

Critical Areas Report- Revised

GAREY REASONABLE USE DEVELOPMENT LAKE FOREST PARK

September 20, 2021

Prepared for:

City of Lake Forest Park
Planning and Building
Department
17425 Ballinger Way Ne,
Lake Forest Park, WA 98155

Prepared on behalf of (applicant):

Mark J. Garey
14827 88th Ave Ne
Kenmore, WA 98028



Title-page image: Stream flowing through the subject property.

The information contained in this report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state and federal regulatory authorities. No other warranty, expressed or implied, is made.



**750 Sixth Street South
Kirkland, WA 98033**

p 425.822.5242
f 425.827.8136

watershedco.com

Reference Number: 190405

Contact: Nell Lund – Senior Ecologist

Alex Capron – Land Use Planner

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1 Introduction

The purpose of this report is to document compliance with the requirements of the City of Lake Forest Park Municipal Code (LFPMC) in the development of a single-family residence located at 36XX NE 205TH Street in the City of Lake Forest Park, WA (parcel no. 4022900497). Specifically, this report provides an analysis of the proposed work relative to the requirements of LFPMC Chapter 16.16 (Environmental Critical Areas), and an analysis evaluating the effects of the proposed project on wetland and stream functions. The site is highly encumbered by critical areas that would deny all reasonable use of the site, therefore, a reasonable use exception pursuant to LFPMC 16.16.250 is sought.

2 Existing Conditions

2.1 Location

The subject parcel, #4022900497, has no assigned address and is on the southwest corner of NE 205TH Street and 37th Avenue NE within City of Lake Forest Park jurisdiction (Figure 1). It is at the north end of City limits, in the northwest $\frac{1}{4}$ Section 3, Township 26 North, Range 4 East of the Public Land Survey System.

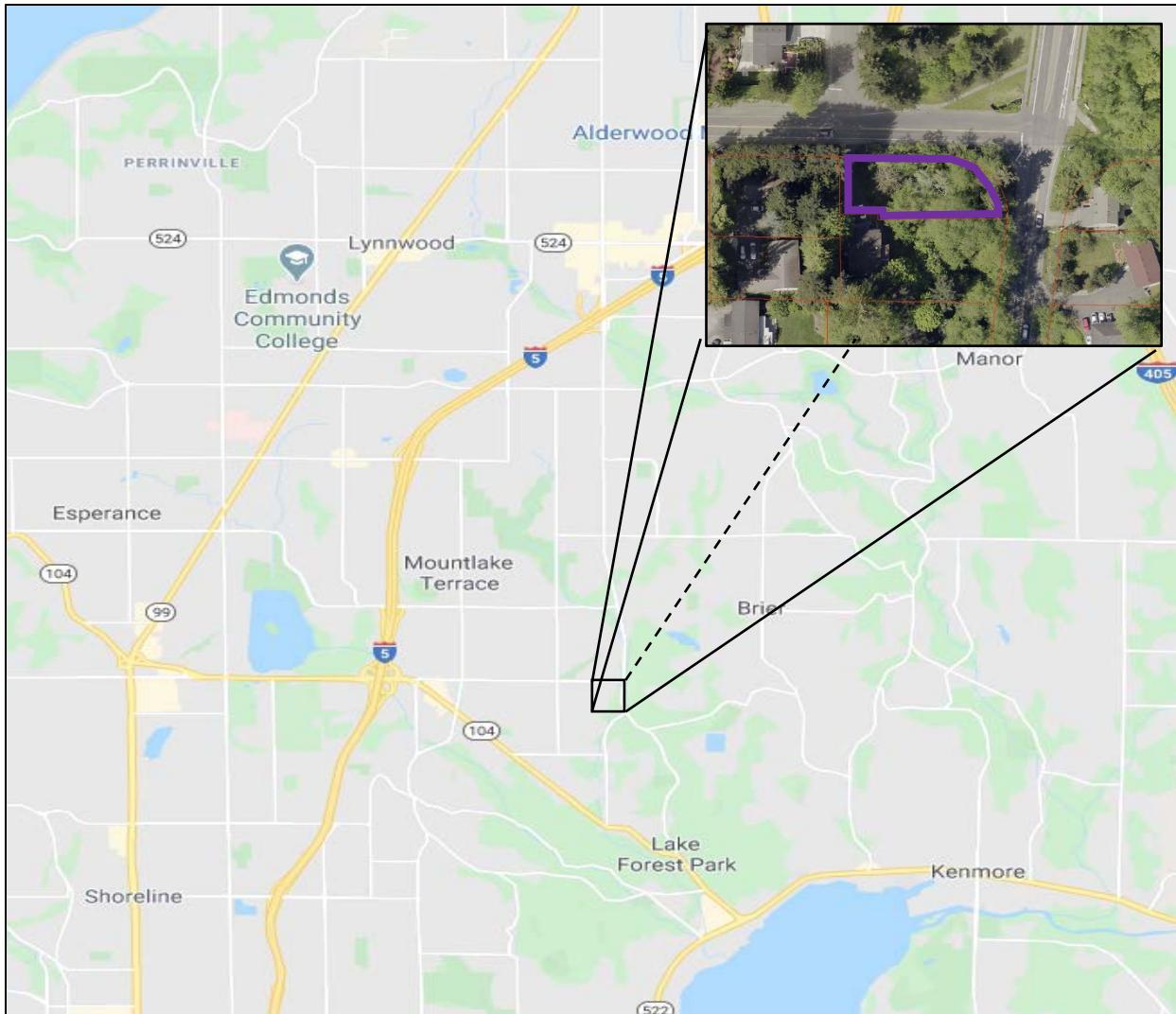


Figure 1. Vicinity and study area map, subject parcel in purple outline.

2.2 Site Description

The subject parcel is an undeveloped lot, 0.25 acres in size, with an existing driveway on the west end of the property. A segment of Lyon Creek flows through the subject property. West of Lyon Creek, the property slopes steeply up to the access easement on the west edge of the property. East of Lyon Creek the property slopes up moderately toward the adjacent roads. The riparian buffer is vegetated by forest and shrub communities. Forest canopy is characterized by paper birch, western red cedar, Douglas-fir, red alder, and white poplar. Understory includes smooth sumac, salmonberry, osoberry, and knotweed. Groundcovers include Cooley's hedge nettle, lady fern, sword fern, and giant horsetail. Invasive knotweed, Himalayan blackberry, jewelweed, English holly, ivy, climbing nightshade, and reed canary grass form locally dominant patches.

2.3 Environmental Setting

The subject parcel is located in the Lyon Creek basin of the Cedar-Sammamish Water Resource Inventory Area (WRIA 8). Surrounding land use west of the property is primarily single-family residential, and a greenbelt encompassing the left bank of Lyon Creek is located east of the property. At a landscape scale, the region is heavily developed and lacks habitat connectivity or corridors between wildlife areas and environmentally critical areas.

2.4 Critical Areas

Streams were delineated by The Watershed Company in the report *Re: Stream Delineation Study – 36XX NE 205th Street Wetland* (Appendix B). A summary of findings is provided below.

2.4.1 Streams

A segment of Lyon Creek flowing through the subject property was identified and delineated within the subject property. Lyon Creek divides the property roughly in half. It enters the site via a box culvert and meanders southeasterly. The channel is approximately 15 to 25 feet wide and is comprised of gravel and silt. Large woody debris, pool, and riffle features are present in the channel. Although recent sediment deposition occurred in and near the stream channel, a survey of our OHWM delineation indicates little if any change to the east bank of Lyon Creek.

The stream gradient is relatively flat, and no natural fish-passage barriers were observed. According to WDFW mapping (Salmonscape), coho salmon spawning is documented in this stream segment; there is also modeled presence of fall chinook salmon, sockeye salmon, and winter steelhead.

Streams are classified as Type S, F, Np, or Ns based on connectivity to Lake Washington, fish use, and seasonality of flow. Based on observed flows during the previous spring site visit (April 19, 2019), this segment of Lyon Creek is presumed to be perennial. As described above, this is documented as a salmon-bearing stream. Therefore, it is a Type F stream (LFPMC 16.16.350). Type F streams in the City of Lake Forest Park require a standard 115-foot buffer (LFPMC 16.16.355).

Table 1. Summary of wetlands, streams, and required buffers.

Stream Name	Type	Buffer (ft)
Lyon Creek	F	115

2.4.2 Stream Buffer

The standard 115-foot stream buffer encumbers the entire property. A 15-foot-setback, measured from the edge of the stream buffer, is also required. A 25% reduction in buffer, as permitted via LFPMC 16.16.355.B.1, still results in the buffer encumbering the entire property (see Appendix A – Mitigation Plan for details).

A reduction in setbacks to allow a reasonably-sized residence is allowed under LFPMC, so long as the mitigation provides equivalent or greater critical area functions and adheres to a comprehensive mitigation monitoring program. A mitigation sequencing narrative is provided below (see Section 3.2 Mitigation Sequencing).

3 Proposed Project

3.1 Overview

This project includes construction of a 1,180 square foot residence, associated driveway, water and sewer utility connections, and dispersions trenches. A critical areas reasonable use exception is sought because a reasonably sized, single-family house with associated access and utilities is not possible under buffer requirements prescribed by LFPMC 16.16.355.

3.2 Mitigation Sequencing

Avoidance: The project avoids direct impacts to Lyon Creek. As mentioned, stream buffer encumbers the entire parcel; therefore, avoidance of buffer impacts is not feasible.

Minimization: The residence was designed to minimize impacts within the stream buffer. The house will have no yard, except for a 10-foot wide perimeter surrounding the house for maintenance and emergency ingress/egress purposes. The house footprint is greatly reduced when compared to neighboring properties, see Section 3.3, Neighboring Housing Analysis. The house size is 25% smaller and the total associated impact area is 40% smaller than the median of neighboring properties, as shown in Table 2. Further, only one significant tree is proposed for removal, a black cottonwood.

Mitigation: Stream buffer mitigation will be provided at a ratio of greater than 1:1 to ensure an increase in buffer function. 3,597 square feet of stream buffer enhancement is proposed to compensate for 3,476 square feet of permanent buffer impacts. In addition, once dispersion trenches are installed, they will be surrounded by native plantings as shown within the mitigation plan. Mitigation will be monitored for a period of five years to ensure successful establishment. Further, enhancement areas and remaining unencumbered buffer areas will be disclosed as a notice to title, preserving these areas from future development.

Monitoring: All enhancement areas within stream buffers will be monitored for a minimum of five years and achieve performance standards outlined within the mitigation plan.

3.3 Neighboring Property Analysis

The subject parcel is zoned R 9,600 with surrounding uses within the City on the east, west, and south consisting of single-family residences. For purposes of determining compatibility with authorized uses, single-family lots zoned R 9,600 located nearby were compared to the subject parcel. The surrounding lots are a mix of highly modified with many framed within existing tree canopies, though many have large driveways, parking areas, and homes. These results can be seen in Table 2 and the corresponding map in Figure 2.

A total of nine properties were analyzed within 300 feet of the subject parcel. The project proposes significantly less impact area than all but two properties and is 25% smaller than the median structure footprint within the study area.

Table 2. Neighboring Property Analysis

Address	Map Key	Parcel Number	Lot size (SF)	Impact Area* (SF)	Percent Impact Area	Approx. House Footprint (SF)
20414 37TH AVE NE	1	4022900447	13,074	3,700	28%	1,620
20420 37TH AVE NE	2	4022900448	10,570	1,900	18%	1,510
3511 NE 205TH ST	3	4022900491	11,059	5,500	50%	2,880
3607 NE 205TH ST	4	4022900496	12,449	3,300	27%	780
3611 NE 205TH ST	5	4022900499	15,982	3,000	19%	1,560
3601 NE 205TH ST	6	4022900501	9,573	4,400	46%	3,050
20405 37TH AVE NE	7	4022900510	16,135	3,600	22%	1,290
3514 NE 204TH ST	8	4022900516	13,901	5,200	37%	2,260
20406 37TH AVE NE	9	4022900446	11,961	1,430	12%	3,200
Subject Site			10,369	2,042 [^]	20%	1,180
Median			12,449	3,600	27%	1,620

*Impact area includes all structures, driveways, and other improved surfaces, measured from the 2019 aerial on King County iMap

[^] Includes project proposal area, but not the existing 1,570 SF driveway easement to neighboring property to the south (3611 NE 205th St)

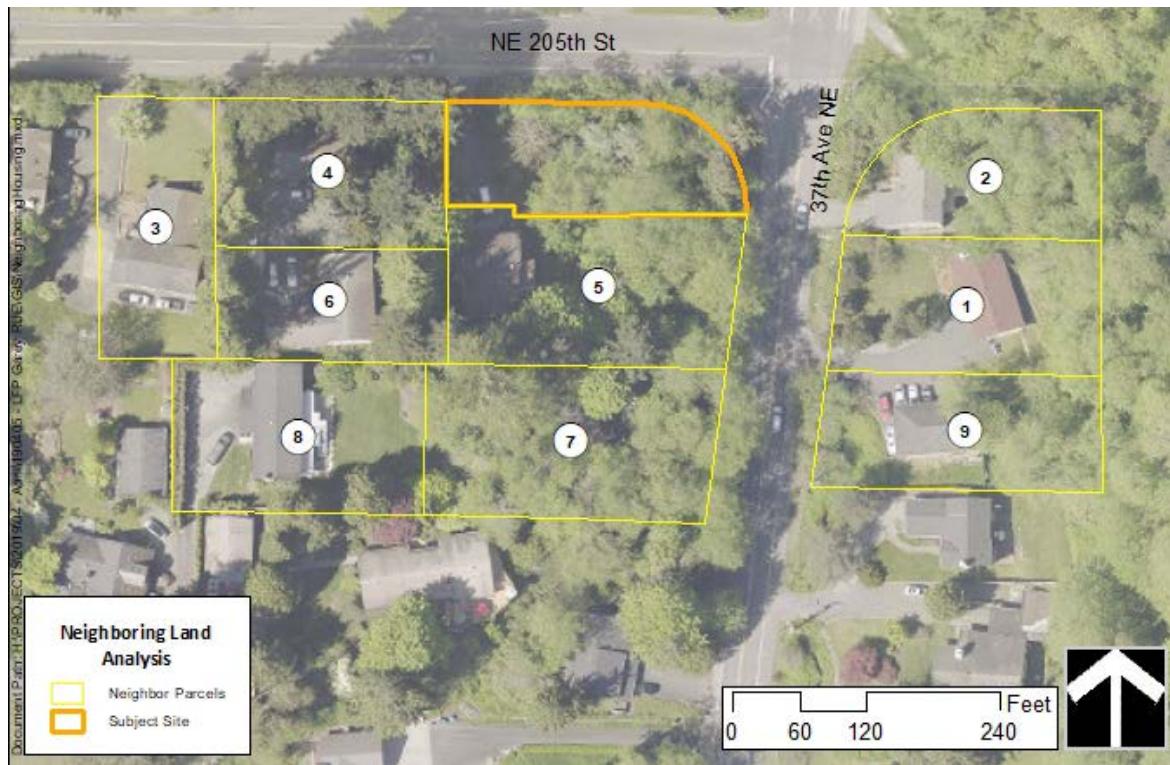


Figure 2. Housing Comparison Map

3.4 Mitigation Plan

Mitigation through the enhancement of stream buffers is proposed as compensation for impacts associated with project development. In total, 3,597 square feet of enhancement is proposed within the buffer of Lyon Creek between the proposed house and creek OHWM, a 1:1 ratio to permanent impacts. This involves the removal of invasive species and installation of a dense native forested plant assemblage.

A mitigation ratio of 1:1 is a typical industry standard for stream buffer impacts to ensure no net loss of ecological function. Removal of invasive species and establishment of a dense native plant community will improve forest structure and health, increase biodiversity, and increase screening vegetation throughout much of the remaining stream buffer. The high mitigation ratio is anticipated to increase wetland function in all categories of habitat, water quality, and hydrology.

Monitoring will be completed for a five-year period following installation of the mitigation site to ensure that goals and performance standards are achieved.

3.5 Functional Lift Analysis

Proposed mitigation is anticipated to provide a functional lift associated with three categories of critical area function including habitat, water quality, and hydrology. Well-functioning stream buffers provide many benefits that include shading, improved microclimate, introduction of dead wood, allochthonous input, stabilization of erosion, filtration of sediment and runoff, bio-attenuation of excess nutrients and pollutants, interception of rainfall, wildlife corridors, and habitat for riparian-associated species or other wildlife. The biotic and abiotic components of the buffer which provide these ecosystem services have the greatest potential when supported by native flora. Native plants improve habitat function compared to exotic species due to their influence on providing complex forest structure, diverse food resources, and the niche habitat that has historically coevolved with native wildlife.

Project impacts remove buffer area topographically and hydrologically down gradient of the creek within the property. Hydrologic and water quality function of downgradient streams are potentially affected. The project will follow stormwater manual requirements and will diffuse stormwater discharge within two separate dispersion trenches before it infiltrates towards the creek; therefore, water quality impacts are minimal.

As compensation, the mitigation area will improve forest health and forest structure, add screening vegetation, remove invasive species, and revegetate areas that do not contain native vegetation. Invasive species, which disrupt natural successional pathways and outcompete native species, will be removed throughout the entire site through use of hand labor and/or light equipment. Native plants will be flagged to protect from removal as stormwater BMPs and tree protection fencing are installed. By successfully establishing dense understory vegetation, the creek will have greater visual screening from disturbed areas compared to preexisting conditions. Installed trees and shrubs are anticipated to provide habitat that can be utilized by native wildlife. As the site matures, a diversity of native vegetation will continue forest succession and regenerate in areas that are currently dominated by invasive species.

The ability of a buffer to remove nutrients is more effective where precipitation and runoff either infiltrates or moves through the rooting zone of a forested buffer. Deep roots associated with trees and shrubs have greater benefit in slope stability and reducing nutrients compared to areas composed invasive species such as English ivy or Himalayan blackberry, or areas with little or sparse vegetation. As the enhanced buffer matures, surface roots, woody debris, and understory species will also aid in surface roughness and the physical filtering of sediments and

particulate matter. Overall, a functional lift in buffer functions is expected to result from the proposed project.

4 Code Compliance

4.1 Reasonable Use Exception

The following is an analysis of consistency with the reasonable use exception criteria in LFPMC 16.16.250.

C. The hearing examiner shall grant an exception only if:

- 1. Application of the requirements of this chapter will deny all reasonable economic use of the property; and*

Response: The project is currently fully encumbered via the 115-foot standard buffer of Lyon Creek. There is not adequate area on-site for buffer averaging or a 25% buffer reduction, as allowed under LFPMC 16.16.355.B.1. The maximum reduced buffer (86.25 feet) still encumbers the entire parcel, preventing the placement of a building footprint and associated driveway for a single family residence outside the buffer.

- 2. There is no other reasonable economic use with less impact on the critical area; and*

Response: There is no other reasonable use consistent with the residential zoning of the property and compatible with the surrounding neighborhood that would result in less impact. The 10' setback from the house footprint is necessary to provide for maintenance of both the house and the stormwater dispersion trenches, as well as safe ingress-egress in an emergency situation. The proposed residential development footprint for the parcel is the minimum necessary size to fulfill the needs of the applicant and has been determined to be smaller than comparable adjacent lots, as outlined in the comparable structure/housing study above in Section 3.3.

- 3. The proposed development does not pose an unreasonable threat to the public health, safety, or welfare, on or off the proposed site, and is consistent with the general purposes of this chapter and the comprehensive plan; and*

Response: There would be no detriment to the public health, safety or welfare, on or off the parcel, as a result of the proposed development. This development is supported by the following City Goals and Policies, as found within the City's 2015 Comprehensive Plan:

Housing Policy H-2.1 Continue to incorporate site standards, landscaping, and building design guidelines into land use regulations to ensure that infill development complements

surrounding uses and the character of Lake Forest Park. Note, infill development is the process of developing vacant or underused parcels within a surrounding area that is already largely developed, per the City Comprehensive Plan Housing Element.

Policy Response: The proposed residence preserves the vast majority of pre-existing natural areas. Further, this site proposes to enhance at a greater than 1:1 ratio to offset project impacts. All remaining lots surrounding this residence within City limits are developed with single-family homes.

Housing Policy H-2.2 Promote site planning techniques that create quality outdoor spaces and are in harmony with neighboring properties.

Policy Response: See response to previous policy.

Parks, Trails, & Open Space Policy PT-4.5 Remove invasive species in parks, trails, and open spaces. As a pre-existing open space zoned for single-family development, invasives will be removed site-wide to preserve remaining open space.

Policy Response: All applicable front and side-yard setback standards, as well as all applicable building codes, will be met. Driveway access will be established from the existing public roadway and will provide for safe passage and emergency access. Of the one tree designated for removal, it will be replaced at a greater than 3:1 ratio.

4. Any alteration is the minimum necessary to allow for reasonable economic use of the property.

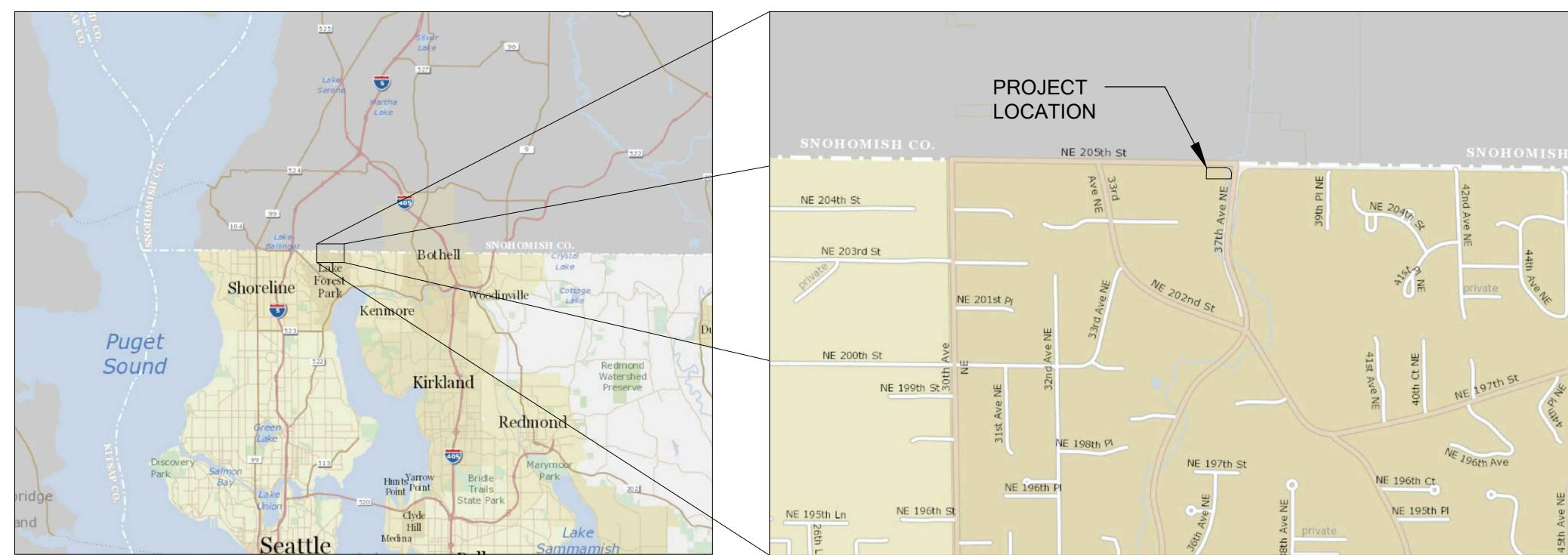
Response: The alteration is the minimum necessary for a single-family structure and appurtenances that will fulfill the needs of the applicant. As demonstrated, the size of the impact is less than the median of surrounding properties. Specifically, the nine neighboring properties (Table 2) indicate the proposal is below the median household size and significantly under the median impact area.

5 Summary

The applicant proposes construction of a single-family house, driveway access, and underground utilities. The parcel is entirely encumbered by Lyon Creek and its associated buffer. A reasonable use exception is sought to allow for deviations from stream buffers beyond the maximum allowed by code, in conjunction with a stream buffer enhancement plan. The size of the proposed development footprint is the minimum necessary and is less than other comparable developments in the vicinity, while the proposed critical area and buffer enhancement will result in a functional lift of ecological functions.

Appendix A

MITIGATION PLAN

VICINITY MAPS

LEGEND

- PARCEL BOUNDARY
- Delineated Stream OHWM
- REDUCED BUFFER (86.25')
- APPROXIMATE KNOTWEED PATCH (630 SF)
- ★ EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE

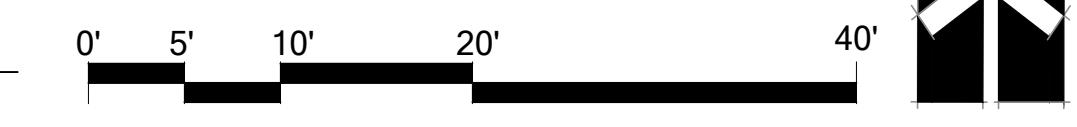
NOTES

1. CRITICAL AREAS DELINEATED ON 6/18/2019 BY THE WATERSHED COMPANY; 750 6TH ST S, KIRKLAND WA, 98033; (425) 822-5242.
2. SURVEY DATED 2/11/20; PROVIDED BY PLOG; 22525 SE 64TH PL, ISSAQAH WA, 98027; (206) 420-7130.
3. ENTIRE SUBJECT PARCEL LOCATED WITHIN 115-FT STREAM BUFFER; STANDARD BUFFER NOT SHOWN IN EXTENTS OF PLAN.

SHEET INDEX

- W1 EXISTING CONDITIONS
- W2 PROPOSED IMPACTS ASSESSMENT
- W3 MITIGATION AND PLANTING PLAN
- W4 PLANT SCHEDULES AND SITE PREPARATION
- W5 PLANT INSTALLATION DETAILS AND NOTES
- W6 MITIGATION PLAN NOTES

PERMIT SET - NOT FOR CONSTRUCTION
LFP GAREY RUE

 PREPARED FOR MARK GAREY
PARCEL #4022900497
36XX NE 205TH ST
LAKE FOREST PARK, WA


2021-RUE-0001

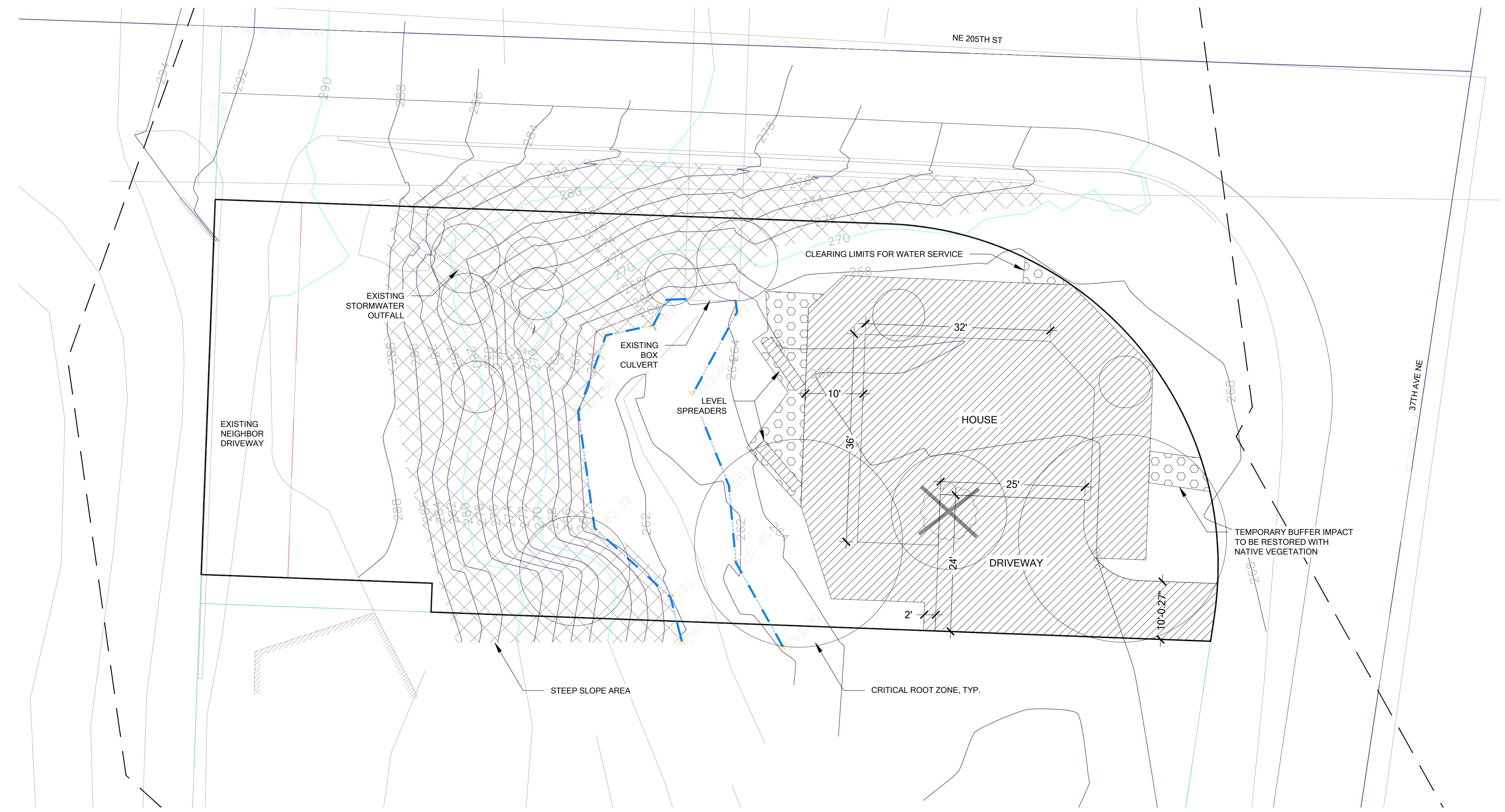
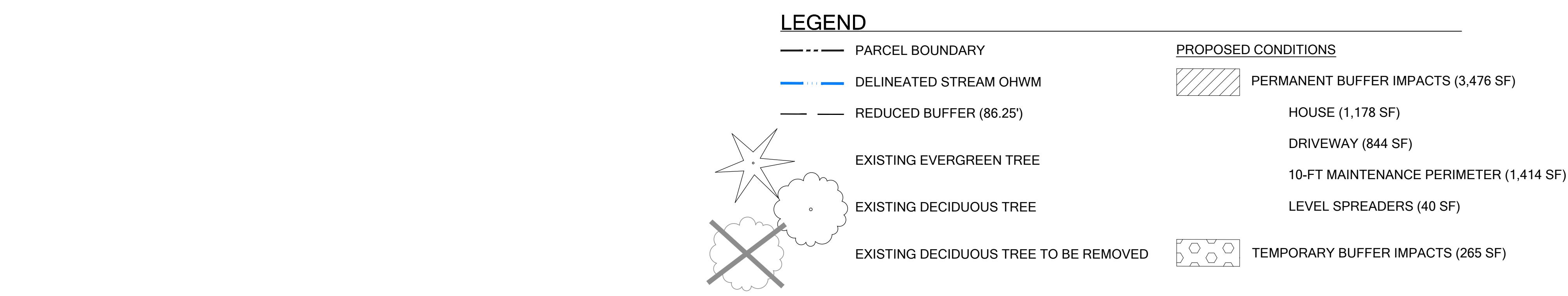
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190405

 SHEET NUMBER:
W1 OF 6

 PROJECT MANAGER: NL
DESIGNED: AK
DRAFTED: AK
CHECKED: MF
JOB NUMBER:
190405

 DATE PRINTED BY
2021-02-11 BY AK



PROPOSED IMPACTS ASSESSMENT

SCALE 1" = 10'

0' 5' 10' 20' 40'

 2021-RUE-0001
 W2 OF 6

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PERMIT SET - NOT FOR CONSTRUCTION

LFP GAREY RUE

 PREPARED FOR MARK GAREY
 PARCEL #4022900497
 36XX NE 205TH ST

LAKE FOREST PARK, WA

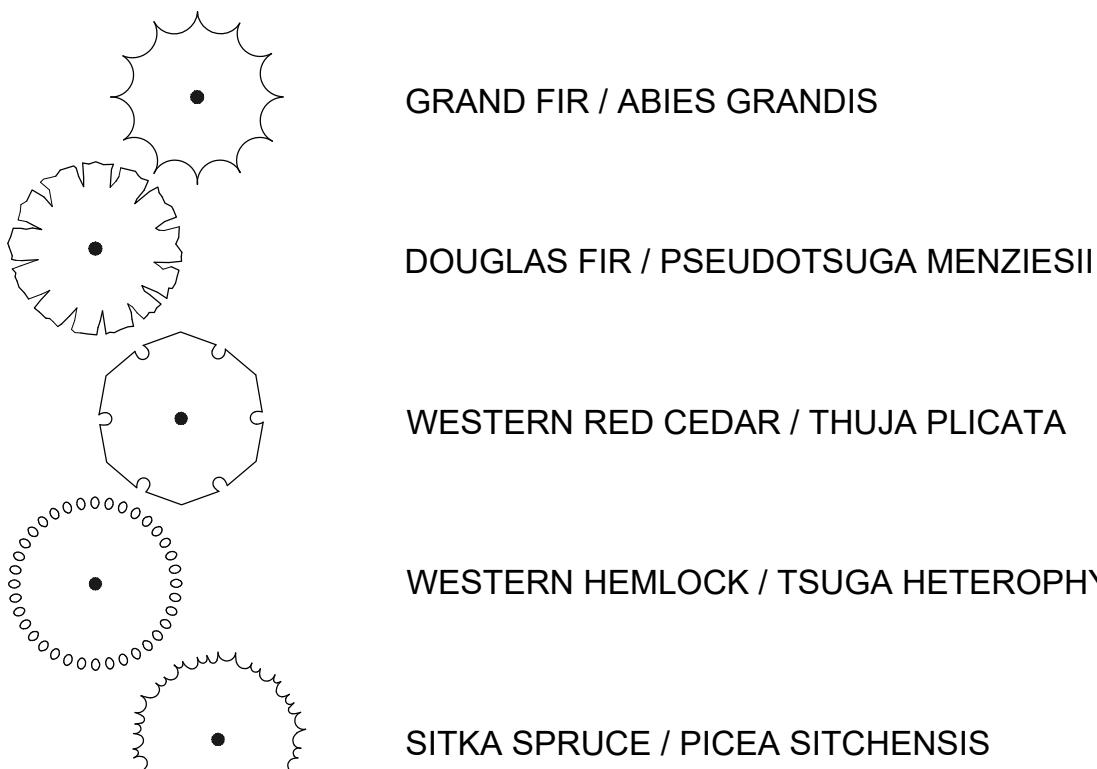
NO.	DATE	SUBMITTALS & REVISIONS	
		DESCRIPTION	MITIGATION PLAN
1	11/24/20	BY AK	

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

 PROJECT MANAGER: NL
 DESIGNED: AK
 DRAFTED: AK
 CHECKED: MF
 JOB NUMBER: 190405

 SHEET NUMBER:
 W2 OF 6
 PRINTED BY
 DATE

LEGEND



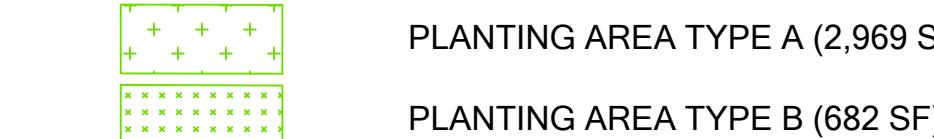
PARCEL BOUNDARY
DELINEATED STREAM OHWM
REDUCED BUFFER (86.25')

EXISTING EVERGREEN TREE
EXISTING DECIDUOUS TREE

EXISTING DECIDUOUS TREE TO BE REMOVED

PROPOSED CONDITIONS

MITIGATION AREA (3,651 SF)



SPLIT RAIL FENCE (205 LF)
COIR WATTLE (146 LF)

W5
W5
1
2

NOTES

- COIR WATTLE IS SHOWN OFFSET FOR CLARITY PURPOSES; WATTLE SHALL BE PLACED ALONG DELINEATED BOUNDARY OF STREAM OR PROPERTY LINE WHERE STREAM BOUNDARY IS OFF-SITE.
- SEE INVASIVE PLANT REMOVAL AND SITE PREPARATION DETAILS ON SHEET W5.
- SEE PLANT SCHEDULES FOR PLANTING AREAS ON SHEET W4.

LFP GAREY RUE
PREPARED FOR MARK GAREY
PARCEL #4022900497
36XX NE 205TH ST
LAKE FOREST PARK, WA

PERMIT SET - NOT FOR CONSTRUCTION

NO.	DATE	SUBMITTALS & REVISIONS	
		DESCRIPTION	BY
1	11/24/20	MITIGATION PLAN	AK

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

PROJECT MANAGER: NL
DESIGNED: AK
DRAFTED: AK
CHECKED: MF
JOB NUMBER:

190405

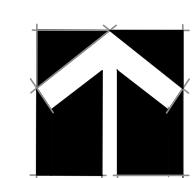
SHEET NUMBER:
W3 OF 6

PRINTED BY
DATE
2021-RUE-0001

MITIGATION AND PLANTING PLAN

SCALE 1" = 10'

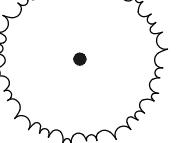
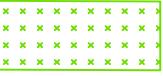
0' 5' 10' 20' 40'

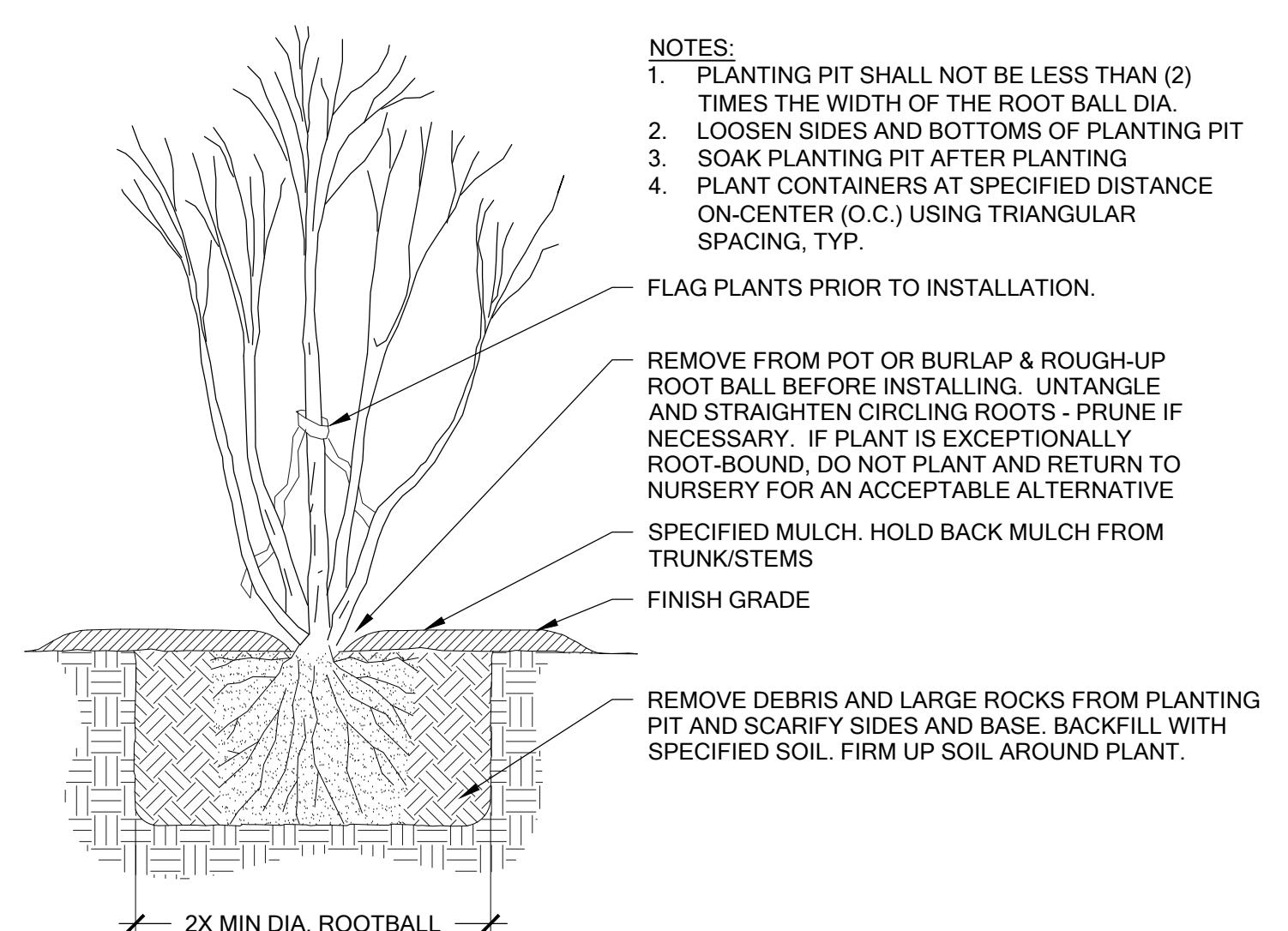


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PLANTING AREA TYPE A (2,969 SF)

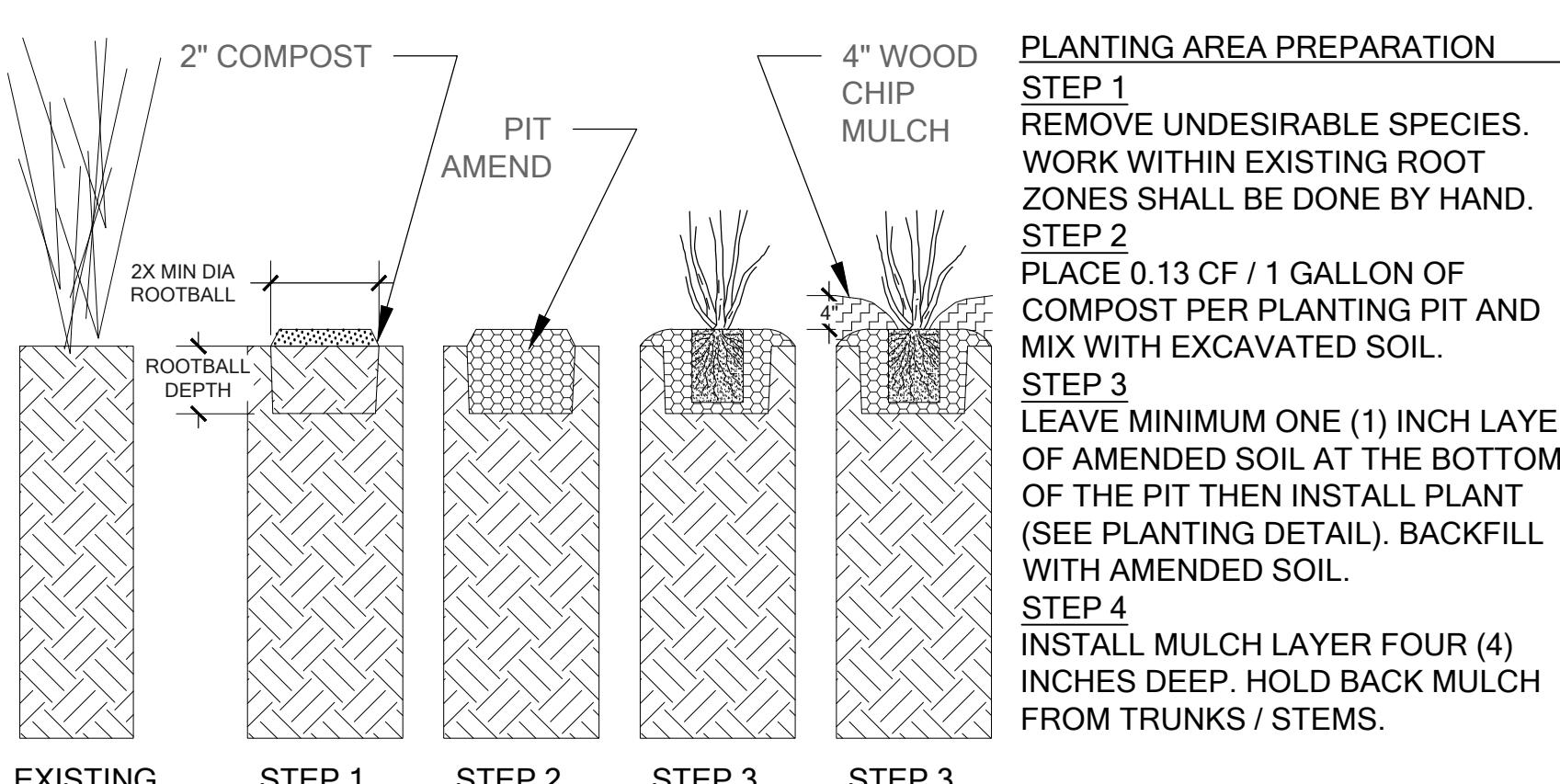
PLANTING AREA TYPE B (682 SF)

<u>TREES</u>	<u>COMMON / BOTANICAL NAME</u>	<u>SIZE</u>	<u>QTY</u>	<u>SPACING</u>
	SITKA SPRUCE / <i>PICEA SITCHENSIS</i>	2 GALLON	9	PER PLAN
	SALIX SITCHENSIS / SITKA WILLOW	LIVESTAKE	25	30" O.C.
<u>TOTAL TREES</u>				34
<u>SHRUBS</u>	<u>COMMON / BOTANICAL NAME</u>	<u>SIZE</u>	<u>QTY</u>	<u>SPACING</u>
	CORNUS SERICEA / RED-TWIG DOGWOOD	LIVESTAKE	25	30" O.C.
	LONICERA INVOLUCRATA / BLACK TWINBERRY	LIVESTAKE	25	30" O.C.
	PHYSOCARPUS CAPITATUS / PACIFIC NINEBACK	LIVESTAKE	25	30" O.C.
<u>TOTAL SHRUBS</u>				75



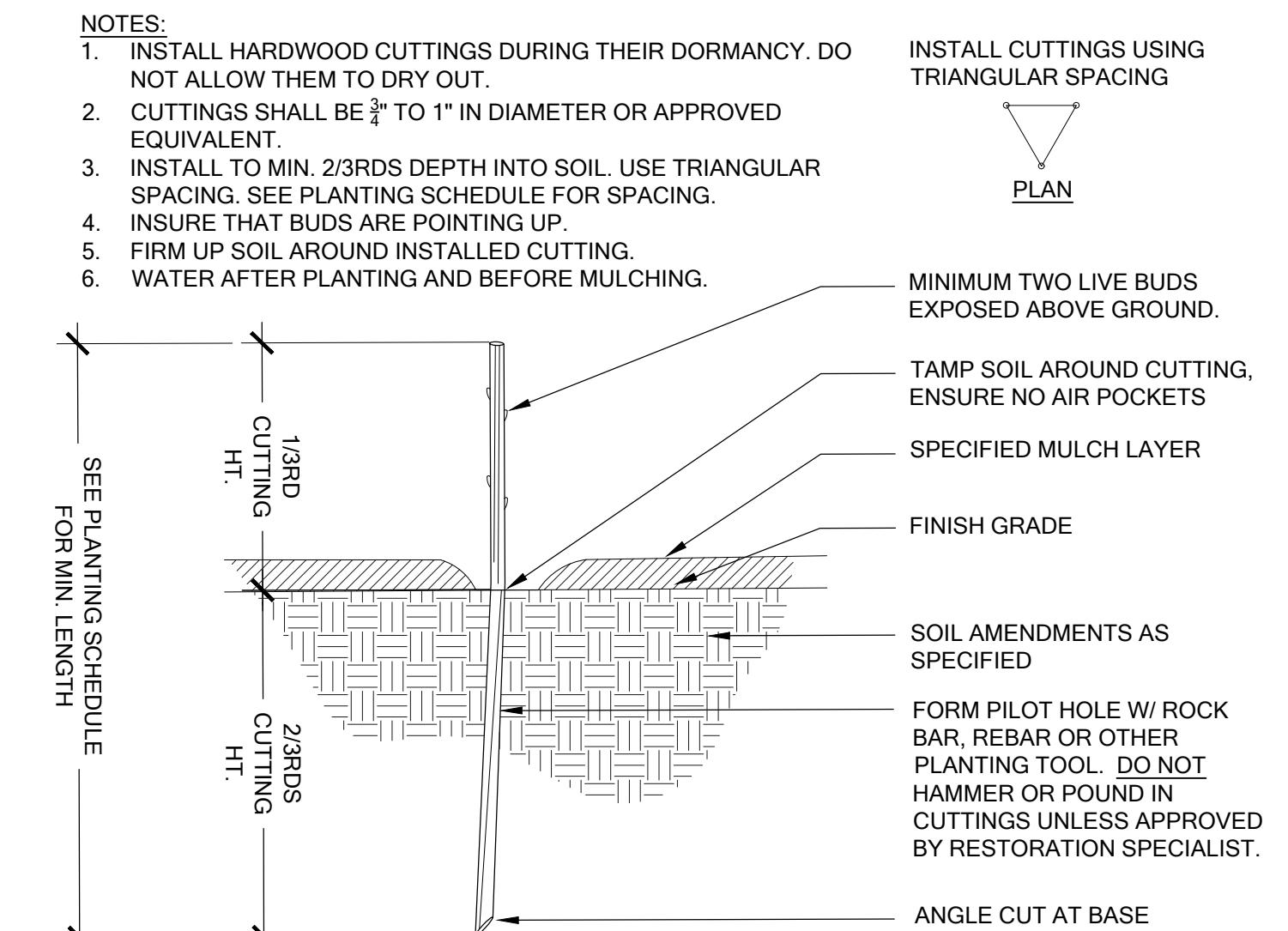
2 CONTAINER PLANTING

Scale: NTS



1 SITE PREPARATION

Scale: N



3 LIVE STAKE PLANTING

Scale: NTS

PLANT SCHEDULES AND SITE PREPARATION

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE

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

DEFINITIONS

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

SUBSTITUTIONS

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

INSPECTION

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

MEASUREMENT OF PLANTS

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

SUBMITTALS

PROPOSED PLANT SOURCES

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

PRODUCT CERTIFICATES

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

DELIVERY, HANDLING, & STORAGE

NOTIFICATION

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

PLANT MATERIALS

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

WARRANTY

PLANT WARRANTY

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

REPLACEMENT

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

PLANT MATERIAL

GENERAL

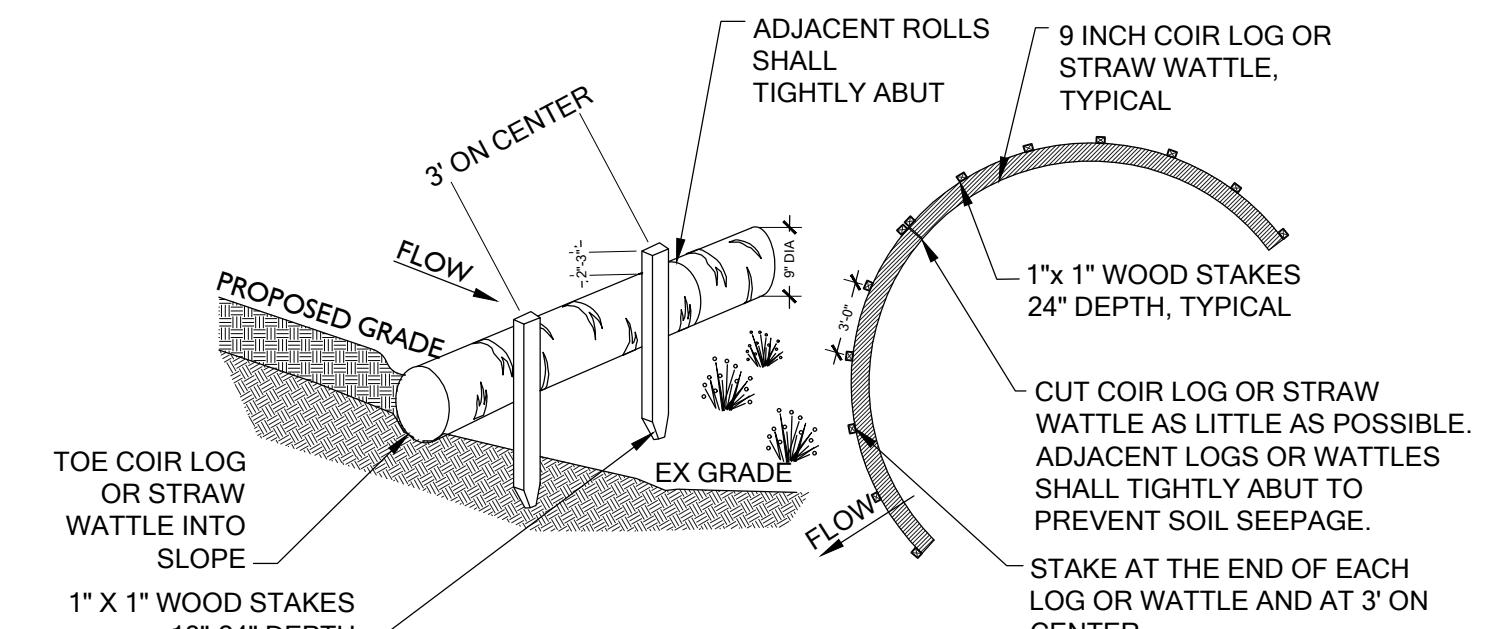
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES

SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT

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



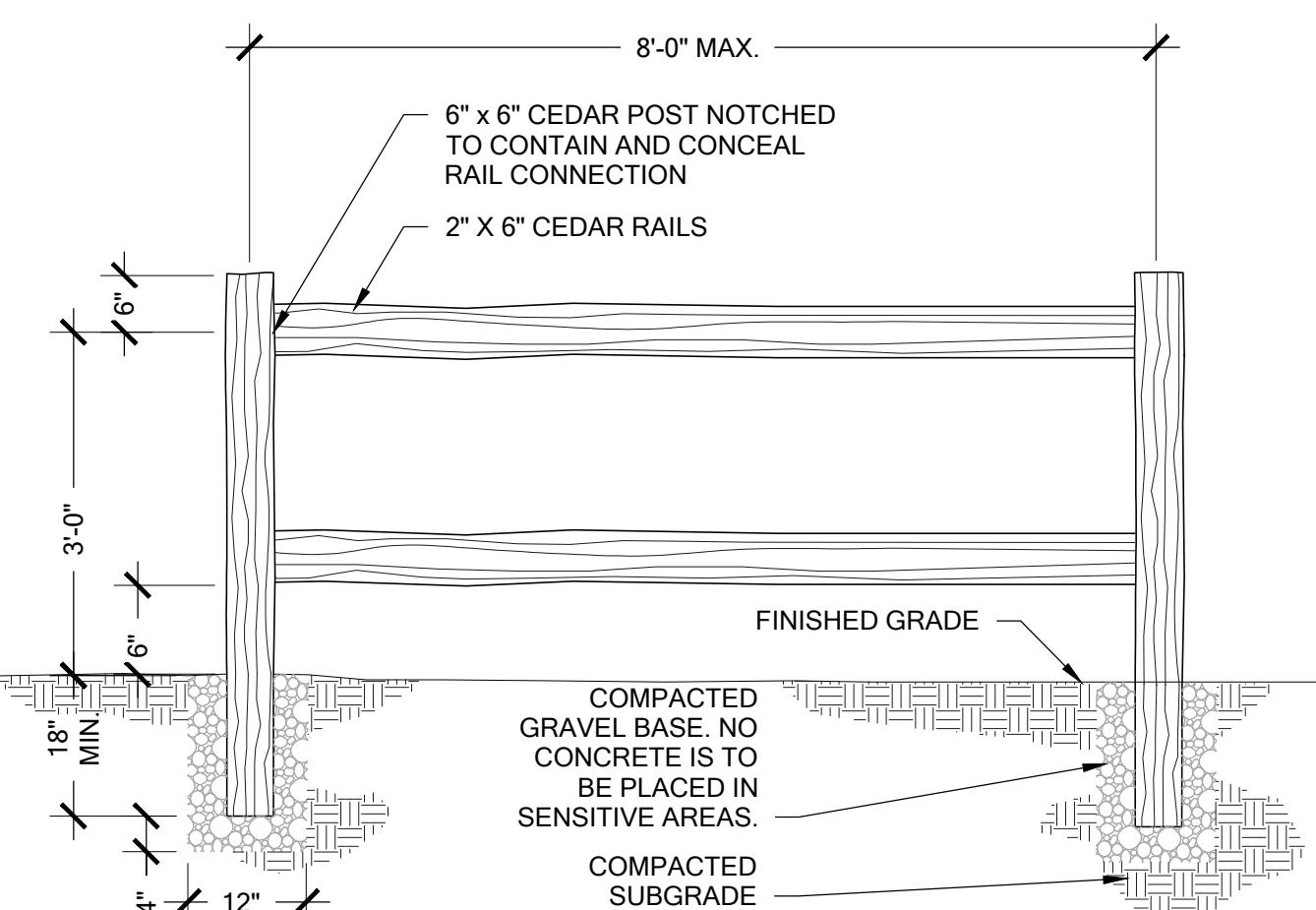
PLAN

NOTES

1. COIR LOG OR STRAW WATTLE SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES
2. COIR LOG OR STRAW WATTLE SHALL BE 8-10 INCH IN DIAMETER AND INSTALLED PER SURFACE WATER DESIGN MANUAL - APPENDIX D (D.2.1.2.5)
3. STAKING: WOODEN STAKES ARE RECOMMENDED TO SECURE THE COIR LOG OR STRAW WATTLE. BE SURE TO USE A STAKE THAT IS LONG ENOUGH TO PROTRUDE SEVERAL INCHES ABOVE THE COIR LOG OR STRAW WATTLE: 18" IS A GOOD LENGTH FOR HARD, ROCKY SOIL; FOR SOFT LOAMY SOIL USE A 24" STAKE.
4. WHEN INSTALLING RUNNING LENGTHS OF COIR LOG OR STRAW WATTLE, BUTT THE SECOND LOG TIGHTLY AGAINST THE FIRST; DO NOT OVERLAP THE ENDS.
5. STAKE THE LOGS OR WATTERLES AT EACH END AND THREE (3) FEET ON CENTER. STAKES SHOULD BE DRIVEN OUTSIDE THE COIR LOG OR STRAW WATTLE. A HEAVY SEDIMENT LOAD WILL TEND TO PICK UP THE COIR LOG OR STRAW WATTLE AND COULD PULL IT OFF THE STAKES IF THEY ARE DRIVEN DOWN TOO LOW.
6. WHEN COIR LOG OR STRAW WATTLE ARE USED FOR FLAT GROUND APPLICATIONS, DRIVE THE STAKES STRAIGHT DOWN; WHEN INSTALLING COIR LOG OR STRAW WATTLE ON SLOPES, DRIVE THE STAKES PERPENDICULAR TO THE SLOPE. DRIVE THE FIRST END STAKE OF THE SECOND COIR LOG OR STRAW WATTLE AT AN ANGLE TOWARD THE FIRST COIR LOG OR STRAW WATTLE IN ORDER TO HELP ABUT THEM TIGHTLY TOGETHER.

1 COIR WATTLE

Scale: NTS



2 SPLIT RAIL FENCE

Scale: NTS

PERMIT SET - NOT FOR CONSTRUCTION

SUBMITTALS & REVISIONS	
NO.	DATE
1	11/24/20

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

PROJECT MANAGER: NL
DESIGNED: AK
DRAFTED: AK
CHECKED: MF
JOB NUMBER: 190405

PRINTED BY:
SHEET NUMBER:
W5 OF 6

DATE:
2021-RUE-0001
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THE
WATERSHED
COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design
LFP GAREY RUE
PREPARED FOR MARK GAREY
PARCEL #4022900497
36XX NE 205TH ST
LAKE FOREST PARK, WA

PLANT INSTALLATION DETAILS AND NOTES

Mitigation Plan Notes

Overview

This plan has been prepared to enhance on-site stream buffer function as compensation for stream buffer impacts associated with the development of a single-family residence. The existing conditions subject to the provisions of this mitigation plan are partially degraded and contain a mixture of native and non-native invasive vegetation such as Himalayan blackberry, knotweed and English ivy.

The plan calls for enhancement of 3,651 square feet of stream buffer through the removal of invasive species and planting of native trees, shrubs and groundcover.

Mitigation Area Work Sequence (See Materials for Items in Bold)

A restoration specialist shall make site visits to verify the following project milestones:

1. Mark the clearing limits with high visibility fencing or similar means.
2. Install erosion control measures as shown on the site preparation plan (sheet W3).
3. Prepare site soils per the site preparation plan (sheets W4 and W5).
4. Install native plants per planting details on sheet W4 and W5.
 - A. Native plant installation shall occur during the dormant season (October 15th through March 1st) in frost-free periods only.
 - B. Layout plant material per plan for inspection by the restoration specialist. Plant substitutions will not be allowed without prior written approval of the restoration specialist.
 - C. Install plants per planting details
5. Water in each plant thoroughly to remove air pockets.
6. Install a temporary irrigation system capable of supplying at least 1-inch of water per week to the entire planted area during the dry season (June 1st through September 30th).
7. One year after initial planting, apply a slow-release, phosphorous-free, granular fertilizer to each installed plant.

Maintenance and Monitoring Plan

The site shall be maintained and monitored for five years following successful installation. Components of the 5-year maintenance and monitoring plan are detailed below.

The site shall be maintained for five years following successful installation.

1. Replace each plant found dead in the summer monitoring visits in the following dormant season (October 15 - March 1). Replacement shall be of the same species and size per plan unless otherwise approved by the restoration specialist.
2. General weeding for all planted areas
 - A. At least twice annually, remove competing grasses and weeds from around the base of each installed plant to a radius of 12 inches. Weeding should occur at least once in the spring and once in the summer. Thorough weeding will result in lower plant mortality and associated plant replacement costs.
 - B. More frequent weeding may be necessary depending on weed conditions that develop after plant installation.
 - C. Noxious weeds must be removed from the entire mitigation area, at least twice annually.
 - D. Do not use string trimmers in the vicinity of installed plants, as they may damage or kill the plants.
3. Maintain a four-inch-thick layer of woodchip mulch across the entire planting area. Mulch should be pulled back two inches from the plant stems.
4. Inspect and repair the irrigation system as necessary each spring. During at least the first two growing seasons, make sure that the entire planting area receives a minimum of one inch of water per week from June 1st through September 30th.

Goals

1. Within the proposed enhancement areas, establish dense native vegetation that is appropriate to the eco-region and site to improve habitat, water quality, and hydrologic function.
2. Increase habitat cover and refuge for amphibians, small mammals, and invertebrates. Provide perching, nesting and foraging habitat for native birds.
3. Reduce prevalence of invasive plants on the property.

Performance Standards

The standards listed below will be used to judge the success of the installation over time. If performance standards are met at the end of year 5, the site will then be deemed successful.

1. **SURVIVAL:** Achieve 100% survival of installed trees and shrubs by the end of year 1. Achieve 80% survival of installed trees and shrubs from year 2 through 3. This standard can be met through plant establishment or through replanting as necessary to achieve the required numbers. Survival will not be monitored after year 3.
2. **NATIVE WOODY PLANT COVER:**
 - A. Achieve a total of 30% cover of native vegetation in the understory (may consist of woody or herbaceous species) with a minimum 30% cover of native woody species (trees/shrubs) by year 2. Native cover will include all installed, existing, or volunteer plants except for the existing canopy cover (tree species over 20 feet in height).
 - B. Achieve a total of 50% cover of native vegetation in the understory (may consist of woody or herbaceous species) with a minimum 30% cover of native woody species (trees/shrubs) by year 3. Native cover will include all installed, existing, or volunteer plants except for the existing canopy cover (tree species over 20 feet in height).
 - C. Achieve a total of 80% cover of native vegetation in the understory (may consist of woody or herbaceous species) with a minimum 50% cover of native woody species (trees/shrubs) by year 5. Native cover will include all installed, existing, or volunteer plants except for the existing canopy cover (tree species over 20 feet in height).
3. **SPECIES DIVERSITY:** Establish at least four native tree species, five native shrub species, and two native groundcover species in the mitigation area and maintain this diversity through year 3. Native volunteer species and existing vegetation may count towards these standards.
4. **INVASIVE COVER:** Area cover for all non-native, invasive and noxious weeds will not exceed 10% at any year during the monitoring period. Invasive plants include those on the King County or Washington State noxious weeds lists.

Monitoring Methods

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

An as-built plan will be prepared by the restoration professional prior to the beginning of the monitoring period. The as-built plan will be a mark-up of the planting plans included in this plan set. The as-built plan will document any departures in plant placement or other components from the proposed plan.

Monitoring will take place once annually in the fall for five years. Year-1 monitoring will commence in the first fall subsequent to installation.

The formal monitoring visit shall record and report the following in an annual report, available upon request by the City of Lake Forest Park:

1. Visual assessment of the overall site.
2. Year-1 assessment of plant survival. Year-2 through year-3 counts of established native trees and shrubs by species, to the extent feasible.
3. Counts of dead plants or complete plant census where mortality is significant in any monitoring year.
4. Estimate of native cover in the mitigation area through line-intercept methodology at a minimum of two transects.
5. Estimate of native weed cover in the mitigation area through line-intercept methodology at a minimum of two transects.
6. Photographic documentation from at least three fixed reference points.
7. Any intrusions into or clearing of the planting areas, vandalism, or other actions that impair the intended functions of the mitigation area.
8. Recommendations for maintenance or repair of any portion of the mitigation area.

Maintenance

The site will be maintained in accordance with the following instructions for at least five years following completion of construction:

1. Follow the recommendations noted in the previous monitoring site visit.
2. General weeding for all planted areas.
 - A. At least twice yearly, remove all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to a distance of 18 inches from the main plant stem. Weeding should occur at least twice during the spring and summer. Frequent weeding will result in lower mortality, lower plant replacement costs, and increased likelihood that the plan meets performance standards by year 5.

- B. More frequent weeding may be necessary depending on weed conditions that develop after plant installation.

- C. Do not weed the area near the plant bases with string trimmer (weed whacker/weed eater). Native plants are easily damaged or killed, and weeds easily recover after trimming.

- D. Selective applications of herbicide may be needed to control invasive weeds, especially when intermixed with native species. Herbicide application, when necessary, shall be conducted only by a state-licensed applicator.

3. Apply slow-release aquatic safe phosphorous-free, granular fertilizer to each installed plant within the wetland/stream buffer annually in the spring (by June 1) of years 2 through 5. Do not apply fertilizer into wetlands or streams.

4. Replace mulch as necessary to maintain a 4-inch-thick layer, retain soil moisture, and limit weeds.

5. Replace each plant found dead in the summer monitoring visits during the upcoming dormant season (October 15 to March 1), for best survival.

6. The property owner will ensure that water is provided for the wetland/stream buffer planting areas with a minimum of 1 inch of water per week from June 1 through September 30 for the first two years following installation, through the operation of a temporary irrigation system at minimum. Less water is needed during March, April, May and October.

Construction Notes and Specifications

The restoration professional will monitor:

1. All site preparation.
 - A. Weed removal.
 - B. Soil preparation.
 - C. Mulch placement.
2. Plant material inspection.
 - A. Plant material delivery inspection.
 - B. 100% plant installation inspection.

Mitigation Planting and Irrigation

1. Install mitigation plants during the dormant season (October 15 - March 1).
 - A. Prepare soil per detail and install plants per detail.
2. Install a temporary, above ground irrigation system to provide full coverage to all installed plants within the wetland/stream buffers.

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 2 through 5 and not in the first year.
2. **Fertilizer (for near aquatic environments):** Slow-release, phosphorous-free granular fertilizer. Label must indicate that product is safe for aquatic environments. Follow manufacturer's instructions for use. Keep fertilizer in weather-tight container while on-site. Fertilizer is only to be applied in years 2 and 3, not in year one.
3. **Irrigation system:** Automated system capable of delivering at least one inch of water per week from June 1 through September 30 for at least the first three years following installation.
4. **Restoration professional:** Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects.
5. **Woodchip mulch:** "Arborist chips" (chipped woody material) approximately one to three inches in maximum dimension (not sawdust). This material is commonly available in large quantities from arborists or tree-pruning companies. Mulch shall not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris.

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.

NO.	DATE	DESCRIPTION	BY
1	11/24/20	MITIGATION PLAN	AK

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

PROJECT MANAGER: NL
DESIGNED: AK
DRAFTED: AK
CHECKED: MF
JOB NUMBER:

190405

SHEET NUMBER:

W6

PRINTED BY

DATE

Appendix B

STREAM DELINEATION REPORT

June 18, 2019

Mark Garey
14827 – 88th Ave. NE
Kenmore, WA 98028
Via email: cheektowaga@outlook.com

Re: Stream Delineation Study – 36XX NE 205th Street

The Watershed Company Reference Number: 190405

Dear Mark:

On April 19, 2019 Ecologists Nell Lund and Roen Hohlfeld visited the undeveloped lot north of 3611 NE 205th Street in the City of Lake Forest Park (parcel 4022900497). The Watershed Company previously visited the site on July 17, 2015 to delineate wetlands and streams. The purpose of this study was to document how site conditions have changed since a water main broke and flooded a portion of the subject parcel. The property was screened for wetlands, and the OHWM of the stream previously delineated by The Watershed Company (July 17, 2015) was re-assessed.

This letter summarizes the findings of this study, provides a brief review of the site plan provided by PLOG Real Estate and Consulting (Garey Residence Reasonable Use Exception, 5/22/2019), and details applicable federal, state, and local regulations. The following attachments are included:

- Stream Delineation Sketch
- Wetland Determination Data Form
- Garey Residence Reasonable Use Exception (PLOG Real Estate and Consulting, 6/15/2018 submittal and 5/22/2019 update)

Methods

Public-domain information on the subject property was reviewed for this delineation study. These sources include USDA Natural Resources Conservation Service Soil maps, U.S. Fish and Wildlife Service National Wetland Inventory maps, Washington Department of Fish and Wildlife (WDFW) interactive mapping programs (PHS on the Web), King County's GIS mapping website (iMAP), and the Lake Forest Park Sensitive Areas Map.

The study area was evaluated for wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement) (US Army Corps of Engineers [Corps] May 2010). Presence or absence of wetland area was determined on the basis of an examination of vegetation, soils, and hydrology. Any areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations along the site to determine presence or absence of wetland. One data point (DP-1A) was recorded and marked with a yellow- and black-striped flag.

The ordinary high water mark (OHWM) of Lyon Creek was determined based on the definition provided by the Washington Department of Fish and Wildlife and WAC 220-110-020(69). The OHWM is located by examining the bed and bank physical characteristics and vegetation to ascertain the water elevation for mean annual floods. Areas meeting the definition were determined to be the OHWM and flagged. Field observations were used to classify streams according to the City of Lake Forest Park Critical Areas Ordinance. The east bank of the stream was flagged by ecologists from The Watershed Company in July 2015.

The OHWM of the stream was reassessed after a water main break was repaired. For the updated April 2019 stream delineation study, the left (east) and right (west) banks of Lyon Creek were marked with five and eight blue- and white-striped flags, respectively.

Findings

The subject property is on the southwest corner of NE 205th Street and 37th Avenue NE. It is at the north end of City limits, in the northwest 1/4 of Section 3, Township 26 North, Range 4 East. The property is in the Lyon Creek basin of the Cedar-Sammamish Water Resource Inventory Area (WRIA-8). A segment of Lyon Creek flows through the subject property. West of Lyon Creek, the property slopes steeply up to the access easement on the west edge of the property. East of Lyon Creek the property slopes up moderately toward the adjacent roads. No wetlands were identified onsite. Site conditions are described below.

In January 2019, a water main break along NE 205th Street north of the site impacted the subject property. As a result of the break, Lyon Creek was flooded and a layer of sand sediment up to eight-inches deep was deposited on the subject parcel. The water main was repaired ahead of our April 2019 fieldwork and curb was added to NE 205th Street.

Lyon Creek

Lyon Creek divides the property roughly in half. It enters the site via a box culvert and meanders southeasterly. The channel is approximately 15 to 25 feet wide and is comprised of gravel and silt. Large woody debris, pool and riffle features are present in the channel. Although recent sediment deposition occurred in and near the stream channel, a survey of our OHWM delineation indicates little if any change to the east bank of Lyon Creek (see enclosed June 2018 and May 2019 site surveys).

The stream gradient is relatively flat and no natural fish-passage barriers were observed. According to WDFW mapping (Salmonscape), coho salmon spawning is documented in this stream segment; there is also modeled presence of fall chinook salmon, sockeye salmon, and winter steelhead.

Riparian buffer

Except for the existing driveway on the west end of the property, the buffer is vegetated by forest and shrub communities. Forest canopy is characterized by paper birch, western red cedar, Douglas-fir, red alder, and white poplar. Understory includes smooth sumac, salmonberry, osoberry, and knotweed. Groundcovers include Cooley's hedge nettle, lady fern, sword fern, and giant horsetail. Invasive knotweed, Himalayan blackberry, jewelweed, English holly, ivy, climbing nightshade, and reed canarygrass form locally-dominant patches.

One data point was recorded in a low spot within the southeast property corner to re-confirm our previous determination (July 17, 2015) that this area is non-wetland. This area has been affected by the water main break, with flooding depositing a layer of sand sediment approximately 8-inches deep. Therefore, soil assessment began below that deposition layer (see DP-1A). Vegetation in the area is dominated by jewelweed, Cooley's hedge nettle, reed canarygrass, and giant horsetail, mixed with blackberry vines. This area, which is under red alder canopy, is also interspersed with smooth sumac and sword fern, both have a facultative upland plant indicator status. Wetland hydrology parameters and hydric soil indicators were not met. Wetland conditions are not present.

Local Regulations

Streams in the City of Lake Forest Park are regulated under municipal code Chapter 16.16 – Environmentally Sensitive Areas.

Lyon Creek

Streams are classified as Type 1, 2 or 3 based on connectivity to Lake Washington, fish use, and seasonality of flow. Based on observed flows during the previous summer site visit (July 17, 2015), this segment of Lyon Creek is presumed to be perennial. As

described above, this is documented as a salmon-bearing stream. Therefore, it is a Type 1 stream (LFPMC 16.16.040). Type 1 streams in the City of Lake Forest Park require a standard 115 foot buffer or a minimum buffer width of 70 feet with enhancement (LFPMC 16.16.350). The standard and reduced stream buffers encumber the entire property. A 15-foot-setback, measured from the edge of the stream buffer, is also required.

Mitigation Sequencing

Pursuant to LFPMC 16.16.130, any plan to impact a critical area or critical area buffer must demonstrate that impacts were avoided where feasible, unavoidable impacts are minimized, and compensatory mitigation will occur.

Reasonable Use Exception (RUE)

Since the property is entirely encumbered by stream and stream buffer, any site development application would be eligible for a reasonable use exception to allow for reasonable economic use of the parcel (LFPMC 16.16.250). On residentially zoned parcels this translates to the ability to construct a reasonably sized residence. RUE permit applications are processed by City staff with approval required by the City's hearing examiner. The hearing examiner's decision criteria, as stated under LFPMC 16.16.250, are as follows (bold emphasis added):

C. The hearing examiner shall grant an exception only if:

- 1. Application of the requirements of this chapter will deny all reasonable economic use of the property; and*
- 2. There is no other reasonable economic use with less impact on the critical area; and*
- 3. The proposed development does not pose an unreasonable threat to the public health, safety, or welfare, on or off the proposed site, and is consistent with the general purposes of this chapter and the comprehensive plan; and*
- 4. Any alteration is the minimum necessary to allow for reasonable economic use of the property.*

D. The hearing examiner shall grant an exemption from the requirements of this chapter only to the minimum necessary extent to allow for reasonable economic use of the applicant's property.

E. The hearing examiner shall condition any exception from the requirements of this chapter upon conditions recommended by the city and upon compliance with any mitigation plan approved by the city.

F. For any in-water or wetland work it is the applicant's responsibility to obtain all state and federal approvals before beginning work.

To meet the 'minimum necessary' code requirements, projects permitted through an RUE typically involve a deviation from front and rear yard zoning setbacks. Setback exception decision criteria stated under LFPMC 16.16.240 is as follows:

C. The decision to grant a deviation shall be based on the following criteria:

- 1. The aggregate setbacks for the zoning front, rear, and side yard setbacks total 50 feet or more;*
- 2. Front and rear zoning setbacks are no less than 10 feet;*
- 3. Side zoning setbacks are no less than five feet;*
- 4. Significant vegetation is preserved;*
- 5. The applicant demonstrates to the city through submittal of an application and supporting documentation that the use of aggregate zoning setbacks will not:*
 - a. Be materially detrimental to the public welfare or injurious to adjacent property or development or alterations; and*
 - b. Alter the neighborhood character or the appropriate use or development of adjacent property; and*
 - c. Conflict with the general purposes and objectives of the comprehensive plan; and*
 - d. Degrade critical areas and critical areas buffer functions.*

RUE permitted developments commonly have a limited footprint, lack a yard beyond the 15-foot building setback, and require mitigation in the form of invasive plant removal followed by native plant restoration, likely on all areas of the lot not impacted by the home, yard, and driveway. Additionally, mitigation plantings require monitoring and maintenance at the applicant's expense for a minimum of five years (LFPMC 16.16.120) and a bond or other security mechanism to ensure successful establishment (LFPMC 16.16.150).

State and Federal Regulations

U.S. Army Corps of Engineers (Corps)/Washington Department of Ecology (Ecology)

The Corps, under section 404 of the Clean Water Act, and Ecology, under Section 401 of the Clean Water Act, are charged with reviewing, conditioning, and approving or denying certain permitted actions that result in discharges to streams. However, provided all site improvements remain above the stream's OHWM, no coordination with the Corps or Ecology will be necessary.

Washington Department of Fish and Wildlife (WDFW)

Chapter 77.55 of the RCW (the Hydraulic Code) gives WDFW the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of state waters." This provision includes any in-water work, the crossing or bridging of any state waters and can also include stormwater discharge to state waters. Thus, the proposed rain garden overflow may require coordination with WDFW. If a project meets regulatory requirements, WDFW will issue a Hydraulic Project Approval (HPA).

Through issuance of an HPA, WDFW can also restrict activities to a particular timeframe. Work is typically restricted to late summer and early fall. However, WDFW has in the past allowed upland stormwater improvements to occur at any time during the year.

References

Hruby, T. 2014. *Washington State Wetland Rating System for Western Washington: 2014 Update*. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. ed. J. S. Wakely, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2015. *National Engineering Handbook, Part 650 Engineering Field Handbook, Chapter 19 Hydrology*

Disclaimer

The information contained in this letter or report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, State and Federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,



Nell Lund, PWS
Senior Ecologist



Roen Holfield
Ecologist



Kenny Booth, AICP
Senior Planner

Enclosures

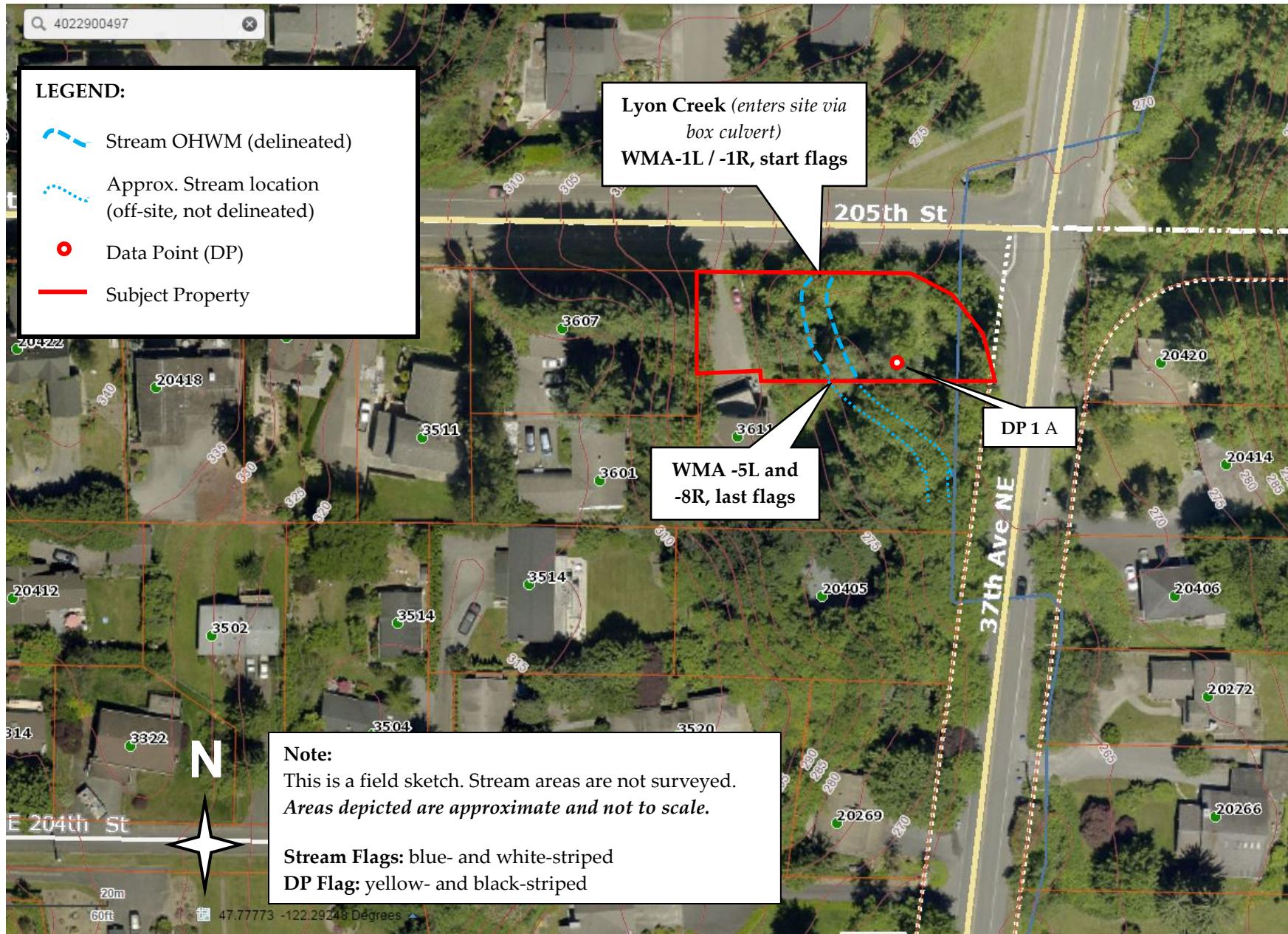
Wetland & Stream Delineation Sketch

Parcel No. 4022900497
North of 3611 NE 205th St.
Lake Forest Park, WA

Prepared for: Mark Garey
Site Visit: April 19, 2019
TWC Ref. No. 190405



750 Sixth Street South | Kirkland | WA 98033
p 425.822.5242 f 425.827.8136





THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM
Western Mountains, Valleys, and Coast Supplement to the
1987 COE Wetlands Delineation Manual

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

DP- 1A

Project Site:	36XX NE 205th St. (Parcel 4022900497)			Sampling Date:	4/19/2019		
Applicant/Owner:	Garey, Mark			Sampling Point:	DP- 1A		
Investigator:	N. Lund			City/County:	Lake Forest Park/King County		
Sect., Township, Range:	S 03	T 26	R 4	State:	WA		
Landform (hillslope, terrace, etc):	hillslope		Slope (%):	<5%			
Subregion (LRR):	A		Lat:	Long:	Datum:		
Soil Map Unit Name: Click here to enter text.			NWI classification: Click here to enter text.				
Are climatic/hydrologic conditions on the site typical for this time of year?			<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	(If no, explain in remarks.)
Are "Normal Circumstances" present on the site?			<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	
Are Vegetation <input type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?							
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic							(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Point within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Site has been altered by a water main break causing flooding and extensive sediment deposition.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1.	<i>Alnus rubra</i>	70	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)	
2.	<i>Thuja plicata</i>	15	N	FAC	Total Number of Dominant Species Across All Strata: 3 (B)	
3.					Percent of Dominant Species that are OBL, FACW, or FAC: 67% (A/B)	
4.						
		95	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m diam.)						Prevalence Index Worksheet
1.	<i>Rubus armeniacus</i>	65	Y	FAC	Total % Cover of OBL species x 1 =	
2.					FACW species x 2 =	
3.					FAC species x 3 =	
4.					FACU species x 4 =	
5.					UPL species x 5 =	
		65	= Total Cover		Column totals (A)	(B)
Herb Stratum (Plot size: 1m diam.)						Prevalence Index = B / A =
1.	<i>Polystichum munitum</i>	15	Y	FACU	Hydrophytic Vegetation Indicators	
2.	<i>Equisetum telmateia</i>	2	N	FACW	<input checked="" type="checkbox"/> Dominance test is > 50%	
3.					<input type="checkbox"/> Prevalence test is ≤ 3.0 *	
4.					<input type="checkbox"/> Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)	
5.					<input type="checkbox"/> Wetland Non-Vascular Plants *	
6.					<input type="checkbox"/> Problematic Hydrophytic Vegetation * (explain)	
7.						
8.						
9.						
10.						
11.						
		17	= Total Cover		* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody Vine Stratum (Plot size:)						Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
1.						
2.						
		0	= Total Cover			
% Bare Ground in Herb Stratum: 40						
Remarks:						

SOIL

Sampling Point – DP-1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
+8-0*							Sand	
0-9	10YR 3/2	100					Sandy clay loam	
9-14	10YR 4/2	15	10YR 3/6	5	C	M	Gravelly sandy clay loam	Mixed matrix
9-14	10YR 3/2	80					Gravelly sandy clay loam	Mixed matrix

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleayed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleayed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

- 2cm Muck (A10)
- Red Parent Material (TF2)
- Other (explain in remarks)
-

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Hydric soil present?

Yes

No

Depth (inches): _____

Remarks: *8-inch layer of sand on top of surface grade.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- Surface water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (explain in remarks)

Secondary Indicators (2 or more required):

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes No Depth (in):Water Table Present? Yes No Depth (in):Saturation Present? Yes No Depth (in):
(includes capillary fringe)Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils damp throughout profile.

Appendix C

ARBORIST REPORT

November 23, 2020

Mark J. Garey
Tel. 206-446-9090
Via email: cheektowaga@outlook.com

Re: Garey Residence Arborist Report

The Watershed Company Reference Number: 190405

Dear Mark:

We are pleased to present to you the findings of our tree inventory for your property in Lake Forest Park, WA (parcel #4022900497). ISA-Certified Arborist® Jake Robertson visited the property on November 17, 2020 to inventory and assess trees located on the subject parcel.

This report includes a summary of the site visit and regulatory implications related to tree retention and removal. This information will help the project team understand the implications of removal of inventoried trees. The following documents are appended:

- Tree Inventory Table
- Tree Inventory Map

Study Area

The subject property is 11,369 square feet in size and is currently undeveloped with an identified stream and corresponding buffer. A moderate slope is located on the northern and western portion of the parcel, but it has not been identified as an Erosion Hazard on King County iMap. See *Stream Delineation Study* dated June 18, 2019 by The Watershed Company for more information on environmentally critical areas. The subject property is a corner lot with single-family parcels to the south and west, NE 205th St forms the northern border, and 37th Ave NE forms the eastern border. The site is currently zoned for residential use (RS 9600).



Figure 1. Defined extent of parcel outlined in yellow. Images courtesy of King County iMap.

Methods

Trees within the study area were determined to be significant using the definition in the Lake Forest Park Municipal Code (LFPMC) Chapter 16.14. Lake Forest Park defines a significant tree as any evergreen or deciduous tree, six inches in diameter or greater, measured four feet above existing grade. Dead trees are not classified as significant per LFPMC 16.14.030. For this study,

the health of significant trees was depicted using a rating system of Excellent, Good, Fair, Poor, Severe, or Dead (Table 1).

In general, tree diameter was measured at four feet above the ground surface (diameter at breast height, or “DBH”) using a graduated metal logger’s DBH tape. Trees with multiple trunks arising from the ground were measured using methodology from The Guide for Plant Appraisal, 10th Edition (Council of Tree & Landscape Appraisers 2018). Briefly, the cross-sectional areas of stems contributing to the canopy were summed and used to generate a singular combined DBH for the tree. The singular DBH number allows for comparison to other single-stemmed trees and for more accurate permitting and tree retention calculations. Lake Forest Park does have additional protection for trees designated as Exceptional or Landmark. There are no Exceptional trees on-site but there is one Landmark tree that measured over 24 inches in diameter.

Trees were not tagged by The Watershed Company, but instead identified #1 - #13 on an annotated PDF (See Appendices). Canopy radius is the average branch length from the trunk as measured with a tape measure; tree height is a visual estimate. A basic Level 1 visual assessment was used to evaluate the health and condition of trees in the study area in accordance with the International Society of Arboriculture (ISA) standards.

Table 1. Assessment of plant condition considers health, structure, and form. Each may be described in rating categories that will be translated into a percent rating. (CTLA 2018)

Rating Category	Condition Components			Percent Rating
	Health	Structure	Form	
Excellent - 1	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation.	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	81% to 100%
Good - 2	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.	61% to 80%
Fair - 3	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may compromise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defect. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.	41% to 60%
Poor - 4	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.	21% to 40%
Severe - 5	Poor vigor. Appears dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	6% to 20%
Dead - 6				0% to 5%

Tree Inventory Results

A total of 13 trees were inventoried and assessed within the study area. Of these 13 trees, two were dead and therefore are not significant, per LFPMC 16.14.030, and not subject to Lake Forest Park regulations. Red alder (*Alnus rubra*) is the most abundant species with eight

individuals, followed by three black cottonwood (*Populus trichocarpa*) trees. The largest inventoried tree is a western red cedar (*Thuja plicata*, Tree #9) with a DBH of 36.3-inches followed by a black cottonwood (Tree #11) with a DBH of 20-inches. A cherry tree (*Prunus sp.*) was also inventoried and assessed on-site. Tree #12 is a black cottonwood with a measured DBH of 36-inches, however, it was found to be dead and therefore not classified as a significant or a landmark tree. A complete table of tree attribute data can be found in *Appendix A - Tree Inventory Table*.

Table 2. Summary of inventoried tree species within the study area.

Tag ID	Scientific Name / Common Name	Trunk DBH (inches)	Significant (Y/N)	Landmark (Y/N)
1	<i>Alnus rubra</i> (Red alder)	12.3	Y	N
2	<i>Alnus rubra</i> (Red alder)	8.6	Y	N
3	<i>Alnus rubra</i> (Red alder)	8.5	Y	N
4	<i>Populus trichocarpa</i> (Black cottonwood)	18.0	N	N
5	<i>Alnus rubra</i> (Red alder)	19.0	Y	N
6	<i>Alnus rubra</i> (Red alder)	8.6	Y	N
7	<i>Alnus rubra</i> (Red alder)	8.5	Y	N
8	<i>Alnus rubra</i> (Red alder)	14.0	Y	N
9	<i>Thuja plicata</i> (Western red cedar)	36.3	Y	Y
10	<i>Prunus sp.</i> (Cherry sp.)	9.0	Y	N
11	<i>Populus trichocarpa</i> (Black cottonwood)	20.0	Y	N
12	<i>Populus trichocarpa</i> (Black cottonwood)	36.0	N	N
13	<i>Alnus rubra</i> (Red alder)	8.5	Y	N

Lake Forest Park Municipal Code Requirements

Lake Forest Park regulates tree activity under LFPMC 16.14 Tree Canopy Preservation and Enhancement. Retention of significant and landmark trees promotes a more diverse, healthier, and greater tree canopy coverage which benefits future generations of residents while protecting and respecting private property rights.

Tree Permit Approval Criteria and Conditions - LFPMC 16.14.070

LFPMC 16.14.070 includes regulations related to tree preservation and enhancement. Due to the inventoried trees being rooted within a critical area buffer, a major tree permit is required.

Development proposals associated with this tree permit must demonstrate prioritization of the requirements listed in LFPMC 16.14.070.D. Proposals shall place a strong emphasis on tree protection and incorporate trees as a site amenity. Per LPFMC, tree retention plans shall demonstrate prioritization of the following:

- i. Existing viable trees in groups or stands;*
- ii. Exceptional trees or other high quality open-grown, windfirm trees;*
- iii. Landmark trees;*
- iv. Trees in critical area buffers, or adjacent to critical area buffers;*
- v. Trees that are interdependent with and therefore critical to the integrity of stands of other protected trees;*
- vi. Other individual trees that will be windfirm, high quality trees if retained;*
- vii. Other trees that provide wildlife or riparian habitat, screening, buffering or other amenities;*
- viii. Trees that help to protect neighbors' trees from windthrow, or other trees within required yard setbacks or on the perimeter; and*
- ix. Trees next to parks or other open space areas.*

Environmentally Critical Areas and Buffers – LFPMC 16.14.080

Removal of trees within critical areas and their buffers is generally prohibited, with specific exceptions outlined under LFPMC 16.14.080.A. Pursuant to LFPMC 16.14.080.A.4, the removal of non-exceptional trees from within critical areas and buffers is allowed when the tree removal is part of an approved action under LFPMC 16.16. If allowed, tree removal is permissible between April 1st and September 30th and proposals must be accompanied by a temporary erosion control plan approved by the administrator.

Additionally, at the request of the administrator, LFPMC 16.14.080.C requires that a qualified professional determine whether or not the tree removal proposed within a critical area buffer is likely to cause damage to the critical area or buffer or reduce its ecological function.

Tree Replacement 16.14.090

The approval of a major tree permit is conditioned upon several factors as outlined in LFPMC 16.14.070.D. The applicant must submit a tree replacement plan demonstrating that replacement trees will, at a minimum, meet applicable canopy coverage goals (see Site Canopy Assessment, below). The City of Lake Forest Park has canopy coverage goals based upon lot size and land use as shown in Table 2: Canopy Coverage Goal in LFPMC 16.14.070.A.

If replacement trees are required, to be compliant with the canopy coverage goal of the city, then trees should be selected from the Approved General Tree List for the City of Lake Forest Park (<https://www.cityoflfp.com/239/Tree-List>) and should be evergreen, native species.

Invasive trees, as defined by the city in LFPMC 16.14.030 cannot be used as replacement trees. All replacement trees must meet the minimum standards for size and quality according to the current edition of the ANSI Z60.1 standard for nursery stock.

Site Canopy Assessment

Parcel #4022900497 is zoned single-family residential and has an area of 11,369 square feet per the Boundary & Topographic Survey by PLOG Engineering, dated May 22, 2019. Canopy coverage is measured by the percentage of canopy provided by existing trees, or the projected canopy coverage to be provided by newly planted or immature trees. The canopy coverage goal for lots between 10,000 to 15,000 square feet is 39 percent.

Using i-Tree Canopy analysis and taking 30 survey points of the project area, tree canopy cover dominates the site at approximately 90-percent of the total area while the remaining 10-percent is understory vegetation or the driveway for the home located at 3611 NE 205th St. At the time of this report, an architectural design has not been provided to outline proposed development.

Tree Protection Measures

To ensure the survival of the significant trees that will be marked for retention prior to construction, these industry standard best management practices should be followed:

- **Tree protection barriers:** A temporary enclosure erected around a tree to be protected at the critical root zone (CRZ). The City defines the CRZ as an area equal to one-foot radius from the base of the tree's trunk for each one inch of the tree's diameter at 4.5 feet above grade). Tree protection barriers should consist of 6-foot-high chain link fence with a sign that states: "Tree Protection Area" on all sides of the fence. Protection barriers are to remain on-site until the director authorizes their removal.
- **Minimize root zone compaction:** A 6-inch layer of coarse mulch or woodchips is to be placed beneath the dripline of the protected trees. Mulch is to be kept 12-inches from the trunk.
- **Hand dig:** All excavation done within the dripline, or when roots are encountered smaller than 2-inches, should be done by hand or by using an air spade.
- **Minimize injury:** When tree roots must be removed, cut roots cleanly using a sharp saw or pruners. Do not rip or cut tree roots with heavy equipment.

- **Monitor construction:** An ISA-certified arborist should be present on-site during construction activities within the CRZ of retained trees to monitor tree protection, assist with changes in the field, and document construction impacts.

Limitations of This Study

The findings of this report are based on the best available science and are limited to the scope, budget, and site conditions at the time of the assessment. Although the information in this report is based on sound methodology, internal structural flaws (such as cracking or root rot) or other conditions that are not visible cannot be detected with this limited basic visual screening. Trees are inherently unpredictable. Even vigorous and healthy trees can fail due to high winds, heavy snow, ice storms, or rain.

This report is based on the current observable conditions and may not represent future conditions of the trees. Any change in site condition, including clearing and grading, will alter the condition of remaining trees in a way that is not predictable. Remaining trees should be monitored for signs of stress, pathogens and structural defects after clearing and home construction.

The conclusions contained within this report have been made for permitting purposes only. They are not intended for use by the property owner or adjacent homeowner to evaluate tree risk. Tree assessment related to occupant safety and safeguarding new structures or other targets must be done separately and after building has been completed. Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

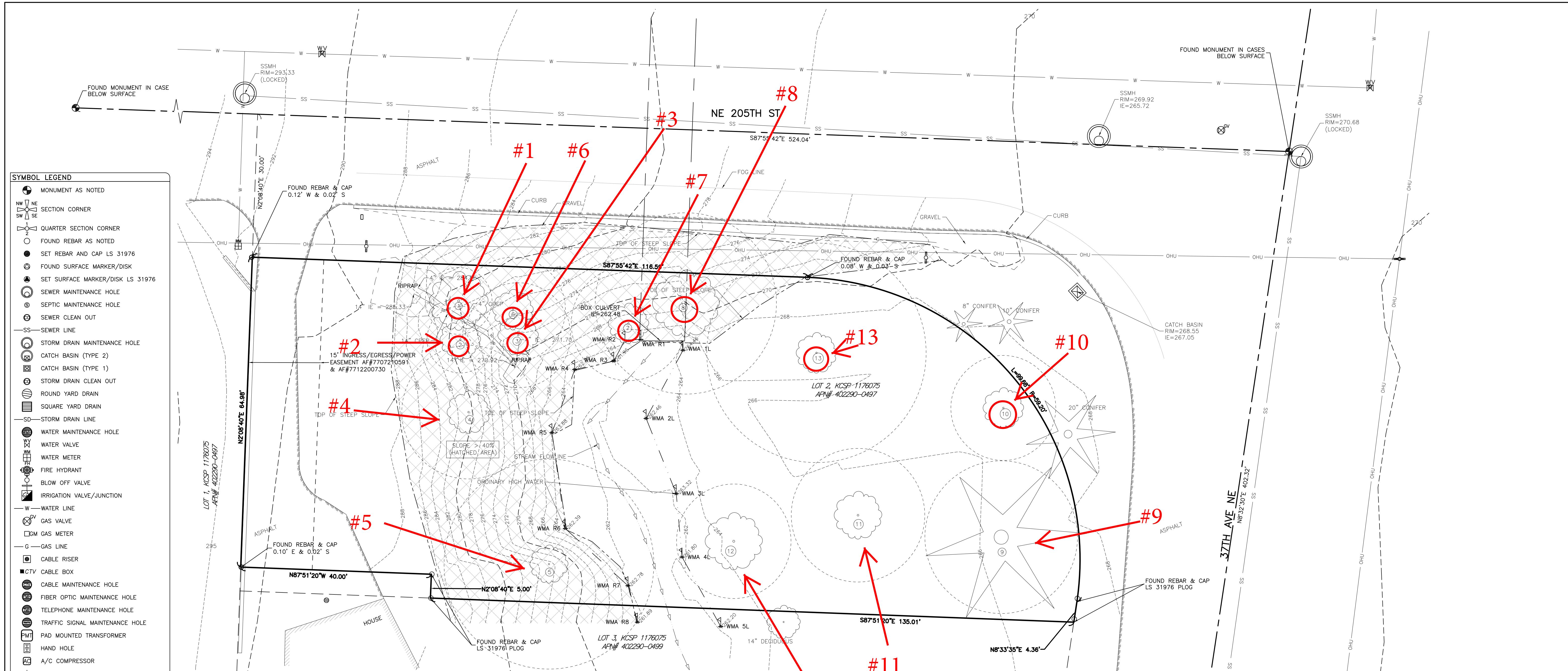
A handwritten signature in black ink, appearing to read "J. Robertson".

Jake Robertson
ISA Certified Arborist® PN-8934A

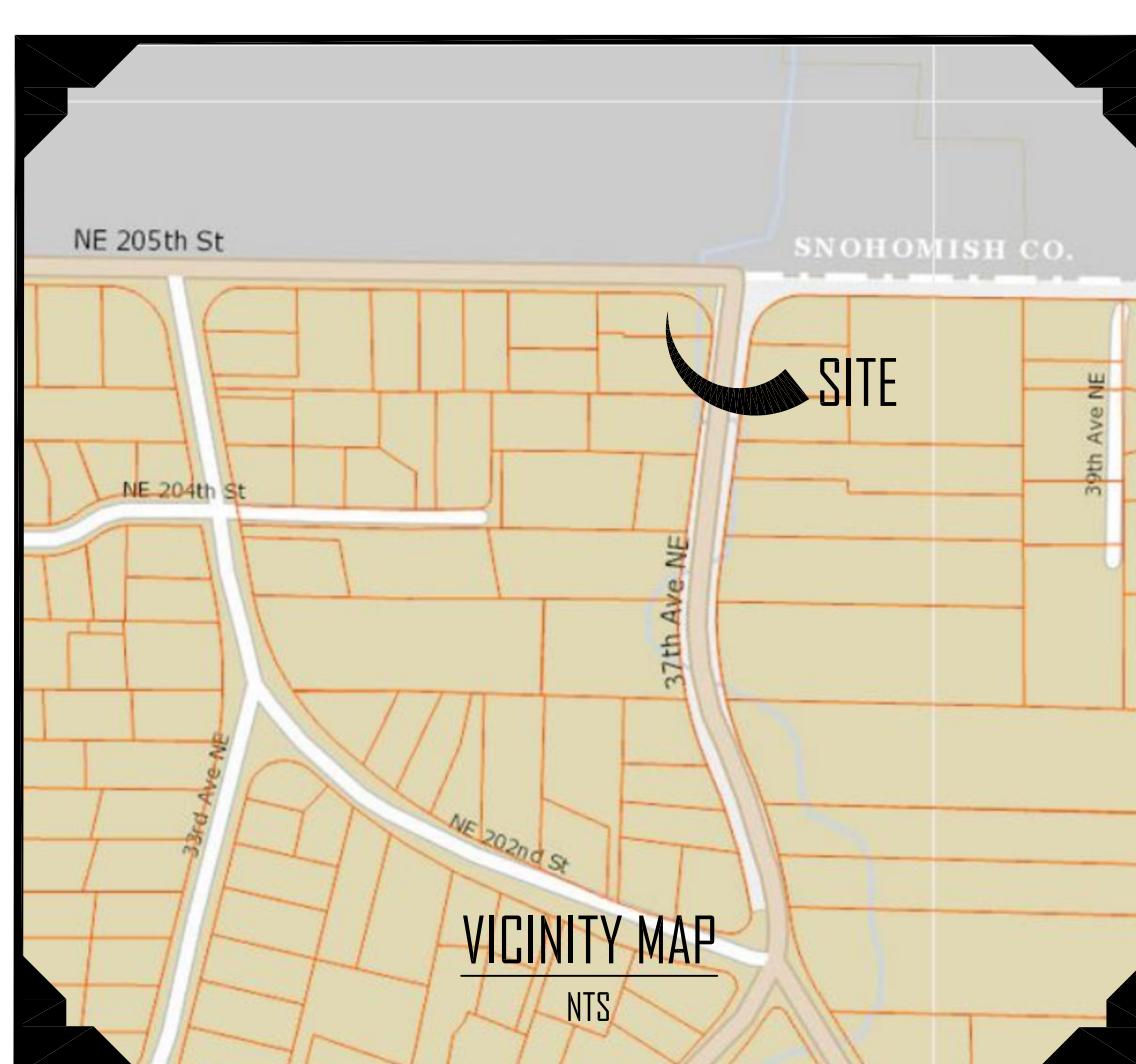
Appendix A: Tree Inventory Table

TAG #	TREE NAME	EV / DEC	# STEMS	COMB. DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT (Y/N)	LANDMARK (Y/N)	NOTES
1	Alnus rubra (Red alder)	D	1	12.3	35	7	Fair	Y	N	Located on steep slope.
2	Alnus rubra (Red alder)	D	1	8.6	40	7	Fair	Y	N	Located on steep slope.
3	Alnus rubra (Red alder)	D	1	8.5	40	11	Fair	Y	N	Located on steep slope.
4	Populus trichocarpa (Black cottonwood)	D	1	18.0	45	14	Dead	N	N	
5	Alnus rubra (Red alder)	D	1	19.0	45	22	Poor	Y	N	Has an uncorrected lean to the East over the stream. Growing in sandy soil which is showing some signs of uplift.
6	Alnus rubra (Red alder)	D	1	8.6	25	11	Fair	Y	N	
7	Alnus rubra (Red alder)	D	1	8.5	25	12	Fair	Y	N	
8	Alnus rubra (Red alder)	D	1	14.0	25	19	Poor	Y	N	Branches intertwined with overhead utility lines.
9	Thuja plicata (Western red cedar)	E	1	36.3	100	16	Good	Y	Y	Co-dominant stems at 7 feet.
10	Prunus sp. (Cherry species)	D	1	9.0	60	11	Poor	Y	N	Ivy growing up stem.
11	Populus trichocarpa (Black cottonwood)	D	1	20.0	50	14	Severe	Y	N	Fallen over but still sprouting new growth. Root plate still intact and buried.
12	Populus trichocarpa (Black cottonwood)	D	1	36.0	30	12	Dead	N	N	
13	Alnus rubra (Red alder)	D	1	8.5	55	23	Fair	Y	N	

Appendix B: Tree Inventory Map



Site visit was made by The Watershed Company
arborist on November 17, 2020



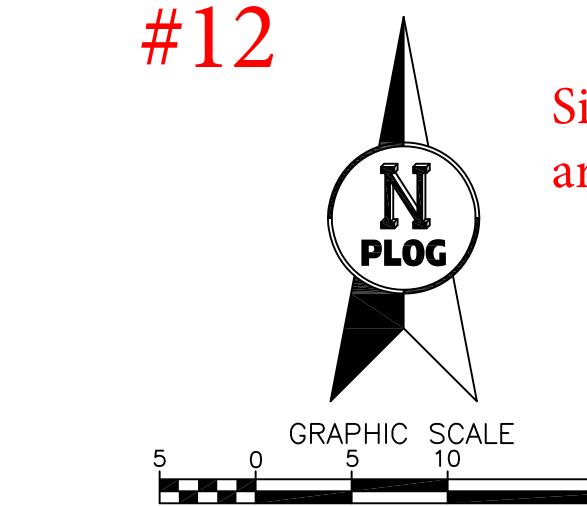
ABBREVIATION LEGEND	
MON	MONUMENT
DN	DOWNT PLAT
SLA	SECTOR PLAT
BLA	BOUNDARY LINE ADJUSTMENT
DBH	DIAETER AT BREAST HEIGHT (FT)
DLR	Drip LINE RADIUS (FT)
APN	ASSESSORS PARCEL NUMBER
AF#	AUDITOR'S FILE NUMBER
(M)	AS MEASURED
(C)	AS CALCULATED
(P)	PER PLAT
(D)	PER DEED
(R#)	PER REFERENCE SURVEY

VERTICAL DATUM & CONTOUR INTERVAL
ELEVATIONS SHOWN ON THIS DRAWING ARE BASED ON CITY OF SEATTLE BENCH MARK 93V-405, A CHISELED ">" IN S RIM BROKEN MON CASE 0.15FT BELOW ASPHALT AT THE INTERSECTION OF NE 205TH ST AND 37TH AVE.
ELEV.: 269.62 (NAVD 88)
2.0' CONTOUR INTERVAL - THE EXPECTED VERTICAL ACCURACY IS EQUAL TO 1/2 THE CONTOUR INTERVAL OR ± 1.0' FOR THIS PROJECT.

LEGAL DESCRIPTION
LOT 2 OF KING COUNTY SHORT PLAT NO. 1178975 RECORDED UNDER RECORDING NUMBER 8104020639 BEING A REVISION OF SHORT PLAT RECORDED UNDER RECORDING NUMBER 7707210591, RECORDS OF KING COUNTY WASHINGTON; EXCEPT THE SOUTH 5 FEET OF THE WEST 40 FEET THEREOF, AS CONVEYED UNDER RECORDING NUMBER 8910200533

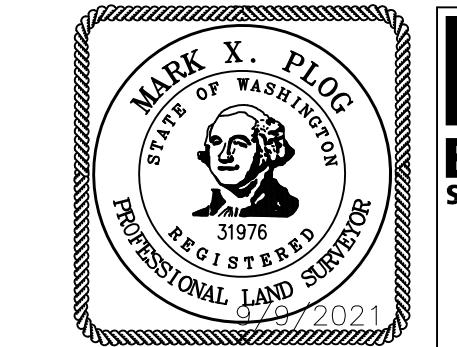
BASIS OF BEARINGS
PER THE RECORD OF SURVEY RECORDED IN VOLUME 190 OF SURVEYS, PAGE 275, RECORDS OF KING COUNTY WASHINGTON.
ACCEPTED THE BEARING OF N 87°55'42" W FOR NE 205TH ST BASED ON FOUND MONUMENTS IN CASE.

GENERAL NOTES
1. INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND LEICA VIVA TS15 SMART POLE TOTAL STATION/RTK GPS.
2. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090. SURVEY WAS COMPLETED BY A FIELD TRAVERSE.
3. UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS, UTILITY LOCATES BY THIRD PARTIES, AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.
4. ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.
5. CONTOURS SHOWN ARE BASED ON A FIELD SURVEY.
6. TREE IDENTIFICATION WAS PERFORMED BY SURVEY FIELD PERSONNEL AND SHOULD BE CONSIDERED A BEST GUESS. AN ARBORIST SHOULD BE RELIED UPON FOR MORE ACCURATE AND DETAILED IDENTIFICATION OF TREE SPECIES AND HEALTH.



PROJECT INFORMATION
SURVEYOR: PLOG ENGINEERING, PLLC
PO BOX 412
RAVENSDALE, WA 98051
PH.: (206) 420-7130
PROPERTY OWNER: MARK GAREY
36XX NE 205TH ST
LAKE FOREST PARK, WA
TAX PARCEL NUMBER: 402290-0497
PROJECT ADDRESS: 36XX NE 205TH ST
LAKE FOREST PARK, WA
PARCEL AREA: 11,389 S.F. (0.261 ACRES ±)
AS SURVEYED

TAG #	TREE NAME	DN / DEC	COMB. DBH (in)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT (Y/N)	LANDMARK (Y/N)	NOTES	
									STEMS	DBH (in)
1	Alnus rubra (Red alder)	D 1	12.3	35	7	Fair	Y	N	Located on steep slope.	
2	Alnus rubra (Red alder)	D 1	8.6	40	7	Fair	Y	N	Located on steep slope.	
3	Alnus rubra (Red alder)	D 1	8.5	40	11	Fair	Y	N	Located on steep slope.	
4	Populus trichocarpa (Black cottonwood)	D 1	18.0	45	14	Dead	N	N		
5	Alnus rubra (Red alder)	D 1	19.0	45	22	Poor	Y	N	Has an uncorrected lean to the East over the stream. Growing in sandy soil which is showing some signs of uplift.	
6	Alnus rubra (Red alder)	D 1	8.6	25	11	Fair	Y	N		
7	Alnus rubra (Red alder)	D 1	8.5	25	12	Fair	Y	N		
8	Alnus rubra (Red alder)	D 1	14.0	25	19	Poor	Y	N	Branches intertwined with overhead utility lines.	
9	Thuja plicata (Western red cedar)	E 1	36.3	100	16	Good	Y	Y	Co-dominant stems at 7 feet.	
10	Prunus sp. (Cherry species)	D 1	9.0	60	11	Poor	Y	N	Ivy growing up stem.	
11	Populus trichocarpa (Black cottonwood)	D 1	20.0	50	14	Severe	Y	N	Fallen over but still sprouting new growth. Root plate still intact and buried.	
12	Populus trichocarpa (Black cottonwood)	D 1	36.0	30	12	Dead	N	N		
13	Alnus rubra (Red alder)	D 1	8.5	55	23	Fair	Y	N	Ivy growing up stem.	



PLOG
ENGINEERING
Surveyors & Civil Engineers
PO BOX 412
RAVENSDALE, WA 98051
(206) 420-7130
www.PlogEngineering.com

MARK GAREY
36XX NE 205TH ST
LAKE FOREST PARK, WA

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SHEET: 1 OF 1