Only after a determination that soft stabilization measures are not technically feasible shall hard stabilization measures be permitted. The determination of whether a technique or stabilization measure is "technically feasible" shall be made by the Director as part of the decision on the underlying permit after consideration of a report prepared by a qualified professional addressing the following factors:

(1) Site conditions, including topography and the location of the primary structure in relation to the critical area;

(2) The location of existing infrastructure necessary to support the proposed measure or technique;

(3) The level of risk to the primary structure or infrastructure presented by erosion or slope failure and ability of the proposed measure to mitigate that risk;

(4) Whether the cost of avoiding disturbance of the critical area or critical area buffer is substantially disproportionate as compared to the environmental impact of proposed disturbance, including any continued impacts on functions and values over time; and

(5) The ability of both permanent and temporary disturbance to be mitigated

The site was analyzed by Geotech Consultants Inc. and a geotechnical report prepared by Geotech Consultants was submitted dated April 23, 2010. This report is the most recent analysis provided in a series of reports completed over the last ten years dated: January 9, 2003; September 10, 2004; and January 21, 2010. All of the submitted reports review the stability of the slopes and the construction of improvements on the site. Currently a soldier pile wall is proposed as the primary stabilization measure. Generally, due to the slope's proximity to the existing residence, the stability issues associated with the slope, and the existing grade (pitch) of the slope, soft stabilization was ruled out as neither the home nor the slope could be moved or the hazard abated without some form of wall stabilization. Planting vegetation as soft stabilization on this slope could not easily be maintained and any vegetation installed would have to be accompanied with an extensive plan to combat the invasive species and noxious weeds which cover the slope, forming its ground cover and understory.

The proposed wall avoids alteration of the existing slope as it only stabilizes the toe-of-slope and provides a catchment to protect the house from future landslides. The wall is a hazard mitigation measure and does not stabilize the entire slope which would require several walls, substantial cost, and result in substantial disturbance.

The reports submitted describe the history of the slope; a "shallow landslide" of the upper 2 feet of soil occurred in 1991 and smaller movements document the slope as unstable and demonstrate the potential for additional movement as probable. This area of Bellevue along Shoreland Drive SE is historically prone to landslides and slope instability given the loose silty soils overlaying the compressed glacial soils. The reports identify the slope as too extreme to utilize soft stabilization measures. A soldier pile wall near the toe-of-slope will stabilize the base of the slope and prevent further toe-of-slope movement. This soldier pile wall is expected to be up to 16 feet in height on the exposed side facing the existing house. The height of the wall will allow for approximately 6 feet of catchment to collect any future earth movement. Boston Ivy is proposed to grow and cover the front of the wall.

Given that the wall is hazard mitigation and avoids extensive alteration and disturbance of the existing slope staff concur that only the proposed wall will serve the desired purpose of preventing damage to the existing house. Soft stabilization is not feasible due to existing site conditions and the extent of the stabilization required.

All evaluations and recommendations submitted as part of the permit package and used in the city's evaluation of the proposal were completed by licensed qualified professionals. Any design or documentation submitted to the city as part of future permit applications related to this project must be prepared by a licensed qualified professional. Engineered plans for the wall construction are required at time of building permit submittal. See Conditions of Approval in Section X of this report.

ii. Consistency With LUC 20.25H.125 and LUC 20.25H.230

The proposed reduction of the 75-foot toe-of-slope setback requires a critical areas report as part of the application for a Critical Areas Land Use Permit. As stated above the applicant has obtained the services of a qualified geotechnical engineering consultant to study the site and document the observed conditions. Staff has reviewed the following documents prepared by Geotech Consultants Inc.:

- Geotechnical Report dated April 23, 2010
- Critical Area Buffer Reduction Study dated January 21, 2010
- Soldier Pile for Landslide Protection Report dated September 20, 2004
- Geotechnical Engineering Study dated January 9, 2003

This geotechnical analysis indicates that the soil and rock material on-site are "loose silty sand overlaying dense, glacially compressed silt" and that the proposed wall will protect the slope stability at the toe-of-slope limiting the stability of the slope from reduction of the setback. Given the wall construction, the geotech recommends that no setback "from the toe-of-slope is needed for the planned work." New work will occur in front of the wall in already disturbed areas.

The performance standards found in LUC 20.25H.125 are being met as:

- The proposed wall type will minimize alteration of the nature contours.
- The location of the wall is as close to the existing house and improvements as possible and the vegetation being disturbed is invasive plants and noxious species which have established near the toe-of-slope where historic landslides have occurred removing the native vegetation.
- The wall is stabilizing the toe-of-slope and preventing further movement. The wall will also incorporate a catchment to contain future slides behind the wall. Given the construction of the wall the geotech has recommended that "no [setback] from the toe-of-slope is needed" and that the proposed improvements are within existing disturbed areas.
- Replacement of some impervious areas with more pervious pavers is proposed as part of the mitigation for the proposed setback reduction and to provide some soft stabilization component to the project. The pavers will improve drainage and water infiltration more than the existing concrete and asphalt surfaces. The geotech has noted that the amount of impervious surface area "will likely go down" as a result of the proposed replacements. All drainage improvements will need to be shown on the submitted plans.
- No buildings are proposed in a critical area and no structures other than the soldier pile wall will disturb the slope.
- The geotech has noted that the construction of the solider pile wall will not result in temporary disturbance to areas "upslope of the wall." Any areas of temporary disturbance are required to be restored with vegetation.
- Mitigation for the reduction of the toe-of-slope setback and disturbance of to remove the rockery and small area of slope below the wall is proposed consisting of ivy and weed control in areas around the proposed wall. In addition 700 square feet of planting is proposed along the north property line to fight the invasive plants found in this location. This native planting is consistent with the City's planting templates and will be maintained for a period of three years following installation per the submitted mitigation plan. See Conditions of Approval in Section X of this report.

IV. Public Notice and Comment

Application Date:	May 5, 2010
Public Notice (500 feet):	May 20, 2010
Minimum Comment Period:	June 3, 2010

The Notice of Application for this project was published the City of Bellevue Weekly Permit Bulletin on May 20, 2010. It was mailed to property owners within 500 feet of the project site. A letter was received from a neighboring property that expressed interest in the project, however no issues were raised.

V. Summary of Technical Reviews

A. Clearing and Grading

The Clearing and Grading Division of the Development Services Department has reviewed the proposed site development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development and has approved the application.

VI. State Environmental Policy Act (SEPA)

The environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate potential environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

A. Earth, Air, and Water

The nature of the soldier pile wall construction will result in minimal earth movement and the existing topography will be maintained. As part of the mitigation for the project and to utilize some soft stabilization methods some of the impervious surface on the site will be replaced with pavers or other surfaces which will improve drainage and infiltration. Drainage improvement will improve water quality prior to drainage entering Lake Washington. Erosion and sedimentation control requirements and BMPs will be reviewed by the Clearing and Grading Department under the building permit to construct the wall. See Conditions of Approval in Section X of this report.

B. Plants and Animals

No significant trees will be removed and no impacts to species of local importance are anticipated. Vegetation to be removed will be ornamental or in most cases invasive and noxious plants. A majority of the slope and surrounding area is covered by English Ivy, blackberry, Scotch Broom, and other invasive plants. Part of the mitigation for reduction of the toe-of-slope setback is removal of invasive species and replanting with native plants. See Conditions of Approval in Section X of this report.

D. Noise

The only noise anticipated as a result of this work will be from construction equipment. Any noise is regulated by Chapter 9.18 BCC. See Conditions of Approval in Section X of this report.

VII. Changes to Proposal Due to Staff Review

Staff requested additional information on the mitigation planting proposed, maintenance and monitoring, and a copy of the property survey. The applicant provided the requested information.

VIII. Decision Criteria

A. 20.25H.145 Critical areas report – Approval of modification.
Modifications to geologic hazard critical areas and critical area buffers shall only be approved if the Director determines that the modification:

1. **Will not increase the threat of the geological hazard to adjacent properties over conditions that would exist if the provisions of this part were not modified;**

   The project geotechnical engineer has reviewed the proposed modifications and found in the geotech report that the proposals "should not impact stability of the neighboring properties."

2. **Will not adversely impact other critical areas;**

   The only proposed work in a critical area is for the construction of a solider pile wall. This wall will cause fewer disturbances and will have minimal excavation in comparison to a standard retaining wall. The toe-of-slope structure setback reduction to the existing wall is removing the setback from areas which are already disturbed by existing development and improvements.

3. **Is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified;**

   The proposed soldier pile wall is hazard mitigation to protect the existing house and property from damage by future slides. The wall will also stabilize the toe-of-slope. The proposed wall is an allowed use in a critical area. The modification of the toe-of-slope setback is acknowledging the existing condition as the house is located 5 to 10 feet away from the toe-of-slope and the area between is disturbed.

4. **Is certified as safe as designed and under anticipated conditions by a qualified engineer or geologist, licensed in the state of Washington;**

   The project geotechnical engineer has found the soldier pile wall to "maximize protection of the residence while minimizing disturbance to the steep slope." In addition work within the setback "will not increase the hazard to the property or neighboring properties beyond what currently exists."

5. **The applicant provides a geotechnical report prepared by a qualified professional demonstrating that modification of the critical area or critical area**

buffer will have no adverse impacts on stability of any adjacent slopes, and will not impact stability of any existing structures. Geotechnical reporting standards shall comply with requirements developed by the Director in City of Bellevue Submittal Requirements Sheet 25, Geotechnical Report and Stability Analysis Requirements, now or as hereafter amended;

The project geotechnical engineer has reviewed the site multiple times over the last 10 years for the proposed project and other proposals which were not constructed. The most recent geotech report addresses the proposed soldier pile wall construction and reduction of the toe-of-slope setback currently proposed. The other geotech reports are included as attachments in the project file.

6. **Any modification complies with recommendations of the geotechnical support with respect to best management practices, construction techniques or other recommendations; and**

   The project geotechnical engineer has reviewed the proposed modifications and found that the proposals are suitable given the geological characteristics of the property. The project will follow recommendations in both the current report and those still applicable which are found in the previous reports.

7. **The proposed modification to the critical area or critical area buffer with any associated mitigation does not significantly impact habitat associated with species of local importance, or such habitat that could reasonably be expected to exist during the anticipated life of the development proposal if the area were regulated under this part.**

   The proposals do not impact any habitat or areas of expected habitat. The areas of vegetation impacted by this proposal are where the soldier pile wall is proposed in the steep slope. This area is covered with English Ivy which will be removed by the wall. Mitigation planting on the property is located in areas which are more easily accessible. The proposed area is along the northern property line where ivy and other plants currently exist. This area is proposed to be restored to native plants per the City's planting templates for critical areas. This planting area will be maintained for a period of 3 years. See Conditions of Approval in Section X of this report.

B. 20.25H.255 Critical Areas Report Decision Criteria

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;**

   The proposed reduction of the toe-of-slope setback is within area already disturbed. The existing house is located 5 to 10 feet away from the toe-of-slope which will be

increased slightly by the proposed soldier pile wall. The soldier pile wall will stabilize the toe-of-slope above its existing condition which mitigates the hazard posed by slope movement in this location and the need for a setback from the toe-of-slope.

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

   Restoration planting is required to be maintained and monitored for three years. A maintenance surety will be required based on the cost estimate of plants and material. The performance surety will be released after three years assuming restoration has been successful per the submitted maintenance and monitoring provisions. See Conditions of Approval in Section X of this report.

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;**

   Disturbance within the steep slope is being minimized by the choice to construct a solider pile wall rather than a traditional retaining wall. No vegetation other than invasive plants and noxious weeds is being removed. The structure setback is already disturbed by existing development and therefore functions and values are already impacted.

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

   The proposed wall is allowed in the zone and is compatible with residential land uses. Other properties in the vicinity of this property have their own large retaining walls to stabilize slopes in the vicinity.

C. 20.30P.140 Critical Areas Land Use Permit Decision Criteria – Decision Criteria
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;**

   The applicant must obtain a building permit. Plans submitted for the building permit must reflect all work proposed including impervious surface changes to pavers, and removal of the existing rockery wall. Engineered plans for the wall are also required. See Conditions of Approval in Section X of this report.

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

   The proposal is consistent with required performance standards for projects in steep

slope critical areas and stabilization projects.

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

   As discussed in Section III of this report, the applicable performance standards of LUC Section 20.25H are being met.

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

   The proposed activity will not affect public services or facilities.

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

   The proposed restoration is per the planting templates found in the City's Critical Areas Handbook which is acceptable. Maintenance and monitoring is required and will be guaranteed by a maintenance surety. A yearly monitoring report with photograph documentation shall be submitted in order to achieve the performance standards outline in the submitted Landscape Plan. See Conditions of Approval in Section X of this report.

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

   As discussed in this report, the proposal complies with all other applicable requirements of the Land Use Code.

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 construction of a soldier pile wall and the reduction of the 75-foot top-of-slope buffer. **Approval of this Critical Areas Land Use Permit does not constitute a permit for construction. A building permit, clear and grade permit, and/or utility permit is required and all plans are subject to review for compliance with applicable City of Bellevue codes and standards.**

Note- Expiration of Approval: In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a building 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
Land Use Code- BCC Title 20	Reilly Pittman, 425-452-4350
Noise Control- BCC 9.18	Reilly Pittman, 425-452-2973

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. Application for a building permit must be submitted and approved. Plans submitted as part of either permit application shall be consistent with the activity permitted under this approval.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

2. **Plan Requirements:** Any plans submitted as part of the building permit must show all work proposed which includes the removal of the rockery below the proposed wall and work to modify any impervious surfaces. Plans for the solider pile wall are required to be engineered and must meet Building Department requirements.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

3. **Mitigation Planting:** The proposed planting shall be consistent with the planting plan submitted June 16, 2010 which is attached to this report.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

4. **Maintenance and Monitoring:** A report on plan health, survival, and maintenance activity shall be submitted yearly for three years as proposed in the mitigation plan submitted June 16, 2010 which is attached to this report.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

5. **Maintenance Surety:** A surety is required in the amount of 20 percent of the cost estimate for the mitigation planting. This surety is required to be completed with a bank and submitted to the City prior to building permit issuance. Staff will provide the surety

form to the applicant.

Authority: Land Use Code 20.30P.140
Reviewer: Reilly Pittman, Development Services Department

6. **Land Use Inspection:** Following installation of planting the applicant shall contact Land Use staff to inspect the planting area. At the end of 3 years you will need to call for an inspection by Land Use staff to release the surety. Staff will need to find that the plants are in a healthy and growing condition and meet the performance standards on the Landscape plan dated October 2009.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

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

   Authority: Land Use Code 20.30P.170
   Reviewer: Reilly Pittman, Development Services Department

8. **Geotechnical Recommendations:** Construction of the proposed improvements shall meet recommendations found in the project geotechnical reports

   Authority: Land Use Code 20.25H.145
   Reviewer: Reilly Pittman, Development Services Department

9. **Noise Control:** Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

   Authority: Bellevue City Code 9.18
   Reviewer: Reilly Pittman, Development Services Department

XI. Attachments:

1. Geotechnical Report dated April 23, 2010 – Enclosed
2. Critical Area Buffer Reduction Study dated January 21, 2010 – Enclosed
3. Soldier Pile for Landslide Protection Report dated September 20, 2004 – In File

4. Geotechnical Engineering Study dated January 9, 2003 – In File
5. Planting Plan, Maintenance and Monitoring Plan, Site Plan, Survey – Enclosed
6. Application, plans, SEPA checklist, and other project information – In File

GEOTECH
CONSULTANTS, INC.

13256 Northeast 20th Street, Suite 16
Bellevue, Washington 98005
(425) 747-5618 FAX (425) 747-8561

April 23, 2010

JN 02438

Marty Vowels
1646 – 100th Place Southeast
Bellevue, Washington 98004

Subject: ***Critical Areas Land Use Considerations for Proposed Soldier Pile Wall and Reduction of 75-foot Toe of Slope Setback***
Remodel of Existing Residence
708 Shoreland Drive Southeast
Bellevue, Washington

Dear Mr. Vowels: *via email*

This letter presents our geotechnical conclusions related to your application for a Critical Areas Land Use Permit (CALUP) related to 1) construction of a soldier pile wall east of the house for landslide protection, and 2) reduction of City of Bellevue's prescriptive 75-foot toe-of-slope structure setback. The existing house is undergoing a substantial remodel. As a part of this work, you intend to construct a new cover over the front entry, install utilities between the house and the toe-of-slope, and enclose the open garage space under the detached building to the southeast of the house. We previously completed a January 9, 2003 geotechnical report for the subject property. At the time of that study, you were proposing to demolish the existing house and construct a new, larger residence. The scope of the current proposal has been scaled back substantially. The existing house will now be remodeled, generally maintaining the existing footprint. This dramatically reduces the amount of site disturbance from the previously-proposed entirely new residence.

SOLDIER PILE WALL: As discussed in our January 9, 2003 geotechnical engineering report, a shallow landslide occurred in 1991 on the steep slope to the east of the southern half of the residence. This slide was a mudflow that involved the uppermost approximately 2 feet of weathered soil and which occurred following heavy rainfall. The existing surface vegetation consisting of brush and trees was carried down the slope with the wet soil. This slide debris traveled over the top of the existing rockery located at the toe of the slope to impact against the eastern wall of the house and the northern portion of the detached garage structure. It is reported that approximately 20 yards of mud, in addition to stumps and logs, had to be removed to clean up the slide debris. The area affected by the soil movement is now covered only with low-growing vegetation. The slope above the north half of the house remains undisturbed, and is in a similar condition to what existed on the slope above the south portion of the house before the 1991 landslide. Similar shallow landslides have occurred on the steep slopes above, east of, Shoreland Drive Southeast in the past. The slides in close proximity to your property have not extended deeper than a few feet, as the underlying soil is dense and has a high strength.

Our 2003 report contains detailed geotechnical recommendations for mitigation of potential hazard of shallow landslides on the steep slope. It is typically most appropriate and cost-effective to provide an adequate setback from the toe of a slope for protection against damage from future landslides and to prevent construction from adversely affecting stability of the slope. However, given the steepness and the height of the slope, and the fact that the existing house will not be reconstructed, it is not feasible to move the structure away from the slope's toe to mitigate this landslide hazard. Stabilizing the steep slope itself would not practical, as it would require installing

several backfilled retaining walls stepping up the slope so that it could be regraded to a flatter inclination. Our recommendations are therefore based around mitigating the potential hazard presented to the existing structures and your family by foreseeable future shallow soil movement upslope of the house and detached garage.

We have considered the City of Bellevue's requirements for mitigation of landslide hazards. **Avoidance Measures** are most desired by the City's code. As was evident from the 1991 landslide, and is typically the case with similar steep slopes, maintaining or promoting surface vegetation, including trees, will not prevent future slope instability. The existing vegetation and trees were simply pulled downhill along with the near-surface soils in the 1991 landslide. In fact, the trees increased the hazard of damage and/or injury, as their trunks and stumps impacted the structure far harder than just the mud would have. We have witnessed this on other similar landslides. There were no indications of improper control of upslope manmade drainage systems at the time of the 1991 landslide. Natural surface drainage combined with infiltration of heavy rainfall was the apparent sources of excessive soil moisture that triggered the landslide. It is our professional opinion that the only appropriate landslide protection mechanism for the house is the construction of a wall across the lowermost portion of the slope to slow or catch debris from future slides. Such a wall must be very strong, and would be limited to a conventional concrete wall or a soldier pile wall. There is insufficient space to safely construct a concrete wall between the house and the existing rockery that defines the toe of the slope, without potentially destabilizing the rockery and adversely affecting stability of the steep slope. Excavation for the footing of such a wall would be relatively deep and cover at least the entire area between the house and the rockery, removing all lateral support for the rockery. A soldier pile wall could not physically be installed in the narrow area between the rockery and house, as there needs to be enough space that even a small drill rig can swing from side-to-side to drill and install the soldier piles. You have confirmed this with a local shoring contractor, who has visited the site on several occasions and has taken measurements for drill rig access to the area east of the house. Similarly, a slide catchment wall extending southward from the detached garage cannot be installed as a conventional concrete wall without potentially destabilizing the existing rockery and the slope above it.

Soft Stabilization is the second option preferred by the City of Bellevue for landslide mitigation. As discussed above, the use of non-structural measures, such as plantings, trees, stepped back rockeries or other biotechnical measures will not stabilize the near-surface soils and prevent a future landslide from damaging the house or causing harm to its occupants.

Considering the steep inclination of the slope, the previous history of shallow soil movement on the site and in the vicinity, and the close proximity of the steep slope to the existing house, it is our opinion that construction of the recommended soldier pile wall is the most appropriate option for landslide mitigation. It is important to note that the proposed soldier pile wall is not intended to stabilize the steep slope and prevent future landslides. That would require the installation of several walls stepping up the slope and disturbing essentially the entire slope area. Instead, we have proposed installing a single soldier pile wall that extends above the existing grade near the toe of the slope to catch debris from a future slide that will travel down the slope toward the house. This wall will also replace the existing rockery, which is not a structural retaining wall. The design recommendations that we presented in our 2003 geotechnical report for the soldier pile wall are still applicable.

In order to address the **Performance Standards** present in Section 20.25H.125 of the Bellevue Municipal Code, we make the following statements:

Item A: The proposed soldier pile wall would be located immediately upslope, east, of the existing rockery. The grade at the base of the steep slope was previously disturbed by excavation for the original house and rockery construction. The soldier pile wall would be located only as far east as was necessary to drill behind the existing rocks and the gravel that was placed behind the rockery for drainage purposes. The slope above the soldier pile wall would not be disturbed. As discussed above, installing the soldier piles in front of the rockery is not an option, due to the limited amount of space for drilling equipment between the rockery and the front walkway and entrance to the house.

Item B: The proposed soldier pile wall will be located as close as practical to the existing rockery, which is a manmade feature previously constructed at the toe of the slope. The sloped area above the soldier pile wall will remain undisturbed.

Item C: The soldier pile wall will not increase the risk of slope instability or pose a hazard to the surrounding properties. This wall is necessary to provide safety for the house's occupants in the event of a future landslide.

Item D: The proposed wall will simply extend above the surface of the steep slope, which will avoid disturbance to the steep slope and will prevent the need for disturbance of the slope area above the wall.

Item E: The amount of impervious area will not be increased by construction of the soldier pile wall. From our discussions with you, the net impervious area on the site will likely go down with the replacement of some impervious surfaces with pavers.

Item F: Backfill will not be placed behind the proposed wall, so it will not result in a change of the existing grades upslope of the soldier pile wall. As such, it is not necessary to step the wall system or regrade the area above the wall to minimize topographic changes.

Item G: The detached garage already incorporates a permanent slide catchment wall into its upslope foundation wall. It is not possible to similarly utilize the existing house to laterally support a permanent catchment wall, and avoid a free-standing wall. The eastern, upslope, wall of the house is framed, and contains the front door and several windows. It could not be replaced with a solid concrete foundation wall.

Item H: This item is not applicable, as a pole building will not be used. The proposed wall construction will maintain the existing topography, as the wall will stick up above the surface of the slope, but will not be backfilled onto the steep slope.

Item I: This item, which refers to deck supports, is not applicable.

Item J: As discussed above, the slope and surface vegetation behind the soldier pile wall will not be disturbed. As a result, no temporary erosion measures upslope of the wall will be needed. Excavation made in front of the wall will be protected with timber lagging.

REDUCTION OF 75-FOOT TOE-OF-SLOPE BUFFER: The reduction from the prescriptive 75-foot toe-of-slope buffer is necessary to allow the construction of the entry cover, buried utilities, and mechanical equipment, and to enclose the current open garage area beneath the detached structure. The area in which these elements will be constructed has been disturbed previously by

excavation for construction of the existing house, detached structure and rockery, and installation of existing utilities to the house.

Geologic and Landslide Conditions: In addition to a reconnaissance of the surface conditions and a review of available geologic information for the area, we completed four test borings on the site as a part of our 2003 geotechnical engineering study. Since that time, we have visited the site on several different occasions, allowing us to observe the existing conditions as recently as February 2010. Two borings were drilled at the base of the steep slope, between the rockery and the house. These borings encountered loose silty sand overlying dense, glacially-compressed silt. The glacially-compressed silt lies within a few feet of the existing ground surface on the steep slope. This competent soil was exposed when the shallow landslide occurred in 1991. No groundwater seepage was observed in the borings at the base of the slope. It is possible that at least localized groundwater may be found perched on top of the dense silt following extended heavy rainfall.

As discussed above, a shallow landslide occurred above the south portion of the house in 1991. This slide was the result of excessive moisture destabilizing the loose, weathered soil within approximately 2 feet of the ground surface. Soil and vegetation from this slide moved down the slope, flowed over the top of the rockery, and impacted the east wall of the house. The area affected by this slide has now been revegetated, and no further slope movement has occurred on the site. Another landslide occurred on two lots to the south in the mid-1990s. This slide also was a shallow flow-type landslide that affected the near-surface soil on an old, oversteepened cut that had been made previously for Shoreland Drive Southeast. Other episodes of shallow soil movement have occurred on steep natural and manmade slopes above Shoreland Drive Southeast in the general vicinity. There is no history of deep-seated soil movement in the area.

Hazards Analysis: The existing house, which is being remodeled, already lies only approximately 15 feet from the existing rockery that was excavated into the toe of the steep slope when the residence was originally constructed. The detached garage structure to the southeast was also excavated into the toe of the steep slope. Between the house and the existing rockery is a relatively flat area covered by concrete, gravel and landscaping. Considering the above, the buffer area has already been disturbed. The intended functions of the buffer to prevent adverse stability impacts from development and to protect the planned development from damage due to future instability have already been degraded. The planned work between the existing rockery and the residence will not cause disturbance of the steep slope or reduce the stability of the slope. The proposed soldier pile slide catchment wall would be installed near the toe of the slope and would protect the house from serious damage in the event of future soil movement on the steep slope above. This wall would provide structural support for the toe of the slope, unlike the existing rockery, which is not a retaining wall. The proposed work in the buffer zone should also not adversely impact the stability of the neighboring properties.

Minimum Recommended Building Setback: Due to the existing degraded condition of the buffer, and the expected scope of the work anticipated in the buffer, it is our professional opinion that no buffer from the toe of the steep slope is needed for the planned work. With the exception of the soldier pile wall, all new work would occur in front of the existing rockery, in an area that has already been disturbed without adverse impacts to the stability of the slope. Installing the soldier pile wall immediately upslope of the rockery maximizes protection of the residence while minimizing disturbance of the steep slope.

Hazard Mitigation: As discussed above, the proposed work within the buffer zone will not increase the hazard to the property or neighboring properties beyond what currently exists. Allowing the

soldier pile catchment wall to be constructed in the buffer will improve safety for the house and its occupants when a landslide occurs on the slope in the future.

If you have any questions, or if we may be of further service, please do not hesitate to contact us.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

4/23/2010

Marc R. McGinnis, P.E.
Principal

MRM: jyb

GEOTECH
CONSULTANTS, INC.

13256 Northeast 20th Street, Suite 16
Bellevue, Washington 98005
(425) 747-5618 FAX (425) 747-8561

January 21, 2010

JN 02438

Marty Vowels
1646 – 100th Place Southeast
Bellevue, Washington 98004

Subject: **Critical Area Buffer Reduction**
Proposed Breezeway
Vowels Residence
708 Shoreland Drive Southeast
Bellevue, Washington

via email mvowels@comcast.net

Dear Mr. Vowels:

This letter presents our geotechnical observations and conclusions related to the Critical Area buffer reduction that will be necessary to construct your proposed breezeway. Your existing house is undergoing a remodel that will not expand the footprint of the structure further toward the east. As a part of the proposed work, an open breezeway is to be constructed to provide a cover over the existing concrete entry walk located on the eastern side of the house. This breezeway would essentially be a roof supported on isolated posts, and it will not be enclosed. Small footings would be constructed to support the isolated post for the breezeway. The edge of the breezeway will be set back several feet from the face of the existing rockery located to the east of your home. No excavation or disturbance is planned in the area of the existing rockery, or the steep slope above it. We also understand that a heat pump and an above-ground propane tank may be installed between the edge of the breezeway and the face of the eastern rockery. These would be mounted on thin concrete pads.

We are familiar with stability issues related to the eastern rockery and the slope above it from our prior work on your property and several other nearby properties along Shoreland Drive Southeast. The steep slope above the rockery is underlain by dense, glacially-compressed silt and silty sand. In April of 1991, a shallow mudflow affected the lower portion of this steep slope along the southern approximately one-half of your residence. This mudflow involved the uppermost approximately 2 feet of soil on the steep slope, which had become weathered and looser over many years. This upper layer of loose soil slid during a period of heavy rainfall. The mud and several trees that moved down the slope accumulated in the area between the house and the rockery. Similar shallow mudflows have occurred in the neighborhood to the south of your home. One of these affected an old cut slope located approximately two lots to the south of yours. This slide occurred in the mid-1990s and the mud from the landslide temporarily blocked Shoreland Drive Southeast. This slide also occurred in the shallower, weathered soil overlying the denser, glacially-compressed soil. Along this section of Shoreland Drive Southeast, there is no history of deeper slides extending into the dense, glacially-compressed soil.

The photographs available from the April 1991 landslide on your property indicate that the rockery was in existence at that time. The soil and debris from the slide flowed over the top of the rockery, but did not damage the rockery.

Conclusions and Recommendations

As with any property in this section of Shoreland Drive Southeast there is a potential for future shallow soil movement on the steep slope above your existing house. The potential for this occurring above the southern portion of the house, where the breezeway will be primarily located, has actually been reduced by the slide that occurred in 1991. That landslide removed the majority of the loose, weathered soil from the lower portion of the steep slope.

For all practical purposes, the use of the area between the house and the toe of the steep slope will remain unchanged from its current condition by the construction of the breezeway. The proposed breezeway construction will not adversely affect the stability of the rockery or the steep slope. No significant excavation is expected and the breezeway will not extend to the face of the rockery. As a result, the function of the area between the house and the existing rockery to slow or catch soil and debris from any future slope movement should not be degraded by the breezeway construction.

Any utilities installed in the area between the house and the rockery should be constructed with limited excavation. As a result, any pads that are constructed to support the heat pump and propane tank should be placed essentially on the existing ground surface. This avoids potentially undermining the existing rockery by excavation.

We appreciate the opportunity to be of assistance on your project. Please do not hesitate to contact us if you have questions regarding this letter.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

1/21/10

Marc R. McGinnis, P.E.
Principal

MRM: jyb

July 15, 2010

Reilly Pittman
Associate Planner
City of Bellevue
Bellevue, WA 98009-9012

RE: Requested Revisions for 10-112050-LO, Vowels Soldier Pile Wall, 708 Shoreland Drive SE

Dear Reilly,

This letter and related attachments provide the requested revisions you asked for in your letter dated June, 18, 2010.

1 - Mitigation

Restoration Planting - Restoration planting will consist of removing and controlling existing invasive and noxious plants including English Ivy and Black Berry covering 600 SF covering the steep slope and rockery and 700 SF by the northwest property line. The ivy and weed control for the 600SF removed in the steep slope area, will be maintained by cutting the weeds back each spring and fall to the back of the new Soldier Pile Wall. The front of the Soldier Pile wall will have noninvasive Boston Ivy. The 700 SF of ivy and weeds removed by the northwest property line will be replanted with over 739.4 SF of native plants. A Native Plants List is attached. The new native planting area will be a strip along the northwest border of our property, extending from the shoreline on our west border east to almost the back of the main house. Please see the "black" area in the attached Vowels Native Area Plan. The Ivy and weed control in this area will be part of the routine yard maintenance. This area also has an existing sprinkler system which will significantly improve the survival rate of the new plantings. Our survival rate goal for year one is 80% and year two and beyond 100%.

Drainage Improvements - The existing drainage will be significantly improved by removing the existing concrete patios and concrete/slate entry walkway (1,300 SF) and replacing these imperious surfaces with more pervious pavers. We may also replace the concrete parking area (1,200 SF) with pavers but cannot commit to that at this time. We still need to determine that the pavers can handle the big trucks (dump, UPS, etc) can handle the load. The runoff from these areas will also be improved by properly sloping the new improvements and directing the water flow into existing storm drain pipes. New downspouts will also be directed to the nearest storm drain system. In addition a new shallow swale drain, or equivalent, will be installed at the base of the front of the new Soldier Pile wall and properly directed to the nearest storm drain. Cross section of the proposed drainage improvements are attached.

Mitigation Areas - The proposed Soldier Pile Wall will remove about 600 SF in area of steep slope and existing rockery. As mitigation for removing this area over 739 SF of restoration native plantings will be provided between by our northwest property line. There is currently

over 700 SF of invasive English Ivy and Black Berry plants in this area of our property, originating from our Northern neighbor. The English Ivy and Black Berry plants will be removed and controlled as part of our routine weekly and annual yard maintenance. We also hope that the new native plans will help control the neighbors invasive weeds. In addition, drainage will be significantly improved by removing the existing concrete patios and entry walkway (1,300 SF) and replacing these imperious surfaces with more pervious pavers and directing new drainage into existing storm drain pipes. The total area of proposed improvements is over 2,200 SF. If we are able to add the parking area (1,200SF), the total drainage improvements would increase to 3,400 SF.

Cost Estimate - The estimated costs for restoration planting and material is $447.54 See the attached Native Plant List for details.

Maintenance and Monitoring - The proposed improvements to our property will be maintained on a timely basis as part of our routine maintenance. As part of the City's monitoring requirements a three year maintenance and monitoring schedule for the applicable improvements is attached. To assist the City in monitoring this requirement an annual email will be sent to the City. This email will include photos of the applicable areas, a brief description of maintenance activity, plant replacement and any other information worth nothing. We hope that the replanting can start this Fall.

2 - Full Property Survey

A 36" x 48" full property survey of our property is included with this letter.

3 - Side Yard Setback

The height of a wall in a zoning setback is restricted to 30". The proposed Soldier Pile Wall includes a Catchment, required by our soils engineer Marc McGinnis, that extends approximately 0' to 6' above grade in the North property line setback. The 6' Catchment in this setback is necessary to protect the NE corner of our Home from potential future landslides. The landslides in this area would primarily be from our Northern neighbors steep slope. Because the existing home is so close to the Northern property line AND the related existing steep slopes, there is no other alternative than to locate the Soldier Pile Wall Catchment in the side yard setback on our property to protect our home from our neighbors hill.

If you have any questions please contact me at mvowels@comcast.net or 425-864-5804.

Sent Via Email - Survey will be hand delivered to the City

Marty Vowels
Owner

En: Native Plant List, Native Area Plan, Drainage Improvement Detail, Maintenance and Monitoring Schedule and Survey

Vowels Maintenance and Monitoring Schedule

This maintenance schedule is for 1) ivy and weed control behind the new soldier pile wall and by the northwest property line and 2) the establishment of new native plants. This schedule anticipates starting in September 2010.

- Year One
  - Fall 2010
    - Cutback and remove applicable ivy and weeds to back of new Soldier Pile Wall
    - Cutback and remove applicable ivy and weeds by northwest property line
    - Plant new native plants in new native planting area by northwest property line
    - Send email to City with photos of new planting and weed control
  - Spring 2011
    - Cut back and remove new applicable ivy and weeds to back of new Soldier Pile Wall
    - Cutback and remove new applicable ivy and weeds by northwest property line
    - Replant any native plants that died during winter
  - Summer 2011
    - Monthly
      - Cutback and remove new ivy and weeds by northwest property line
      - Water new native plants
- Year Two
  - Fall 2011
    - Cutback and remove applicable ivy and weeds to back of new Soldier Pile Wall
    - Cutback and remove applicable ivy and weeds by northwest property line
    - Send email to City with photos of new planting and weed control
  - Spring 2012
    - Cut back and remove new applicable ivy and weeds to back of new Soldier Pile Wall
    - Cutback and remove new applicable ivy and weeds by northwest property line
    - Replant any native plants that died during winter
  - Summer 2012
    - Monthly
      - Cutback and remove new ivy and weeds by northwest property line
      - Water new native plants
- Year Three
  - Fall 2012
    - Cutback and remove applicable ivy and weeds to back of Soldier Pile Wall
    - Cutback and remove applicable ivy and weeds by northwest property line
    - Send email to City with photos of new planting and weed control
  - Spring 2013
    - Cut back and remove new applicable ivy and weeds to back of Soldier Pile Wall
    - Cutback and remove new applicable ivy and weeds by northwest property line
    - Replant any native plants that died during winter
  - Summer 2013
    - Monthly
      - Cutback and remove new ivy and weeds by northwest property line
      - Water new native plants
  - Fall 2013
    - Monitoring ends

Vowels Native Plant List

	Name							Total	Total
	Latin Name	Common Name	Size	Spacing	Height	Cost	Qty	Sq Ft	Cost
				In feet	*In feet*	*Per Plant*			
Trees									
1	Acer circinatum	Vine Maple	5 gallon	6	20	$ 25.00	5	141.4	$ 125.00
Shrubs									
1	Mahonia aquifolium	Tall Oregon Grape	1 gallon	3.5	5	$ 5.95	12	150.0	$ 71.40
2	Philadelphus lewisii	Mock Orange	1 gallon	4.5	8	$ 5.95	5	100.0	$ 29.75
3	Symphoricarpos Albus	Snowberry	1 gallon	4.5	5	$ 4.35	5	100.0	$ 21.75
Ground Covers and Perennials									
1	Fragaria chiloensis	Coastal Strawberry	4" pot	2	0.5	$ 1.27	12	48.0	$ 15.24
2	Gaultheria shallon	Salal	1 gallon	2	5	$ 3.80	18	72.0	$ 68.40
3	Oxalis oregana	Sorrel	4" pot	2	1	$ 2.00	12	48.0	$ 24.00
4	Polystichum munitum	Sword Fern	1 gallon	2	5	$ 4.60	20	80.0	$ 92.00
							Only need 600 SF	739.4	$ 447.54

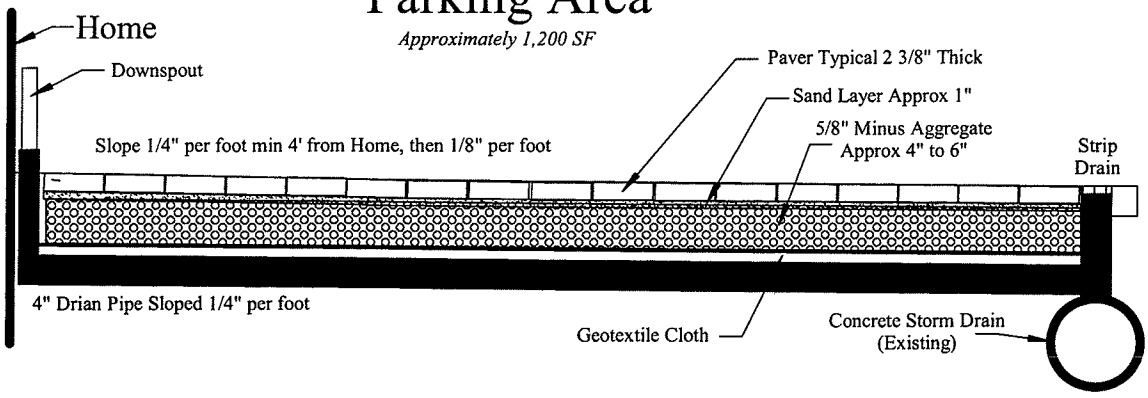
Vowels Native Area Plan

Drainage Improvement Detail

Not to Scale

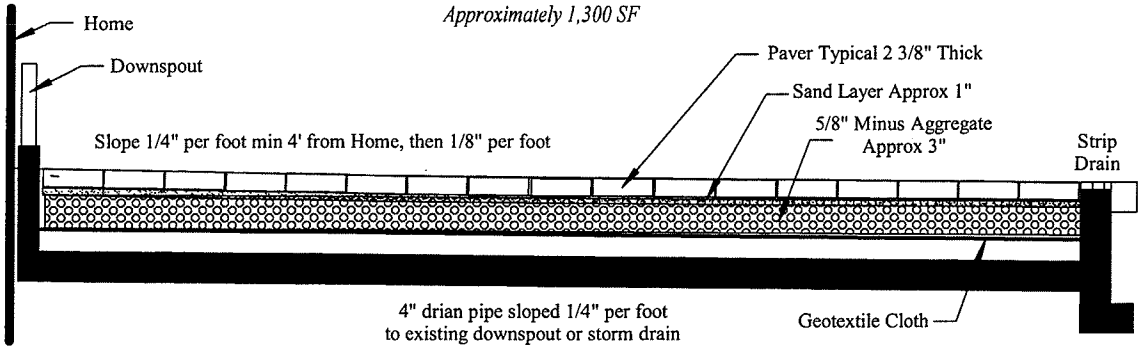
Parking Area

Approximately 1,200 SF

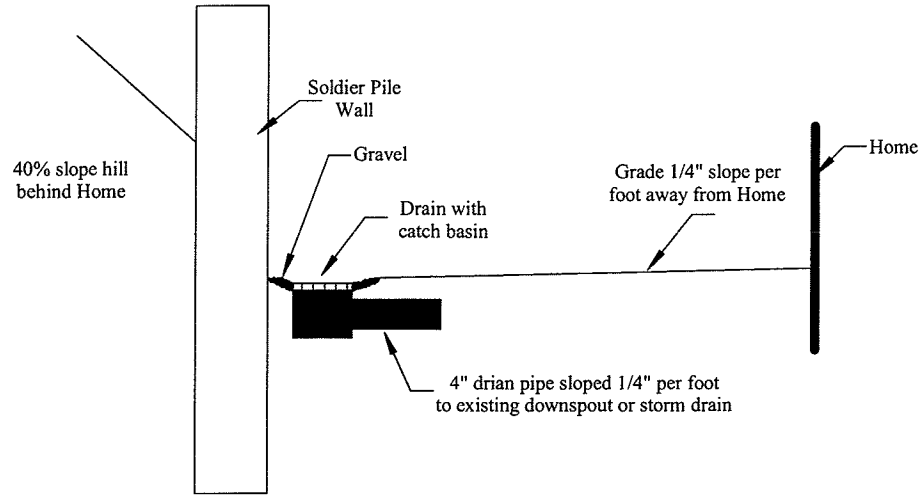


Patio And Entry Walkway

Approximately 1,300 SF



Soldier Pile Wall
Shallow Swale Drain



TOPOGRAPHIC SURVEY

IN THE SW1/4, SE1/4, SEC. 31, T.25N., R.5E., W.M.

Scale 1" = 20'

North ↑

No Change To Lot Coverage

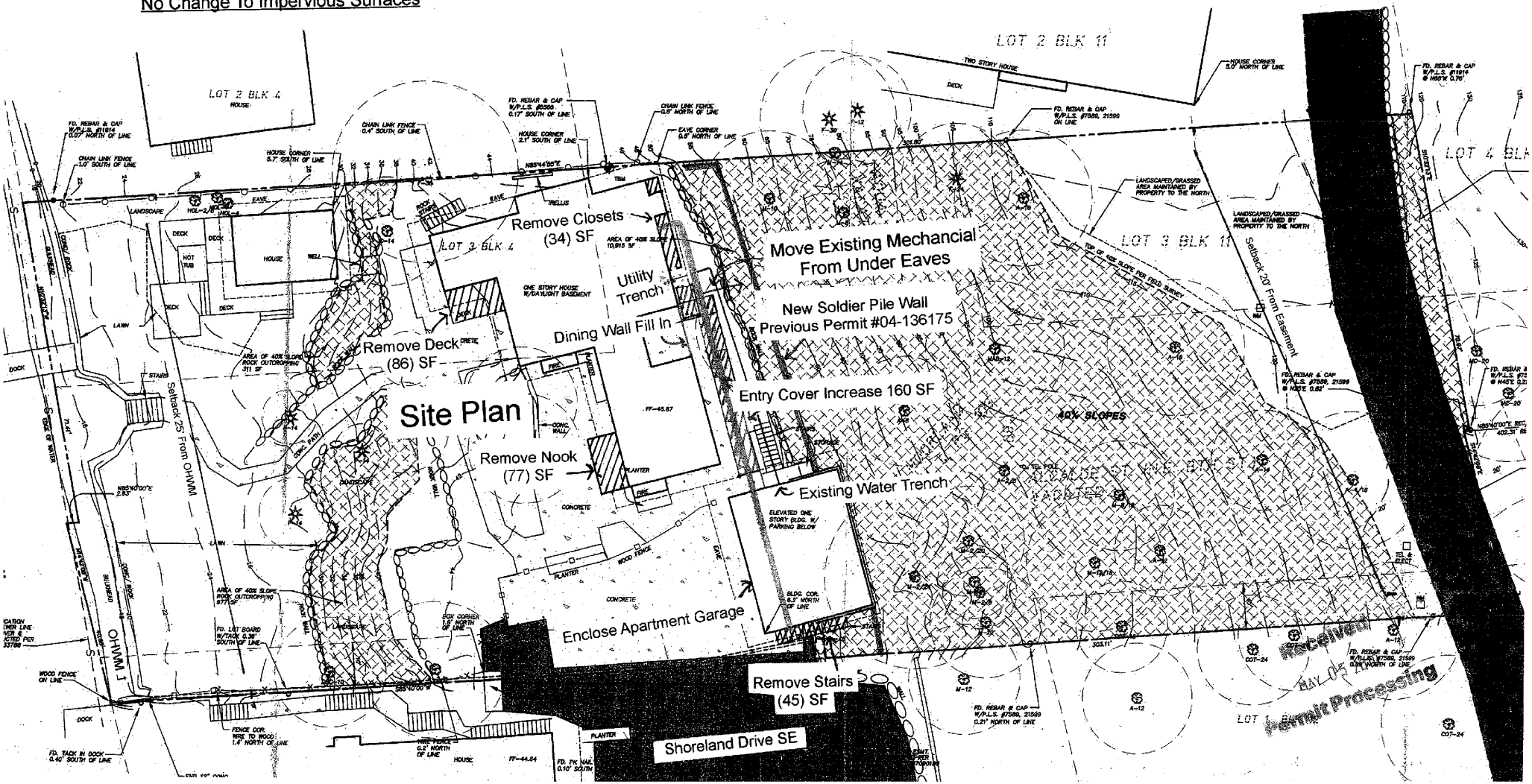
No Change To Impervious Surfaces

Owner

Marty Vowels 425-864-5804

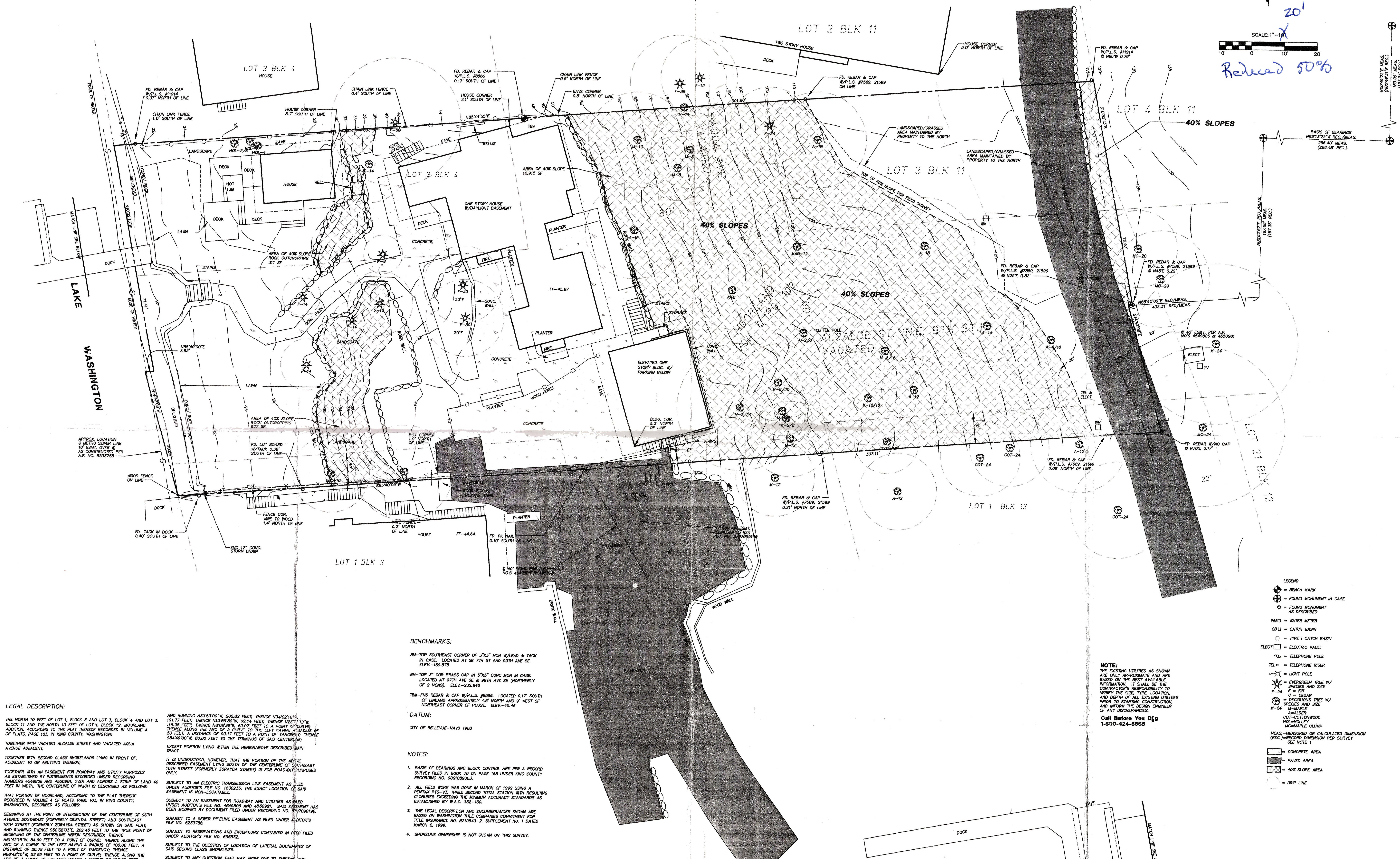
708 Shoreland Drive SE

Bellevue, WA 98004



TOPOGRAPHIC SURVEY

IN THE SW1/4, SE1/4, SEC. 31, T.25N., R.5E., W.M.



LEGAL DESCRIPTION:

THE NORTH 10 FEET OF LOT 1, BLOCK 3 AND LOT 3, BLOCK 4 AND LOT 3, BLOCK 11 AND THE NORTH 10 FEET OF LOT 1, BLOCK 12, MOORLAND ADDITION, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 4 OF PLATS, PAGE 103, IN KING COUNTY, WASHINGTON;

TOGETHER WITH VACATED ALCALDE STREET AND VACATED AQUA AVENUE ADJACENT;

TOGETHER WITH SECOND CLASS SHORELANDS LYING IN FRONT OF, ADJACENT TO OR ABUTTING THEREON;

TOGETHER WITH AN EASEMENT FOR ROADWAY AND UTILITY PURPOSES AS ESTABLISHED BY INSTRUMENTS RECORDED UNDER RECORDING NUMBERS 4549806 AND 4550981, OVER AND ACROSS A STRIP OF LAND 40 FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS:

THAT PORTION OF MOORLAND, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 4 OF PLATS, PAGE 103, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE CENTERLINE OF 96TH AVENUE SOUTHEAST (FORMERLY ORIENTAL STREET) AND SOUTHEAST 10TH STREET (FORMERLY ZORAYDA STREET) AS SHOWN ON SAID PLAT; AND RUNNING THENCE S50°32'03"E, 202.45 FEET TO THE TRUE POINT OF BEGINNING OF THE CENTERLINE HEREIN DESCRIBED; THENCE N51°42'15"W, 84.99 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 100.00 FEET, A DISTANCE OF 26.78 FEET TO A POINT OF TANGENCY; THENCE N66°42'15"W, 52.59 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 100.00 FEET, A DISTANCE OF 21.21 FEET TO A POINT OF TANGENCY; THENCE N78°51'15"W, 166.22 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 100 FEET, A DISTANCE OF 24.13 FEET TO A POINT OF TANGENCY; THENCE NORTHWESTERLY TO A POINT IN THE CENTERLINE OF 94TH AVENUE SOUTHEAST (FORMERLY GRENADA AVENUE) WHICH IS 82.91 FEET NORTH OF THE CENTERLINE OF SOUTHEAST 10TH STREET (FORMERLY ZORAYDA STREET) AS SHOWN ON SAID PLAT; THENCE N54°57'25"W, 162.46 FEET TO A POINT WHICH FOR REFERENCE PURPOSES IS DESIGNATED POINT A; THENCE N60°23'40"W, 344.79 FEET; THENCE N30°46'40"W, 261.65 FEET TO A TERMINUS OF SAID CENTERLINE; THENCE RETURN TO SAID POINT A AND RUNNING N39°53'00"W, 202.82 FEET; THENCE N34°02'10"W, 191.77 FEET; THENCE N13°56'50"W, 99.14 FEET; THENCE N23°[illegible]'10"W, 115.95 FEET; THENCE N8°08'36"E, 60.07 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50 FEET, A DISTANCE OF 90.17 FEET TO A POINT OF TANGENCY; THENCE S84°49'00"W, 80.00 FEET TO THE TERMINUS OF SAID CENTERLINE;

EXCEPT PORTION LYING WITHIN THE HEREINABOVE DESCRIBED MAIN TRACT.

IT IS UNDERSTOOD, HOWEVER, THAT THE PORTION OF THE ABOVE DESCRIBED EASEMENT LYING SOUTH OF THE CENTERLINE OF SOUTHEAST 10TH STREET (FORMERLY ZORAYDA STREET) IS FOR ROADWAY PURPOSES ONLY.

SUBJECT TO AN ELECTRIC TRANSMISSION LINE EASEMENT AS FILED UNDER AUDITOR'S FILE NO. 1830235, THE EXACT LOCATION OF SAID EASEMENT IS NON-LOCATABLE.

SUBJECT TO AN EASEMENT FOR ROADWAY AND UTILITIES AS FILED UNDER AUDITOR'S FILE NO. 4549806 AND 4550981. SAID EASEMENT HAS BEEN MODIFIED BY DOCUMENT FILED UNDER RECORDING NO. 8707090190.

SUBJECT TO A SEWER PIPELINE EASEMENT AS FILED UNDER AUDITOR'S FILE NO. 5233788.

SUBJECT TO RESERVATIONS AND EXCEPTIONS CONTAINED IN DEED FILED UNDER AUDITOR'S FILE NO. 695532.

SUBJECT TO THE QUESTION OF LOCATION OF LATERAL BOUNDARIES OF SAID SECOND CLASS SHORELINES.

SUBJECT TO ANY QUESTION THAT MAY ARISE DUE TO SHIFTING AND CHANGING IN THE COURSE OF LAKE WASHINGTON.

SUBJECT TO RIGHT OF THE STATE OF WASHINGTON IN AND TO THAT PORTION, IF ANY, OF THE PROPERTY HEREIN DESCRIBED WHICH LIES BELOW THE LINE OF ORDINARY HIGH WATER OF LAKE WASHINGTON.

BENCHMARKS:

BM—TOP SOUTHEAST CORNER OF 3"X3" MON W/LEAD & TACK IN CASE. LOCATED AT SE 7TH ST AND 99TH AVE SE. ELEV.—169.575

BM—TOP 3" COB BRASS CAP IN 5"X5" CONC MON IN CASE. LOCATED AT 97TH AVE SE & 99TH AVE SE (NORTHERLY OF 2 MONS). ELEV.—232.846

TBM—FND REBAR & CAP W/P.L.S. #8566. LOCATED 0.17' SOUTH OF LINEAND APPROXIMATELY 4.5' NORTH AND 9' WEST OF NORTHEAST CORNER OF HOUSE. ELEV.—45.46

DATUM:

CITY OF BELLEVUE—NAVD 1988

NOTES:

1. BASIS OF BEARINGS AND BLOCK CONTROL ARE PER A RECORD SURVEY FILED IN BOOK 70 ON PAGE 155 UNDER KING COUNTY RECORDING NO. 9001089003.
2. ALL FIELD WORK WAS DONE IN MARCH OF 1999 USING A PENTAX PTS—V3, THREE SECOND TOTAL STATION WITH RESULTING CLOSURES EXCEEDING THE MINIMUM ACCURACY STANDARDS AS ESTABLISHED BY W.A.C. 332—130.
3. THE LEGAL DESCRIPTION AND ENCUMBERANCES SHOWN ARE BASED ON WASHINGTON TITLE COMPANIES COMMITMENT FOR TITLE INSURANCE NO. R219843—2, SUPPLEMENT NO. 1 DATED MARCH 2, 1999.
4. SHORELINE OWNERSHIP IS NOT SHOWN ON THIS SURVEY.

SUBJECT TO ANY PROHIBITION OF OR LIMITATION OF USE, OCCUPANCY OR IMPROVEMENT OF THE LAND RESULTING FROM THE RIGHTS OF THE PUBLIC OR RIPARIAN OWNERS TO USE ANY PORTION WHICH IS NOW OR HAS BEEN FORMERLY COVERED BY WATER.

SUBJECT TO PARAMOUNT RIGHTS AND EASEMENTS IN FAVOR OF THE UNITED STATES FOR COMMERCE, NAVIGATION, FISHERIES AND THE PRODUCTION OF POWER.

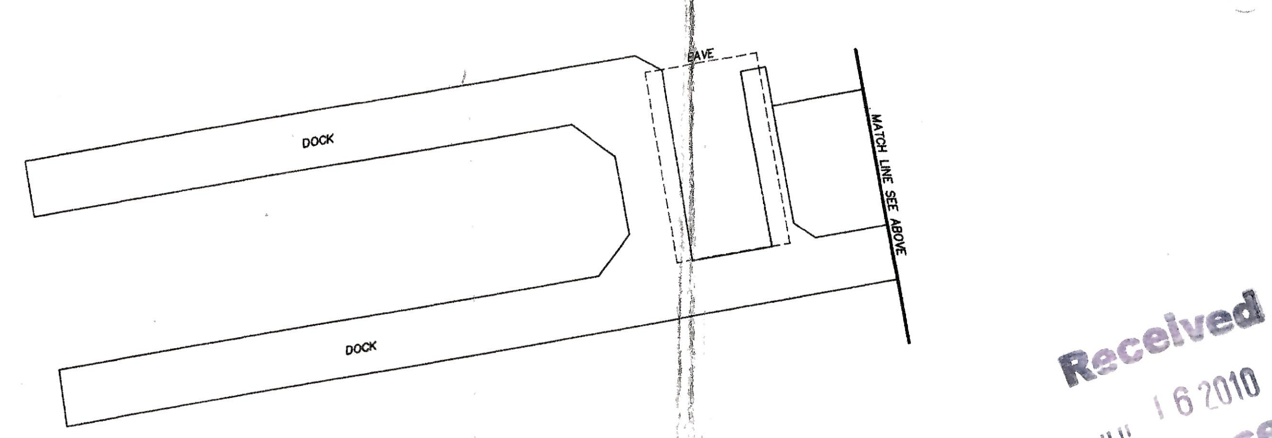
SUBJECT TO A SEWER AND/OR WATER CONNECTION CHARGE AS FILED UNDER RECORDING NO. 9612200938.

NOTE:
THE EXISTING UTILITIES AS SHOWN ARE ONLY APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE SIZE, TYPE, LOCATION, AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION, AND INFORM THE DESIGN ENGINEER OF ANY DISCREPANCIES.

Call Before You Dig
1-800-424-5555

LEGEND

- = BENCH MARK
- = FOUND MONUMENT IN CASE
- = FOUND MONUMENT AS DESCRIBED
- WM = WATER METER
- CB = CATCH BASIN
- = TYPE I CATCH BASIN
- ELECT = ELECTRIC VAULT
- = TELEPHONE POLE
- TEL = TELEPHONE RISER
- = LIGHT POLE
- F-24 = EVERGREEN TREE W/ SPECIES AND SIZE: F = FIR, C = CEDAR
- M-24 = DECIDUOUS TREE W/ SPECIES AND SIZE: M=MAPLE, A=ALDER, COT=COTTONWOOD, HOL=HOLLEY, MC=MAPLE CLUMP
- MEAS.=MEASURED OR CALCULATED DIMENSION
- (REC.)=RECORD DIMENSION PER SURVEY SEE NOTE 1
- = CONCRETE AREA
- = PAVED AREA
- = 40% SLOPE AREA
- = DRIP LINE



DOCK DETAIL

Received
[illegible] 16 2010
Permit Processing

TOPOGRAPHIC SURVEY

MARTY AND PAM VOWELS
1646 100TH PL. S.E.
BELLEVUE, WA 98004

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
415 RAINIER BLVD. N, ISSAQUAH, WASHINGTON 98027, PH:(425)392-5351 FAX:392-4676
516 EAST FIRST, CLE ELUM, WASHINGTON 98922, PH:(509)674-7433 FAX:674-7419

JOB NO.	01072
DATE	12/01
SCALE	1"=10'
DESIGNED	R.S.F.
DRAWN	R.S.F.
CHECKED	R.BOGDON
APPROVED	R.BOGDON
SHEET 1 OF 1	