



**City of Bellevue  
Development Services Department  
Land Use Staff Report**

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**Proposal Name:** **Scott Buffer Reduction**

**Proposal Address:** **1911 104<sup>th</sup> Ave SE**

**Proposal Description:** The applicant requests a Critical Areas Land Use Permit in order to reduce the prescribed 60-foot critical area buffer from a category III wetland to minimum of 35 feet in order to construct a single-family residence on the property.

**File Number:** **08-122560-LO**

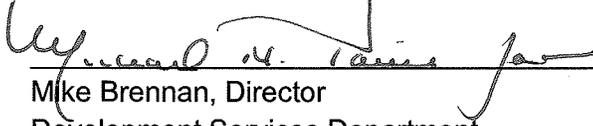
**Applicant:** **Kevin Scott**

**Decisions Included:** Critical Areas Land Use Permit  
(Process II. LUC 20.30P)

**Planner:** **Kevin LeClair, Senior Land Use Planner**

**State Environmental Policy Act  
Threshold Determination:** **SEPA Exempt per RCW 197-11-800**

**Director's Decision:** **Approval with Conditions**

  
Mike Brennan, Director  
Development Services Department

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Application Date: June 4, 2008  
Notice of Application Publication Date: August 7, 2008  
Decision Publication Date: September 25, 2008  
Project/SEPA Appeal Deadline: October 9, 2008

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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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**I. Proposal Description**

The applicant is requesting a Critical Areas Land Use Permit in order to reduce the prescribed 60-foot critical area buffer from a category III wetland to minimum of 35 feet in order to construct a single-family residence on the property.

Land Use Code (LUC) 20.25H.095.C.1 prescribes a 60-foot critical area buffer from the edge of category III wetlands with a habitat score of less than 20 points. The request is to reduce the prescribed buffer to a minimum distance of 35 feet. LUC 20.25H.095.C.2 allows for the modification of a critical area buffer through a critical areas report. The critical areas report is a mechanism by which certain LUC requirements may be modified for a specific proposal.

The critical areas report is intended to provide flexibility for sites where the expected critical areas functions and values are not present due to degraded conditions. The two, small category III wetlands and buffers on the property are degraded in function and value because they lack the vegetative structural diversity found in higher-quality wetlands. Therefore, the wetlands and buffer are currently not fully performing their water quality, flood control and wildlife habitat functions.

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

**A. Site Description**

The property is located at 1911 104<sup>th</sup> Ave SE. It is bordered on its south and west sides by Killarney Glen Park, which is owned and operated by the City of Bellevue Parks and Community Services Department, on the north by a single-family residential property, and on the east by the public right-of-way of 104<sup>th</sup> Ave SE.

The property is generally rectangular with an east-west axis of approximately 170 feet and the north-south axis approximately 90 feet. The property is currently undeveloped, although there is a gravel driveway that crosses the property from south to north.

Access to the property is gained via an ingress/egress easement across the neighboring property to the south. This property is currently the parking lot and public access point to Killarney Glen Park.

The property contains two, category III wetlands. Wetland A is 75 square feet in size and wetland B is 100 square feet in size. The property slopes (<40%) down from 104<sup>th</sup> Ave SE and then slopes gently (<5%) down to the west. The property contains 37 significant trees of the following species: Douglas-fir, Black cottonwood, Red alder and Bigleaf maple. The trees are consolidated into two stands with the evergreen trees concentrated on the eastern boundary and the deciduous trees on the western half of the property in the buffer of the two wetlands.

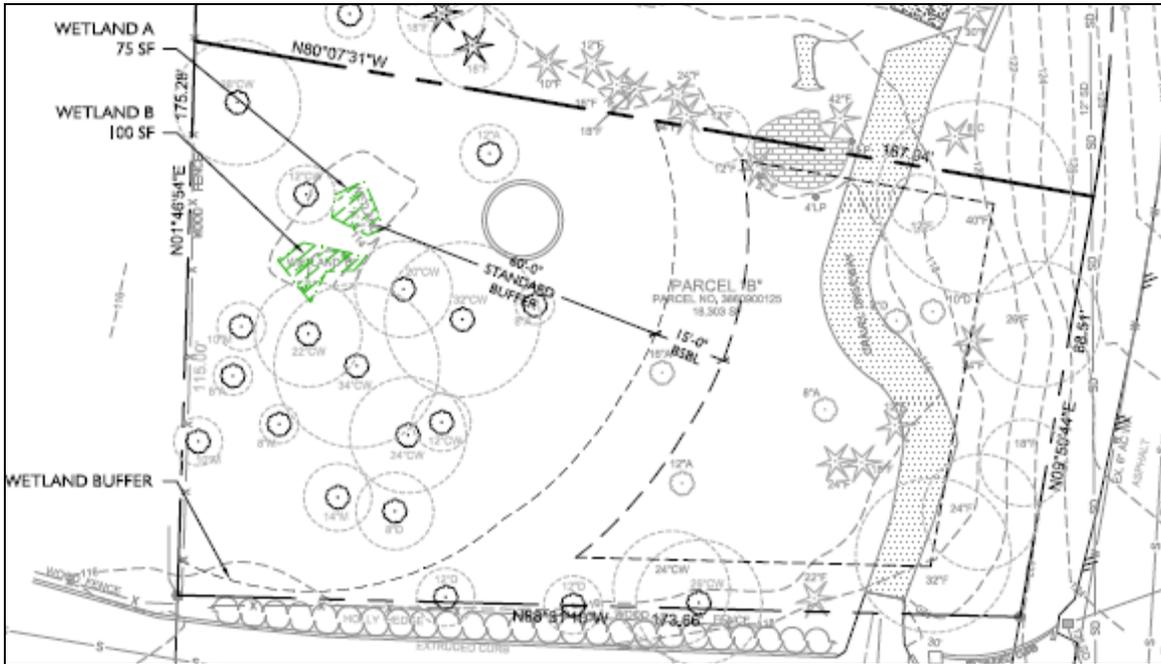


Figure 1: Site Survey with Critical Area and Standard 60' Buffer

**B. Zoning**

The property is in the R-2.5 land use zoning district and the Critical Areas Overlay District.

**C. Land Use Context**

The property is in a medium density single-family residential comprehensive planning district and is surround by similar single-family residential properties. The park site is zoned slightly lower at R-1.8, but still a single-family residential land use.

One unique characteristic of this property is the adjacent parcel to the south being a public access point and parking area for Killarney Glen park. The property possesses a ingress-egress easement across the park parking area.

**D. Critical Areas Functions and Values**

**1. Wetlands** - Wetlands provide important functions and values for both the human and biological environment—these functions include flood control, water quality improvement, and nutrient production. These functions and values to the environment and the citizens of Bellevue depend on their size and location within a basin, as well as their diversity and quality. While Bellevue’s wetlands provide various beneficial functions, not all wetlands perform all functions, nor do they perform all functions equally well (Novitski et al., 1995). However, the combined effect of functional processes of wetlands within basins provides benefits to both natural and human environments. For example, wetlands provide significant stormwater control, even if they are degraded and comprise only a small percentage of area within a basin.

The wetlands on the property are small, scrub-shrub, depressional wetlands grouped close together underneath a developed forest canopy. The primary

source of hydrology for both wetlands is groundwater, rainfall, and some surface water entering from a nearby lawn located in Killarney Glen Park. Slough sedge (*Carex obnupta*, OBL), salmonberry (*Rubus spectabilis*, FAC+), and red-osier dogwood (*Cornus sericea*, FACW) dominate the wetland areas. Black hawthorn, bitter cherry, and black twinberry (*Lonicera involucrata*, FAC+) are also present. Both wetlands were classified as category III wetlands, based on the Department of Ecology rating system.

No other critical areas were found on-site during field investigations. No additional critical areas are known to occur on properties immediately adjacent to the project site.

### **III. Consistency with Land Use Code Requirements:**

#### **A. Zoning District Dimensional Requirements:**

The site is located in the R-2.5 land use zoning district. The following general dimensional requirements from LUC 20.20 for development in this district will be met by any single-family residential development on the property:

Front yard setback:	20 feet
Rear yard setback:	25 feet
Side yard setback:	5 feet
Two side yards combined:	15 feet
Maximum lot coverage by structures:	35%
Maximum coverage by impervious surface:	50%
Significant tree retention:	30% of diameter inches

#### **B. Critical Areas Requirements LUC 20.25H**

##### **1. Consideration of administrative approval of structure and/or buffer setbacks LUC 20.25H.040.**

As discussed above, the minimum critical area buffer for the category III wetlands on the property is 60 feet. The minimum structure setback is 15 feet.

The proposal considered the allowed modifications to the general dimensional chart (LUC 20.20.010) to the minimum distance allowed in order to maintain the largest possible wetland buffer. It was determined that in order to preserve more of the significant conifer trees on the eastern portion of site and protect the functions and values of the wetlands, a modification of the general dimensional standards would degrade the site more than processing a critical areas report (LUC 20.25H.230) to reduce the critical area buffer to a minimum distance of 35 feet.

##### **2. Consistency With Land Use Code Critical Areas Performance Standards LUC 20.25H.100.**

The following performance standards, when applicable, shall be incorporated in the design of development on sites with wetlands and wetland critical area

buffers. Their incorporation is required to be documented prior to building permit approval for the subsequent single-family residence. See Section X for related conditions of approval.

**a. Lights shall be directed away from the wetland.**

The front of the proposed house will face east, away from the on-site wetland. Therefore, any lights associated with the driveway, garage, or front door of the residence will be directed away from the wetlands. Lighting at the rear of the residence will be limited to that necessary to provide adequate access and security. Such lighting at the rear of the residence will be shielded to prevent light from reaching the areas of on-site wetlands.

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

The proposed residence will be situated in the eastern portion of the property approximately 57 feet from the edge of the nearest wetland. The driveway, garage, and front door of the residence will be situated on the eastern side of the residence. Therefore, the majority of noise-generating activities will occur on the eastern side of the residence, in excess of 100 feet from the on-site wetlands. The subsequent building permit will be reviewed to ensure the HVAC system is also located on the east side of the structure.

**c. Toxic runoff from new impervious area shall be routed away from the wetlands.**

Runoff from new impervious surfaces will be directed via sheet flow into two proposed rain gardens located within the reduced wetland buffer. The rain gardens will treat the runoff by removing stormwater pollutants before overflowing into the wetland buffer.

**d. Treated water may be allowed to enter the wetland critical area buffer.**

As indicated in the prior response, on-site stormwater runoff will be treated in rain gardens located within the outer edge of the buffer, before flowing into the interior of the wetland buffer and finally into the wetland. The rain garden will retain and treat the storm water runoff from the new impervious surface up to the equivalent of a 100-year storm event. See attachment 3 for a description of the method used to determine the size of the rain garden feature.

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

A wetland buffer enhancement plan has been prepared that details the areas proposed for enhancement. Specifically, dense, native vegetation will be planted within the proposed buffer, with higher densities along the outer edge of the buffer. Species

proposed for planting along the buffer edge include sword and lady fern, low Oregon grape, Pacific ninebark, red-osier dogwood, Nootka rose, and other emergent groundcovers.

**f. Use of pesticides, insecticides and fertilizers within 150 of the edge of the wetland buffer shall be in accordance with the City of Bellevue’s “Environmental Best Management Practices,” now and hereafter amended.**

The proposed maintenance of the wetland buffer enhancement is consistent with the practices in the City of Bellevue’s “Environmental Best Management Practices.”

**3. Consistency with Critical Areas Report LUC 20.25.230.**

The applicant supplied a complete critical areas report prepared by The Watershed Company, a qualified professional. The report met the minimum requirements in LUC 20.25H.250.

**4. Consistency with Critical Areas Report – Additional provisions LUC 20.25H.110.**

In addition to the general requirements of LUC 20.25H.230, a critical area report pertaining to wetlands shall include an assessment of the wetlands and buffers within 300 feet of the project area, including supplemental information.

The applicant’s consultant investigated the neighboring park site for the presence of wetlands. Their investigation did not reveal the presence of any additional wetlands within 300 feet of the category III wetlands on the subject property.

The applicant has agreed to place the wetland critical area and critical area buffer on the property into a Native Growth Protection Area Easement in order to provide for long-term conservation of the functions and values of the critical area and critical area buffer.

**IV. Public Notice and Comment**

Application Date:	June 4, 2008
Public Notice (500 feet):	August 7, 2008
Minimum Comment Period:	August 21, 2008

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on August 7, 2008. It was mailed to property owners within 500 feet of the project site. Two comments have been received from the public as of the public notification of this application.

The public comments were both related to the seasonal inundation of a portion of Killarney Glen Park and direction to ensure the wet soil conditions not be

exacerbated by the proposed development.

In response to this concern, the applicant is proposing to install two rain gardens at the outer edge of the wetland buffer that are sized to retain the expected 100-year storm water runoff from the proposed new impervious surface.

## **V. Summary of Technical Reviews**

### **Clearing and Grading:**

The Clearing and Grading Division of the Planning and Community Development 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.

## **VI. State Environmental Policy Act (SEPA)**

The proposal is for the reduction of a wetland critical area buffer with associated enhancement of the critical area buffer for the purposes of constructing a single-family residence on the property. The proposed work is entirely outside of the areas defined as "Critical Areas" by BCC 22.02.045. Furthermore, pursuant to BCC 22.02.032 and WAC 197-11-800, the construction or location of a one single-family primary structure is "categorically exempt" from SEPA environmental review.

## **VII. Changes to proposal as a result of City review**

The initial proposal submitted by the applicant was requesting a single-family primary structure that encompassed more of the buildable area on the property and was approximately 5 feet closer to the wetland than is currently proposed.

The original proposal also did not include the two rain gardens at the edge of the wetland critical area buffer to treat and retain stormwater runoff from the proposed additional impervious surface on the property.

These two changes were a result of the City review and the comments received by the parties of record on this proposal.

**VIII. Decision Criteria**

**A. Critical Areas Report Decision Criteria-Proposals to Reduce Regulated Critical Area Buffer LUC 20.25H.255.**

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

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

**Finding:** A wetland buffer enhancement plan has been prepared (see Attachment 2) that details the areas proposed for enhancement as a result of the requested buffer modification. This plan mitigates for the proposed reduction of the standard 60-foot critical area buffer. Mitigation will involve the removal of approximately 1,000 square feet of invasive and non-native species and the planting of 5,725 square feet of native vegetation (trees, shrubs, and groundcover) within the modified critical area buffer. This planting layout incorporates a diversity of native plant species configured in a naturalistic fashion. Proposed buffer plantings, rain gardens, and fallen trees increase species and structural diversity, thereby increasing the number of available habitat niches. The proposed native plantings, particularly those within the rain gardens, will improve stormwater treatment within the buffer. The enhancement plan will provide for substantially improved critical area and buffer functions and values relative to the existing condition. A monitoring and maintenance plan for the proposed mitigation area is also included in this report.

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

**Finding:** A wetland buffer enhancement plan has been prepared (see Attachment 2) that details the areas proposed for enhancement as a result of the requested buffer modification. This plan mitigates impacts for the proposed reduction of the standard 60-foot critical area buffer. Mitigation will involve the removal of approximately 1,000 square feet of invasive and non-native species and the planting of 5,725 square feet of native vegetation within the modified critical area buffer. This planting layout incorporates a diversity of native plant species configured in a naturalistic fashion. Proposed plantings include trees, shrubs, groundcover, and habitat structures.

The most important critical area functions provided by the on-site wetlands are stormwater treatment and wildlife habitat value. The proposed enhancement will help improve the quality of water flowing into both wetlands, with the addition of two rain gardens and dense emergent and scrub-shrub vegetation in the buffer.

The little habitat value the small wetlands currently offer will be increased by the addition of native plants and fallen trees just outside of the wetland edge. Therefore, the enhancement plan will provide for substantially improved critical area functions and values. A net gain in critical area buffer functions is expected.

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

**Finding:** As outlined in the wetland buffer enhancement plan (see Attachment 2), mitigation for the proposed wetland buffer reductions will take place on-site in the form of critical area buffer enhancement. The enhancement will involve the removal of invasive and non-native species and the planting of dense native vegetation. The existing on-site wetland buffer areas consist of bare ground, and some native and non-native scrub-shrub species. The lack of dense emergent vegetation, known to help filter pollutants from storm water and sub-surface groundwater, prevents the buffer area from acting as a biofilter for runoff towards the wetland.

Enhancement within the reduced wetland buffer will include the planting of 5,725 square feet of native vegetation and the addition of two rain gardens, totaling approximately 980 square feet in size. The native plantings and rain gardens will help to treat on-site runoff and filter pollutants before they reach the wetland. Therefore, the planned reductions to the wetland buffer, coupled with the proposed rain gardens and dense native understory plantings within the critical area buffer, will increase the stormwater quality improvement function of the wetland buffer.

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

**Finding:** A wetland buffer enhancement plan has been prepared (see Attachment 2) that details the areas proposed for enhancement as a result of the requested buffer modification. This plan ensures that an overall net gain in critical area functions will result from the proposed project. Additionally, a comprehensive five-year maintenance and monitoring plan, including detailed information on specific plant types and planting plans is included in this report. This plan will ensure that proposed enhancement plantings will be maintained, monitored and successfully established within the first five years following implementation. Furthermore, to ensure that the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, the applicant will post an Installation Assurance Device and a Maintenance Assurance Device prior to permit issuance.

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

**Finding:** While no specific critical areas were found off-site during fieldwork, the standard 60-foot wetland buffer does extend onto the Killarney Glen Park located immediately west of the project site and onto the parcels immediately north and south of the project site. However, enhancement of the modified wetland buffer will provide improved protection of the wetlands in those areas closest to the adjacent properties. Furthermore, enhancement of the reduced onsite buffer will increase the overall habitat function of the area, thereby improving habitat functions on adjacent properties.

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

**Finding:** The proposed wetland buffer modification and resulting single-family development will be compatible with adjacent properties and surrounding development within the same land use district (R-2.5). Adjacent properties contain single-family land uses and a public park. Reductions in yard setbacks are not being requested. Therefore, the proposed home will not be located any closer to adjacent properties as was envisioned through application of the dimensional requirements of the R-2.5 zone.

**B. Critical Areas Land Use Permit Decision Criteria 20.30P**

The proposal, as conditioned below, meets the applicable regulations and decision criteria for a Critical Areas Land Use Permit pursuant to LUC Section 20.30P.

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

**Finding:** The project applicant has applied for a Critical Areas Land Use Permit to reduce the onsite wetland buffer. No other City of Bellevue permits will be required of the project at this time. A Clear and Grade Permit and all applicable Building Permits will be applied for after approval of the proposed buffer reduction.

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

**Finding:** The proposed project involves the reduction of an on-site wetland buffer. A standard 60-foot buffer for two areas of Category III wetlands is proposed to be reduced to a minimum of 35 feet. The proposed 35-foot buffer will be enhanced with the removal of existing invasive and non-native species and the addition of dense native plantings. A future residence is proposed to be situated approximately 57 feet from the edge of the nearest on-site wetland.

The applicant has used the best available design and development techniques to conceptually design the footprint of the proposed residence, along with all associated hardscapes. The design and layout took into consideration the location and condition of existing on-site significant trees. In order to help provide

added stormwater benefits to the site, the highest quality trees found on-site were proposed for retention. The residence and hardscapes were located in those areas primarily occupied by trees in fair to moderate condition. Additionally, total proposed impervious surfaces were calculated to help determine the total runoff expected from the improved portions of the site. These calculations were used to size and locate two rain gardens within the reduced wetland buffer to receive stormwater and mimic natural conditions. The proposed rain gardens are in accordance with the City of Bellevue's Natural Drainage Practices. The development techniques mentioned above, coupled with approximately 5,725 square feet of wetland buffer enhancement, will result in the least impact on the critical area buffer.

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

**Finding:** The proposal incorporates the applicable performance standards of Part 20.25H. See discussion above in Section III.

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

**Finding:** The proposed project will be served by adequate public facilities. No new streets will be needed to serve the site and the project site will utilize existing utilities found within 104th Avenue SE. Additionally, fire and police protection are currently available at the site.

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

**Finding:** A mitigation and restoration plan has been prepared in accordance with the requirements of LUC 20.25H.210.

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

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

**IX. Conclusion and Decision**

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Development Services Director does hereby **approve with conditions** the proposal to reduce the prescribed category III wetland buffer to a distance of no less than 35 feet.

**Note- Expiration of Approval:** In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a Clearing and Grading Permit or other necessary development permits within one year of the effective date of the approval.

**X. Conditions of Approval**

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

<u>Applicable Ordinances</u>	<u>Contact Person</u>
Clearing and Grading Code- BCC 23.76	Tom McFarlane, 425-452-5207
Land Use Code- BCC 20.25H	Kevin LeClair, 425-452-2928

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

**1. Clearing Limits for Permanent and Temporary Disturbance:** Prior to commencement of construction, clearing limits based on the area outside of the proposed critical area, critical area buffer and critical area structure setback are to be surveyed and marked in the field and steel construction fence erected to limit disturbance outside those limits. Proposed clearing limits must be delineated in preparation for preconstruction inspection by clearing and grading and land use staff and certified in the field to be in conformity with this approval.

Authority: Bellevue City Code 23.76.160  
Reviewer: Tom McFarlane, Development Services Department

**2. Restoration for Areas of Temporary Disturbance:** In order to mitigate for the permitted disturbance inside the required NGPA Easement (See condition 8 below) and outside the NGPA Easement, a restoration plan for all areas of temporary disturbance shall be submitted for review and approval by the City of Bellevue prior to the issuance of the Building Permit. The plan shall include the documentation of existing site conditions and shall identify the restoration measures to return the site to its existing conditions per LUC 20.25H.220.H.

Authority: Land Use Code 20.25H.220.H  
Reviewer: Kevin LeClair, Development Services Department

**3. Restoration Plan for Reduced Critical Area Buffer:** To mitigate for the allowed permanent disturbance on the site and reduction of the critical area buffer, the restoration plan included in Attachment 2 shall be submitted for review and approval by the City of Bellevue prior to issuance of the Building Permit.

Authority: Land Use Code 20.25H.210  
Reviewer: Kevin LeClair, Development Services Department

**4. Rainy Season restrictions:** Due to the proximity to two category III wetland critical areas, no clearing and grading activity may occur during the rainy season, which is defined as November 1 through April 30 without written authorization of the Department of Planning and Community Development. Should approval be granted for work during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

Authority: Bellevue City Code 23.76.093.A,  
Reviewer: Tom McFarlane, Development Services Department

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

Authority: Land Use Code 20.25H.220.H  
Reviewer: Planner, Planning and Community Development Dept

**6. Noise Control:** The proposal will be subject to normal construction hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Upon written request to PCD, work hours may be extended to 10 pm if the criteria for extension of work hours as stated in BCC 9.18 can be met.

Authority: Bellevue City Code 9.18  
Reviewer: Kevin LeClair, Development Services Department

**7. Wetland Critical Area Performance Standards:** The following performance standards will be reviewed for compliance at the subsequent single-family primary structure development phase. These performance must be met prior to approval of the subsequent building permit.

- A. Lights shall be directed away from the wetland.
- B. Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques.
- C. Toxic runoff from new impervious area shall be routed away from the wetlands.
- D. Treated water may be allowed to enter the wetland critical area buffer.
- E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.
- F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

Authority: Land Use Code 20.25H.100  
Reviewer: Kevin LeClair, Development Services Department

**8. Native Growth Protection Area Easement:** Prior to approval of the subsequent building permit for the development of a single family primary structure on the property the critical area and critical buffer shall be placed in a Native Growth Protection Area Easement. The Easement shall contain, at a minimum, the following:

- 1. An assurance that the NGPA or NGPE will be kept free from all development and disturbance except where allowed or required for habitat improvement projects, vegetation management, and new or expanded City parks pursuant to LUC 20.25H.055; and that native vegetation, existing topography, and other natural features will be preserved for the purpose of preventing harm to property and the environment, including, but not limited to, controlling surface water runoff and erosion, maintaining slope stability, buffering and protecting plants and animal habitat;
- 2. The right of the City of Bellevue to enter the property to investigate the condition of the NGPA or NGPE upon reasonable notice;
- 3. The right of the City of Bellevue to enforce the terms of the restriction; and A management plan for the NGPA or NGPE designating future management responsibility.

Authority: Land Use Code 20.25H.030  
Reviewer: Kevin LeClair, Development Services Department

**9. Installation and Maintenance Assurance Devices:** To ensure the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, the applicant shall post an Installation Assurance Device and a Maintenance Assurance Device prior to the Building Permit issuance. These devices will be released when the applicant demonstrates that the five-year maintenance and monitoring plan has been implemented and the restoration successfully established and at the end of five years following implementation.

Authority: Land Use Code 20.25H.255.B.4  
Reviewer: Kevin LeClair, Development Services Department

#### **Attachments**

1. Vicinity Map
2. Critical Areas Report with Site Plan and Restoration Plan
3. Rain Garden Sizing Memorandum from J3ME

**CRITICAL AREAS REPORT**  
**Proposed Wetland Buffer Reduction**  
**Scott Property – Bellevue, WA**

**Prepared for:**

City of Bellevue  
450 110<sup>th</sup> Avenue NE  
Bellevue, WA 98009

**Prepared on behalf of:**

Kevin Scott  
2422 127<sup>th</sup> Avenue NE  
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**Prepared by:**

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June 2, 2008

Updated August 15, 2008



# Critical Areas Report

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## Scott Residence, Bellevue, Washington

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*Prepared for:*

City of Bellevue  
450 110<sup>th</sup> Avenue NE  
Bellevue, WA 98009

*Prepared on behalf of:*

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June 2, 2008  
Updated August 15, 2008



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## CRITICAL AREAS REPORT SCOTT PROPERTY BELLEVUE, WASHINGTON

### INTRODUCTION

On June 28, 2007, The Watershed Company Ecologists Mike Foster and Nell Lund conducted a wetland delineation study at the property located just south of and adjacent to 1911 104<sup>th</sup> Avenue SE (Figure 1). A report titled *104<sup>th</sup> Avenue SE Scott Property Wetland Delineation Study – TWC Ref# 070618* and dated July 17, 2007 was prepared for the project site. This report summarizes the findings of the July 17, 2007 report and also documents how a proposed reduction in portions of the on-site wetland buffer can be achieved with no net loss of on-site or off-site ecological functions. As required by Bellevue Land Use Code (LUC) 20.25H.230, a critical areas report is required as part of any critical area buffer modification proposal.

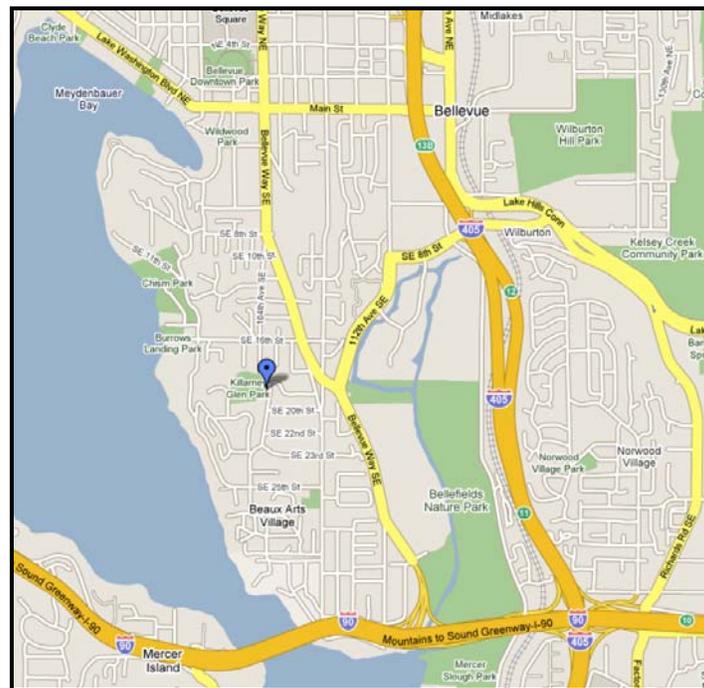


Figure 1. Vicinity Map of project site (Google Maps).

### DESCRIPTION OF PROJECT AREA

The subject property is located along the western side of 104<sup>th</sup> Avenue SE just north of SE 20<sup>th</sup> Street. The parcel (tax parcel number 3860900125) is rectangular shaped and approximately 0.43 acre in size. It slopes downward rather steeply from 104<sup>th</sup> Avenue SE before becoming relatively flat over the western two-thirds of the property. The parcel is currently undeveloped with the exception of a paved driveway providing access to the site from an access easement located on the parcel to the south. The driveway currently passes through the eastern portion of

the site from south to north and continues onto the adjacent parcel to the north. In addition to containing the access easement, the adjacent southern parcel provides access and parking for Killarney Glen Park. The park borders the subject parcel on the south and west. The park provides two tennis courts, a sports court, open spaces, play and picnic areas, and restrooms. The park is approximately 10.32 acres in size.

Medium-sized Douglas-fir (*Pseudotsuga menziesii*, FACU) trees form a canopy in the eastern third of the property, adjacent to 104<sup>th</sup> Avenue SE. Several large black cottonwood (*Populus balsamifera* var *trichocarpa*, FAC) trees dominate the canopy in the western third of the subject property, near Killarney Glen Park. The understory near the park is composed of black hawthorn (*Crataegus douglasii*, FAC), beaked hazelnut (*Corylus cornuta*, FACU), bitter cherry (*Prunus emarginata*, FACU), English laurel (*Prunus laurocerasus*, NI), and osoberry (*Oemleria cerasiformis*, FACU), with some English ivy (*Hedera helix*, NI) and English holly (*Ilex aquifolium*, NI) also present. As exhibited in the photographs of the site below (Figures 2-4), dense native groundcover is largely absent from the site. Regular clearing by the previous landowner has historically prevented the establishment of thick understory vegetation. The invasive weeds English laurel, English holly and English ivy, all of which are on King County's 2008 noxious weed list, have significant cover in the western third of the property, including a hedge along the southern edge of the property.

Two small areas of wetland were identified on-site during wetland delineation on June 28, 2007. Both wetlands are located in the western third of the subject parcel, approximately 20 to 30 feet from the western property line. One wetland is 100 square feet in size, while the other is 75 square feet. The wetlands are small scrub-shrub depressional wetlands grouped close together underneath a developed forest canopy. The primary source of hydrology for both wetlands is groundwater, rainfall, and some surface water entering from a nearby lawn located in Killarney Glen Park. Slough sedge (*Carex obnupta*, OBL), salmonberry (*Rubus spectabilis*, FAC+), and red-osier dogwood (*Cornus sericea*, FACW) dominate the wetland areas. Black hawthorn, bitter cherry, and black twinberry (*Lonicera involucrata*, FAC+) are also present. Both wetlands were classified as Category III wetlands, based on the Department of Ecology rating system.

No other critical areas were found on-site during field investigations. No additional critical areas are known to occur on properties immediately adjacent to the project site.

### **Sensitive Species**

According to WDFW PHS data (December 2007), the project site and surrounding properties do not contain any sensitive habitat or species. Furthermore, pursuant to LUC 20.25H.150, no species of local importance have been identified on-site.



**Figure 2.** North-facing photograph of bare ground and a few understory shrubs in the wetland buffer adjacent to Kilarney Glen Park. English laurel and English ivy are shown in the right-hand side of the photograph (April 30, 2008).



**Figure 3.** Southward-facing photograph of non-wetland area along the south edge of the property. Except for the small patch of reed canarygrass, the understory lacks vegetation (April 30, 2008).



**Figure 4.** Southwesterly-facing photograph showing bare ground in the wetland buffer area along the edge of Killarney Glen Park (beyond the fence). English laurel, a non-native, is shown in the lower left corner (April 30, 2008).

## REGULATORY IMPLICATIONS

### *Local Regulations*

In Bellevue, regulated wetlands are governed by Critical Areas Ordinance No. 5680. According to LUC 20.25H.095, buffer width determinations for wetlands are based on wetland category, water quality functions score, and habitat functions score (Table 1).

Table 1. Wetland Summary

Wetland	Wetland Category (per LUC 20.25H.095.B)	Water Quality Functions Score	Habitat Functions Score	Wetland Buffer (per LUC 20.25H.095.C)
A	III	16	10	60 feet
B	III	16	10	60 feet

Category III wetlands in the City of Bellevue with habitat scores less than 20 points require a 60-foot buffer. Pursuant to LUC 20.25H.095.D.2, an additional structure setback of 15 feet measured from the edge of the wetland buffer is also required.

Buffer widths may be modified under two options detailed in LUC 20.25H.095.C.2 and 20.25H.230. First, an applicant may be allowed to modify the buffer using a buffer averaging plan. Buffer averaging may be approved if the applicant demonstrates that buffer functions will

be maintained, the buffer is contiguous, and the total buffer area is not reduced. Second, the applicant may reduce the buffer through the critical areas report process if it can be shown that an enhancement plan will improve buffer function overall despite the buffer intrusion. Enhancement may involve removing invasive plant species, planting native vegetation, etc. An approved enhancement plan would require monitoring and maintenance in accordance with LUC 20.25H.210. Buffers modified under a buffer averaging plan must be at least 75 percent of the standard buffer width. There is no buffer minimum for buffers modified through a critical areas report.

### ***State and Federal Regulations***

Wetlands are also regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. Any filling of Waters of the State, including wetlands (except isolated wetlands), would likely require notification of and permits from the Corps. Both on-site wetlands are likely considered isolated; however, only the Corps can make that determination. Federally permitted actions that could affect species listed under the Endangered Species Act (i.e. salmon or bull trout) may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Application for Corps permits may require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from the Washington State Department of Ecology. Generally, neither the Corps nor Ecology regulates wetland buffers.

## **PROPOSED BUFFER MODIFICATIONS**

The existing project site is currently undeveloped. It is proposed that a single-family residence be constructed on the project site in the near future. The proposed residence will be approximately 55 feet wide (east-to-west) and 73 feet deep (north-to-south), and will contain a landscaped yard area approximately 25 feet deep. Development of the single-family residence and associated yard will require that the eastern portion of the existing wetland buffer be modified to allow for the proposed improvements. The existing standard 60-foot buffer in this area is highly degraded with marginal wetland buffer functions and values. The buffer reduction request will result in a buffer 35 feet wide at its narrowest point. An additional 15-foot structure setback will result in any proposed structure being located at least 50 feet from the edge of the nearest on-site wetland. However, as currently planned, the proposed residence will be situated approximately 24 feet from the reduced wetland buffer, thereby providing an additional 9 feet of structure setback. This area will be kept as a landscaped lawn and will help to minimize the long-term impacts of the development on the adjacent critical area buffer and also protect the buffer from adverse impacts during project construction.

Modification of the existing and degraded 60-foot wetland buffer will allow for portions of the buffer to be used for a proposed residential landscaped yard area, while the remaining degraded on-site buffer will be enhanced with the removal of existing invasive and non-native species and the addition of dense native plantings.

The modified wetland buffer will be situated in a north-south direction and will prevent encroachments into the entire western third of the project site. The southernmost portion of the

project site does not currently contain a wetland buffer. However, it is proposed that the modified buffer extend southward to the property line to include the entire western third of the subject property within the buffer. The buffer will have a maximum width of approximately 74 feet in this location, and result in the addition of 395 square feet of buffer.

Two rain gardens, totaling approximately 980 square feet in size, will be located within the proposed wetland buffer along the eastern perimeter. Stormwater runoff from the entire eastern portion of the project site will sheet flow to the proposed rain gardens, where it will be detained and treated before overflowing into the wetland buffer. The entire modified buffer area will be designated as a Native Growth Protection Easement (NGPE) and will be kept free from all development and disturbance. At least three signs identifying the area as an NGPE will be placed along the buffer boundary on a split-rail fence marking the NGPE edge.

Buffer modifications are only requested along the eastern portion of the existing standard 60-foot buffer. The standard 60-foot buffer will remain intact and be expanded throughout the southern portion of the parcel, and will continue to extend north and west onto adjacent parcels. The adjacent parcel to the north contains an existing single-family residence situated approximately 90 feet from the nearest wetland edge with a substantial number of significant trees and vegetation within the 60-foot buffer. The adjacent parcel to the west occupied by Killarney Glen Park contains only lawn areas within the 60-foot wetland buffer, while the nearest structures are tennis courts located approximately 110 feet from the nearest wetland edge. Therefore, assuming that the buffer of the on-site wetlands extends outward for 60 feet in all directions, the total wetland buffer area is 15,678 square feet. This report requests a net reduction of 1,572 square feet in the size of the on-site buffer, including the contribution of the buffer addition area to the south. Therefore, requested modifications are proposed to impact approximately 9.9 percent of the total wetland buffer. The remaining 90.1 percent of the standard wetland buffer will remain intact at 60 feet on portions of the subject property and the adjacent properties to the north and west.

In addition, 5,725 square feet of the on-site wetland buffer will be enhanced through the removal of invasive and non-native species and the planting of native trees, shrubs, and groundcover. The proposed enhancement of 5,725 square feet of wetland buffer will provide an additional level of protection of the on-site wetland functions and values and will offset the loss of 1,572 square feet of degraded buffer area. Overall, a net gain in wetland buffer functions is proposed.

## **CRITICAL AREAS REPORT CRITERIA**

As previously mentioned, wetland buffers may be modified pursuant to LUC 20.25H.230. The Director may approve a modification of the buffer if it can be shown that, through enhancement, the modification will result in no loss of buffer function. Furthermore, the critical areas report must meet specific decision criteria in order for the Director to approve a proposal to reduce the regulated critical area buffer. Compliance with the critical areas report criteria listed in LUC 20.25H.255(B) is addressed below.

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

A wetland buffer enhancement plan has been prepared (see Appendix A) that details the areas proposed for enhancement as a result of the requested buffer modification. This plan mitigates for the proposed reduction of the standard 60-foot critical area buffer. Mitigation will involve the removal of approximately 1,000 square feet of invasive and non-native species and the planting of 5,725 square feet of native vegetation (trees, shrubs, and groundcover) within the modified critical area buffer. This planting layout incorporates a diversity of native plant species configured in a naturalistic fashion.

Proposed buffer plantings, rain gardens, and fallen trees increase species and structural diversity, thereby increasing the number of available habitat niches. The proposed native plantings, particularly those within the rain gardens, will improve stormwater treatment within the buffer. The enhancement plan will provide for substantially improved critical area and buffer functions and values relative to the existing condition. A monitoring and maintenance plan for the proposed mitigation area is also included in this report.

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

A wetland buffer enhancement plan has been prepared (see Appendix A) that details the areas proposed for enhancement as a result of the requested buffer modification. This plan mitigates impacts for the proposed reduction of the standard 60-foot critical area buffer. Mitigation will involve the removal of approximately 1,000 square feet of invasive and non-native species and the planting of 5,725 square feet of native vegetation within the modified critical area buffer. This planting layout incorporates a diversity of native plant species configured in a naturalistic fashion. Proposed plantings include trees, shrubs, groundcover, and habitat structures.

The most important critical area functions provided by the on-site wetlands are stormwater treatment and wildlife habitat value. The proposed enhancement will help improve the quality of water flowing into both wetlands, with the addition of two rain gardens and dense emergent and scrub-shrub vegetation in the buffer. The little habitat value the small wetlands currently offer will likely be increased by the addition of native plants and fallen trees just outside of the wetland edge. Therefore, the enhancement plan will provide for substantially improved critical area functions and values. A net gain in critical area buffer functions is proposed.

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

As outlined in the wetland buffer enhancement plan (see Appendix A), mitigation for the proposed wetland buffer reductions will take place on-site in the form of critical area buffer enhancement. The enhancement will involve the removal of invasive and non-native species and the planting of dense native vegetation. The existing on-site wetland buffer areas consist of bare ground, and some native and non-native scrub-shrub species. The lack of dense emergent vegetation, known to help filter pollutants from storm water and sub-surface groundwater, prevents the buffer area from acting as a biofilter for runoff towards the wetland.

Enhancement within the reduced wetland buffer will include the planting of 5,725 square feet of native vegetation and the addition of two rain gardens, totaling approximately 980 square feet in size. The native plantings and rain gardens will help to treat on-site runoff and filter pollutants before they reach the wetland. Therefore, the planned reductions to the wetland buffer, coupled with the proposed rain gardens and dense native understory plantings within the critical area buffer, will increase the stormwater quality improvement function of the wetland buffer.

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

A wetland buffer enhancement plan has been prepared (see Appendix A) that details the areas proposed for enhancement as a result of the requested buffer modification. This plan ensures that an overall net gain in critical area functions will result from the proposed project. Additionally, a comprehensive five-year maintenance and monitoring plan, including detailed information on specific plant types and planting plans is included in this report. This plan will ensure that proposed enhancement plantings will be maintained, monitored and successfully established within the first five years following implementation. Furthermore, to ensure that the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, the applicant will post an Installation Assurance Device and a Maintenance Assurance Device prior to permit issuance.

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

While no specific critical areas were found off-site during fieldwork, the standard 60-foot wetland buffer does encroach onto the Killarney Glen Park located immediately west of the project site and onto the single-family parcel immediately north of the project site. However, enhancement of the modified wetland buffer will provide improved protection of the wetlands in those areas closest to the adjacent properties. Furthermore, enhancement of the reduced on-

site buffer will increase the overall habitat function of the area, thereby improving habitat functions on adjacent properties.

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

The proposed wetland buffer modification and resulting single-family development will be compatible with adjacent properties and surrounding development within the same land use district (Single Family R-2.5). Adjacent properties contain single-family land uses and a public park. Reductions in yard setbacks are not being requested. Therefore, the proposed home will not be located any closer to adjacent properties as was envisioned through application of the dimensional requirements of the R-2.5 zone.

To allow wetland buffer modifications through an approved critical areas report, the Director must also find compliance with the submittal requirements of LUC 20.25H.250. Compliance with the relevant sections listed in LUC 20.25H.250(B) is addressed below.

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

No impacts to on-site critical areas are planned as part of the proposed development. The two small areas of existing wetlands will remain undisturbed. However, functions and values of on-site critical areas will be improved by enhancing the critical area buffer immediately adjacent to the wetlands. Additionally, a 15-foot structure setback will remain in place adjacent to the modified wetland buffer. The standard 15-foot structure setback will help to protect adjacent critical areas from adverse impacts during project construction and help to provide increased access around the proposed residence for maintenance and repair of the structure and for the ingress/egress of emergency services.

Mitigation will involve the removal of approximately 1,000 square feet of invasive and non-native species and the planting of 5,725 square feet of native vegetation within the modified critical area buffer. The proposed plantings will help to minimize the long-term impacts to the adjacent wetland areas associated with the proposed development and also improve hydrological functions of the wetlands.

The proposed plantings within the modified wetland buffer will provide ecological functions that are more protective of the adjacent critical area than would be found if a standard buffer were proposed with no vegetative enhancement.

5. *An analysis of the level of protection of critical area functions and values provided by the regulations or standards of this Code, compared with the level of protection provided by the proposal. The analysis shall include:*
- a. *A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist;*

The functions performed by Wetlands A and B would not be affected under the proposed buffer reduction plan. The bowl-shaped wetlands will continue to hold and diffuse flood flow during storm events with or without a buffer modification. The little habitat value the small wetlands offer will likely be increased by the addition of plants just outside of the wetland edge. Water quality entering the system will likely improve with the addition of two rain gardens and dense emergent and scrub-shrub vegetation in the buffer.

Standard regulatory requirements under LUC 20.25H.095 preserve a currently low- to moderately-functioning 60-foot buffer. Under the proposal, the 25-foot reduction along the east edge of the buffer would be compensated by raising the functions and values of the remaining buffer area. The enhancement will greatly increase the water quality function and habitat function of the buffer.

Overall, the proposed plan would increase the buffer function and not affect the functions of the wetland.

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

The strict application of the regulations and standards of LUC 20.25H would require the proposed residential development to be situated at least 75 feet (60-foot wetland buffer and 15-foot structure setback) from the on-site wetlands. The existing degraded wetland buffer would remain in its existing condition with no enhancement necessary to achieve approval of the proposed development. Other than providing a substantial distance between the wetlands and proposed development, the buffer would remain void of any vegetative enhancement that would help to improve ecological functions over existing conditions. Further, since the wetland buffer is presently somewhat overrun with invasive species, without a comprehensive maintenance and monitoring plan, the buffer is more likely to become extensively overgrown with invasive weeds, including Himalayan blackberry and English ivy.

Through the process outlined in LUC 20.25H.095.C.2, the applicant had the opportunity to consider using buffer averaging to reduce the on-site wetland buffer. This approach would have resulted in a maximum reduction of 25 percent (15 feet) from the standard 60-foot buffer. However, modifications to the buffer through averaging would not have resulted in a large enough building envelope

for the proposed residence and an adequately sized yard area. Reduction of the buffer to 45 feet, along with the standard 15-foot structure setback, would have resulted in a building envelope approximately 63 feet wide. The planned residence is proposed to be approximately 55 feet wide along with a yard area approximately 25 feet deep.

The applicant also considered reducing the 20-foot front yard setback pursuant to LUC 20.25H.040.B. However, due to the number of existing significant trees found within the front yard setback, the applicant chose to move the residence slightly closer to the on-site wetlands and preserve a number of significant trees. Because limited significant trees exist in the middle portion of the site, the residential footprint can be positioned there while preserving the area of significant trees to the east. As a result, cumulative impacts are lessened by retaining a greater number of significant trees that can help to provide needed stormwater infiltration.

Therefore, buffer reduction and enhancement through the critical areas report process was selected as the preferred means of buffer modification to allow for the proposed residence and associated yard.

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

By requesting wetland buffer modifications pursuant to LUC 20.25H.230, the applicant is provided the opportunity to restore and enhance substantial portions of the on-site wetland buffer. A wetland buffer enhancement plan has been prepared (see Appendix A) that details the area proposed for enhancement as a result of the requested buffer modification. This plan mitigates for the proposed reduction of the standard 60-foot critical area buffer. Mitigation will involve the removal of approximately 1,000 square feet of invasive and non-native species and the planting of 5,725 square feet of native vegetation within the modified critical area buffer. This planting layout incorporates a diversity of native plant species configured in a naturalistic fashion. Proposed plantings include trees, shrubs, groundcover, and habitat structures. A monitoring and maintenance plan for the proposed mitigation area is also included in this report. Overall, a net gain in critical area buffer functions is proposed.

Additionally, as proposed the entire area of requested buffer reduction (1,572 square feet) will not be encroached upon by a structure, but instead will remain a yard area of the future residence and will be substantially vegetated with a grass lawn and ornamental and native plantings. Over half of the proposed 25-foot-wide yard area will be permanently protected from structures by application of the standard 15-foot structure setback.

The application of a standard 60-foot wetland buffer would have resulted in 9,337 square feet falling within the limits of the on-site buffer. The requested buffer modifications will result in 7,765 square feet falling within the limits of the wetland buffer, all of which will be placed within the boundaries of an NGPE. The area of buffer proposed for removal from the site (1,572 square feet) is highly degraded with sparse amounts of existing vegetation. This area is significantly less than the area of buffer enhancement (5,725 square feet) proposed within the remainder of the existing degraded buffer. Therefore, modification of the on-site wetland buffer will provide a substantially higher level of protection than the buffer provided through the application of the regulations of LUC 20.25H.095.

## CRITICAL AREAS LAND USE PERMIT CRITERIA

Modification of a critical area buffer requires the applicant to apply for and receive a Critical Areas Land Use Permit. Before issuing a Critical Areas Land Use Permit, the Director must find that the project meets specific decision criteria. Compliance with the applicable Critical Areas Land Use Permit decision criteria listed in LUC 20.30P.140 is addressed below.

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

The project applicant has applied for a Critical Areas Land Use Permit to reduce the on-site wetland buffer. No other City of Bellevue permits will be required of the project at this time. A Clear and Grade Permit and all applicable Building Permits will be applied for after approval of the proposed buffer reduction.

*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.*

The proposed project involves the reduction of an on-site wetland buffer. A standard 60-foot buffer for two areas of Category III wetlands is proposed to be reduced to a minimum of 35 feet. The proposed 35-foot buffer will be enhanced with the removal of existing invasive and non-native species and the addition of dense native plantings. A future residence is proposed to be situated approximately 57 feet from the edge of the nearest on-site wetland.

The applicant has used the best available design and development techniques to conceptually design the footprint of the proposed residence, along with all associated hardscapes. The design and layout took into consideration the location and condition of existing on-site significant trees. In order to help provide added stormwater benefits to the site, the highest quality trees found on-site were proposed for retention. The residence and hardscapes were located in those areas primarily occupied by trees in fair to moderate condition. Additionally, total proposed impervious surfaces were calculated to help determine the total runoff expected from the improved portions of the site. These calculations were used to size and locate two rain gardens within the reduced wetland

buffer to receive stormwater and mimic natural conditions. The proposed rain gardens are in accordance with the City of Bellevue's Natural Drainage Practices.

The development techniques mentioned above, coupled with approximately 5,725 square feet of wetland buffer enhancement, will result in the least impact on the critical area buffer.

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

*20.25H.100 Performance Standards*

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

*(A) Lights shall be directed away from the wetland.*

The front of the proposed house will face east, away from the on-site wetland. Therefore, any lights associated with the driveway, garage, or front door of the residence will be directed away from the wetlands. Lighting at the rear of the residence will be limited to that necessary to provide adequate access and security. Such lighting at the rear of the residence will be shielded to prevent light from reaching the areas of on-site wetlands.

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

The proposed residence will be situated in the eastern portion of the property approximately 57 feet from the edge of the nearest wetland. The driveway, garage, and front door of the residence will be situated on the eastern side of the residence. Therefore, the majority of noise-generating activities will occur on the eastern side of the residence, in excess of 100 feet from the on-site wetlands.

*(C) Toxic runoff from new impervious area shall be routed away from the wetlands.*

Runoff from new impervious surfaces will be directed via sheet flow into two proposed rain gardens located within the reduced wetland buffer. The rain gardens will treat the runoff by removing stormwater pollutants before overflowing into the wetland buffer.

*(D) Treated water may be allowed to enter the wetland critical area buffer.*

As indicated in the prior response, on-site stormwater runoff will be treated in rain gardens located within the outer edge of the buffer, before flowing into the interior of the wetland buffer and finally into the wetland.

*(E) The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.*

A wetland buffer enhancement plan has been prepared that details the areas proposed for enhancement. Specifically, dense, native vegetation will be planted within the proposed buffer, with higher densities along the outer edge of the buffer. Species proposed for planting along the buffer edge include sword and lady fern, low Oregon grape, Pacific ninebark, red-osier dogwood, Nootka rose, and other emergent groundcovers.

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

The proposed project will be served by adequate public facilities. No new streets will be needed to serve the site and the project site will utilize existing utilities found within 104<sup>th</sup> Avenue SE. Additionally, fire and police protection are currently available at the site.

*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.*

A mitigation and restoration plan has been prepared in accordance with the requirements of LUC 20.25H.210.

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

The proposed project complies with all other applicable City of Bellevue Land Use Codes, including 20.25H.

## **MONITORING AND MAINTENANCE PLAN**

This plan seeks to restore and enhance substantial portions of the wetland buffer found on the subject property. The wetland buffer has a high potential for enhancement to increase several important functions as it contains large patches of bare ground and non-native invasive plants. Approximately 1,000 square feet of invasive and non-native species are proposed for removal, with dense native plantings to be planted in the remaining understory.

An area within the modified wetland buffer measuring 5,725 square feet will be restored and enhanced by removing and/or controlling non-native weeds, improving soil conditions, and revegetating with native plant species. A combination of trees, shrubs, groundcover, and habitat structures are proposed. Trees species include Douglas-fir, western red cedar, and western hemlock. Proposed shrubs include vine maple, red-osier dogwood, beaked hazelnut, Pacific crabapple, tall Oregon grape, low Oregon grape, Pacific ninebark, red-flowering currant, and Nootka rose. Groundcover species include salal and sword fern. Additionally, three fallen trees are proposed within the enhancement area.

## Goals

- 1) Within the planted area of the wetland buffer, establish dense native vegetation in the understory of the restoration area that is appropriate to the ecoregion and site.
- 2) Where indicated on the plan, areas within the wetland buffer will remain substantially vegetated with a preponderance of native plants and will contain little invasive or noxious weed cover.
- 3) Increase habitat cover and refuge for amphibians, small mammals and invertebrates.

## Performance Standards

The standards listed below shall be used to judge the success of the installation over time. If performance standards are met at the end of Year 5, the site will then be deemed successful and the performance security bond will be eligible for release by the City of Bellevue.

- 1) Survival: 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 60% understory cover of native shrubs by Year 3. Native volunteer species may count towards this cover standard.
  - b. Achieve 80% understory cover of native shrubs by Year 5. Native volunteer species may count towards this cover standard.
- 3) Species diversity: Establish at least three native shrub species by Year 5. Native volunteer species may count towards this standard.
- 4) Invasive cover: Aerial cover for all non-native, invasive and noxious weeds will not exceed 10% at any year during the monitoring period. Invasive plants include Himalayan blackberry (*Rubus armeniacus*), cut leaf blackberry (*Rubus laciniatus*), reed canarygrass (*Phalaris arundinacea*), cherry (hedge) laurel (*Prunus laurocerasus*), English holly (*Ilex aquifolium*), and ivy species (*Hedera spp.*).
- 5) Place at least seven pieces of **woody debris** within the buffer and ensure good ground contact.

## Monitoring Methods

This monitoring program is designed to track the success of the mitigation site over time and to measure the degree to which it is meeting the performance standards outlined elsewhere in this document.

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 shall 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.

**Transects:** During the as-built inspection, the monitoring **restoration professional** shall install monitoring transects. Approximate transect locations shall be marked on the as-built plan. Six 50-foot transects shall be established in the planted areas.

All other planted areas not directly covered by transects will be visually assessed and noted as to how they are meeting the performance standards.

Monitoring shall take place twice annually for five years. During each year there shall be a spring and a late summer or fall visit. Year 1 monitoring shall commence in the first spring subsequent to installation.

The spring monitoring visit will record maintenance needs such as plant replacement and weeding needs. Following the spring visit the restoration professional will notify the owner and/or maintenance crews of necessary early growing season maintenance. The second annual monitoring visit will contain the bulk of the site assessment and will take place in the late summer or early fall. The late-season formal monitoring visit shall record and report the following in an annual report submitted to the City of Bellevue:

- 1) General summary of the spring visit.
- 2) Year 1 counts of live and dead plants by species.
- 3) Counts of dead plants where mortality is significant in any monitoring year.
- 4) Estimate of native shrub cover using the line intercept method along established transects in planted areas.
- 5) Estimate of non-native, invasive weed cover using the cover class method site-wide.
- 6) Tabulation of established native species, including both planted and volunteer species.
- 7) Photographic documentation from four fixed reference points.
- 8) Any intrusions into or clearing of the planting areas, vandalism or other actions that impair the intended functions of the mitigation area.
- 9) Recommendations for maintenance or repair of any portion of the mitigation area.

### ***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, shall monitor:

1. All site preparation
  - a. Soil preparation.
  - b. Mulch placement.
2. Plant material inspection
  - a. Plant material delivery inspection.

- b. 50% plant installation inspection.
- c. 100% plant installation inspection.

### General Work Sequence

1. Salvage at least seven pieces of large **woody debris** from the areas to be cleared and place in the buffer as shown on the plan or at the direction of the **restoration professional**. Woody debris shall be placed to maximize ground contact.
2. All plant installation is to take place during the dormant season (October 15th – March 1st), for best survival.
3. Prepare a planting pit for each plant and install per the planting details.
4. Mulch each plant with a circular **wood chip mulch ring** (6.5 cubic yards needed), four inches thick and extending to a distance of 9 inches from the plant stem (18 inches in diameter).
5. Install a temporary, above ground **irrigation system** to provide full coverage to all plants within the restoration area.
6. Install a split-rail fence and sensitive area signage around the on-site buffer area per the plan details. At least three signs shall be installed.

### Material Specifications and Definitions

1. **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 two, three, four and five and not in the first year.
2. **Irrigation system:** Automated system capable of delivering at least two inches of water per week from June 1 through September 30 for the first two years following installation.
3. **Restoration Professional:** Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects.
4. **Wood chip mulch:**
  - a. Stockpiled bark from site until depleted, then:
  - b. Arborist chips" (chipped woody material) approximately 1 to 3 inches in maximum dimension (not sawdust or coarse hog fuel). This material is commonly available in large quantities from arborists or tree-pruning companies. This material is sold as "Animal Friendly Hog Fuel" at Pacific Topsoils [(800) 884-7645]. Mulch shall not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris. Quantity required: 6.5 cubic yards.
5. **Woody debris:** Large pieces of downed wood such as logs, root wads, and limbs, which are placed on the ground. These pieces of downed wood should have a diameter of at least 12 inches and a minimum length of 10 feet. Debris to be placed to maximize ground contact.

### **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 for five years following completion of the construction. Operate the temporary irrigation system during June through September of Years 1 and 2. The system should be set to provide at least 1.5 inches of water to all plants during June, July, August and September. Less water is needed during March, April, May and October. Replace each plant found dead in the summer monitoring visits during the upcoming fall dormant season (October 15 to March 1).

- 1) Follow the recommendations noted in the spring 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 will increase the likelihood that the plan meets performance standards by Year 5.
  - 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 two through five.
- 4) Replace mulch as necessary to maintain a 4-inch-thick layer, retain soil moisture and limit weeds.
- 5) The homeowner shall 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 through the operation of a temporary irrigation system.

### **SUMMARY**

A modification from the standard 60-foot wetland buffer is proposed. A reduction to 35 feet is requested along the northeastern portions of the existing buffer to allow for the encroachment of a lawn area into the wetland buffer, with some compensatory expansion along the southeast portion of the existing buffer. The net reduction in buffer square footage on-site is 1,572 square feet. The proposed wetland buffer reduction request will allow for extensive restoration and enhancement within a substantial portion of the existing degraded buffer. A wetland buffer enhancement plan has been prepared that details the areas proposed for enhancement as a result of the requested buffer modification. The enhancement plan mitigates for the proposed reduction of the standard 60-foot critical area buffer. Mitigation will involve the removal of non-native weed species, the planting of 5,725 square feet of native vegetation within the

modified critical area buffer, and construction of two rain gardens to collect and treat stormwater runoff. The planting layout incorporates a great diversity of native plant species configured in a naturalistic fashion. Proposed plantings include trees, shrubs, groundcover, and habitat structures. The proposed enhancement plan will provide significantly better protection of those critical area functions and values than would be provided by application of the standard 60-foot wetland buffer. Therefore, an overall net gain in critical area buffer functions is proposed.

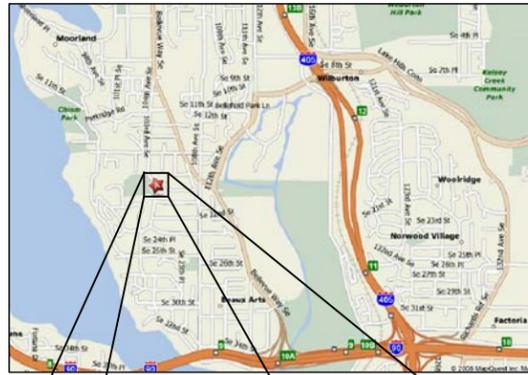
**REFERENCES**

Washington Department of Ecology. August 2004, version 2. Wetland Rating Form – Western Washington. Ecology Publication #04-06-15. 19 pp.

Washington Department of Ecology, U.S. Army Corps of Engineers, Seattle District and Environmental Protection Agency Region 10. March 2006. Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 1). Washington State Department of Ecology Publication #06-06-011a. Olympia, WA

## **APPENDIX A**

### **Project Plans**



VICINITY MAPS

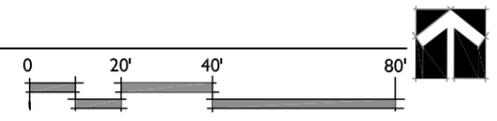
SHEET INDEX

1. EXISTING CONDITIONS
2. BUFFER REDUCTION PLAN & MITIGATION NOTES
3. TREE INVENTORY & PRESERVATION PLAN
4. RESTORATION PLANTING PLAN & LEGEND
5. SITE DETAILS & PLANT INSTALLATION SPECIFICATIONS



EXISTING CONDITIONS PLAN

SCALE: 1" = 20'-0"



750 Sixth Street South  
Kirkland WA 98033  
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www.watershedco.com  
Science & Design

**SCOTT PROPERTY**  
BUFFER REDUCTION / RESTORATION PLAN  
C/O: KEVIN SCOTT  
2422 127TH AVE NE  
BELLEVUE, WASHINGTON 98005

PHASE:  
**PERMIT**

NO.	DATE	ISSUE
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REMARKS/NOTES:  
ORIGINAL ON 22 x 34 IN

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Checked: MG  
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070618\_SCOTT-2.DWG

JOB NUMBER:  
**070618**

SHEET NUMBER:  
**I OF 5**

**Monitoring and Maintenance Plan**

This plan seeks to restore and enhance substantial portions of the wetland buffer found on the subject property. The wetland buffer, as it contains large patches of bare ground and non-native invasive plants, has a high potential for enhancement to increase several important functions. Approximately 1,000 square feet of invasive and non-native species are proposed for removal, with dense native plantings to be planted in the remaining understory.

An area within the modified wetland buffer measuring 5,725 square feet will be restored and enhanced by removing and/or controlling non-native weeds, improving soil conditions, and revegetating with native plant species. A combination of trees, shrubs, groundcover, and habitat structures are proposed. Trees species include Douglas-fir, western red cedar, and western hemlock. Proposed shrubs include vine maple, red osier dogwood, beaked hazelnut, pacific crabapple, tall Oregon grape, low Oregon grape, pacific ninebark, red flowering currant, and nootka rose. Groundcover species include salal and sword fern. Additionally, at least seven fallen trees are proposed within the enhancement area.

**Goals**

- 1) Within the planted area of the wetland buffer, establish dense native vegetation in the understory of the restoration area that is appropriate to the ecoregion and site.
- 2) Where indicated on the plan, areas within the wetland buffer will remain substantially vegetated with a preponderance of native plants and will contain little invasive or noxious weed cover.
- 3) Increase habitat cover and refuge for amphibians, small mammals and invertebrates.

**Performance Standards**

The standards listed below shall be used to judge the success of the installation over time. If performance standards are met at the end of Year 5, the site will then be deemed successful and the performance security bond will be eligible for release by the City of Bellevue.

- 1) Survival: 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:
  - Achieve 60% understory cover of native shrubs by Year 3. Native volunteer species may count towards this cover standard.
  - Achieve 80% understory cover of native shrubs by Year 5. Native volunteer species may count towards this cover standard.
- 3) Species diversity: Establish at least 3 native shrub species by Year 5. Native volunteer species may count towards this standard.
- 4) Invasive cover: Aerial cover for all non-native, invasive and noxious weeds will not exceed 10% at any year during the monitoring period. Invasive plants include Himalayan blackberry (*Rubus armeniacus*), cut leaf blackberry (*Rubus laciniatus*), reed canarygrass (*Phalaris arundinacea*), cherry (hedge) laurel (*Prunus laurocerasus*), English holly (*Ilex aquifolium*), and ivy species (*Hedera spp.*).
- 5) Place at least 3 pieces of woody debris within the buffer and ensure good ground contact.

**Monitoring Methods**

This monitoring program is designed to track the success of the mitigation site over time and to measure the degree to which it is meeting the performance standards outlined elsewhere in this document. 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 shall 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.

**Transects** During the as-built inspection, the monitoring restoration professional shall install monitoring transects. Approximate transect locations shall be marked on the as-built plan. Six 50-foot transects shall be established in the planted areas. All other planted areas not directly covered by transects will be visually assessed and noted as to how they are meeting the performance standards. Monitoring shall take place twice annually for five years. During each year there shall be a spring and a late summer or fall visit. Year 1 monitoring shall commence in the first spring subsequent to installation. The spring monitoring visit will record maintenance needs such as plant replacement and weeding needs. Following the spring visit the restoration professional will notify the owner and/or maintenance crews of necessary early growing season maintenance. The second annual monitoring visit will contain the bulk of the site assessment and will take place in the late summer or early fall. The late-season formal monitoring visit shall record and report the following in an annual report submitted to the City of Bellevue:

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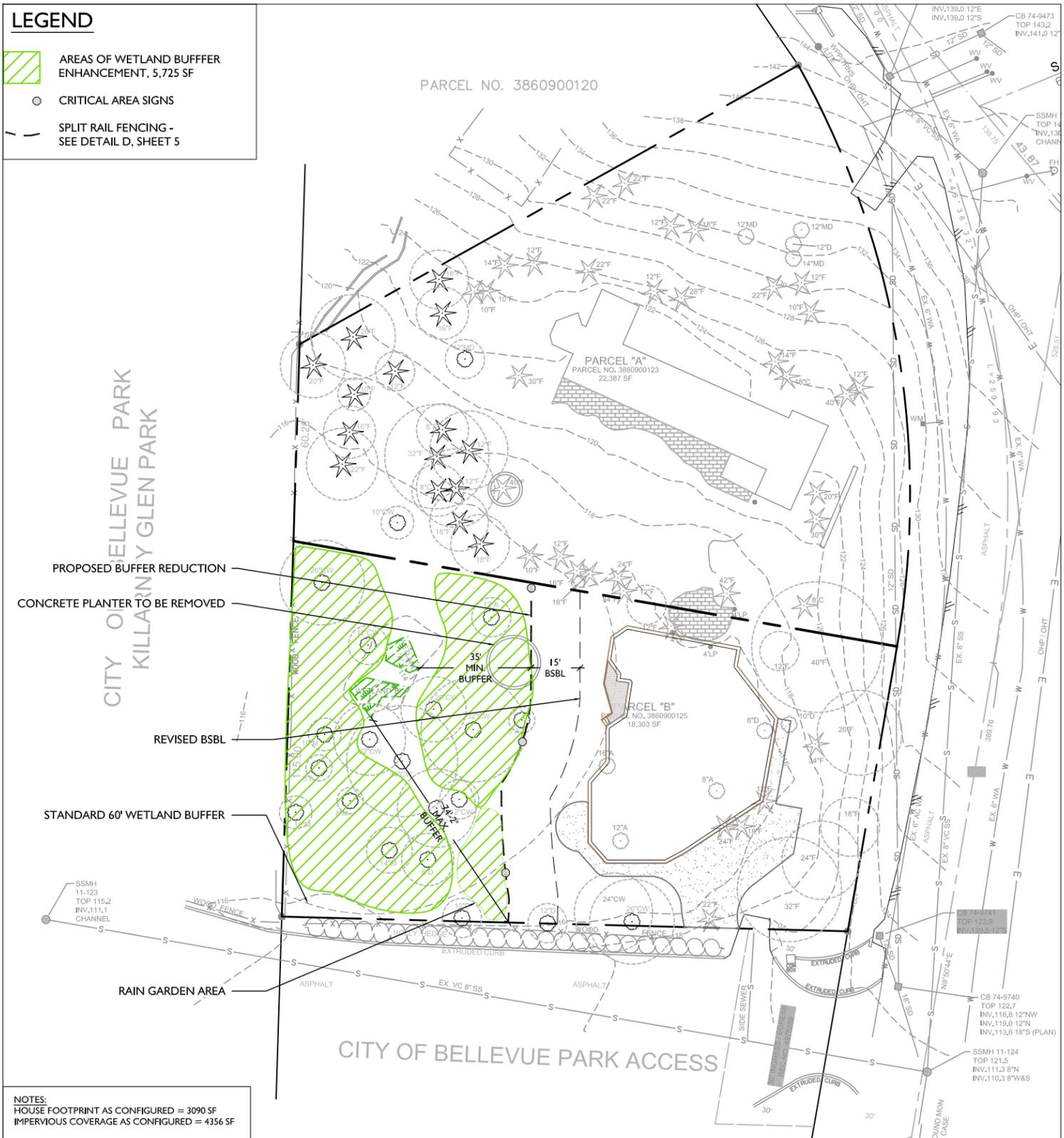
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**LEGEND**

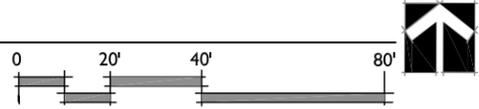
- AREAS OF WETLAND BUFFER ENHANCEMENT, 5,725 SF
- CRITICAL AREA SIGNS
- SPLIT RAIL FENCING - SEE DETAIL D, SHEET 5



NOTES:  
HOUSE FOOTPRINT AS CONFIGURED = 3090 SF  
IMPERVIOUS COVERAGE AS CONFIGURED = 4356 SF

**BUFFER REDUCTION PLAN**

SCALE: 1" = 20'-0"



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REMARKS/NOTES:  
ORIGINAL ON 22 x 34 IN

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Drafted: MG / ZS  
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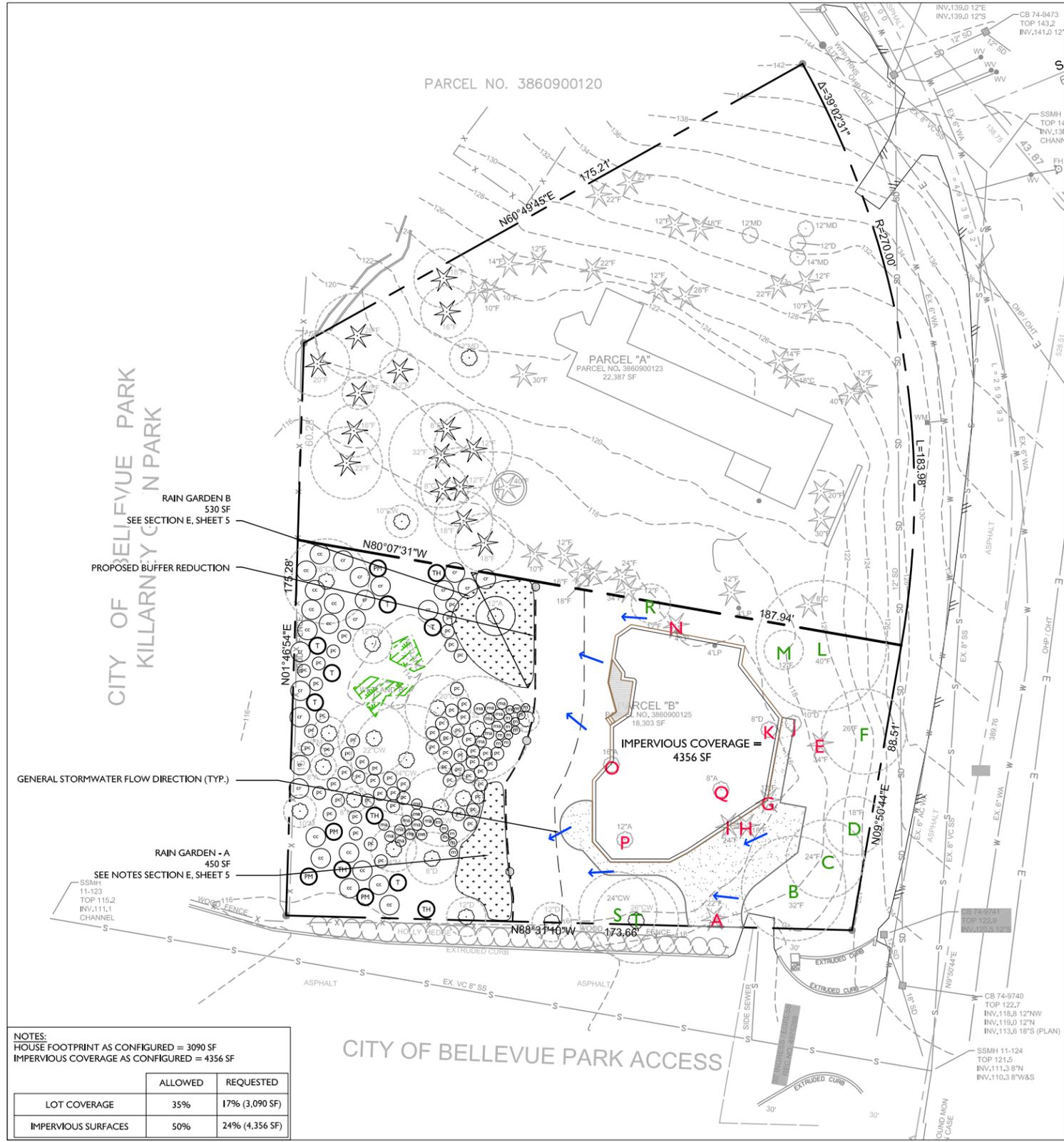
JOB NUMBER:  
070618

SHEET NUMBER:  
2 OF 5

TREE INVENTORY (OUTSIDE OF PROPOSED BUFFER)				
ID	SPECIES	DIA./HT.	OBSERVATIONS	PROPOSED STATUS
A	DOUGLAS-FIR	22" / 80'	LEAN TO S., WIDE CANOPY & WELL DEVELOPED BRANCH STRUCTURE.	REMOVAL
B	DOUGLAS-FIR	32" / 80'	CLOSE TO EXISTING DRIVE, WIDE CANOPY & WELL DEVELOPED BRANCH STRUCTURE	PRESERVATION
C	DOUGLAS-FIR	24" / 60'	LEAN TO W., FAIR BRANCH STRUCTURE, NARROW CANOPY SPREAD	PRESERVATION
D	DOUGLAS-FIR	18" / 40'	HEAVY LEAN TO W., POOR BRANCH STRUCTURE, NARROW CANOPY SPREAD	PRESERVATION
E	DOUGLAS-FIR	32" / 75'	HEALTHY, EVEN BRANCH STRUCTURE, WIDE CANOPY	REMOVAL
F	DOUGLAS-FIR	26" / 65'	HEALTHY, EVEN BRANCH STRUCTURE, WIDE CANOPY	PRESERVATION
G	DOUGLAS-FIR	18" / 45'	VERY NARROW CANOPY, POOR BRANCH STRUCTURE, EPICORMIC TRUNK, EXPOSED ROOTS, MEDIUM CANOPY SPREAD, FAIR BRANCHING STRUCTURE.	REMOVAL
H	DOUGLAS-FIR	18" / 45'	HEAVY LEAN TO S., GOOD BRANCH STRUCTURE & MEDIUM CANOPY SPREAD.	REMOVAL
I	DOUGLAS-FIR	24" / 50'	UNEVEN BRANCH STRUCTURE, NARROW CANOPY, MULTI-TRUNKED	REMOVAL
J	DOUGLAS-FIR	12" / 25'	UNEVEN BRANCHING (ALL ON W. SIDE), HEAVY LEAN TO W., VERY CLOSE TO EXISTING DRIVE	REMOVAL
K	RED ALDER	10" / 30'	SPECIMEN, WELL DEVELOPED CANOPY, EXCELLENT BRANCH STRUCTURE	PRESERVATION
L	DOUGLAS-FIR	40" / 100'	YOUNG TREE, HEALTHY BRANCHING	PRESERVATION
M	DOUGLAS-FIR	12" / 20'	HEAVY LEAN TO E., ROOTS COVERED BY PATIO, GOOD BRANCH STRUCTURE & CANOPY	REMOVAL
N	DOUGLAS-FIR	12" / 25'	LARGEST ALDER ON-SITE, HEALTHY BRANCHING, WIDE CANOPY SPREAD, CENTRAL SITE LOCATION	REMOVAL
O	RED ALDER	16" / 40'	UNEVEN BRANCH STRUCTURE, HEAVY LEAN TO N.	REMOVAL
P	RED ALDER	12" / 25'	HEAVY LEAN TO W., UNEVEN BRANCHING, BROKEN LEADER, UNHEALTHY FOILAGE	REMOVAL
Q	RED ALDER	8" / 20'	MEDIUM CANOPY SPREAD, FAIR BRANCH STRUCTURE	PRESERVATION
R	DOUGLAS-FIR	12" / 30'	HEALTHY, EVEN BRANCH STRUCTURE, WIDE CANOPY	PRESERVATION
S	BLACK COTTONWOOD	24" / 60'	HEALTHY, EVEN BRANCH STRUCTURE, WIDE CANOPY	PRESERVATION
T	BLACK COTTONWOOD	26" / 60'	HEALTHY, EVEN BRANCH STRUCTURE, WIDE CANOPY	PRESERVATION

GREEN = PRESERVATION  
 RED = REMOVAL

**NOTES:**  
 TOTAL DIAMETER IN INCHES = 398"  
 TOTAL DIAMETER IN INCHES PROPOSED FOR PRESERVATION = 214"  
 PERCENTAGE PRESERVED = 54%

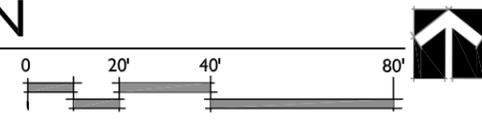


**NOTES:**  
 HOUSE FOOTPRINT AS CONFIGURED = 3090 SF  
 IMPERVIOUS COVERAGE AS CONFIGURED = 4356 SF

	ALLOWED	REQUESTED
LOT COVERAGE	35%	17% (3,090 SF)
IMPERVIOUS SURFACES	50%	24% (4,356 SF)

# TREE INVENTORY & PRESERVATION PLAN

SCALE: 1" = 20'-0"



**SCOTT PROPERTY**  
 BUFFER REDUCTION / RESTORATION PLAN  
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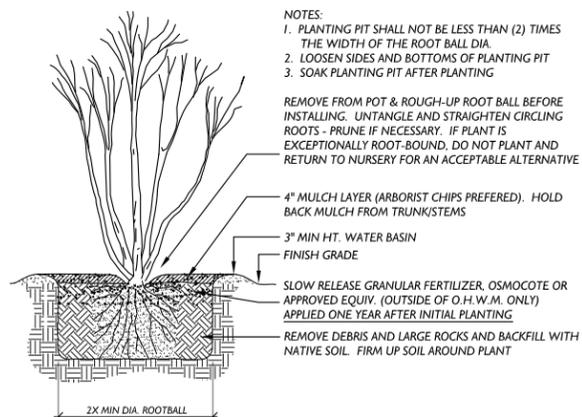
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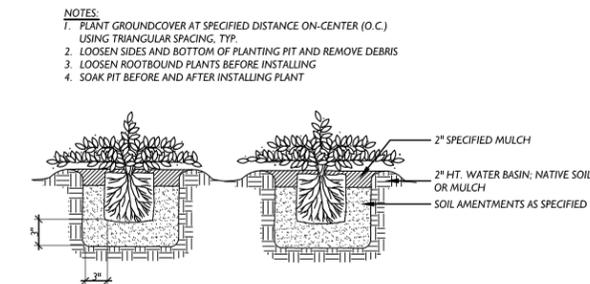
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**3 OF 5**

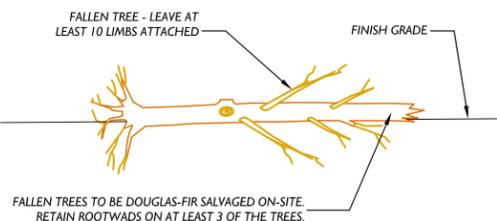




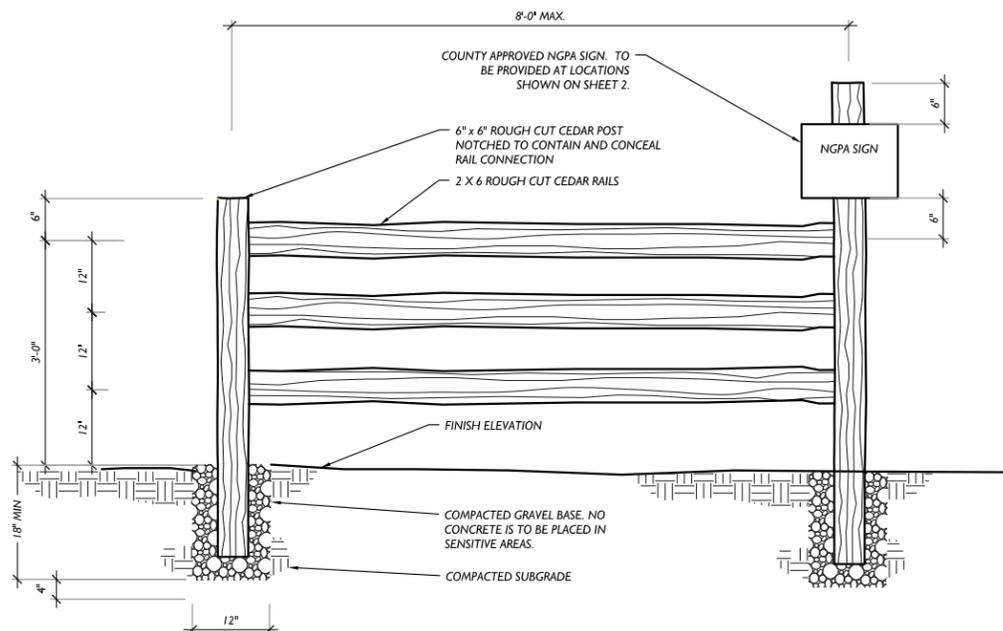
**A** SHRUB & TREE PLANTING DETAIL  
NTS



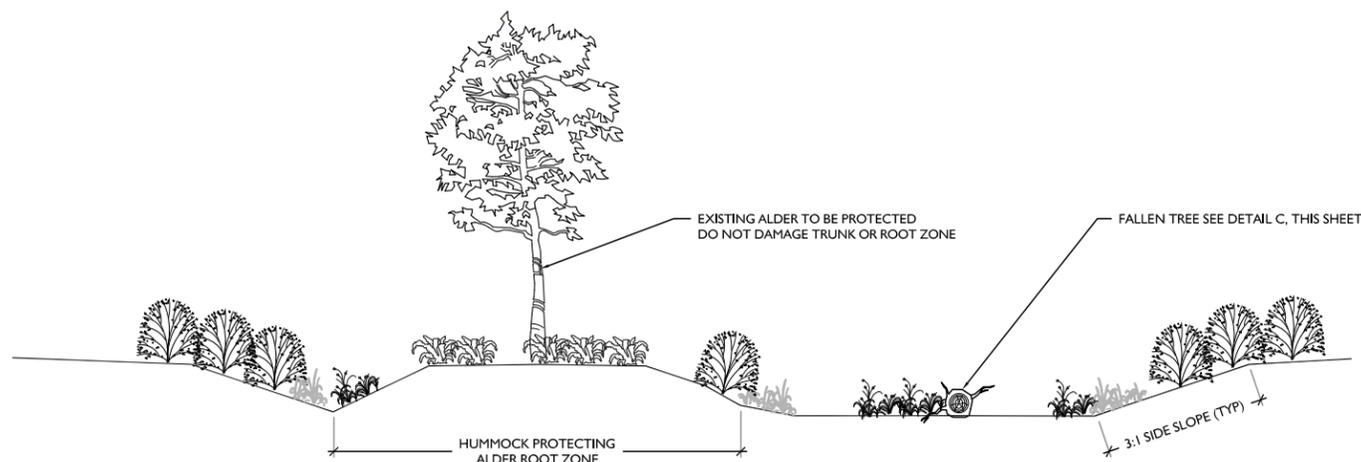
**B** GROUNDCOVER & PERENNIAL PLANTING DETAIL  
NTS



**C** FALLEN TREE  
NTS



**D** SPLIT RAIL FENCE DETAIL  
NTS



**E** RAIN GARDEN B - SECTION  
NTS

**\* RAIN GARDEN NOTES: (APPLICABLE TO BOTH RAIN GARDENS)**  
1. RAIN GARDENS SIZED AS LISTED TO CONTROL RUNOFF FROM EASTERN PORTION OF SITE VIA SHEET FLOW.  
2. RAIN GARDENS SHALL BE 18" IN DEPTH WITH 3:1 SIDE SLOPES.  
3. RAIN GARDEN SOIL SHALL BE AMENDED PER CITY OF BELLEVUE RECOMMENDATIONS.  
4. OVERFLOW IS TO BE DIRECTED INTO BUFFER AREA.

**PLANT INSTALLATION SPECIFICATIONS**

NOTE: THESE SPECIFICATIONS ARE A LEGALLY BINDING CONTRACT

**GENERAL NOTES**

**QUALITY ASSURANCE**

- PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
- PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS WILL 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).
- TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUNSCALD WILL BE REJECTED.

**DEFINITIONS**

- 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 BAREROT PLANTS, LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC.; SPRIGS, PLUGS, AND LINERS.
- CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

**SUBSTITUTIONS**

- 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.
- SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE LANDSCAPE ARCHITECT / CONSULTANT.
- 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.
- 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**

- PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE 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.
- 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. THE CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE 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.

**MEASUREMENTS OF PLANTS**

- PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
- 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.
- 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**

- 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**

- 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.
- HAVE COPIES OF VENDOR'S OR GROWER'S 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**

- 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.
- 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.
- 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 BAREROT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
- 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**

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

**PLANT MATERIAL**

**GENERAL**

- 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.
- 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.

**ROOT TREATMENT**

- 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.
- PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
- ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

**SCOTT PROPERTY**  
BUFFER REDUCTION / RESTORATION PLAN  
C/O: KEVIN SCOTT  
2422 127TH AVE NE  
BELLEVUE, WASHINGTON 98005

PHASE:

**PERMIT**

NO.	DATE	ISSUE
1	05/02/08	REVIEW SET
2	05/29/08	PERMIT SET
3	7/30/08	REVISIONS
4	08/14/08	PERMIT SET

REMARKS/NOTES:

ORIGINAL ON 22 x 34 IN

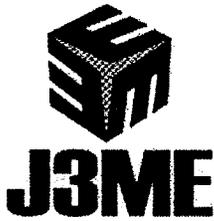
Project Manager: MG  
Designed: MG / ZS  
Drafted: MG / ZS  
Checked: MG  
File name:  
070618\_SCOTT-2.DWG

JOB NUMBER:

070618

SHEET NUMBER:

5 OF 5



1375 NW Mall Street, Suite 3  
Issaquah, WA 98027  
125.313.1078 (Bus)  
125.313.1077 (Fax)

# Memo

To: Kenny Booth, TWC  
From: Nicole Mecum  
Date: August 14, 2008  
Re: Scott Property - Rain Garden Sizing

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This memo has been prepared to summarize the sizing of the proposed rain garden on the Scott Property in Bellevue, WA.

The City of Bellevue has not adopted proposed Chapter 9-Low Impact Development of their Engineering Standards therefore the Rain Garden was sized using Section 2.5 Appendix C of the 2005 KCSWDM (see attached excerpts from manual).

- Proposed Impervious Area = 4,356 SF
- Minimum Storage Required = 3 inches
- Storage Volume =  $4,356 \times 0.25$  feet = 1,089 CF
- Based on an 18" ponding depth; the required surface area is 950 SF

The proposed rain garden will overflow into the wetland.

Please let me know if you have any questions or need additional information.

RECEIVED  
AUG 15 2008  
PERMIT PROCESSING

## C.2.5 RAIN GARDEN

*Rain gardens*, also known as "**bioretention**," are excavated or otherwise formed depressions in the landscape that provide for storage, treatment, and infiltration of stormwater runoff. The soil in the depression is enhanced to promote infiltration and plant growth. Plants adapted to wet conditions are planted in the enhanced soil. Figure C.2.5.A (p. C-58) shows a plan view and section of a typical rain garden system.

### Applicable Surfaces

Subject to the minimum design requirements and specifications in this section, rain gardens may be applied to any impervious surface such as a roof, driveway, parking area, road, or sidewalk, and to any non-native pervious surface such as a lawn, landscaped area, or pasture.

### Design Considerations

Rain gardens may overflow occasionally in large storm events or more frequently if located in very poorly drained soils or areas with very high water tables. In very well-drained soils, water may drain too quickly to support water loving plants and ponding may be of short duration. Conditioning the soil in the rain garden with abundant compost will enhance the growth of plants and help the soil to more readily admit water.

### Operation and Maintenance

See Section C.2.5.3 (p. C-60).

### C.2.5.1 MINIMUM DESIGN REQUIREMENTS

All of the following requirements must be met in order for a rain garden to be applicable to a *target impervious surface* or *new pervious surface*:

1. A **minimum water storage volume** equivalent to 3 inches (0.25 feet) of runoff depth from the impervious surface area served is required. In other words, the volume in cubic feet shall equal 0.25 times the square footage of the impervious surface area served (see example calculation in Section C.2.5.2 below). For rain gardens serving *new pervious surface*, a minimum water storage volume equivalent to 0.5 inches (0.04 feet) of runoff depth is required.
2. The **water storage area**, containing the minimum required storage volume, shall be 12 inches deep at overflow and have side slopes no steeper than 3 horizontal to 1 vertical. The overflow point of the water storage area shall be at least 6 inches below any adjacent pavement area. The overflow point must be situated so that overflow does not cause erosion damage or unplanned inundation.
3. If a **containment berm** is used to form the water storage area, the berm must be at least 2 feet wide and 6 inches above the 12 inches of water depth. A **catch basin** or **rock pad** must be provided to release water when the pond's water level exceeds the 12 inches of water depth. The catch basin may discharge to the local drainage system or other acceptable discharge location via a 4-inch rigid pipe. The rock pad may be used with or without a constructed drainage system downstream. If a rock pad is used, it must be composed of crushed rock, 6-inches deep and 2 feet wide (perpendicular to flow) and must extend at least 4 feet or beyond the containment berm, whichever is greater. The rock pad must be situated so that overflow does not cause erosion damage or unplanned inundation.
4. **Amended soil** consisting of minimum of 4 inches of compost tilled into the upper 12 inches of soil or 12 inches of imported sand/compost blend is required in the rain garden. Tilling and amending to greater depth is desirable.
5. **Water tolerant plants** such as those in Table C.2.5.A shall be planted in the pond bottom. Plants native to Western Washington are preferred.

6. A minimum 5-foot **setback** shall be maintained between any part of a rain garden and any structure or property line.
7. Rain gardens are not allowed in critical area **buffers** or on **slopes** steeper than 20%. Rain gardens proposed on slopes steeper than 15% or within 50 feet of a **steep slope hazard area** or **landslide hazard area** must be approved by a **geotechnical engineer** or **engineering geologist** unless otherwise approved by the DDES staff geologist.
8. For **sites** with **septic systems**, rain gardens must be located downgradient of the primary and reserve drainfield areas. DDES permit review staff can waive this requirement if site topography clearly prohibits subsurface flows from intersecting the drainfield.
9. The rain garden must not create **flooding or erosion impacts** as determined by the DDES. If a rain garden is proposed near a **landslide hazard area**, **erosion hazard area**, **steep slope hazard area**, or a slope steeper than 15%, DDES may require evaluation and approval of the proposal by a **geotechnical engineer** or **engineering geologist**.

TABLE C.2.5.A WATER TOLERANT PLANTS		
Common Name	Scientific Name	Spacing (on center)
Western mannagrass	<i>Glyceria occidentalis</i>	seed
Velvetgrass	<i>Holcus mollis</i>	seed
Shortawn foxtail	<i>Alopecurus aequalis</i>	seed
Water foxtail	<i>Alopecurus geniculatus</i>	seed
Spike rush	<i>Eleocharis spp.</i>	4 inches
Slough sedge	<i>Carex obnupta</i>	6 inches or seed
Sawbeak sedge	<i>Carex stipata</i>	6 inches
Sedge	<i>Carex spp.</i>	6 inches
Slender rush	<i>Juncus tenuis</i>	6 inches
Water parsley	<i>Oenanthe sarmentosa</i>	6 inches
Hardstem bulrush	<i>Scirpus acutus</i>	6 inches
Watercress	<i>Rorippa nasturtium-aquaticum</i>	12 inches
Small-fruited bulrush	<i>Scirpus microcarpus</i>	12 inches

### C.2.5.2 EXAMPLE SIZING CALCULATION

Runoff Source: 20-foot by 20-foot driveway

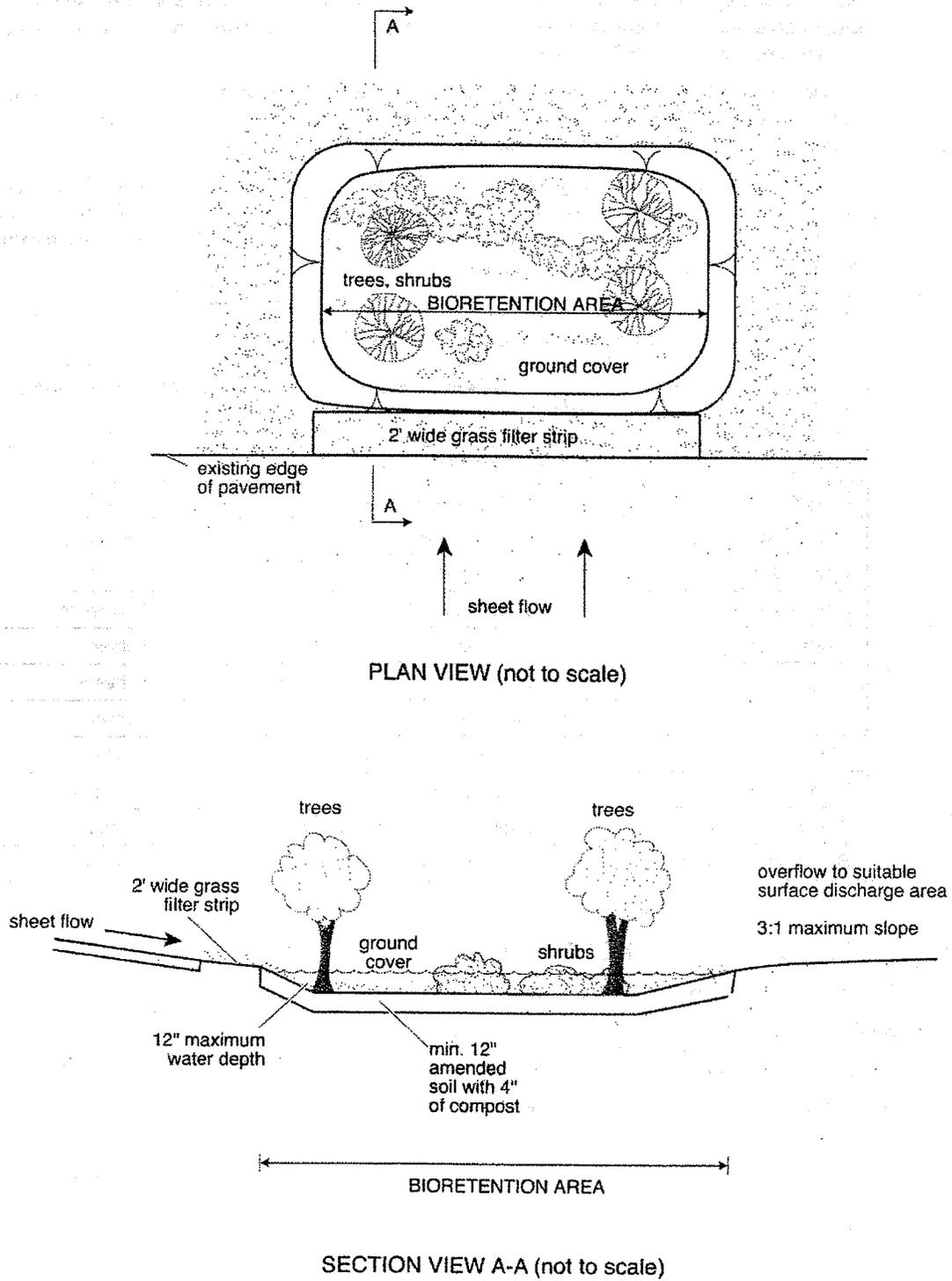
Minimum Storage Required = 3 inches (0.25 feet)

Storage Volume Needed = 20 feet x 20 feet x 0.25 feet = 100 cubic feet

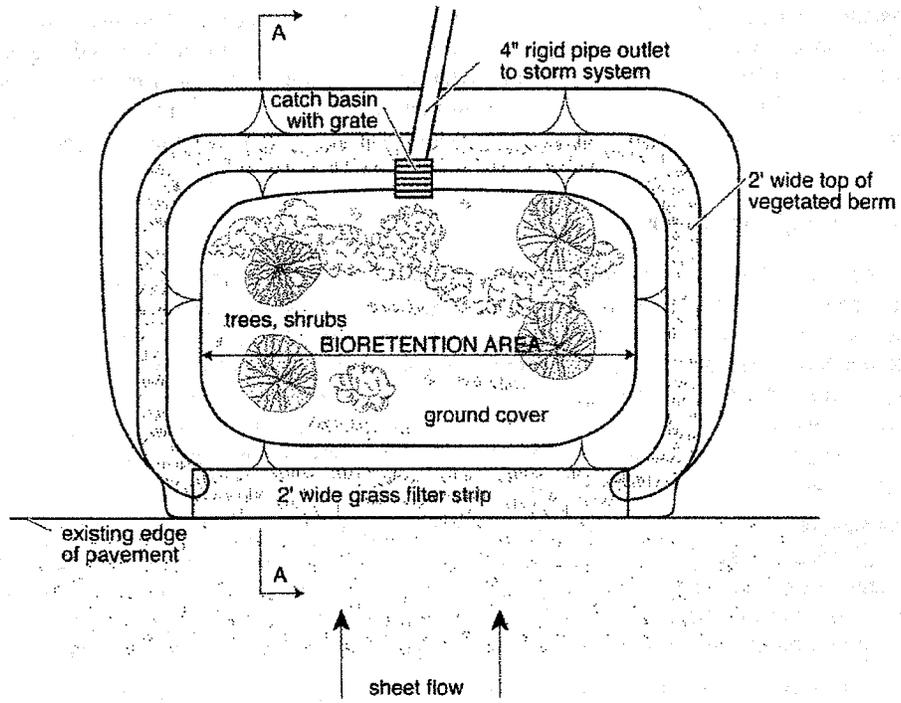
Pond Design: Choosing a 1 foot depth with 3:1 side slopes and a bottom area of 4 feet x 10 feet provides a storage volume of 100 cubic feet.

*Note that if the soil percolation rate is 0.5 inches per hour, a pond 1-foot deep will take 24 hours to drain when filled. Similarly, a small storm of 0.5 inches would produce a depth of about 3 inches and drain in 6 hours.*

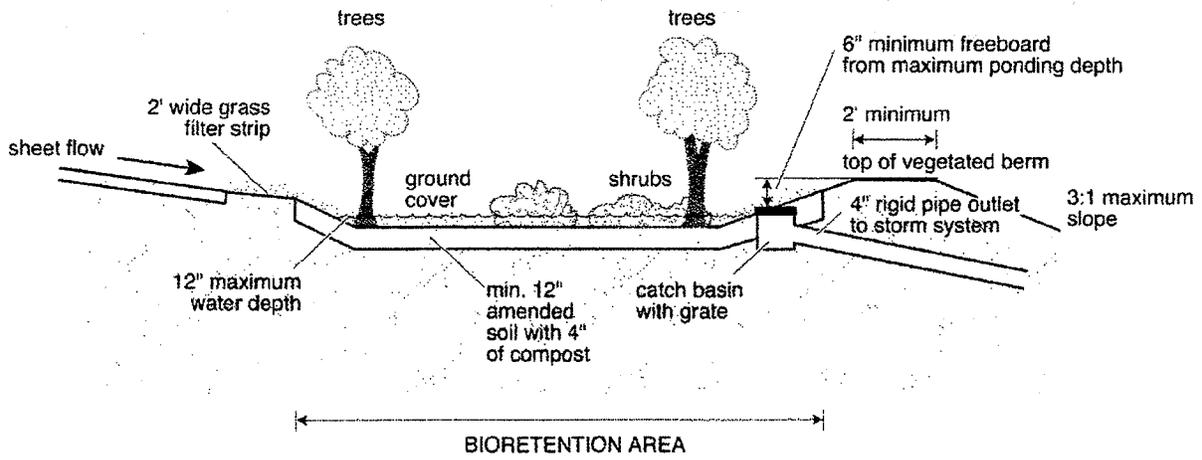
**FIGURE C.2.5.A TYPICAL RAIN GARDEN (BIORETENTION POND)**



**FIGURE C.2.5.B TYPICAL RAIN GARDEN WITH CONTAINMENT BERM**



PLAN VIEW (not to scale)



SECTION VIEW A-A (not to scale)

### C.2.5.3 MAINTENANCE INSTRUCTIONS FOR A RAIN GARDEN

If the rain garden flow control BMP is proposed for a project, the following maintenance and operation instructions must be recorded as an attachment to the required **declaration of covenant and grant of easement** per Requirement 3 of Section C.1.3.3 (p. C-18). The intent of these instructions is to explain to future property owners, the purpose of the BMP and how it must be maintained and operated. These instructions are intended to be a minimum; DDES may require additional instructions based on site-specific conditions. Also, as the County gains more experience with the maintenance and operation of these BMPs, future updates to the instructions will be posted on King County's *Surface Water Design Manual* website.

#### □ TEXT OF INSTRUCTIONS

Your property contains a stormwater management flow control BMP (best management practice) called a "rain garden," which was installed to mitigate the stormwater quantity and quality impacts of some or all of the impervious or non-native pervious surfaces on your property. Rain gardens, also known as "bioretention," are vegetated closed depressions or ponds that retain and filter stormwater from an area of impervious surface or non-native pervious surface. The soil in the rain garden has been enhanced to encourage and support vigorous plant growth that serves to filter the water and sustain infiltration capacity. Depending on soil conditions, rain gardens may have water in them throughout the wet season and may overflow during major storm events.

The size, placement, and design of the rain garden as depicted by the flow control BMP site plan and design details must be maintained and may not be changed without written approval either from the King County Water and Land Resources Division or through a future development permit from King County. Plant materials may be changed to suit tastes, but chemical fertilizers and pesticides must not be used. Mulch may be added and additional compost should be worked into the soil over time.

Rain gardens must be inspected annually for physical defects. After major storm events, the system should be checked to see that the overflow system is working properly. If erosion channels or bare spots are evident, they should be stabilized with soil, plant material, mulch, or landscape rock. A supplemental watering program may be needed the first year to ensure the long-term survival of the rain garden's vegetation. Vegetation should be maintained as follows: 1) replace all dead vegetation as soon as possible; 2) remove fallen leaves and debris as needed; 3) remove all noxious vegetation when discovered; 4) manually weed without herbicides or pesticides; 5) during drought conditions, use mulch to prevent excess solar damage and water loss.