City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Lee Residence Stream Stabilization
Proposal Address:	66 Skagit Key
Proposal Description:	Critical Areas Land Use Permit to restore a streambank that was cleared in violation of city code. The proposal involves the removal of angular rock and the placement of bank stabilization using coir logs and native vegetation. The work occurs along the bank of Coal Creek
File Number:	16-136230-LO
Applicant:	Steve and Jun eLee
Decisions Included:	Critical Areas Land Use Permit (Process II. 20.30P)
Planner:	Heidi M. Bedwell Environmental Planning Manager
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: _____
Elizabeth Stead, Land Use Director

Application Date:	June 24, 2016
Notice of Application Publication:	September 1, 2016
Decision Publication Date:	February 14, 2019
Appeal Deadline:	February 28, 2019

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.

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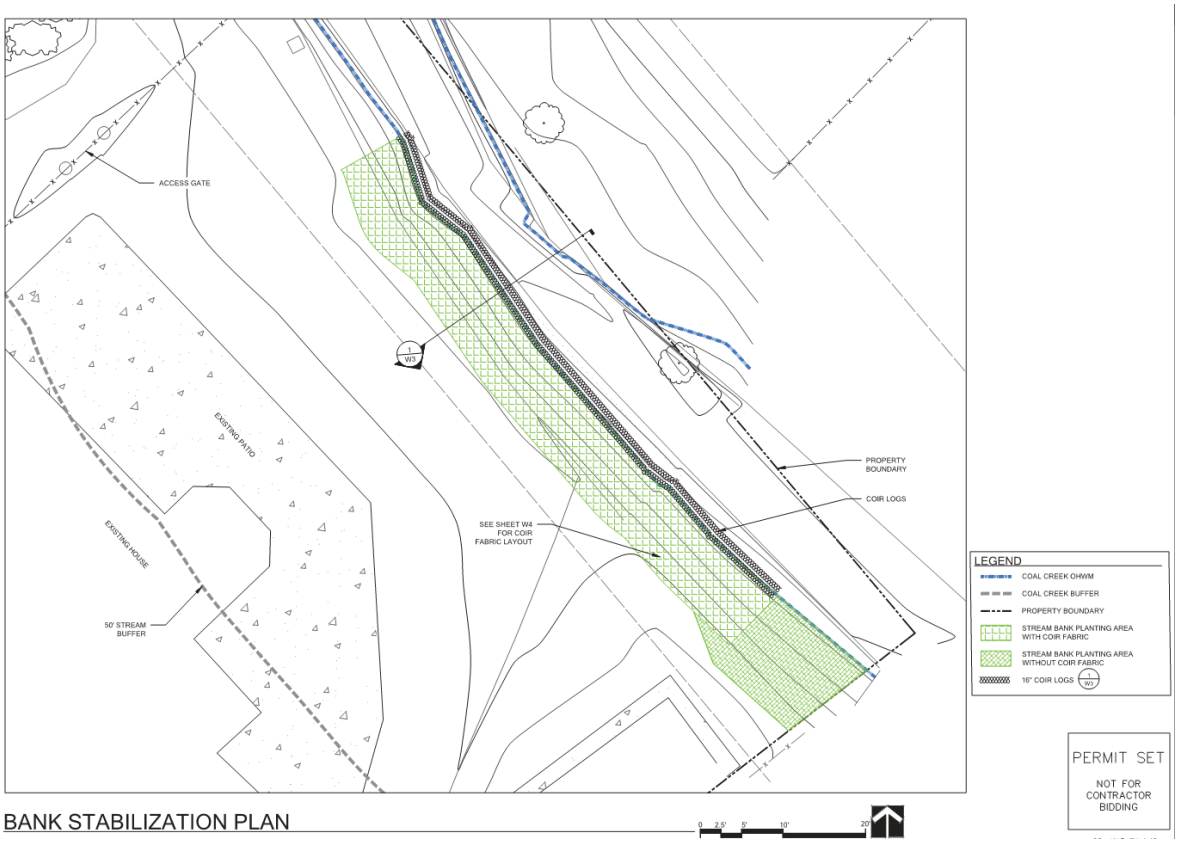
1. Project Plans
2. Critical Areas Report

I. Proposal Description

The proposed streambank stabilization project will include removal of hardened stabilization components that were installed without permits. Following removal of these features, soft stabilization techniques will be utilized to repair the bank. This includes the use of native plantings and coir logs secured with native dogwood and willow live-stakes. See figure 1 for example stream improvements and stabilization.

Figure 1



Any project that proposes disturbance within critical areas and associated buffers requires approval of a Critical Areas Land Use Permit. The project includes stream bank stabilization which is an allowed uses in the Land Use Code 20.25H.055, subject to certain performance standards discussed in this report.

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

A. Site Description

The project is located in the Newport Shores neighborhood along Coal Creek. Properties in the vicinity are developed with single family residences and the entire area is zoned residential. Coal Creek is a Type-F stream that has a 100-year floodplain. The proposed

work is below the top-of-bank and will be in the stream and floodplain.

The lot is developed with a single-family residence and ornamental landscaping with lawn adjacent to the creek. A small existing shed is also located within the stream buffer.

Figure 2

B. Zoning and Land Use Context

The site has a Comprehensive Plan designation of SF-M which is Single-Family Medium Density. The site is zoned R-2.5 and surrounding properties are zoned single-family residential of the same density. The proposal does not affect zoning or change the residential use of the site.

C. Critical Areas Function and Value, Regulations

i. Streams and Riparian Areas

Most of the elements necessary for a healthy aquatic environment rely on processes sustained by dynamic interaction between the stream and the adjacent riparian area (Naiman et al., 1992). Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Riparian areas support healthy stream conditions.

Riparian vegetation, particularly forested riparian areas, affect water temperature by providing shade to reduce solar exposure and regulate high ambient air temperatures, slowing or preventing increases in water temperature (Brazier and Brown, 1973; Corbett and Lynch, 1985).

Upland and wetland riparian areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff, protecting water quality in streams (Ecology, 2001; City of Portland 2001). The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods (Novitzki, 1979; Verry and Boelter, 1979 in Mitsch and Gosselink, 1993). Upland and wetland areas can infiltrate floodflows, which in turn, are released to the stream as baseflow

Stream riparian areas, or buffers, can be a significant factor in determining the quality of wildlife habitat. For example, buffers comprised of native vegetation with multi-canopy structure, snags, and down logs provide habitat for the greatest range of wildlife species (McMillan, 2000). Vegetated riparian areas also provide a source of large woody debris that helps create and maintain diverse in-stream habitat, as well as create woody debris jams that store sediments and moderate flood velocities.

Sparsely vegetated or vegetated buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated (May 2003). Until the newly planted buffer is established the near term goals for buffer functions may not be attained.

Riparian areas often have shallow groundwater tables, as well as areas where groundwater and surface waters interact. Groundwater flows out of riparian wetlands, seeps, and springs to support stream baseflows. Surface water that flows into riparian areas during floods or as direct precipitation infiltrates into groundwater in riparian areas and is stored for later discharge to the stream (Ecology, 2001; City of Portland, 2001).

ii. Floodplain

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

III. Consistency with Code Requirements:

A. Zoning District Dimensional Requirements LUC 20.20.010:

This is a proposal to improve bank stabilization along Coal Creek. The project will not be constructing any structures or appurtenances that are regulated by the City of Bellevue Land Use Code dimensional requirements described in LUC 20.20.010. The project complies with the standards of LUC 20.20.010.

B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes standards and procedures that apply to construction of improvements on any site which contains in whole or in part any portion designated as critical area or critical area buffer. The proposed stabilization activity is an allowed uses per LUC 20.25H.055 and subject to the performance standards as follows.

i. Consistency with LUC 20.25H.055.C.3.m

Proposed stabilization measures within a critical area or critical area buffer to protect against streambank erosion or steep slopes or landslide hazards may be approved in accordance with this subsection.

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.

This proposal removes rocks that were placed within the stream bank without prior city approval. Removal of the rocks requires restoration and stabilization of the streambank. Existing single family residence and appurtenances will be protected with the stabilization measures proposed.

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 proposed stabilization is soft stabilization that uses bioengineering techniques including coir logs and native planting. Disturbance resulting from the removal of the illegally placed rock will be restored and approximately 850 square feet of stream bank will be planted with native plants per the submitted plans found in Attachment 1. **See Conditions of Approval in Section IX of this report.**

ii. Consistency with LUC 20.25H.080

Development on sites with a type S or F stream or associated critical area buffer shall incorporate the following performance standards in design of the development, as applicable

1. **Lights shall be directed away from the stream.**

   No lighting is proposed.

2. **Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the stream, or any noise shall be minimized through use of design and insulation techniques.**

   Construction noise will be temporary and no long-term noise will be generated by the proposal. The project will be required to meet construction noise requirements in BCC 9.18.

3. **Toxic runoff from new impervious area shall be routed away from the stream.**

   No new impervious surfaces are created and no toxic runoff will be generated.

4. **Treated water may be allowed to enter the stream critical area buffer.**

The project will not generate water that needs to be treated.

5. **The outer edge of the stream critical area buffer shall be planted with dense vegetation to limit pet or human use.**

   The stream banks and buffer will be restored with native planting where impacted by the project.

6. **Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices", now or as hereafter amended. S60-Wilburton Sewer Capacity Upgrade Project 29 City of Bellevue - Critical Areas Report**

   Any use of these products will be consistent with the BMPs already employed by the City's Parks Department as this site is within a City park. Parks will be performing the plant installation and maintenance and will do so per their BMPs.

IV. Public Notice and Comment

Application Date:	June 24, 2016
Public Notice (500 feet):	September 1, 2016
Minimum Comment Period:	September 15, 2016

The Notice of Application for this project was published in the City of Bellevue Weekly Permit Bulletin and the Seattle Times on September 1, 2016. Notice was also 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 for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development.

B. Utilities

The City's Utility Department reviewed and approved the proposal.

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 only earth disturbance anticipated will be temporary resulting from removal of the existing rocks along the stream bank. Any erosion potential would be temporary and mitigated by required best management practices for erosion control in conformance with the City's Clearing and Grading Code BCC 23.76. An approved temporary erosion and sedimentation control (TESC) plan and a storm water pollution prevention plan (CSWPPP) is required before the clear & grade permit will be issued.

B. Animals

Long-term effects of the proposed project will provide a net benefit to improve fish habitat and overall habitat conditions. Construction of bank protection will prevent unintended bank erosion and sediment input into the stream. The proposed project will not result in development (i.e., impervious surfaces) or long-term adverse impacts to habitat for species of local importance and will improve habitat over existing conditions. Before work can proceed, all required federal and state permits and approvals must be obtained by the applicant. A copy any required permits shall be submitted to the City of Bellevue, prior to beginning construction. **See Section IX for a related condition of approval.**

C. Plants

The proposed improvement along the stream bank will enable additional bank planting which is proposed. Approximately 850 square feet of stream bank is proposed replanted with native vegetation. The planting will also include the installation of coir logs secured with dogwood and willow stakes. **See Section IX for a related condition of approval.**

VII. Decision Criteria

A. 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 approval of clearing and grading permit for the project. **See Section IX for a related condition of approval.**

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 project utilizes the best available construction techniques to have the least impact on critical areas and buffers as possible. The work will result in a gain in stream habitat functions with the removal of the hardened stream bank and the installation of native vegetation and the coir logs. All areas of temporary disturbance are proposed to be restored following construction. **See Section IX for a related condition of approval.**

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 performance standards will be met.

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

   The proposed project has no impact on public facilities.

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

   Areas of temporary disturbance are proposed to be restored as described in the project plans in Attachment 1. All proposed improvements are to be monitored per the and maintained for a minimum of 5 years. **See Section IX for a related condition of approval.**

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.

VIII. 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 Development Services Department does hereby **approve with conditions** the proposal to for stream bank stabilization in along Coal Creek. **A Clearing and Grading permit is required, and all plans are subject to review for compliance with applicable City of Bellevue codes and standards.**

Note- Expiration of Approval of Critical Areas Land Use Permit: In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant

fails to file for a clearing and grading permit or other necessary development permits within one year of the effective date of the approval.

IX. Conditions of Approval

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

Applicable Ordinances	Contact Person
Clearing and Grading Code – BCC 23.76	Tom McFarlane, 425-452-5207
Land Use Code – BCC Title 20	Heidi Bedwell, 425-452-4350

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

1. **Clearing and Grading Permit and Building Permit Required:** A Clearing and Grading permit is required prior to construction activity. Plans submitted as part of this or any associated permit application shall be consistent with the activity permitted under this approval.

   Authority: Land Use Code 20.30P.140
   Reviewer: Heidi Bedwell, Development Services Department

2. **Obtain all Other Applicable State and/or Federal Permits:** Before work can proceed, all required federal and state permits and approvals must be obtained by the applicant. Permits shall be submitted to the City of Bellevue, prior to beginning construction.

   Authority: Land Use Code 20.25H.080
   Reviewer: Heidi Bedwell, Development Services Department

3. **Restoration Plan:** Plans submitted under the clearing and grading permit for restoration shall be consistent with this approval and the restoration plans found as attachment 1. All temporary disturbance is required to be restored.

   Authority: Land Use Code 20.30P.140; 20.25H.220
   Reviewer: Heidi Bedwell, Development Services Department

4. **Final Mitigation Plan Performance Standards:**

   The final mitigation plan shall include performance standards to measure the successful establishment of the mitigation plantings. The following performance standards are acceptable:

   Year 1 (from date of plant installation)
   - 100% survival of all installed plants and/or replanting in following dormant season to reestablish 100%
   - 10% coverage of invasive plants in planting area

   Year 2 (from date of plant installation)
   - At least 90% survival of all installed material
   - Less than 10% coverage of planting area by invasive species or non-native/ornamental vegetation

   Year 3, 4, & 5 (from date of plant installation)
   - At least 85% survival of all installed material
   - Less than 10% coverage by invasive species or non-native/ornamental vegetation

   Authority: Land Use Code 20.25H.220
   Reviewer: Heidi Bedwell, Development Services Department

5. **Land Use Inspection:** Following installation of the mitigation planting, the applicant shall contact Land Use staff to inspect the planting area prior to final building inspection. Plantings shall be installed consistent with the approved final mitigation plan.

   Authority: Land Use Code 20.30P.140
   Reviewer: Heidi Bedwell, Development Services Department

6. **Maintenance and Monitoring Surety:** A financial surety is required to be submitted to ensure the mitigation planting successfully establishes. A maintenance assurance device that is equal to 20% of the cost of plants, installation, and the cost of monitoring is required to be held for a period of five years from the date of successful installation. A cost estimate is required to be provided with the building permit. The financial surety is required to be posted prior to clearing and grading permit issuance. Release of the surety after the 5-year monitoring period is contingent upon a final inspection of the planting by Land Use Staff that finds the maintenance and monitoring plan was successful and meets performance standards.

   Authority: Land Use Code 20.25H.220

Reviewer: Heidi Bedwell, Development Services Department

7. **Maintenance and Monitoring Reports:** The mitigation planting is required to be maintained and monitored for five years to ensure the plants successfully establish. Annual monitoring reports are required to be submitted to document the plants are meeting approved performance standards. Photos from selected photo points shall be included in the monitoring reports to document the planting. Land Use inspection is required by Land Use staff to end the plant monitoring period.

   Reporting shall be submitted no later than the end of each growing season or by October 31st, and shall include a site plan and photos from photo points established at the time of Land Use inspection. Reports shall be submitted to Heidi Bedwell by the above listed date and can be emailed to hbedwell@bellevuewa.gov or mailed directly to:

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

   Authority: Land Use Code 20.30P.140; 20.25H.220
   Reviewer: Heidi Bedwell, Development Services Department

Environmental Checklist Reviewed by
Heidi M. Bedwell (HMB) 8/20/2016

City of Bellevue Submittal Requirements	**27**

ENVIRONMENTAL CHECKLIST

12/21/00

Thank you in advance for your cooperation and adherence to these procedures. If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

INTRODUCTION
Purpose of the Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21c RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the City of Bellevue identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the City decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Answer the questions briefly, with the most precise information known, or give the best description you can. You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the Planner in the Permit Center can assist you.
The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. Include references to any reports or studies that you are aware of which are relevant to the answers you provide. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impacts.

Use of a Checklist for Nonproject Proposals: *A nonproject proposal includes plans, policies, and programs where actions are different or broader than a single site-specific proposal.*

For nonproject proposals, complete the Environmental Checklist even though you may answer "does not apply" to most questions. In addition, complete the Supplemental Sheet for Nonproject Actions available from Permit Processing.

For nonproject actions, the references in the checklist to the words *project*, *applicant*, and *property* or *site* should be read as *proposal*, *proposer*, and *affected geographic area*, respectively.

Attach an 8½" x 11" vicinity map which accurately locates the proposed site.

City of Bellevue Submittal Requirements	**27a**

ENVIRONMENTAL CHECKLIST

12/21/00

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

BACKGROUND INFORMATION

Property Owner: **Steve and June Lee**
66 Skagit Key
Bellevue, WA 98006

Contact Person: **Kenny Booth, The Watershed Company**
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: **750 6th Street South, Kirkland, WA 98033**

Phone: **(425) 822-5242**

Proposal Title: **Lee Streambank Stabilization**

Proposal Location (Street address and nearest cross street or intersection) Provide a legal description if available:

Street Address:
66 Skagit Key
Bellevue, WA 98006

Parcel:
6065310640

Legal Description:
NEWPORT DIV #3
Plat Block: 3
Plat Lot: 21

Please attach an 8½“ X 11” vicinity map that accurately locates the proposal site. **See last page.**

Give an accurate, brief description of the proposal’s scope and nature:

General description:

The project site is located within the Newport Shores neighborhood at 66 Skagit Key in Bellevue, WA (tax parcel 6065310640). The site is surrounded by single-family residences with Coal Creek flowing in a northwesterly direction along the northeast property line. The site includes a two-story residence constructed in 1989. The parcel is 20,428 square feet in size with the residence situated approximately 45 feet from the top of the Coal Creek streambank.

The site is relatively flat although the banks of Coal Creek slope rather steeply toward the northeast. The stream channel adjacent to the site is 4 to 6 feet below the yard level and is approximately 12 feet wide with steep, primarily grass and ivy-covered banks. The yard area is mostly lawn with landscaping shrubs around the perimeter.

In the past, high flows in the stream eroded a portion of the bank, resulting in an undercut bank which gave way beneath the property owner. Repair work completed in 2015 included the placement of angular rock along the toe of the bank, partially within the stream, and soil along the upper bank. This work triggered an enforcement action by the City of Bellevue. In order to rectify the violation, stream bank repair work is now proposed.

The proposal will involve hand hand-removal of the existing angular toe rock. A layer of coir fabric will be placed on the bank, extending approximately 18 inches into the stream. Two rows of coir logs will then be staked on top of the fabric at the toe, the lower one partially submerged. The loose fabric up the slope will then be temporarily rolled or folded back on top of the coir logs to allow smoothing and shaping of the upper slope using hand tools. Finally, the fabric will be pulled up the slope, keyed in at the top, and staked throughout. A planting plan will be implemented by driving live stakes through the fabric and cutting small holes for plantings.

1. Acreage of site: **The entire parcel is 20,428 square feet (.469 acre)**

2. Number of dwelling units/buildings to be demolished: **None.**

3. Number of dwelling units/buildings to be constructed: **None.**

4. Square footage of buildings to be demolished: **None.**

5. Square footage of buildings to be constructed: **None.**

6. Quantity of earth movement (in cubic yards): ~**5 cy cut / 0 cy fill**

7. Proposed land use: **No changes are proposed to the existing land use.**

8. Design features, including building height, number of stories, and proposed exterior materials: **Not applicable.**

10. Other

Estimated date of completion of the proposal or timing of phasing:

Construction would begin immediately following permit issuance subject to any WDFW required work windows.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

None at this time.

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

None.

HMB 8/20/2016

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

The parcel is the subject of an open code enforcement case (15-126107-DC). Otherwise, no other applications are pending for government approvals of other proposals directly affecting the subject property.

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

-Critical Areas Land Use Permit, City of Bellevue
-Clearing and Grading Permit, City of Bellevue
-Hydraulic Project Approval, Washington Department of Fish and Wildlife

Please provide one or more of the following exhibits, if applicable to your proposal.
(Please check appropriate box(es) for exhibits submitted with your proposal):

☐ Land Use Reclassification (rezone)
Map of existing and proposed zoning

☐ Preliminary Plat or Planned Unit Development
Preliminary plat map

☑ Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

☐ Building Permit (or Design Review)
Site plan
Clearing & grading plan

☐ Shoreline Management Permit
Site plan

HMB 8/20/2016

A. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (circle one): Flat Rolling Hilly Steep slopes Mountains Other:

b. What is the steepest slope on the site (approximate percent slope)?

The site is relatively flat with the exception of the streambanks.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

According to Natural Resources Conservation Service (NRCS) soil maps, the property contains Briscot silt loam (Br) within the project area and Urban Land (Ur) to the south.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Portions of the toe of the stream bank have been eroded by high stream flows.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Cut: Approximately 5 CY of angular rock will be removed from the site.

Fill: No new fill is proposed.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some minor erosion could occur during installation of the stream bank repairs. However, BMPs would be incorporated to minimize impacts during all clearing and grading activities.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

No new impervious surfaces are proposed.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

All clearing and grading construction would be in accordance with City of Bellevue Clearing & Grading Code (Chapter 23.76), permit conditions, and all other applicable codes, ordinances, and standards.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Emissions from vehicle trips and construction equipment would occur for a short period of time during site construction. After project completion, there would be no change in emissions from existing conditions.

HMB 8/20/2016

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No off-site sources of emissions or odor would affect the proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Vehicles and construction equipment would be kept in good working order.

3. WATER

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Coal Creek.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The entirety of the proposed project will occur within 200 feet of Coal Creek.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

The proposal would not require surface water withdrawals or diversions.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Yes, the proposal lies within a 100-year floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposal does not involve any discharges of waste materials to surface waters.

b. Ground

1. Will ground water be withdrawn, or will water be discharged to ground water? Give a general description, purpose, and approximate quantities if known.

No withdrawal of ground water or discharge of water to ground water would occur as part of this project.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural;

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etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material from septic tanks or other sources would be discharged into the ground as part of this project.

c. Water runoff (including stormwater):

1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff from the immediate project site is not expected except at natural, near pre-project rates. In general, precipitation is expected to infiltrate into vegetated soils.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Waste materials would not enter ground or surface waters due to water runoff.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

The erosion control measures described under question 1h would be implemented as necessary.

Proposal shall comply with BCC 23.76 Clearing and Grading Code

4. PLANTS

a. Check or circle types of vegetation found on the site:

- ☒ deciduous tree: alder, maple, aspen, other
- ☒ evergreen tree: fir, cedar, pine, other
- ☒ shrub:
- ☐ pasture
- ☐ crop or grain
- ☐ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other:
- ☐ water plants: water lily, eelgrass, milfoil, other
- ☒ other types of vegetation: grass

b. What kind and amount of vegetation will be removed or altered?

Lawn grass and ivy will be removed as part of the project.

c. List threatened or endangered species known to be on or near the site.

No threatened or endangered plant species are known to be on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The proposal involves the planting of approximately 852 square feet of native vegetation on the project site. Proposed plantings will include Oregon ash, Sitka spruce, western red cedar, pacific ninebark, cluster rose, red-flowering currant, salmonberry, oceanspray, shore sedge, coastal strawberry, kinnikinnick, lady fern, red-osier dogwood, Sitka willow, and Pacific willow.

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5. ANIMALS

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other

b. List any threatened or endangered species known to be on or near the site.

Adult and juvenile Chinook salmon and steelhead trout (listed as Threatened under the Federal Endangered Species Act) migrate through Coal Creek. Adults migrate upstream to reach spawning grounds; juveniles migrate downstream from their natal streams to reach the ocean. Coal Creek also contains coho salmon (Species of Concern under the Federal Endangered Species Act).

c. Is the site part of a migration route? If so, explain.

As described above, adult and juvenile salmon migrate up and downstream, respectively, through Coal Creek.

d. Proposed measures to preserve or enhance wildlife, if any:

The proposed project will enhance wildlife habitat through the installation of approximately 852 square feet of native plantings adjacent to the stream.

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

There is no proposed change in the existing forms of energy currently used for the residence.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The project would not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

No changes to energy features are proposed.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Typical environmental hazards associated with residential construction work (e.g. risk of fire, spills) could occur as part of this proposal.

1) Describe special emergency services that might be required.

Special emergency services are not anticipated at the site. In the unlikely event that a serious accident (e.g. fire or spill) occurs during construction, local fire department or emergency medical services might be required. After project completion, no special emergency services, other than those typically associated with residential uses, might be required.

2) Proposed measures to reduce or control environmental health hazards, if any:

During construction, standard precautions would be taken to ensure the safety of the work crew. Safety and accident response supplies would be on site. The construction manager would be contacted by a crew member immediately upon discovery of a spill. The construction manager would then ensure that the spill is cleaned up in the appropriate manner and would contact the appropriate authorities.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Typical noise associated with adjacent traffic exists in the project area.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise associated with project construction would be restricted to use of construction vehicles and hand-held power tools. A small excavator may also be utilized. Construction noise would be limited to normal daytime working hours. There would be no long-term noise associated with the completed project, other than that associated with a typical residential property.

3) Proposed measures to reduce or control noise impacts, if any:

As mentioned above, construction noise would be limited to daylight working hours. No other noise-control measures are necessary.

Subject to BCC 9.18
Noise Control

8. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties?

The site and adjacent properties are currently in single-family residential use.

b. Has the site been used for agriculture? If so, describe.

The site has not been used for agriculture in recent history.

c. Describe any structures on the site.

The project site includes a single-family residence.

d. Will any structures be demolished? If so, what?

No.

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e. What is the current zoning classification of the site?

The current zoning classification is R-2.5 (Single-Family Residential).

f. What is the current comprehensive plan designation of the site?

The current comprehensive plan designation is SF-M (Single-family Medium-density).

g. If applicable, what is the current shoreline master program designation of the site?

N/A

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Coal Creek has been classified as an "environmentally sensitive" area. Additionally, the stream is within the mapped 100-year floodplain. Subject to the provision in LUC 20.25H Critical Areas Overlay District

i. Approximately how many people would resid

The project would not change the number of people who reside on the property.

j. Approximately how many people would the completed project displace?

No people would be displaced as a result of this project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

No such measures are necessary.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposal would comply with all applicable regulatory plans and codes.

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

The property currently features one single-family residence. This proposal would not affect the number of housing units on the property.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

No such measures are necessary.

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10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No new structures are proposed.

b. What views in the immediate vicinity would be altered or obstructed?

Views will not be negatively affected by the proposed project. In fact, new native plantings may improve views within the area.

c. Proposed measures to reduce or control aesthetic impacts, if any:

No such measures are necessary.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Light or glare will not be produced by the finished project.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

No such measures are necessary.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

In the immediate vicinity, Lake Washington provides recreational activities such as swimming, boating, and fishing. Newcastle Beach Park is located approximately 0.5 mile to the southwest.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The proposed project would not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No such measures are necessary.

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13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

No such places or objects are known to be on or next to the site.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

No such landmarks or evidence is known to be on or next to the site.

c. Proposed measures to reduce or control impacts, if any:

Should historic, archeological, scientific or culturally significant items be encountered during implementation of this project, work would be temporarily stopped while the appropriate agencies are notified.

14. TRANSPORTATION

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The property takes access from Skagit Key. Site access would not be changed as a result of the proposed project.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The nearest King County Metro transit stop is located approximately 0.5 mile feet to the southeast of the subject parcel, at the junction of Coal Creek Parkway and Interstate-405.

c. How many parking spaces would the completed project have? How many would the project eliminate?

The proposed project would not affect parking on the property.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

The proposal would not require any new roads, or improvements to existing roads.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Water, rail, or air transportation would not be utilized by the completed project.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Traffic generation would not change as result of the proposed project.

g. Proposed measures to reduce or control transportation impacts, if any:

No such measures are necessary.

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15. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No increase in public service needs would result from this project.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No such measures are necessary.

16. UTILITIES

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The site is currently served by utilities. No new utilities are proposed as part of the project.

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

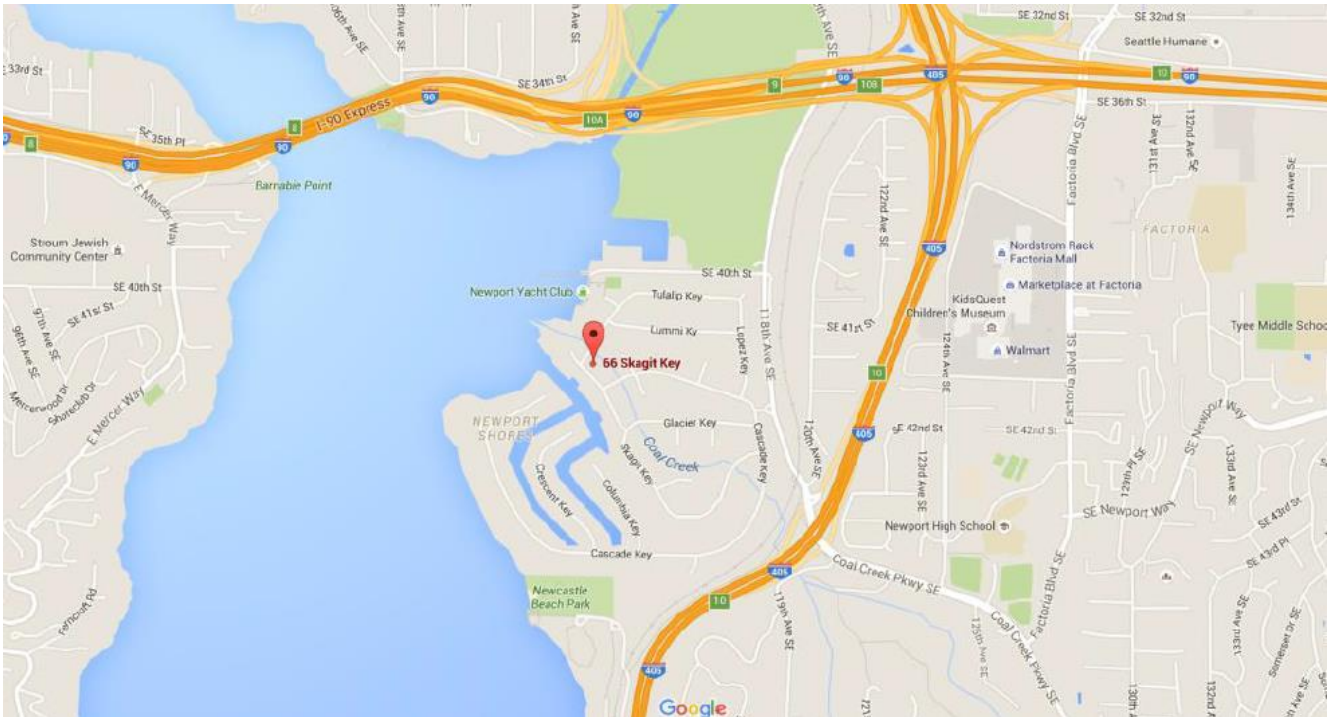
Signature

Kenny Booth, AICP
Senior Planner

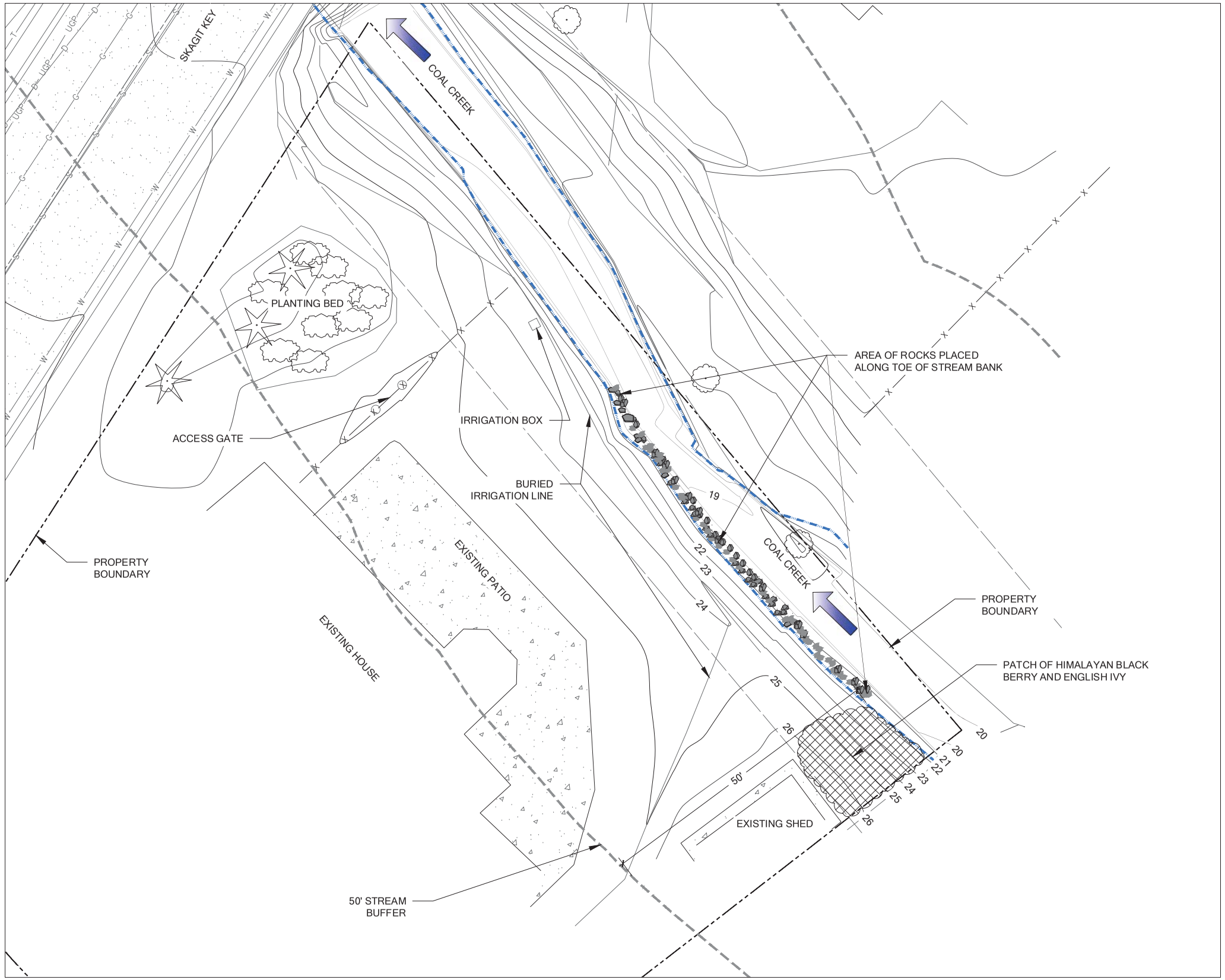
Date Submitted: June 24, 2016

HMB 8/20/2016

<u>Vicinity Map</u> from iMAP (top) Google Maps (below)

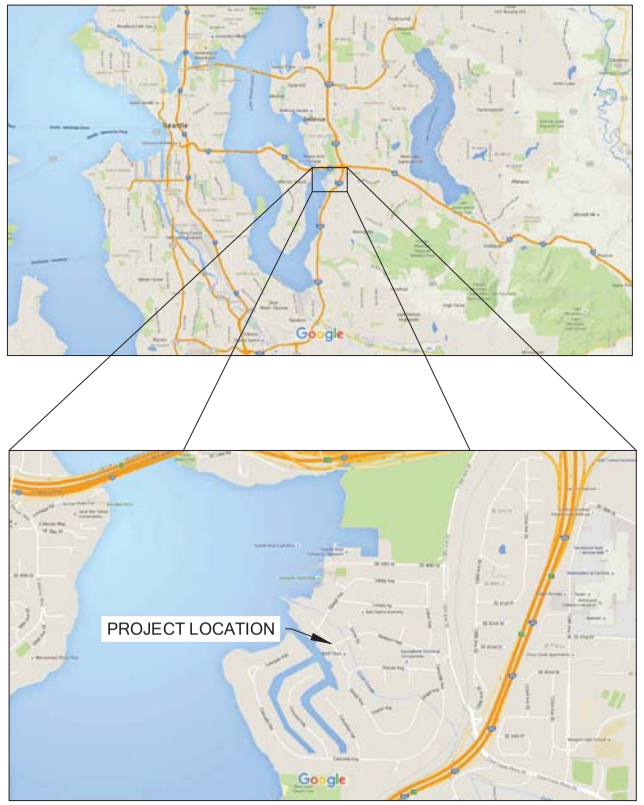


COAL CREEK RESTORATION PLAN



EXISTING CONDITIONS

0 5' 10' 20' 40'



VICINITY MAPS

SHEET INDEX

1 EXISTING CONDITIONS
2 BANK STABILIZATION PLAN
3 BANK STABILIZATION DETAILS
4 SITE PREP PLAN
5 PLANTING PLAN AND DETAILS
6 PLANT INSTALLATION NOTES
7 RESTORATION PLAN NOTES

NOTES

1. THE WATERSHED COMPANY CONDUCTED A SITE VISIT ON MARCH 18, 2016.
2. SURVEY RECEIVED FROM TETRA TECH ON MAY 27, 2016.

LEGEND

- COAL CREEK OHWM
- COAL CREEK BUFFER
- PROPERTY BOUNDARY

PERMIT SET

NOT FOR CONTRACTOR BIDDING

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THE LEE RESIDENCE
STEAMBANK RESTORATION PLAN
PREPARED FOR STEVE AND JUNE LEE
PARCEL# 6065310640
66 SKAGIT KEY
BELLEVUE, WA 98006

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	06-17-16	REVIEW SET	KMB
2	06-22-16	PERMIT SUBMITTAL	KMB

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

PROJECT MANAGER: KB
DESIGNED: GJ, KMB
DRAFTED: KMB
CHECKED: MF,GJ,KB
JOB NUMBER:
160308
SHEET NUMBER:
W1 OF 7

FILENAME 160308_COAL_CREEK_LEE.DWG
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LEGEND

- COAL CREEK OHWM
- COAL CREEK BUFFER
- PROPERTY BOUNDARY
- STREAM BANK PLANTING AREA WITH COIR FABRIC
- STREAM BANK PLANTING AREA WITHOUT COIR FABRIC
- 16" COIR LOGS (1 / W3)

BANK STABILIZATION PLAN

0 2.5' 5' 10' 20'

PERMIT SET

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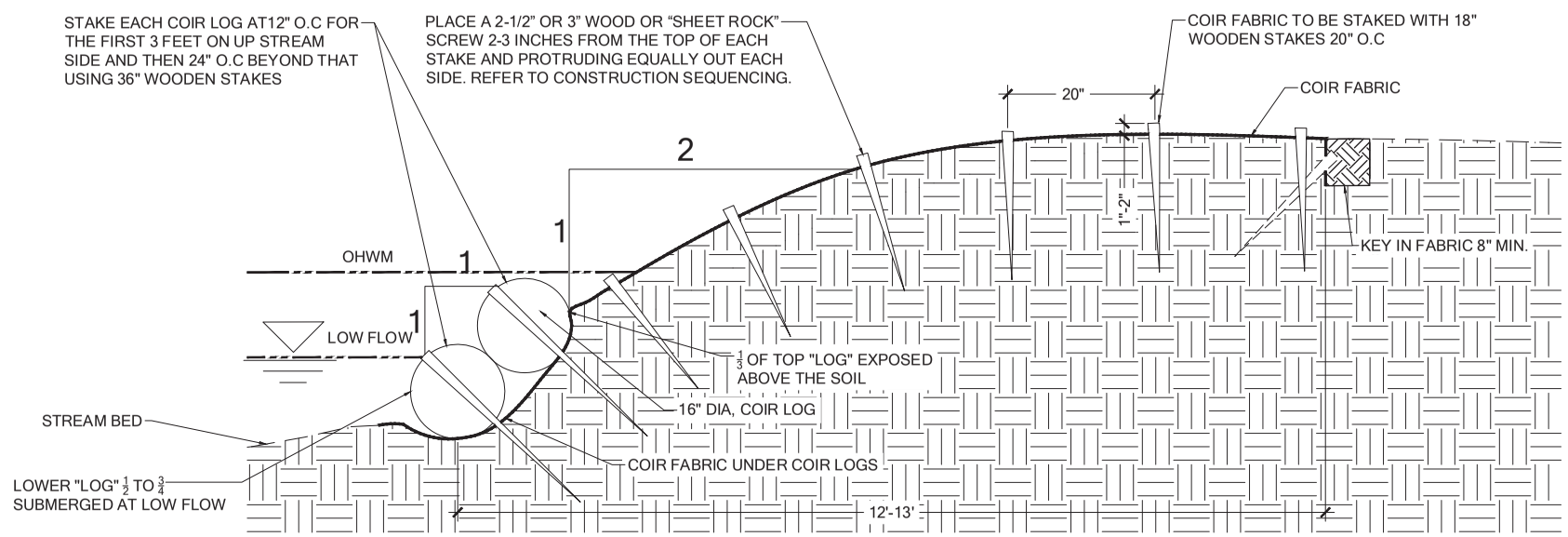
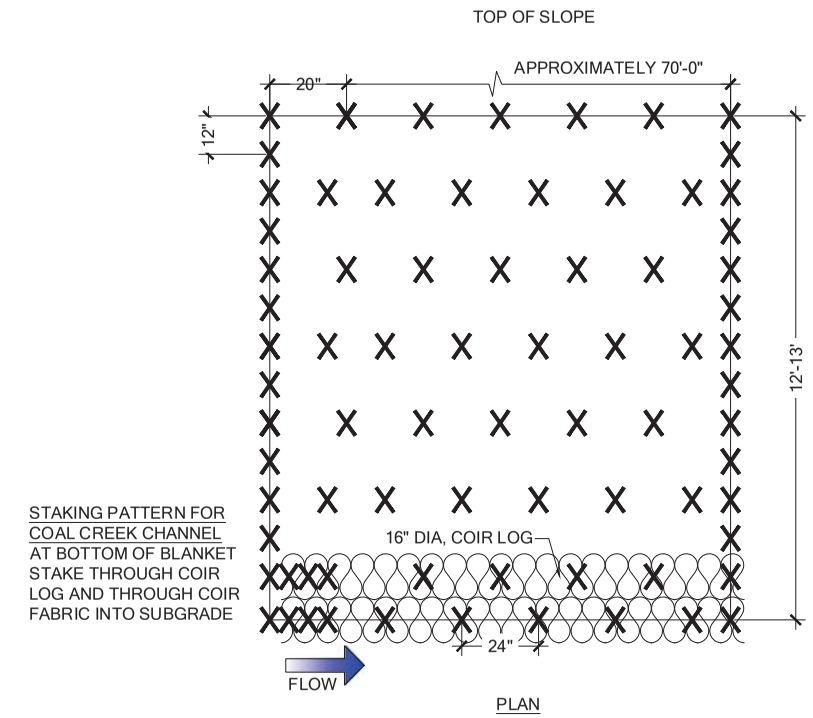


1 COIR FABRIC, COIR LOG, AND STAKING DETAIL



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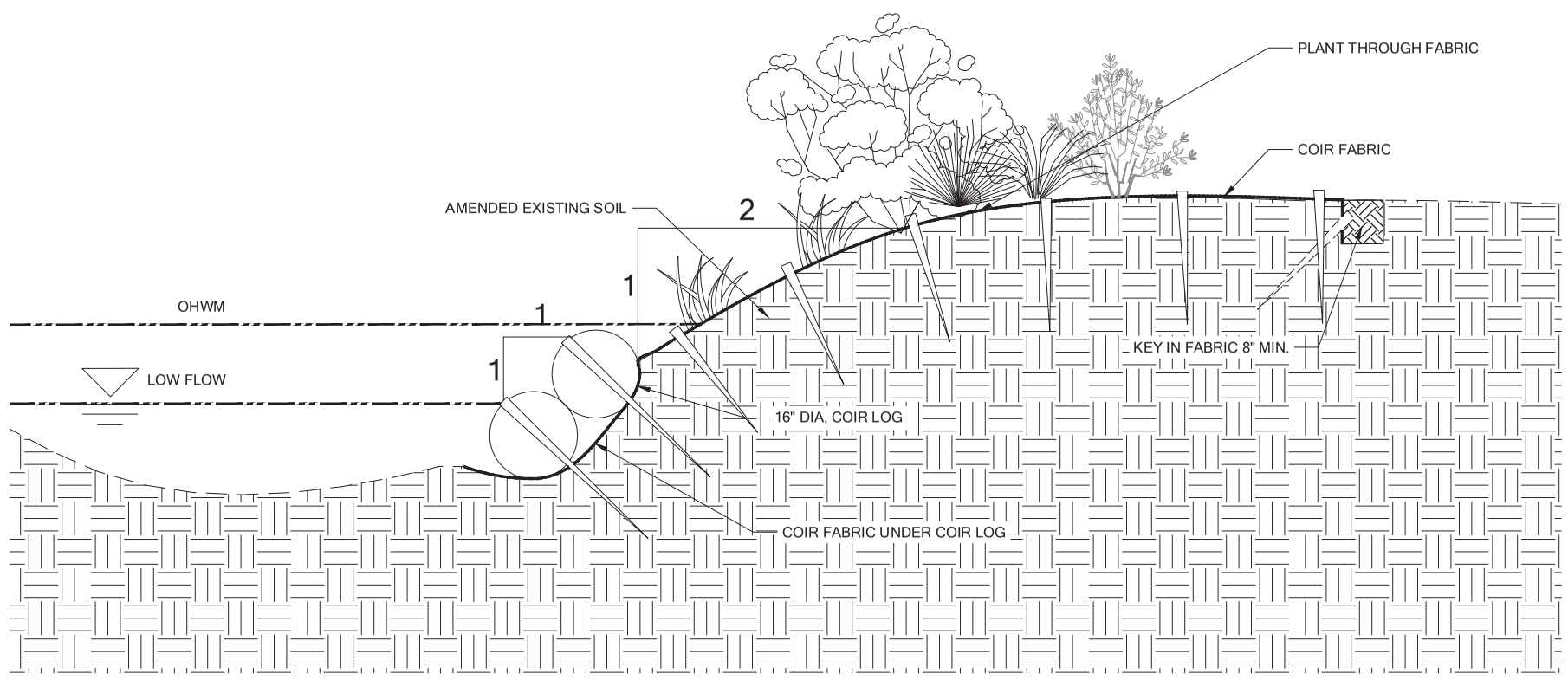

2 BANK REVEGETATION SECTION

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NOTES
1. SEE ALSO CONSTRUCTION SEQUENCE ON SHEET W7.

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BANK STABILIZATION DETAILS

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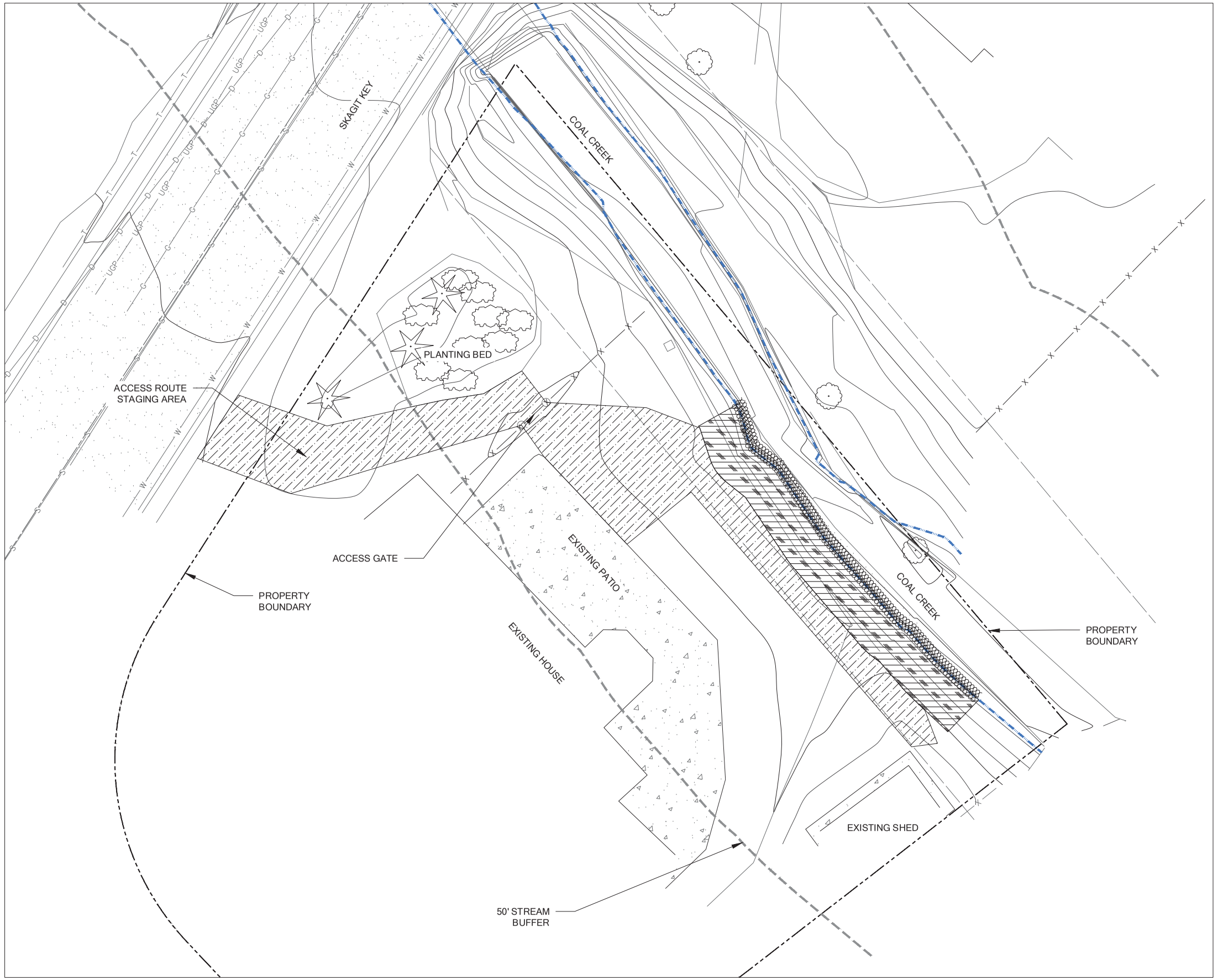

LEGEND

- COAL CREEK OHWM
- COAL CREEK BUFFER
- PROPERTY BOUNDARY
- COIR FABRIC
- COIR LOG
- STAGING AND ACCESS AREA

SITE PREP PLAN

0 5' 10' 20' 40'

PERMIT SET

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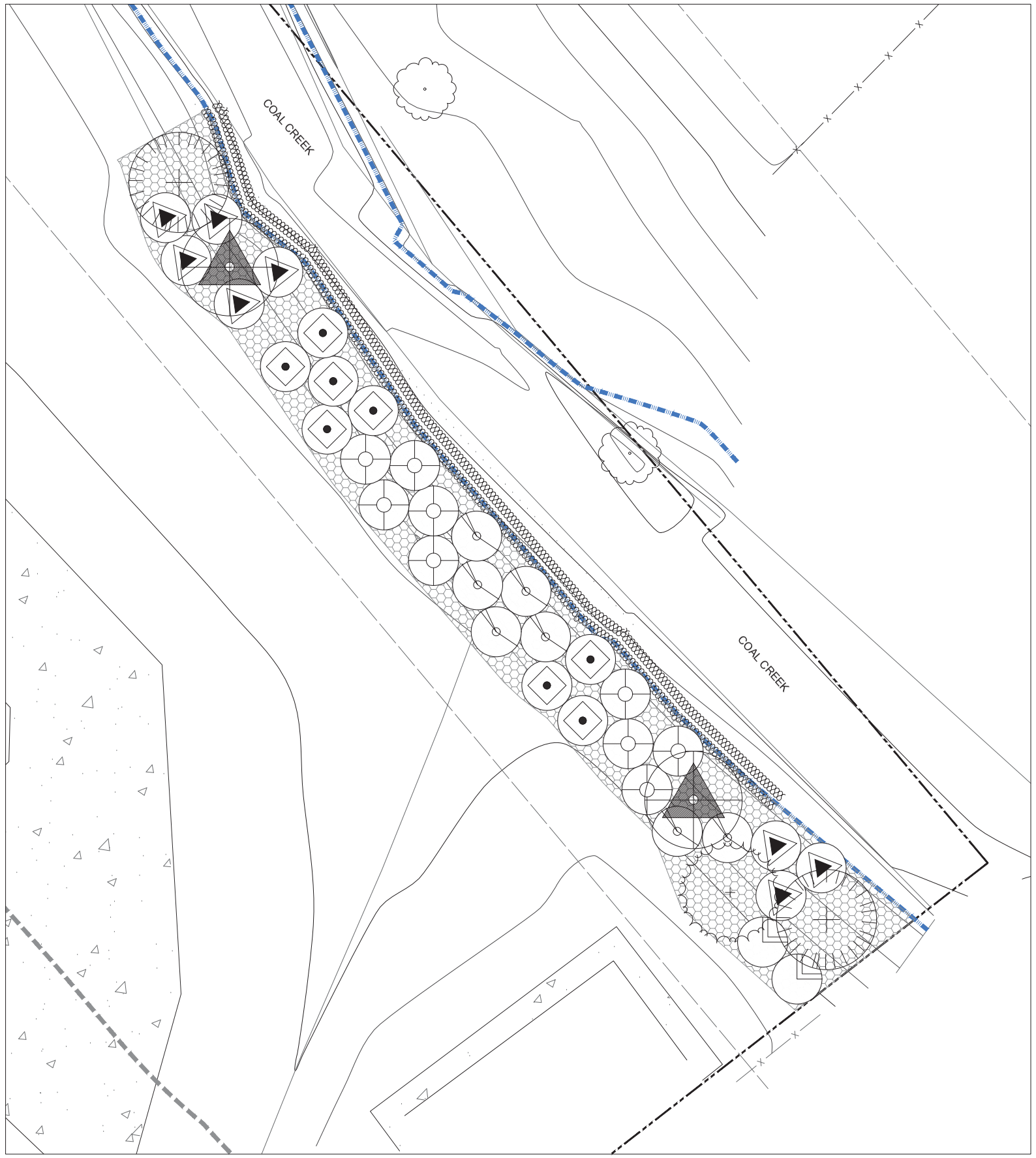
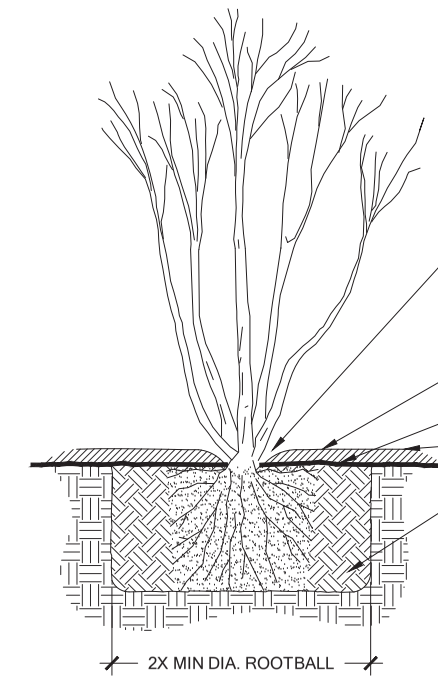


PLANTING SCHEDULE

	SIZE	SPACING	QTY
TREES			
FRAXINUS LATIFOLIA / OREGON ASH	2 GAL	AS SHOWN ON PLAN	2
PICEA SITCHENSIS / SITKA SPRUCE	2 GAL		1
THUJA PLICATA / WESTERN REDCEDAR	2 GAL		2
SHRUBS			
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	1GAL.	AS SHOWN ON PLAN	8
ROSA PISOCARPA / CLUSTER ROSE	1 GAL.		8
RIBES SANGUINEUM / RED-FLOWERING CURRANT	1 GAL.		9
RUBUS SPECTABILIS / SALMONBERRY	1 GAL.		2
HOLODISCUS DISCOLOR / OCEANSPRAY	1 GAL.		8
GROUND COVER			
CAREX LENTICULARIS / SHORE SEDGE	4"	24" O.C.	50
FRAGARIA CHILOENSIS / COASTAL STRAWBERRY	4"	24" O.C.	50
ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	4"	24" O.C.	50
ATHYRIUM FILIX-FEMINA / LADY FERN	4"	24" O.C.	50
COIR LOG WITH LIVE STAKES			
CORNUS SERICEA / RED-OSIER DOGWOOD	PLANT 2 LIVE STAKES PER LINEAR FOOT OF EACH COIR LOG		100
SALIX SITCHENSIS / SITKA WILLOW			100
SALIX LUCIDA / PACIFIC WILLOW			100



NOTES:
1. PLANT CONTAINER AT SPECIFIED DISTANCE ON-CENTER (O.C.) USING TRIANGULAR SPACING, TYP.
2. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
3. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
4. SOAK PLANTING PIT AFTER PLANTING

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

SPECIFIED MULCH LAYER. HOLD BACK MULCH FROM TRUNK/STEMS

COIR FABRIC

FINISH GRADE

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

1 CONTAINER PLANTING DETAIL

Scale: NTS

PERMIT SET

NOT FOR CONTRACTOR BIDDING

PLANTING PLAN

0 2.5' 5' 10' 40'

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W5 OF 7

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PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

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

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

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

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

SUBMITTALS

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

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

DELIVERY, HANDLING, & STORAGE

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

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

WARRANTY

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

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

PLANT MATERIAL

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

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

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

PLANT INSTALLATION NOTES
SCALE AS NOTED

PERMIT SET

NOT FOR CONTRACTOR BIDDING

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Science & Design

THE LEE RESIDENCE
STEAMBANK RESTORATION PLAN
PREPARED FOR STEVE AND JUNE LEE
PARCEL# 6065310640
66 SKAGIT KEY
BELLEVUE, WA 98006

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	06-17-16	REVIEW SET	KMB
2	06-22-16	PERMIT SUBMITTAL	KMB

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

PROJECT MANAGER: KB
DESIGNED: GJ, KMB
DRAFTED: KMB
CHECKED: MF,GJ,KB
JOB NUMBER:
160308
SHEET NUMBER:
W6 OF 7

DATE: 6/21/2016 | PRINTED BY: KYLE BRAUN | FILENAME: 160308_COAL_CREEK_LEE.DWG

RESTORATION NOTES

CONSTRUCTION SEQUENCING:

1. VERIFY ALL NECESSARY SITE EASEMENTS AND ACCESS AUTHORIZATIONS FOR ALL CONSTRUCTION ACTIVITIES.
2. HOLD A PRE-CONSTRUCTION MEETING WITH HOMEOWNER; CONTRACTOR, DESIGNER (THE WATERSHED COMPANY), CITY OF BELLEVUE INSPECTOR (IF REQUIRED); AND/OR INVITEES.
3. ENSURE THAT COPIES OF ALL REQUIRED PERMITS AND AUTHORIZATIONS FROM LOCAL AND STATE AGENCIES, WITH CONDITIONS, ARE PRESENT ON-SITE FOR THE DURATION OF THE WORK.
4. EQUIPMENT USED ON THIS PROJECT MUST BE IN EXCELLENT WORKING CONDITION, WELL MAINTAINED AND COMPLETELY FREE OF FLUID LEAKS OF ANY KIND.
5. BEFORE BEGINNING CONSTRUCTION WORK, ESTABLISH CLEARING LIMITS AND DEFINE THE WORK AREA(S).
6. IDENTIFY CONSTRUCTION ACCESS FROM ROADWAYS, EQUIPMENT ACCESS PATHWAYS, STAGING AREAS, SILT FENCING, HIGH VISIBILITY FENCING, AND ANY AND ALL OTHER TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES, GENERAL AND SITE-SPECIFIC, AS NOTED ON THE PLANS AND SUPPORTING DOCUMENTS OR AS REQUIRED BY VARIOUS PERMITS AND AUTHORIZATIONS ON PROJECT PERIMETER.
7. LOCATE ANY EXISTING UTILITIES WITHIN THE PROJECT AREA OR ALONG ACCESS ROUTES AND RELOCATE OR PROTECT ANY THAT MAY INTERFERE WITH OR BE DAMAGED BY PROJECT IMPLEMENTATION.
8. TURN OFF OR OTHERWISE DE-ACTIVATE BACK YARD SPRINKLER SYSTEM COMPONENTS WHICH COULD IN ANY WAY BE AFFECTED BY CONSTRUCTION ACTIVITIES, INCLUDING SITE ACCESS.
9. IDENTIFY ANY STRUCTURES OR MATERIALS WITHIN THE PROJECT AREA SLATED FOR RELOCATION OR REMOVAL PRIOR TO PROJECT IMPLEMENTATION (SUCH AS AND INCLUDING ANGULAR ROCK AND NON-NATIVE VEGETATION, SEE BELOW) AND CONDUCT OR ARRANGE FOR THEIR REMOVAL OR RELOCATION. DISPOSE OF THE DEBRIS GENERATED FROM REMOVAL AT AN APPROPRIATE OFF-SITE, UPLAND LOCATION, LANDFILL, OR RECYCLING FACILITY AS APPROPRIATE. IT IS EXPECTED THAT HAND OR SMALL POWER EQUIPMENT WOULD BE USED TO ACCOMPLISH ANY NECESSARY DEMOLITION AND DISPOSAL OF THE DEBRIS.
10. HAND-REMOVE ANGULAR TOE ROCK TO FORM AN UNINTERRUPTED TOE-OF-SLOPE AT THE WATER'S EDGE.
11. PLACE COIR 900-WEIGHT FABRIC ALONG THE ENTIRE BANK, WITHOUT SPLICING OR SEAMS, EXTENDING 18 INCHES MINIMUM ON-SLOPE PAST (BELOW) THE WATER'S EDGE AT LOW-FLOW CONDITIONS. PRODUCT COMES IN 13-FOOT-WIDE BY 165-FOOT-LONG ROLLS, ALLOWING THE FABRIC TO EXTEND ALONG THE ENTIRE LENGTH OF THE PROJECT AND ALSO UP TO OR NEAR THE TOP-OF-SLOPE WITHOUT ANY SEAMS.
12. STAKE TWO ROWS OF 16-INCH-DIAMETER COIR LOGS ALONG THE TOE OF THE STREAMBANK FOR THE ENTIRE LENGTH OF THE STREAMBANK REPAIR. THESE "LOGS" ARE TO BE STAKED ON TOP OF THE LAID OUT COIR FABRIC AND WITH THE BOTTOM EDGE OF THE LOWER LOG COINCIDENT WITH THE LOWER EDGE OF THE FABRIC. THE LOWER LOG IS TO BE PLACED SUCH THAT IT IS ½ TO ¾ SUBMERGED UNDER TYPICAL LOW-FLOW CONDITIONS ACCORDING TO THE PLAN DETAILS. USE MIN. 1" BY 2" BY 36" WESTERN RED CEDAR OR FIR (NO HARDWOOD OR HEMLOCK) WOODEN STAKES ACCORDING TO THE PLAN DETAILS, PLACED 24" ON CENTER EXCEPT 12" ON CENTER FOR THE FIRST 4 STAKES ON THE UPSTREAM END OF EACH LOG. PER PLAN DETAILS, PLACE A 2-1/2" OR 3" WOOD OR "SHEET ROCK" SCREW 2-3 INCHES FROM THE TOP OF EACH STAKE AND PROTRUDING EQUALLY OUT EACH SIDE. DRIVE STAKES TO FULL DEPTH SUCH THAT THE PROTRUDING ENDS OF THE SCREWS PRESS FIRMLY DOWN ON THE COIR LOG. THESE COIR LOGS WILL SERVE AS, AND SUBSTITUTE FOR, SILT FENCING ALONG THE WATER'S EDGE DURING THE PROCESS OF SMOOTHING THE UPPER SLOPE, PLACING AND STAKING BIODEGRADABLE (COIR) FABRIC, AND IMPLEMENTING THE NATIVE REVEGETATION PLAN.
13. TEMPORARILY ROLL THE COIR FABRIC FROM THE TOP, DOWNSLOPE, TO EXPOSE THE EARTHEN SLOPE. LEAVE THE COIR FABRIC ROLLED UP, ON TOP OF OR UP AGAINST THE INSTALLED COIR LOGS.
14. EVALUATE YARD SPRINKLER AND/OR ROOF DRAIN DISCHARGES IN OR NEAR THE PROJECT AREA TO DETERMINE IF THEY NEED ADDITIONAL PROTECTION DURING CONSTRUCTION, AND/OR IF THEY NEED TO BE MODIFIED OR RE-CONSTRUCTED IN ASSOCIATION WITH THE PROJECT. BANK-FORMING ACTIVITIES (BELOW) MAY EXPOSE OR OTHERWISE AFFECT THESE FEATURES, POSSIBLY MAKING THEM MORE VULNERABLE TO DAMAGE.
15. USING HAND TOOLS, SHOVEL AND RAKE, SMOOTH THE UPPER STREAMBANK TO ACHIEVE THE SPECIFIED SLOPE AND DIMENSIONS - 2:1, H:V TYP., WHERE FEASIBLE, 1½:1 H:V MAX. REMOVE ANY NON-NATIVE VEGETATION AND ROOTS (E. G. HIMALAYAN BLACKBERRY) WITHIN THE PROJECT AREA.
16. PLACE AND MIX IN ANY ADDITIONAL TOPSOIL OR OTHER SOIL SUPPLEMENTATION MATERIALS, SUCH AS COMPOST.
17. IN THE PROCESS OF RAKING AND SMOOTHING THE SLOPE, RAKE TOPSOIL UP TO AND AGAINST THE UPPER COIR LOG ROW SUCH THAT IT IS APPROXIMATELY 2/3 BURIED ALONG ITS UPSLOPE SIDE.
18. ROLL THE COIR FABRIC BACK UP THE SLOPE. KEY IN THE FABRIC AT THE TOP OF THE SLOPE AND ALSO ALONG EACH EDGE BY TRENCHING AND STAKING. ALSO STAKE THE FABRIC THROUGHOUT ACCORDING TO THE PATTERN AND SPACING ON THE PLAN DETAILS. STAKES ARE TO BE WOODEN, 1" BY 2" BY 18" WESTERN RED CEDAR OR FIR (NO HARDWOOD OR HEMLOCK), PLACED 12" ON CENTER ALONG THE UPSTREAM AND DOWNSTREAM EDGES AND 20" ON CENTER ACROSS THE TOP AND THROUGHOUT THE COVERED SLOPE AREA. AS FOR THE COIR LOG STAKING, PLACE A 2-1/2" OR 3" WOOD OR "SHEET ROCK" SCREW 2-3 INCHES FROM THE TOP OF EACH STAKE AND PROTRUDING EQUALLY OUT EACH SIDE. DRIVE STAKES TO FULL DEPTH SUCH THAT THE PROTRUDING ENDS OF THE SCREWS PRESS FIRMLY DOWN ON THE COIR FABRIC.
19. PLANT THROUGH THE COIR FABRIC ON THE STREAMBANK SLOPE TO IMPLEMENT THE PLANTING PLAN. SMALL HOLES ARE TO BE CUT TO ALLOW BARE ROOT OR POTTED SPECIMENS TO BE PLANTED THROUGH THE FABRIC. DRIVE WILLOW AND RED OSIER DOGWOOD LIVE STAKES THROUGH THE FABRIC AND COIR LOGS ACCORDING TO THE PATTERN AND DENSITY SHOWN ON THE PLANTING PLAN.
20. WHERE AND IF APPLICABLE, SOW LAWN GRASS SEED MIXTURE OVER ABOVE-BANK AREAS PROTECTED BY THE COIR FABRIC AS WELL AS ANY ADJOINING DISTURBED LAWN. RAKE IN A THIN LAYER OF TOPSOIL, 1 INCH OR LESS, OVER EXPOSED FABRIC IN THE DISTURBED LAWN AREA TO PARTIALLY OBSCURE IT AND BED THE GRASS SEED.
21. PROVIDE IRRIGATION AND MAINTENANCE ACCORDING TO THE PLANTING PLAN.
22. CONDUCT SITE CLEAN-UP, TOUCH-UP, AND FINAL RAKING AND SMOOTHING OF THE PROJECT AREA TO ACHIEVE A FINISHED, LANDSCAPED APPEARANCE.
23. PROVIDE PERFORMANCE MONITORING AS REQUIRED.

MONITORING PROGRAM

GOALS AND PERFORMANCE STANDARDS

THE FOLLOWING GOALS AND PERFORMANCE STANDARDS WILL BE USED TO MEASURE PROJECT SUCCESS OVER THE MONITORING PERIOD.

GOALS

1) WITHIN THE PROPOSED RESTORATION AND BANK STABILITY AREA, ESTABLISH DENSE NATIVE VEGETATION THAT IS APPROPRIATE TO THE ECO-REGION AND SITE.
2) WHERE INDICATED ON THE PLAN, AREAS WITHIN THE RESTORATION AREA WILL REMAIN SUBSTANTIALLY VEGETATED WITH A PREPONDERANCE OF NATIVE PLANTS AND WILL CONTAIN LITTLE INVASIVE OR NOXIOUS WEED COVER.
3) IMPROVE NATIVE VEGETATION STRUCTURE IN THE RIPARIAN CORRIDOR TO RE-ESTABLISH STREAM BANK STABILITY AND PREVENT CONTINUED EROSION.

PERFORMANCE STANDARDS

THE STANDARDS LISTED BELOW WILL BE USED TO JUDGE THE SUCCESS OF THE INSTALLATION OVER TIME. IF PERFORMANCE STANDARDS ARE MET AT THE END OF YEAR 3, THE SITE WILL THEN BE DEEMED SUCCESSFUL AND THE PERFORMANCE SECURITY BOND WILL BE ELIGIBLE FOR RELEASE BY THE CITY OF BELLEVUE.

1) SURVIVAL: ACHIEVE 100% SURVIVAL OF INSTALLED PLANTS BY THE END OF YEAR 1. THIS STANDARD CAN BE MET THROUGH PLANT ESTABLISHMENT OR THROUGH REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
2) NATIVE COVER:
   a. ACHIEVE 80% UNDERSTORY COVER OF NATIVE SHRUBS BY YEAR 3. NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS COVER STANDARD.
3) SPECIES DIVERSITY: ESTABLISH AT LEAST TWO NATIVE SHRUB SPECIES AND ONE NATIVE GROUNDCOVER SPECIES BY YEAR 3. NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
4) INVASIVE COVER: AERIAL COVER FOR ALL NON-NATIVE, INVASIVE AND NOXIOUS WEEDS WITHIN THE PLANTING AREAS WILL NOT EXCEED 10% AT ANY YEAR DURING THE MONITORING PERIOD. INVASIVE PLANTS INCLUDE IVY SPECIES (HEDERA SPP.), HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS), AND CUT LEAF BLACKBERRY (RUBUS LACINIATUS). INVASIVE PLANTS ARE DEFINED AS THOSE LISTED BY THE WASHINGTON STATE NOXIOUS WEED CONTROL BOARD AS CLASS A, B, OR C.

MAINTENANCE AND MONITORING PLAN

THIS MONITORING PROGRAM IS DESIGNED TO MEASURE PROGRESS TOWARDS THE STATED GOALS AND PERFORMANCE STANDARDS WITHIN THE REQUIRED 3-YEAR MONITORING PERIOD.

MONITORING METHODS

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

AN AS-BUILT PLAN WILL BE PREPARED BY THE RESTORATION PROFESSIONAL (WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS) PRIOR TO THE BEGINNING OF THE MONITORING PERIOD. THE AS-BUILT PLAN WILL BE A MARK-UP OF THE PLANTING PLANS INCLUDED IN THIS PLAN SET. THE AS-BUILT PLAN WILL DOCUMENT ANY DEPARTURES IN PLANT PLACEMENT OR OTHER COMPONENTS FROM THE PROPOSED PLAN.

MONITORING WILL TAKE PLACE ONCE ANNUALLY IN THE FALL FOR THREE YEARS. YEAR-1 MONITORING WILL COMMENCE IN THE FIRST FALL SUBSEQUENT TO INSTALLATION.

THE FORMAL MONITORING VISIT SHALL RECORD AND REPORT THE FOLLOWING IN AN ANNUAL REPORT SUBMITTED TO THE CITY OF BELLEVUE:

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

CONSTRUCTION NOTES AND SPECIFICATIONS

NOTE: SPECIFICATIONS FOR ITEMS IN BOLD CAN BE FOUND BELOW UNDER "MATERIAL SPECIFICATIONS AND DEFINITIONS."

NOTE: THE WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS, WILL MONITOR:

1. ALL SITE PREPARATION
   a. WEED REMOVAL
   b. SOIL AND COIR PREPARATION.
   c. MULCH PLACEMENT.
2. PLANT MATERIAL INSPECTION
   a. PLANT MATERIAL DELIVERY INSPECTION.
   b. 100% PLANT INSTALLATION INSPECTION.

GENERAL WORK SEQUENCE

SITE PREPARATION AND PLANT INSTALLATION SHOULD FOLLOW THE PLANTING NOTES AND INSTALLATION SPECIFICATIONS ON SHEET W6 OF THIS PLAN SET.

MATERIAL SPECIFICATIONS AND DEFINITIONS

1. TOPSOIL: CEDAR GROVE TOPSOIL MIX OR EQUIVALENT PRODUCT. TOPSOIL FOR PLANTING BEDS AND ORNAMENTAL TURF SHALL BE A MIXTURE OF APPROXIMATELY 33-50% COMPOST AND 50-65% SAND OR SANDY LOAM, EACH MEETING THE FOLLOWING REQUIREMENTS.
   a. LOAM SHALL BE SANDY LOAM PER USDA GRADATION; AND FREE OF PHYTO-TOXIC MATERIALS, AND VIABLE SEEDS, RHIZOMES OR ROOTS OF STATE-LISTED NOXIOUS WEEDS.
   b. SAND SHALL BE FREE OF PHYTO-TOXIC MATERIALS, AND VIABLE SEEDS, RHIZOMES OR ROOTS OF STATE-LISTED NOXIOUS WEEDS.
   c. MIX SHALL CONTAIN 10 TO 20% ORGANIC MATTER, BY WEIGHT (LOSS ON IGNITION)
   d. PH SHALL BE BETWEEN 6.0 AND 7.5
   e. SOLUBLE CONTENTS SHALL BE LESS THAN 3.0 MMHOS/CM
2. FERTILIZER: SLOW RELEASE, GRANULAR PHOSPHOROUS-FREE FERTILIZER. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR APPLICATION. KEEP FERTILIZER IN A WEATHER-TIGHT CONTAINER WHILE ON SITE. NOTE THAT FERTILIZER IS TO BE APPLIED ONLY IN YEARS 2 AND 3 AND NOT IN THE FIRST YEAR.
3. RESTORATION PROFESSIONAL: WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
4. WOOD CHIP MULCH: WOOD CHIP MULCH SHALL MEET WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION FOR BARK OR WOOD CHIPS AS DEFINED BY 9-14.4(3). "BARK OR WOOD CHIP MULCH SHALL BE DERIVED FROM DOUGLAS FIR, PINE, OR HEMLOCK SPECIES. IT SHALL NOT CONTAIN RESIN, TANNIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. SAWDUST SHALL NOT BE USED AS MULCH.

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

Sieve Size	Percent Passing	
	Minimum	Maximum
2"	95	100
No. 4	0	30

CONTINGENCIES

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

MAINTENANCE

THE SITE WILL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FOR THREE YEARS FOLLOWING COMPLETION OF THE CONSTRUCTION.

1) FOLLOW THE RECOMMENDATIONS NOTED IN THE PREVIOUS MONITORING SITE VISIT.
2) GENERAL WEEDING FOR ALL PLANTED AREAS:
   a. AT LEAST TWICE YEARLY, REMOVE ALL COMPETING WEEDS AND WEED ROOTS FROM BENEATH EACH INSTALLED PLANT AND ANY DESIRABLE VOLUNTEER VEGETATION TO A DISTANCE OF 18 INCHES FROM THE MAIN PLANT STEM. WEEDING SHOULD OCCUR AT LEAST TWICE DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY, LOWER PLANT REPLACEMENT COSTS, AND INCREASED LIKELIHOOD THAT THE PLAN MEETS PERFORMANCE STANDARDS BY YEAR 3.
   b. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLAN INSTALLATION.
   c. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER/WEED EATER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
3) APPLY SLOW RELEASE GRANULAR FERTILIZER TO EACH INSTALLED PLANT ANNUALLY IN THE SPRING (BY JUNE 1) OF YEARS 2 AND 3.
4) REPLACE MULCH AS NECESSARY TO MAINTAIN A 3-INCH-THICK LAYER, RETAIN SOIL MOISTURE, AND LIMIT WEEDS.
5) REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISITS DURING THE UPCOMING FALL/WINTER DORMANT SEASON (OCTOBER 15 TO MARCH 1).
6) THE HOMEOWNER WILL ENSURE THAT WATER IS PROVIDED FOR THE ENTIRE PLANTED AREA WITH A MINIMUM OF 2 INCHES OF WATER PROVIDED PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION. LESS WATER IS NEEDED DURING MARCH, APRIL, MAY AND OCTOBER.

PERMIT SET

NOT FOR CONTRACTOR BIDDING

RESTORATION PLAN NOTES

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SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	06-17-16	REVIEW SET	KMB
2	06-22-16	PERMIT SUBMITTAL	KMB

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

PROJECT MANAGER: KB
DESIGNED: GJ, KMB
DRAFTED: KMB
CHECKED: MF,GJ,KB
JOB NUMBER: 160308

SHEET NUMBER: W7 OF 7

DATE 6/21/2016 | PRINTED BY KYLE BRAUN | FILENAME 160308_COAL_CREEK_LEE.DWG

Lee Residence – Bank Stabilization
Critical Areas Land Use Permit
Narrative Description
June 2016

Description of the project site, including landscape features, existing development, and site history as applicable.

Response: The project site is located within the Newport Shores neighborhood at 66 Skagit Key in Bellevue, WA (tax parcel 6065310640). The site is surrounded by single-family residences with Coal Creek flowing in a northwesterly direction along the northeast property line. The site includes a two-story residence constructed in 1989. The parcel is 20,428 square feet in size with the residence situated approximately 45 feet from the top of the Coal Creek streambank.

The site is relatively flat although the banks of Coal Creek slope rather steeply toward the northeast. The stream channel adjacent to the site is 4 to 6 feet below the yard level and is approximately 12 feet wide with steep, primarily grass and ivy-covered banks. The yard area is mostly lawn with landscaping shrubs around the perimeter.

In the past, high flows in the stream eroded a portion of the bank, resulting in an undercut bank which gave way beneath the property owner. Repair work completed in 2015 included the placement of angular rock along the toe of the bank, partially within the stream, and soil along the upper bank. This work triggered an enforcement action by the City of Bellevue. In order to rectify the violation, stream bank repair work is now proposed.

Coal Creek is classified as a Type F (fish-bearing) stream and flows into Lake Washington approximately 700 feet downstream from the site. Coal Creek within the project area includes an associated 100-year floodplain. Type F streams on sites with existing primary structures require standard buffer widths of 50 feet. Beyond the stream and floodplain, no additional critical areas are found on-site or in the immediate vicinity.

A description of how the design constitutes the minimum necessary impact to the critical area.

Response: As mentioned, a portion of the bank has experienced erosion and the toe of the bank is currently stabilized by angular rock. Continued erosion would

likely have resulted in a loss of additional rear yard area, and if the erosion were left unchecked, significant property loss may have occurred, with the possibility of the residence eventually becoming threatened. The placement of the angular rock in 2015 appears to have stopped the erosion and temporarily stabilized the bank. The current proposal is to remove the angular rock and install soft stabilization measures including coir logs, a coir fabric blanket, and native plantings.

The proposed work constitutes the minimum necessary impact, as soft stabilization methods will fortify an existing eroded (albeit temporarily stabilized) bank area and therefore will not result in any measurable increase in the base flood elevation or cause further channel constriction. Once complete and established, the project site will be returned to a more natural bank condition, stabilized by native plantings and their root systems.

Further, temporary impacts have been minimized to the greatest extent feasible by minimizing the length and area of stabilization and positioning any equipment or machinery above the stream's OHWM. The project has been designed such that it can be implemented with hand tools and smaller equipment. Coir logs will be placed along the streambank initially, and so will be in place to serve as a sediment barrier during the process of smoothing the bank, protecting it with a coir fabric blanket, and implementing a native revegetation plan. Standard BMPs will also be followed to minimize disturbance during construction.

A description of why there is no feasible alternative with less impact to the critical area, critical area buffer, or critical area structure setback.

Response: Bank erosion during and before 2015 resulted in the need for some form of stabilization. Angular rock was placed along the toe of the bank without permits in 2015 as a temporary solution to the erosion problem. The current project includes removal of the angular rock and stabilization of the bank with coir logs, a coir fabric blanket, and native plantings. The erosion that has occurred to date necessitates some type of longer-term stabilization action. The current proposal includes the softest method feasible. Specifically, rock will be removed without replacement along the bank. Following successful establishment, bank stabilization measures will consist only of native plantings with deep root systems.

Another natural in-stream remedy to the bank erosion, including the use of large woody debris, was studied. However, wood was not included in the design for two primary reasons - 1) large wood installed near the toe of the bank could cause additional scour, not only downward but possibly into the subject bank or

the opposite bank; and 2) placing wood in the channel would result in some level of flow constriction, thereby potentially worsening flooding. The existing channel appears to have little or no excess capacity to pass high flows, which have likely increased over time due to urbanization of the basin. For these reasons large woody debris was not included in the proposal. However, despite the lack of wood, the project does include soft stabilization measures including placement of the coir logs and coir blanket, and extensive native vegetative plantings. Additional alternatives considered consisted of hard stabilization measures including the placement of exposed rock or concrete above and below the OHWM. While these alternatives would have remedied the erosion problem, they were not proposed as they constitute stabilization techniques 'harder' than the selected alternative. Therefore, there is no feasible alternative with less impact to the stream or stream buffer.

A description of alternatives considered and why the alternative selected is preferred.

Response: The alternatives considered as described above either cause unintended consequences or constitute design techniques with greater critical area or buffer impact than the selected alternative. Specifically, the use of large woody debris could cause additional scour, not only downward but possibly into the bank as well. In addition, placing wood in the channel would result in some level of flow constriction (the existing channel appears to have little or no excess capacity to pass high flows), thereby potentially worsening flooding in the immediate vicinity. The more impactful alternatives (placement of exposed rock or concrete) would have resulted in greater impact to the habitat functions of the stream by preventing or inhibiting vegetation growth along the treated bank sections. Vegetation provides shade and organic stream inputs, helps stabilize banks, and produces terrestrial insects as food for fish.

A summary of how the proposal meets each of the decision criteria contained in Land Use Code Section 20.30P.

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

Response: The project applicant has applied for a Critical Areas Land Use Permit (LO) to conduct an allowed activity (stabilization measures) within a stream critical area and area of special flood hazard. No other City of Bellevue land use permits are required of the project at this time.

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

Response: The proposed streambank stabilization project will include removal of hardened stabilization components that were installed without permits. Following removal of these features, soft stabilization techniques will be utilized to repair the bank. This includes the use of coir logs and native plantings. The use of these features will result in the least impact on the stream and stream buffer. Specifically, the coir logs will allow for stabilization of the bank with a biodegradable material that will allow native plantings to become established along the bank and extending up the sideslope. Over time the coir logs will degrade as the plantings and their roots take hold. Over the course of a few years, the bank will achieve a naturally-vegetated and stable condition without any hard stabilization components included. Thus, over the intermediate and long term, the bank condition will be improved in terms of both stability and habitat function, with no long-term impacts to the stream or stream buffer.

Temporary impacts will also be minimized, as all work will occur with the use of hand tools and small machinery positioned above the OHWM with standard BMPs followed. The coir logs will be placed along the toe of the streambank slope as one of the first steps in the implementation process, and so will be in place to protect the stream from any silty runoff as the upper slopes are protected by coir fabric placement and revegetation. Therefore, the project has utilized the best available construction, design, and development techniques to limit impacts to the stream and stream buffer.

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

Response: See below for stream critical area (LUC 20.25H.080.A) and areas of special flood hazard (LUC 20.25H.180.C) performance standard compliance.

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

Response: The existing site is served by adequate public facilities. No increase in demand for public services will result from the proposed streambank stabilization project.

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

Response: A restoration plan has been prepared in accordance with the requirements of LUC 20.25H.210. The plan has been submitted concurrently with this project narrative.

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

Response: The proposed project complies with all other applicable City of Bellevue Land Use Codes.

A summary of how the proposal meets each of the criteria and performance standards contained in Land Use Code Section 20.25H associated with the critical area you are modifying.

Response: Stabilization measures within stream critical areas and areas of special flood hazard are allowed pursuant to LUC 20.25H.055.C.3.m, provided compliance with LUC 20.25H.080.A and LUC 20.25H.180.C is shown. A discussion of compliance with these sections is presented below.

20.25H.055.C.3.m. Stabilization Measures.

See LUC 20.25E.080.E for standards regulating shoreline stabilization measures. Proposed stabilization measures within a critical area or critical area buffer to protect against streambank erosion or steep slopes or landslide hazards may be approved in accordance with this subsection.

i. 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.

Response: The proposed stabilization measures are intended to stabilize an existing streambank that is situated in the rear yard area of the existing residence at 66 Skagit Key. Erosion washed away upwards of 6 feet of the bank prior to the repair work initiated in 2015. Had repair work not been undertaken, erosion would have continued unchecked, potentially washing away significant portions of the rear yard area. Therefore, the stabilization efforts were necessary in order to prevent significant loss of property. The proposed project includes retroactive permitting for the stabilization efforts and modification of the repair work to include the softest measures feasible. Avoidance measures are not technically feasible, in that avoidance would lead to further bank erosion, resulting in continued loss of property and eventually threats to the existing residence.

ii. 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 subsection C.3.m.iii.(D) of 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.

iii. Definitions.

(A) Hard Stabilization Measures. As used in this part, "hard stabilization measures" include: rock revetments, gabions, concrete groins, retaining walls, bulkheads and similar measures which present a vertical or nearly vertical interface with the water.

(B) Soft Stabilization Measures. As used in this part, "soft stabilization measures" include: biotechnical measures, bank enhancement, anchor trees, gravel placement, stepped back rockeries, vegetative plantings and similar measures that use natural materials engineered to provide stabilization while mimicking or preserving the functions and values of the critical area.

(C) Avoidance Measures. As used in this part, "avoidance measures" refer to techniques used to minimize or prevent erosion or slope collapse that do not involve modification of the bank or slope. "Avoidance measures" include vegetation enhancement, upland drainage control, and protective walls or embankments placed outside of the critical area and critical area buffer.

(D) Technically Feasible. 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.

Response: The proposed design represents a soft stabilization measure. Both the coir logs and proposed plantings are a 'soft' technique. Prior unpermitted repair work included the placement of angular rock; however, all rock will be removed under the current proposal. Therefore, the as-modified project will have avoided the use of 'hard' stabilization measures.

20.25H.180.C – Development in the area of special flood hazard: General Performance Standards

4. No Rise in the Base Flood Elevation (BFE). Any allowed use or development shall not result in a rise in the BFE.

Response: The proposed project includes the placement of coir logs along the toe of the Coal Creek streambank. The coir logs will replace angular rock which was placed without permits following extensive erosion. Therefore, because the bank had been eroded and the channel widened as a result, the placement of the coir logs within these areas will not result in a channel constriction or otherwise decrease in the cross-sectional area of the stream channel below its pre-erosion state, and so will not result in an impediment to stream flow. Rather, coir log placement will return the bank closer to its pre-existing dimensions, but still with some increased capacity. Also, the coir logs are not permanent and will deteriorate in the intermediate term, over a several-year period. Therefore, there will be no rise in the base flood elevation of Coal Creek within the project vicinity.

7. Compensatory Storage. Development proposals must not reduce the effective base flood storage volume of the area of special flood hazard. Grading or other activity that would reduce the effective storage volume must be mitigated by creating compensatory storage on the site.

Response: As explained in the above response, there is anticipated to be no net change in streambank dimensions and no rise in the base flood elevation over pre-existing conditions due to the proposed actions. Therefore, no reduction in the effective base flood storage volume of the area is expected.

20.25H.080.A Performance Standards.

Development on sites with a type S or F stream or associated critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

1. *Lights shall be directed away from the stream.*

Response: No lights are proposed as part of the streambank stabilization project.

2. *Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the stream or any noise shall be minimized through use of design and insulation techniques.*

   Response: The streambank stabilization project will not result in any new long-term noise generating activities.

3. *Toxic runoff from new impervious area shall be routed away from the stream.*

   Response: No new impervious surfaces are proposed as part of the project.

4. *Treated water may be allowed to enter the stream critical area buffer.*

   Response: No change in on-site runoff patterns or drainage facilities is proposed.

5. *The outer edge of the stream critical area buffer shall be planted with dense vegetation to limit pet or human use.*

   Response: New plantings are proposed to help stabilize the streambank. Plantings include Oregon ash, Sitka spruce, western red cedar, pacific ninebark, cluster rose, red-flowering currant, salmonberry, oceanspray, shore sedge, coastal strawberry, kinnikinnick, lady fern, red-osier dogwood, Sitka willow, and Pacific willow.

6. *Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.*

   Response: Generally, weed control efforts in the stream buffer will employ manual removal. If any persistent weed or pest problems require pesticide control, the City would be contacted to verify compliance with City of Bellevue BMPs and, if allowed, a licensed pesticide applicator would be hired.