City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Vista Homes
Proposal Address:	1811 132nd Pl. SE
Proposal Description:	Land Use review of a Critical Areas Land Use Permit to reduce a 75-foot toe-of-slope structure setback from a steep slope critical areas in order to construct a new single family residence.
File Number:	15-130325-LO
Applicant:	Charles Jackson, Vista Land Development Corp.
Decisions Included	Critical Areas Land Use Permit (Process II. 20.30P)
Planner:	Reilly Pittman, Land Use Planner
State Environmental Policy Act Threshold Determination:	**Exempt**
Director's Decision:	**Approval with Conditions** Michael A. Brennan, Director Development Services Department By: _____ Carol V. Helland, Land Use Director

Application Date:	December 29, 2015
Notice of Application Date:	January 28, 2016
Decision Publication Date:	January 19, 2017
Project Appeal Deadline:	February 2, 2017

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

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Attachments

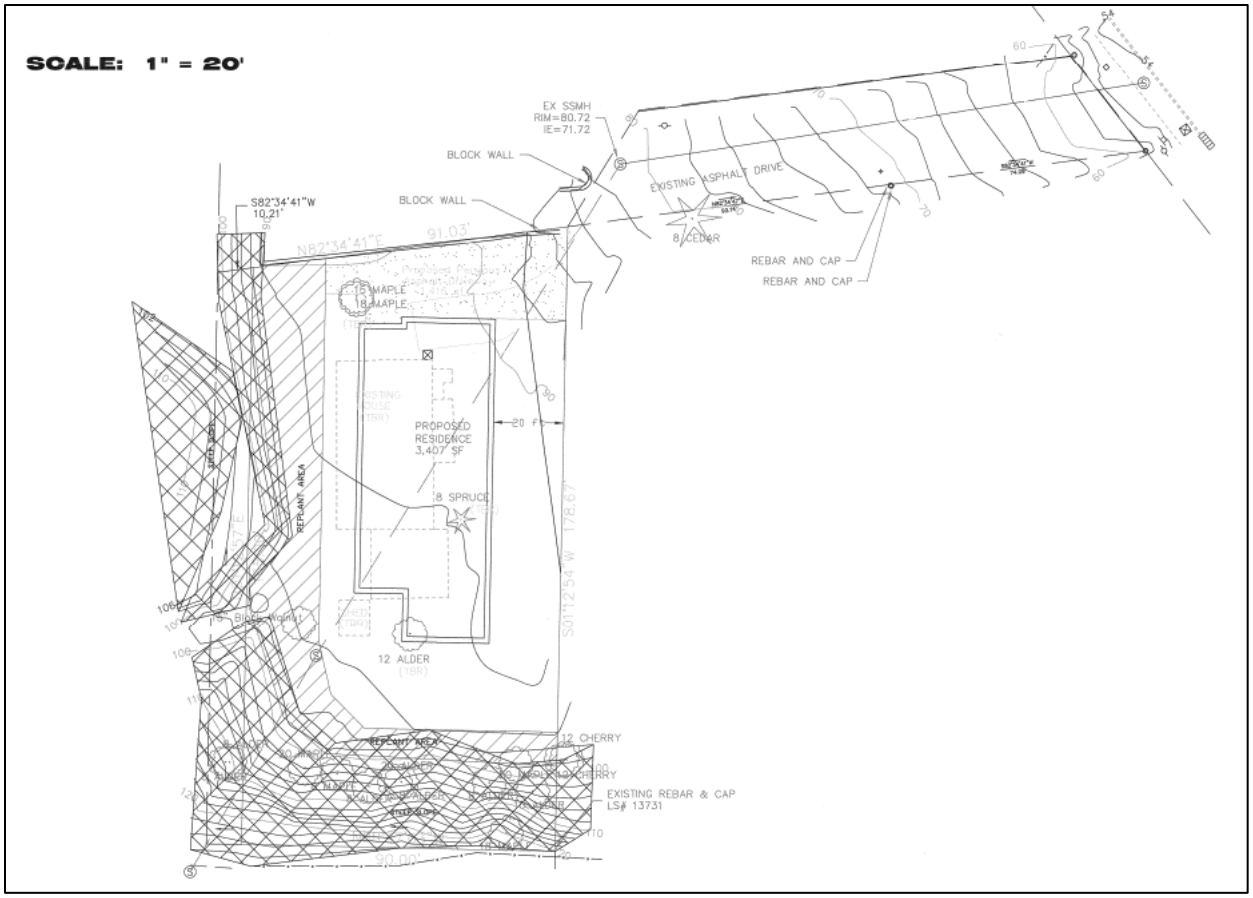
1. Site Plan – Enclosed
2. Geotech Report and Addendum Letters – In File
3. Mitigation Plan and Maintenance Plan – In File
4. Critical Areas Planting Templates – Enclosed
5. Forms and Application Materials – In File

I. Proposal Description

The proposal is to demolish an existing house and construct a new house in a 75-foot structure setback from the toe of steep slope critical area. The slope is found on the west and south property lines. The proposed house footprint will be 3,407 square feet with much of the new house footprint within the existing footprint of the house proposed for demolition. The proposed reduced slope setbacks are 20 feet from the toe of the western slope and 25 feet from the toe of the south slope.

LUC 20.25H requires a Critical Areas Land Use Permit for any reduction of a structure setbacks from critical areas through a critical areas report. The critical areas report is intended to provide flexibility for sites where the expected critical areas functions and values are not present due to degraded conditions. The steep slope and much of the property are overgrown with English ivy and blackberry. The proposal removes 5,962 square feet of invasive plants and replants the area with native species at the toe of the slope. The planting area will be maintained for five years to ensure the plants establish and the invasive plants are removed from the area. See figure 1 below for the project site plan.

Figure 1



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

A. Site Description

The project site is located at 1811 132nd Pl. SE in the Richards Valley subarea. The property is accessed off 132nd Pl. SE which connects to Richards Road to the east of the property. The property is surrounded to the west and south by steep slope critical areas. Land uses adjacent to the property include a City open space to the west and other single family houses to the north, east and south. The existing site currently has an abandoned house and is heavily overgrown with invasive vegetation. Significant trees are mostly found on the lot perimeter where the steep slope is located. See figure 2 for existing site condition.

Figure 2

B. Zoning

The property is zoned R-3.5, a Single Family Residential zoning district. The surrounding properties, most developed with single family homes, are also zoned R-3.5. However the undeveloped Woodridge Open Space is adjacent to the west.

C. Land Use Context

The property has a Comprehensive plan Land Use Designation SF-M, Single-Family Medium Density. The proposed use will be a residential home which is in keeping with this Land Use designation

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. Habitat

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

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

Based on the submitted plans the proposal conforms to the zoning requirements of the R-3.5 district. Conformance with all zoning requirements will be confirmed as part of the building permit review. **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 critical area, critical area buffer or structure setback from a critical area or buffer. The project area is within the 75-foot toe-of-slope

setback from a steep slope critical area. The following sections of the Land Use Code apply to this proposal to reduce a toe-of-slope structure setback.

i. Consistency with LUC 20.25H.145

Staff reviewed the geotech report submitted by Earth Solutions NW dated November 6, 2015 and revisions dated May, July, and October 2016 addressing slope stability analysis that are attachment two of this report. The geotech has found that the proposed modification of the slope setback will not increase the risk of damage to adjacent properties, will not adversely impact other critical areas and that the proposed design and existing roadway will allow for catchment of any debris that may slide from the slope (Geotech report, pg. 5). The geotech is a certified engineer who is qualified to make determinations as to slope stability. Provided the project is constructed per the geotech's recommendations the engineer finds that the project can be constructed as proposed. To address concerns about slope stability the geotech recommended that the future house extend the foundation wall above grade by three feet in order to provide catchment of any surficial debris. Based on their analysis and recommendations the geotech found that the potential geological hazards on the site will be mitigated to an extent that is "equal to or greater than" exist on the site currently (Geotech revision 10/14/16). The geotech also determined that the proposed planting plan at the toe of the slope will provide soil stabilization. Geotechnical recommendations, including providing a taller foundation wall for debris catchment are required to be incorporated into the house plans under the future building permit. **See Conditions of Approval in Section X of this report.**

ii. Consistency with LUC 20.25H.250

The proposed reduction of a toe-of-slope setback through a Critical Areas Report requires a demonstration that a site is degraded ecologically and that the site function and value can be improved as part of the project. The existing site is overgrown with ivy and blackberry with significant trees and structures strangled and covered by the ivy respectively. The proposal will clear the invasive species from the toe-of-slope and remaining site to construct the proposed house and plant 5,962 square feet of native vegetation. The ivy growing on trees on the site will also be cut and ongoing maintenance will occur to ensure the installed plants can establish. Staff finds that this proposed concept of removing invasive vegetation and replanting will provide sufficient improvement of the function and value of the site. However the proposed planting shown on the plan (attachement 3) is insufficient and does not provide enough detail to ensure the planting has sufficient density to establish a healthy vegetative community on the site. The submitted mitigation plan will be approved as a conceptual plan with a final plan required as part of the building permit. At a minimum, the planting is required to meet the plant species and density as found on the planting templates for steep slopes and in areas of invasive species coverage found on attachment 4. Based on a dense planting pattern of 9-foot on center spacing for trees, 4-foot on center spacing for shrubs and 2-foot spacing for groundcovers and a planting area of 5,962 square feet at least 60 trees, 300 shrubs, and 1,600 ground covers can be expected in the planting area. Credit can be given for exiting vegetation but additional plant quantity is needed to provide the density required. **See Conditions of Approval in Section X of this report.**

Due to the new development and extent of ivy growth, the applicant was required to have an arborist evaluate the existing trees on the property. Three trees are proposed on the plans for removal in order for the proposed house to be constructed. The arborist identifies other trees on-site that may need to be removed for "safety" based on health and degree of ivy growth but no target is provided for the trees. If additional trees are determined necessary for removal the hazard evaluation for each tree is required to be submitted under the building permit to determine if there is a target these trees will impact. Removal for ill health will not be allowed if there is no risk in keeping a tree. Additional tree planting may be required if other trees are added for removal. All recommended pruning and trimming is allowed. **See Conditions of Approval in Section X of this report.**

IV. Public Notice and Comment

Application Date:	December 29, 2015
Public Notice (500 feet):	January 26, 2016
Minimum Comment Period:	February 11, 2016

The Notice of Application for this project was published the City of Bellevue weekly permit bulletin and Seattle Times on January 26, 2016. It was mailed to property owners within 500 feet of the project site. No comments were received.

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 and geotech report for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff required revisions regarding the slope stability analysis and approved the application.

VI. State Environmental Policy Act (SEPA)

The proposed addition is exempt from SEPA in WAC 197-11-800. No improvements are proposed within a critical area or exceed a categorical exemption.

VII. Changes to Proposal Due to Staff Review

Changes were requested to clarify the geotech report and slope stability. The foundation of the house was proposed to be extended in order to provide catchment of any debris. The mitigation plan was also requested to be revised to locate the planting at the toe of the slope rather than on the steep slope. Placement of the planting at the toe-of-slope was required given the degree of steepness of the slopes on the site.

VIII. Decision Criteria

A. 20.25H.255 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;**
   The performance standards related to steep slopes are being met by this proposal as no critical area or critical area buffer is proposed to be modified. As reviewed in Section III above, the project geotech found that the proposal will not increase slope instability and that the proposed house considers slope stability and safety in the design which is at least as protective as the existing site.

2. **Adequate resources to ensure completion of any required mitigation and monitoring efforts;**
   The submitted maintenance and monitoring plan (attachment 3) is approved as conceptual with a final plan required to be submitted under the building permit. The planting is required to be monitored for five years and the plan needs to be revised to provide for a full five years including performance standards, maintenance, and monitoring reports for five years. Staff inspection of the planting is required after installation and to end the monitoring. A maintenance surety is required to be submitted prior to building permit issuance for an amount that is 100 percent of the estimated cost of maintenance and monitoring for five years. A cost estimate is required to be submitted under the building permit. **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;**
   The proposed project complies with the required performance standards. No work, except removal of invasive species, is proposed in the steep slope critical area. The proposal is not detrimental to the functions and values of the critical areas.

4. **The resulting development is compatible with other uses and development in the same land use district.**
   The proposed construction will remove the existing abandoned house and replace it with a new house. These improvements are compatible with the existing house and adjacent residential uses as these improvements are normally associated with residential development. Therefore, the proposal is allowed in this land use district and is compatible.

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

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

1. **The proposal obtains all other permits required by the Land Use Code;**
   The applicant must obtain a building permit and any associated permits. **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 critical area is avoided and the proposed new house is mostly located within the footprint of the existing house. The site will have extensive invasive species removal and new native vegetation planted to provide new trees and native plants at the toe-of-slope. The project has been reviewed by a geotech engineer who provided their recommendations that include a taller foundation to provide catchment of any debris from the slope. This and other recommendations will be incorporated into the project. **See Conditions of Approval in Section X of this report.**

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 be served by adequate public facilities.

5. **The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and**
   The mitigation planting is required to conform to the species and spacing requirements of the City's Critical Area Notebook planting templates. The maintenance and monitoring plan shall be for a total of five years. Revised planting and maintenance plans are needed for building permit approval. **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, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the reduction of the 75-foot toe-of-slope structure setback to construct a new house. **Approval of this Critical Areas Land Use Permit does not constitute a permit for construction. A building 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	Tom McFarlane, 425-452-5207
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:** Approval of this Critical Areas Land Use Permit does not constitute an approval of a development permit. Application for a building permit or other required permits 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. **Land Use Inspection:** Following installation of mitigation planting, the applicant shall contact Land Use staff to inspect the planting area prior to final building inspection.

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

3. **Tree Removal:** Removal of trees in addition to the three proposed on the approved plans requires further hazard evaluation by the project arborist as part of the building permit to show the target, risk, and health of the trees requires their removal.

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

4. **Final Mitigation Planting Plan:** The submitted mitigation plan is considered as conceptual. A final mitigation plan is required that confirms that plant spacing is consistent with the City's planting templates so that adequate plant density is provided. The applicable planting templates are found as Attachment 4.

   Authority: Land Use Code 20.25H.220
   Reviewer: Reilly Pittman, Development Services Department

5. **Final Maintenance and Monitoring Plan:** The submitted maintenance and monitoring plan is approved as conceptual. A final plan is required to be submitted under the building permit. The plan is required to be amended to consistently provide for five years of

maintenance and monitoring. Land Use inspection is required by Land Use staff to end the plant monitoring. Annual monitoring reports with photos of the planting area are required to be submitted that document how the plants are meeting the chosen performance standards. Monitoring reports and questions can be emailed to Reilly Pittman at rpittman@bellevuewa.gov.

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

6. **Maintenance and Monitoring Surety:** A financial surety is required to be submitted based on 100 percent of the cost to maintain and monitor the plants for five years. A cost estimate is required to be provided under the future building permit. A financial surety is required to be posted prior to building permit issuance. Release of the surety is contingent upon a final inspection of the planting by Land Use Staff that finds the maintenance and monitoring plan was successful.

   Authority: Land Use Code 20.25H.220
   Reviewer: Reilly Pittman, Development Services Department

7. **Geotechnical Recommendations:** Recommendations from the geotech to address slope stability shall be incorporated into the house design.

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

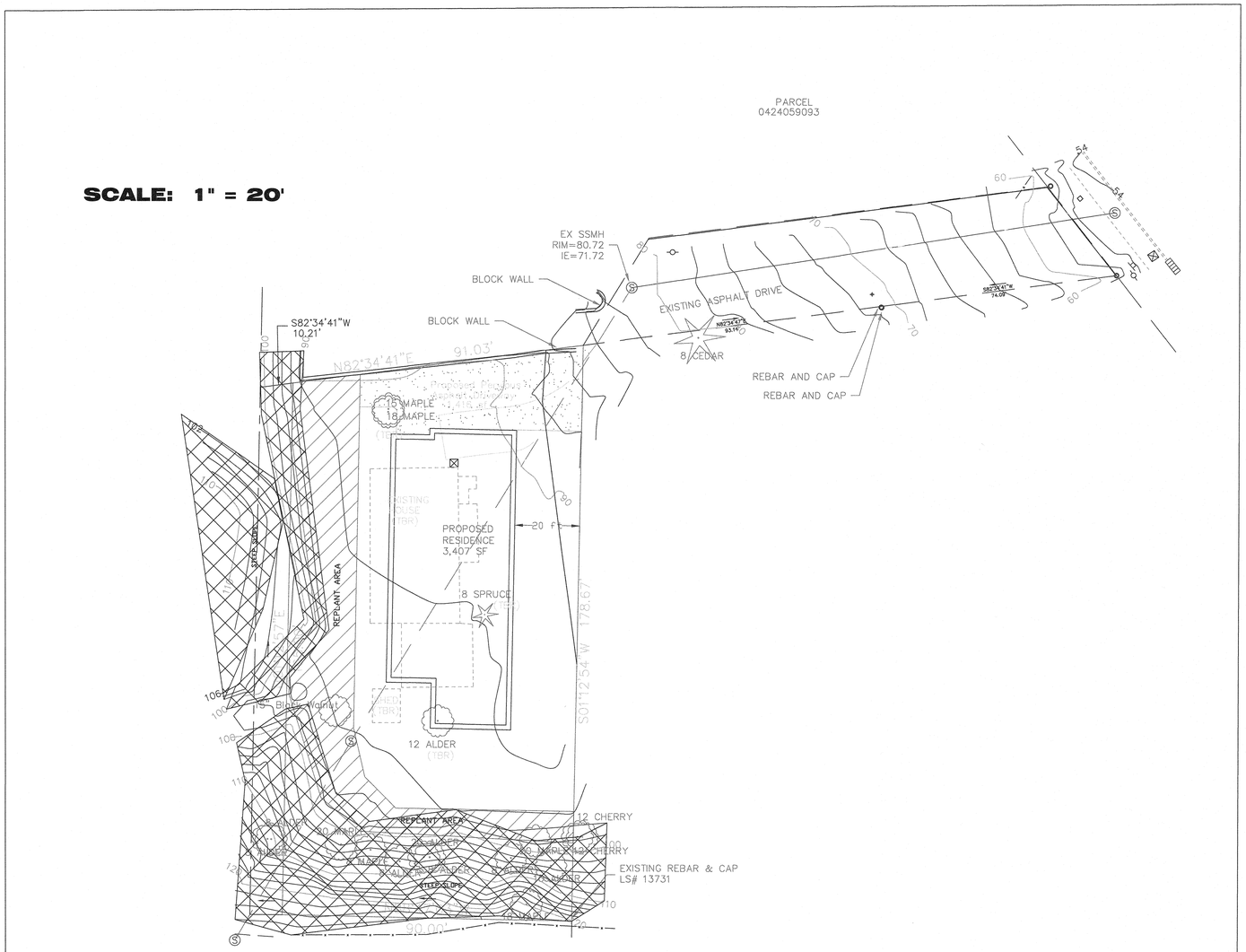
8. **Noise Control:** Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited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

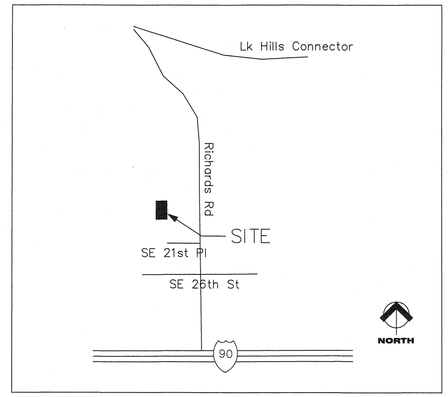
   Authority: Bellevue City Code 9.18
   Reviewer: Reilly Pittman, Development Services Department

Tahn Associates, L.L.C.
Steep Slope Mitigation Plan

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

SCALE: 1" = 20'





VICINITY MAP
NOT TO SCALE

CONTACT INFORMATION

APPLICANT:
Tahn Associates, L.L.C.
13400 Northup Way #31
Bellevue, WA 98004
425-891-8383
don@prolinkre.com
c/o charles@vista-dc.com

ENVIRONMENTAL CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consulting
PO Box 1908
Issaquah, Washington 98027
253-905-5736
jeff.jsjones@comcast.net

IMPACT AND MITIGATION AREAS

Lot Area	15,467 sf
Proposed Building Footprint	3,407 sf
Proposed Impervious Driveway	1,416 sf
Front Setback	20 Feet
Side Setback	15 Feet
Rear Setback	25 Feet
Steep Slope Setback from Toe of Slope	75 feet
Steep Slope Area	3,783 sf
Steep Slope Ivy Removal from Trees Area	5,962 sf
Replant Area	2,958 sf
Required Mitigation Area Ratio	1 : 1
Building Envelope and Usable Area	9,505 sf
Lot Coverage (Building Footprint+Driveway–Steep Slope) 3,407sf+1,272sf/15,467sf–3,783sf =	40%
Percentage of Impervious Surface 3,407sf/15,467sf =	22%

LEGEND

- SANITARY SEWER MH
- UTILITY POLE
- POWER JUNCTION BOX
- POWER PEDESTAL
- TELEPHONE VAULT
- TELEPHONE CABINET
- SET 1/2 REBAR AND CAP LS# 38992
- 40% SLOPE +
- STEEP SLOPE MITIGATION AREA
- TBR – To Be Removed
- SIGN
- CONIFER TREE
- DECIDUOUS TREE
- MAIL BOX
- PK NAIL
- MON IN CASE/
- EX REBAR / PIPE AS NOTED
- WATER WELL

NO.	DATE	BY	REVISION
3	1/12/17	JSJ	Adjust Bldg. Location
2	12/28/16	JSJ	Identify Trees to be Removed
1	8/31/16	JSJ	Revise Planting Area

CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consultants
Wetlands, Streams, and Wildlife
P.O. BOX 1908 ISSAQUAH, WASHINGTON 98027

CLIENT: Tahn Associates, L.L.C.
13400 Northup Way #31, Bellevue, WA 98004
425-891-8383 don@prolinkre.com c/o charles@vista-dc.com

PROJECT:
Steep Slope Mitigation Plan
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

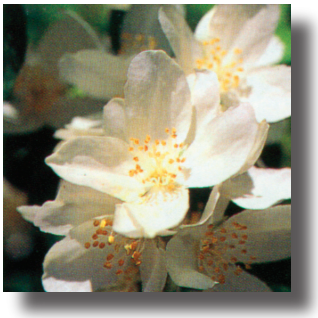
DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
J. Jones	J. Jones	J. Jones		6/29/2016

SCALE 1"=20'

SHEET 1 of 4

Oceanspray

Thimbleberry



Mock Orange

Douglas-fir

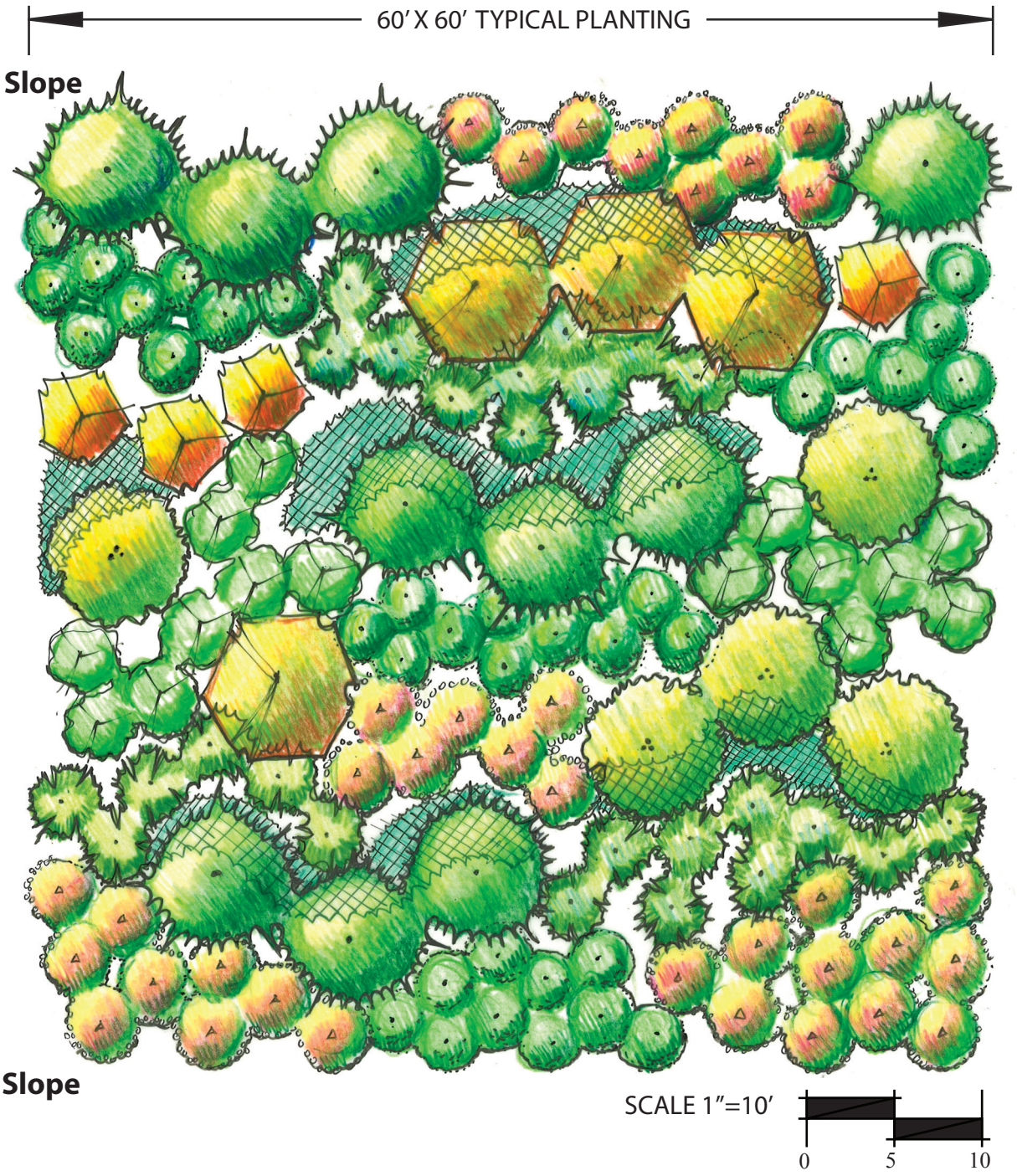
Geological Hazards

Steep Slope Planting Template

for ***Sunny*** and ***Shady*** Sites

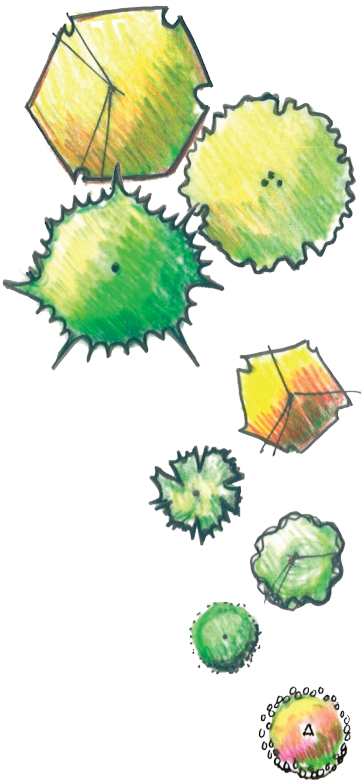
A1

GEOLOGICAL HAZARDS (STEEP SLOPE) PLANTING TEMPLATE



Steep slopes commonly have fragile, erodible soils. Planting can be difficult to establish in these areas as gravity, wind, and rain have a tendency to pull nutrient-rich soil down the slope. In addition, sunny sites require drought-tolerant plants, while both sunny and shady sites require plants with strong, root systems to keep soil intact. On the next two pages you will find one legend designed for sunny, steep sites and one designed for shady, steep sites. The plants chosen for these templates are known for drought tolerance and soil-binding characteristics. With the successful establishment of plants on steep slopes, the potential for erosion decreases. For additional information on Steep Slopes, refer to the section on *Geological Hazard Areas* in *Chapter One* and the City's Critical Areas Ordinance. Note, these templates are to be used for stable and undisturbed sloping sites. If your site has experienced a landslide or substantial erosion, do not use this template; consult a professional.

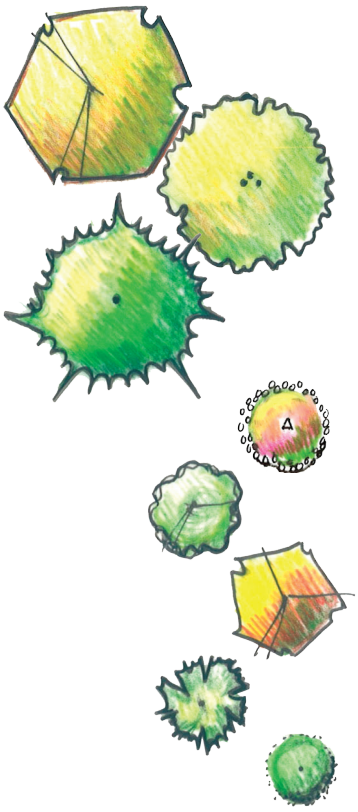
PLANT LEGEND FOR SUNNY SITES



LATIN NAME/ COMMON NAME	TYPICAL SPACING/ AVERAGE HEIGHT	CHARACTERISTICS
TREES		
Acer macrophyllum/ Big-leaf maple	9 feet on center/ 75 feet	Yellow fall color, provides understory shade, largest leaf of all maples
Alnus rubra/ Red alder	9 feet on center/ 60 feet	Vigorous grower, provides cover quickly for other plants
Pseudotsuga menziesii/ Douglas-fir	9 feet on center/ 100 feet	Highly adaptable, fast grower
SHRUBS		
Corylus cornuta/ Beaked hazelnut	6 feet on center/ 11 feet	Edible acorn, wildlife food. Small understory tree, yellowish fall color
Holodiscus discolor/ Oceanspray	4.5 feet on center/ 7 feet	Spectacular blossom; attracts hummingbirds and butterflies
Philadelphus lewisii/ Mock orange	4.5 feet on center/ 8 feet	Fragrant white blossom
Rubus parviflorus/ Thimbleberry	4 feet on center/ 8 feet	Delicious edible berries, fast grower, likes sun
Symphoricarpos albus/ Snowberry	4.5 feet on center/ 5 feet	White berries, proven performer in tough conditions
GROUNDCOVERS & PERENNIALS		
Arctostaphylos uva-ursi/ Kinnikinnick	*24 in. on center/ 6-8 in.	Evergreen groundcover, great for rockeries and full sun areas
Fragaria chiloensis/ Coastal strawberry	*24 in. on center/ 4-6 in.	Tough, highly adaptable groundcover w/ red stems and edible berries
Festuca idahoensis/ Idaho fescue	*24 in. on center/ 2.5 feet	Bluish leaves, clumping
Polystichum munitum/ Sword fern	*24 in. on center/ 5 feet once mature	Semi-evergreen fern, highly adaptable
Epilobium angustifolium/ Fireweed	*24 in. on center/ 1.5-2 feet	Big purple flowers on a tall stem

* *Indicates plants are to be triangularly spaced for the area shown. See page 23 for triangular spacing.*

PLANT LEGEND FOR SHADY SITES



LATIN NAME/ COMMON NAME	TYPICAL SPACING/ AVERAGE HEIGHT	CHARACTERISTICS
TREES		
Acer macrophyllum/ Big-leaf maple	9 feet on center/ 75 feet	Yellow fall color, provides understory shade, largest leaf of all maples
Alnus rubra/ Red alder	9 feet on center/ 60 feet	Vigorous grower, provides cover quickly for other plants
Thuja plicata/ Western red cedar	9 feet on center/ 150 feet	Fragrant, adaptable to many sites
SHRUBS		
Acer circinatum/ Vine maple	4.5 feet on center/ 20 feet	Bright red fall color, small understory tree, grows well in shade
Amelanchier alnifolia/ Western serviceberry	4.5 feet on center/ 20 feet	Fragrant flowers, edible red to purple berries
Corylus cornuta/ Beaked hazelnut	6 feet on center/ 11 feet	Edible acorn, wildlife food, small understory tree, yellowish fall color
Oemleria cerasiformis/ Osoberry	4.5 feet on center/ 10 feet	Berries attract birds, first shrub to leaf out in spring
Sambucus racemosa/ Red elderberry	4 feet on center/ 15 feet	Edible berries, fast grower, graceful form with age
GROUNDCOVERS & PERENNIALS		
Arctostaphylos uva-ursi/ Kinnikinnick	*24 in. on center/ 6-8 in.	Evergreen groundcover, great for rockeries and full sun areas
Asarum caudatum/ Wild ginger	*24 in. on center/ 6-8 in.	Tough groundcover, great for planting under shrubs and trees
Polystichum munitum/ Sword fern	*24 in. on center/ 5 feet once mature	Semi-evergreen fern, highly adaptable

* *Indicates plants are to be triangularly spaced for the area shown.* *See page 23 for triangular spacing.*

A1-Shade