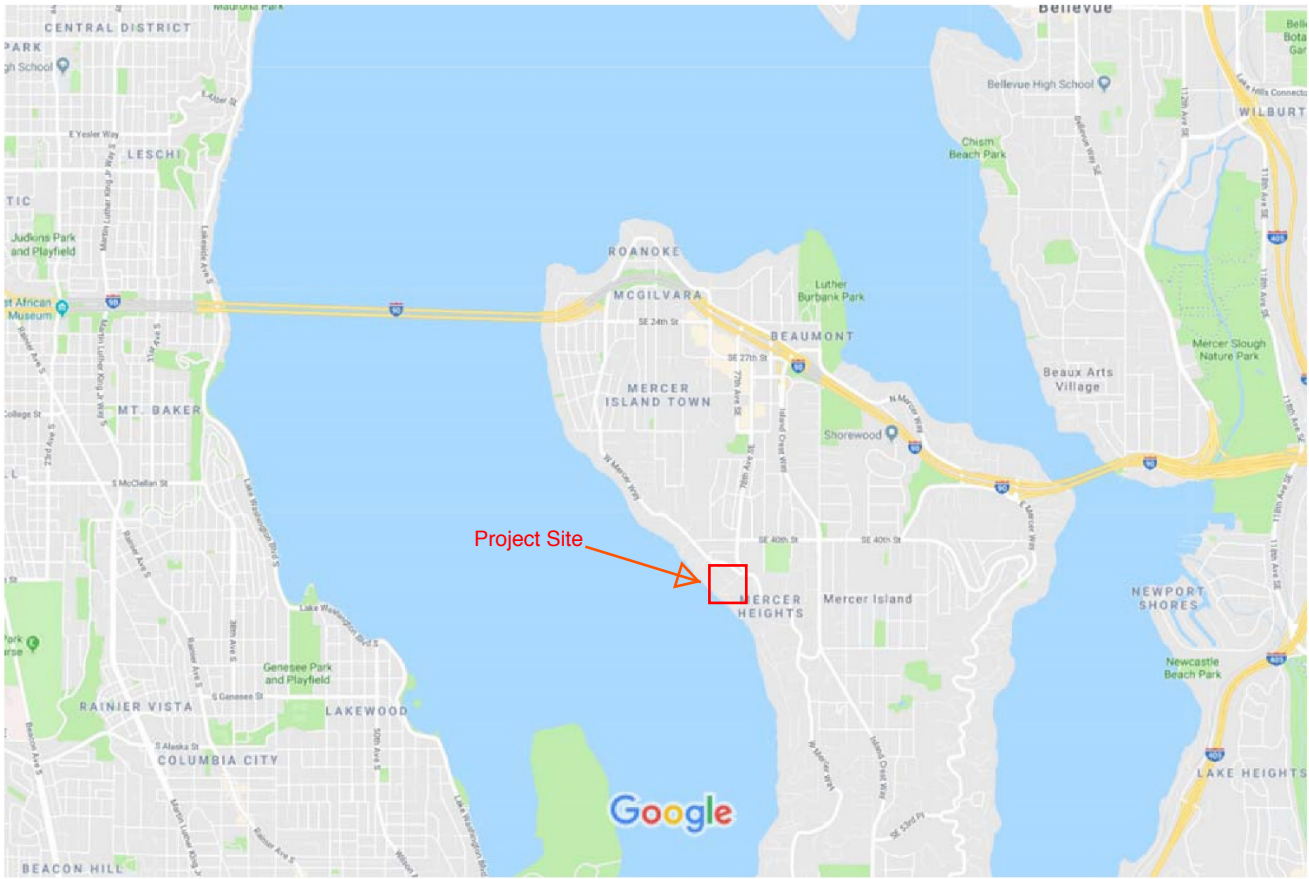
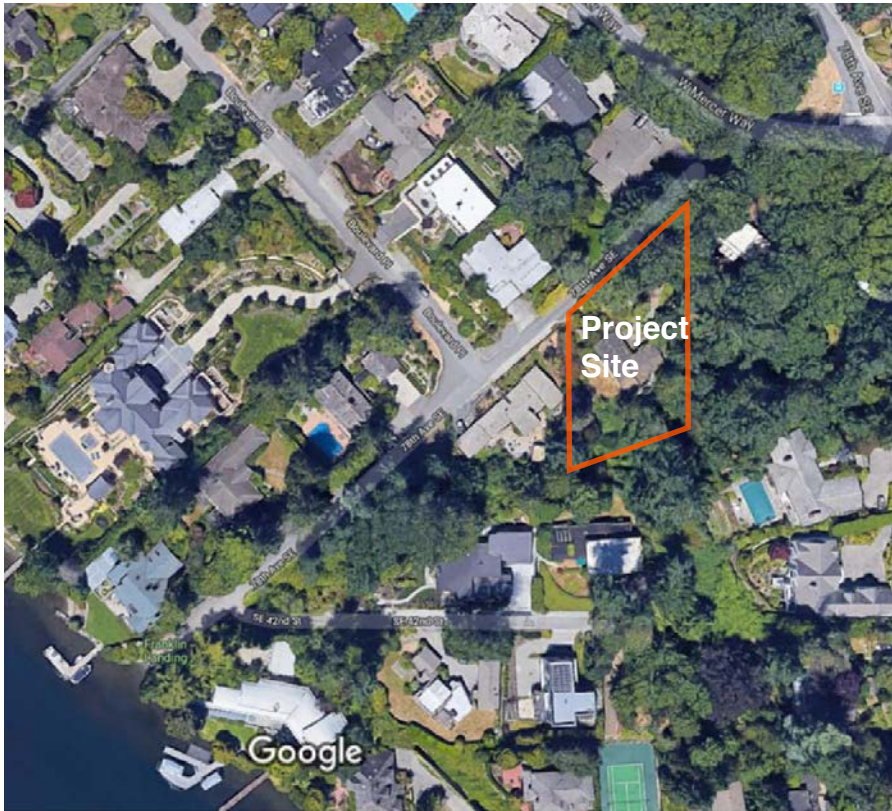


Appendix A: Project Drawings and Figures



Map data ©2019 Google 2000 ft



Imagery ©2019 Google, Map data ©2019 Google 50 ft

Figure 1 - Vicinity Map

King County iMap



Legend

- Address points
- Address labels
- - - Parcels
- Potential landslide hazard areas (2016, see explanation-->)
- Potential steep slope hazard areas (2016, see explanation-->)

Stream (1990 SAO)

- class 1
- class 2 perennial
- class 2 salmonid
- class 3
- - - unclassified
- - - Wetland (1990 SAO)
- = = = Sensitive area notice on title

Pictometry, King County, King County

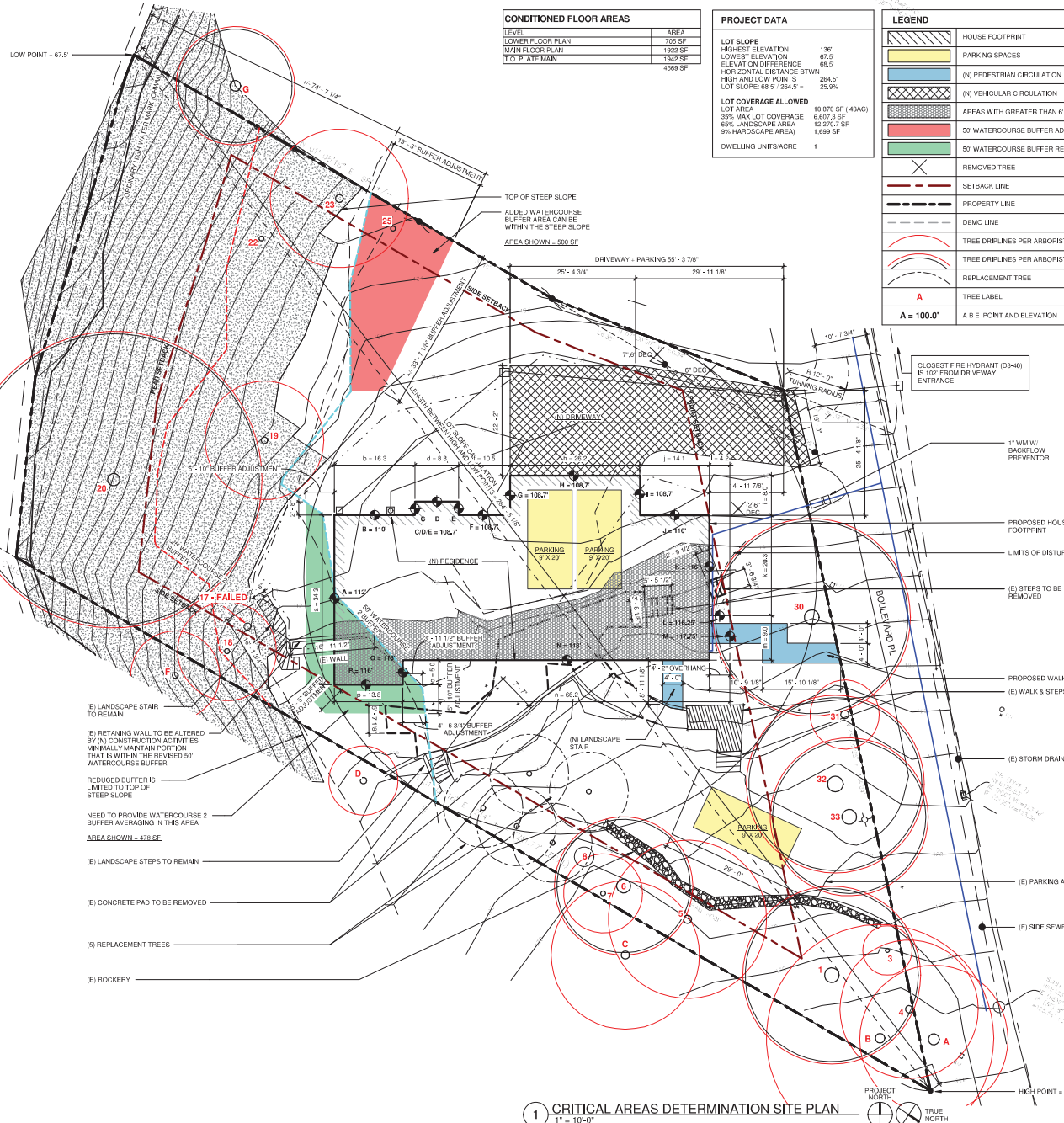
The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Date: 2/20/2019

Notes:



Figure 2 - King County Critical Areas Map



CONDITIONED FLOOR AREAS	
LEVEL	AREA
LOWER FLOOR PLAN	765 SF
MAIN FLOOR PLAN	1922 SF
EG. PLATE MAIN	1362 SF
	4569 SF

PROJECT DATA	
LOT SLOPE	13%
HIGHEST ELEVATION	67.5
LOWEST ELEVATION	66.5
ELEVATION DIFFERENCE	1.0
HORIZONTAL DISTANCE BTWN HIGH AND LOW POINTS	284.5'
LOT SLOPE (8.5' / 98.4' F)	25.0%
LOT COVERAGE ALLOWED	18,878 SF (434%)
30% MAX LOT COVERAGE	5,667.3 SF
60% LANDSCAPE AREA	12,270.2 SF
9% HARDSCAPE AREA	1,699.9 SF
DWELLING UNITS/ACRE	1

LEGEND	
[Symbol]	HOUSE FOOTPRINT
[Symbol]	PARKING SPACES
[Symbol]	(N) PEDESTRIAN CIRCULATION
[Symbol]	(N) VEHICULAR CIRCULATION
[Symbol]	AREAS WITH GREATER THAN 6" OF CUT AND/OR FILL
[Symbol]	50' WATERCOURSE BUFFER ADDITION AREA
[Symbol]	50' WATERCOURSE BUFFER REDUCTION AREA
[Symbol]	REMOVED TREE
[Symbol]	SETBACK LINE
[Symbol]	PROPERTY LINE
[Symbol]	DEMO LINE
[Symbol]	TREE DRIP LINES PER ARBORIST SCHEDULE, 24" OR SMALLER
[Symbol]	TREE DRIP LINES PER ARBORIST SCHEDULE, GREATER THAN 24"
[Symbol]	REPLACEMENT TREE
[Symbol]	TREE LABEL
A = 100.0'	A.B.E. POINT AND ELEVATION

AVERAGE BUILDING ELEVATION (A.B.E.)				
ELEVATION MARK	MIDPOINT ELEVATION	WALL SEGMENT MARK	WALL SEGMENT LENGTH (FT)	PRODUCT
A	112.0	a	34.3	3,841.6
B	110.0	b	16.3	1,735.0
C	108.7	c	2.7	293.7
D	108.7	d	8.8	955.6
E	108.7	e	2.7	293.5
F	108.7	f	10.4	1,130.5
G	108.7	g	8.0	868.8
H	108.7	h	28.3	3,140.0
I	108.7	i	8.0	868.6
J	110.0	j	14.0	1,540.0
K	116.0	k	29.3	3,348.8
L	116.25	l	4.2	468.3
M	117.25	m	9.0	1,059.8
N	118.0	n	66.2	7,811.6
O	116.0	o	5.0	550.0
P	116.0	p	13.8	1,600.8
TOTALS				28,344.8
A.B.E. - SLIM PRODUCTS / SLIM WALL LENGTHS				1134 FT
MAXIMUM HEIGHT ALLOWED - A.B.E. + 20'				143.4 FT
PROPOSED BUILDING HEIGHT				140.2 FT (140'-2")

TREE SCHEDULE				
MARK	SPECIES	DSH (N)	DRIFLINE EXTENT	RATING
1	DOUGLAS FIR	35	16' RADIAL	EXCEPT
3	MADRONE	10	5' RADIAL	EXCEPT
4	BIG LEAF MAPLE	16.5	14' RADIAL	REG
5	BIG LEAF MAPLE	20	16' RADIAL	REG
6	DOUGLAS FIR	30	14' RADIAL	EXCEPT
7	DOUGLAS FIR	14	8' RADIAL	REG
8	BIG LEAF MAPLE	48	HABITAT SPAR	NA
17	BIG LEAF MAPLE	18	NA	FAILED
18	BIG LEAF MAPLE	13	10' RADIAL	REG
19	AUSTRIAN PINE	17	12' RADIAL	REG
20	BIG LEAF MAPLE	43	30' RADIAL	EXCEPT
22	FLOWERING PLUM	8.10	NA	NA
23	SCOTS PINE	21	14' RADIAL	REG
25	FLOWERING PLUM	9.8	NA	NA
30	DOUGLAS FIR	38	20' RADIAL	EXCEPT
31	GEDAR	20	7' RADIAL	EXCEPT
32	DOUGLAS FIR	35	18' RADIAL	REG
33	DOUGLAS FIR	31	15' RADIAL	EXCEPT
A	BIG LEAF MAPLE	19	15' RADIAL	REG
B	DOUGLAS FIR	18	21' RADIAL	REG
C	BIG LEAF MAPLE	20	16' RADIAL	REG
D	DOUGLAS FIR	12	7' RADIAL	REG
F	DOUGLAS FIR	14	9' RADIAL	REG
G	DOUGLAS FIR	26	12' RADIAL	REG

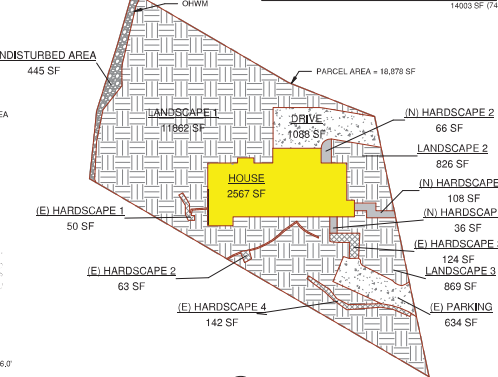
NOTE: SEE ARBORIST REPORT DATED 02/01/2016 AND ADDENDA DATED 01/03/2019

LOT COVERAGE	
SITE AREA	18,878 SF
ALLOWABLE COVERAGE (35%)	6,607.3 SF
ALLOWABLE HARDSCAPE (6%)	1,699.9 SF (+ 2,318 SF)
+ LEFTOVER LOT COVERAGE	= 4,017 SF

BUILDING & DRIVING SURFACES	
(E) PARKING	634 SF
DRIVE	1089 SF
HOUSE	2567 SF
LANDSCAPE	4289 SF (23%)

HARDSCAPE	
(E) HARDSCAPE 1	50 SF
(E) HARDSCAPE 2	63 SF
(E) HARDSCAPE 3	124 SF
(E) HARDSCAPE 4	142 SF
(N) HARDSCAPE 1	108 SF
(N) HARDSCAPE 2	66 SF
(N) HARDSCAPE 3	96 SF
TOTAL	589 SF (3%)

LANDSCAPE	
LANDSCAPE 1	11862 SF
LANDSCAPE 2	826 SF
LANDSCAPE 3	869 SF
UNDISTURBED AREA	445 SF
TOTAL	14035 SF (74%)



1 CRITICAL AREAS DETERMINATION SITE PLAN
1" = 10'-0"

2 SITE AREAS
1/32" = 1'-0"

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DESIGN	SNS, JDB, MM
DRAWN	ER
CHECKED	AC
SHEET ISSUE DATE	03/07/19
DRAWING SETS	
PERMIT SET	03/10/2019
REVISIONS	
#	DATE DESCRIPTION

Stuart Silk Architects
2400 N. 45th Street
Seattle, WA 98103
WWW.STUARTSILK.COM

LEE-BOYLE
4150 BOULEVARD PLACE
MERCER ISLAND, WA

CRITICAL AREAS DETERMINATION
SITE PLAN

CA-1.0
PLOT DATE: 3/20/2019

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER CHICAGO TITLE COMMITMENT NUMBER: 0144086-ETU DATED FEBRUARY 15, 2019)

THAT PORTION OF TRACT 14, REPLAT OF ISLAND PARK, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 13 OF PLATS, PAGE 58, IN KING COUNTY, WASHINGTON, AS DESCRIBED IN KING COUNTY SUPERIOR COURT CAUSE NO. 14-2-18504-9, AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF SOUTHEAST 42 ND STREET, FORMERLY FRANKLIN AVENUE, AND THE SOUTHEASTERLY LINE OF 78TH AVENUE SOUTHEAST, FORMERLY WALTHEW AVENUE; THENCE EASTERLY ALONG SAID NORTHERLY LINE OF SOUTHEAST 42 ND STREET, 428 FEET TO A POINT 600 FEET WEST OF THE SOUTHEAST CORNER OF SAID TRACT 14; THENCE NORTH 00°07'07" EAST A DISTANCE OF 172.23 FEET, MORE OR LESS, TO THE CENTER LINE OF A CREEK WHICH IS THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 00°07'07" EAST A DISTANCE OF 211.77 FEET, MORE OR LESS TO AN INTERSECTION WITH THE EASTERLY LINE OF SAID WALTHEW AVENUE; THENCE SOUTH 49°01'56" WEST ALONG SAID SOUTHEASTERLY LINE OF WALTHEW AVENUE A DISTANCE OF 132.688 FEET; THENCE SOUTH 00°07'07" WEST 148 FEET MORE OR LESS TO THE CENTER LINE OF SAID CREEK; THENCE EASTERLY ALONG THE CENTER LINE OF SAID CREEK TO THE TRUE POINT OF BEGINNING;

TOGETHER WITH THE FOLLOWING DESCRIBED PARCEL:

THAT PORTION OF LOT "C" OF SHORT PLAT BY J. BENJ. HAYES & ASSOCIATES CIVIL ENGINEER AND LAND SURVEYOR DATED SEPTEMBER 28, 1949, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHERLY CORNER OF SAID LOT "C"; THENCE SOUTH 47°51'00" WEST ALONG THE NORTHERLY LINE OF 78 TH AVENUE SOUTHEAST A DISTANCE OF 10.20 FEET; THENCE SOUTH 08°42'04" EAST A DISTANCE OF 50.35 FEET MORE OR LESS TO THE EASTERLY LINE OF SAID LOT "C"; THENCE NORTH 00°03'12" WEST ALONG THE EASTERLY LINE OF SAID LOT "C"; A DISTANCE OF 56.61 FEET MORE OR LESS TO THE POINT OF BEGINNING.

SURVEYOR'S NOTES

- THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN AUGUST OF 2015. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISK OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
- BURIED UTILITIES SHOWN BASED ON RECORDS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE IN THE FIELD. DIMENSIONS ASSUMES NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS OR ACCEPT RESPONSIBILITY FOR UNDERGROUND LINES WHICH ARE NOT MADE PUBLIC RECORD. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY. AS ALWAYS, CALL 1-800-424-5555 BEFORE CONSTRUCTION.
- SUBJECT PROPERTY TAX PARCEL NO. 3623500174
- SUBJECT PROPERTY AREA PER THIS SURVEY IS 18881± S.F. (0.43± ACRES)
- ALL TITLE INFORMATION SHOWN ON THIS MAP HAS BEEN EXTRACTED FROM CHICAGO TITLE INSURANCE COMPANY'S "GUARANTEE", CERTIFICATE NO. 0144086-ETU, DATED FEBRUARY 15, 2019. IN PREPARING THIS MAP, TERRANE, INC. HAS CONDUCTED NO INDEPENDENT TITLE SEARCH NOR IS TERRANE, INC. AWARE OF ANY TITLE ISSUES AFFECTING THE SURVEYED PROPERTY OTHER THAN THOSE SHOWN ON THE MAP AND DISCLOSED BY THE REFERENCED "GUARANTEE". TERRANE, INC. HAS RELIED WHOLLY ON CHICAGO TITLE INSURANCE COMPANY'S REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND TERRANE, INC. QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
- INSTRUMENTATION FOR THIS SURVEY WAS A TRIMBLE ELECTRONIC DISTANCE MEASURING UNIT. PROCEDURES USED IN THIS SURVEY WERE DIRECT AND REVERSE ANGLES. NO CORRECTION NECESSARY. MEETS STATE STANDARDS SET BY WAC 332-130-090.

BASIS OF BEARINGS

NAD 83(2011) WASHINGTON NORTH COORDINATE SYSTEM PER GPS OBSERVATIONS, THE CENTERLINE OF BOULEVARD PL BEARS 140°57'32"W BETWEEN FOUND MONUMENTS.

REFERENCES

1. REPLAT OF ISLAND PARK; VOL. 13, PG 58

VERTICAL DATUM

NAVD 88, PER GPS OBSERVATION

VICINITY MAP

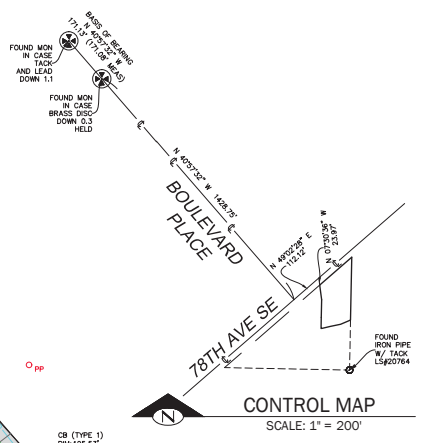
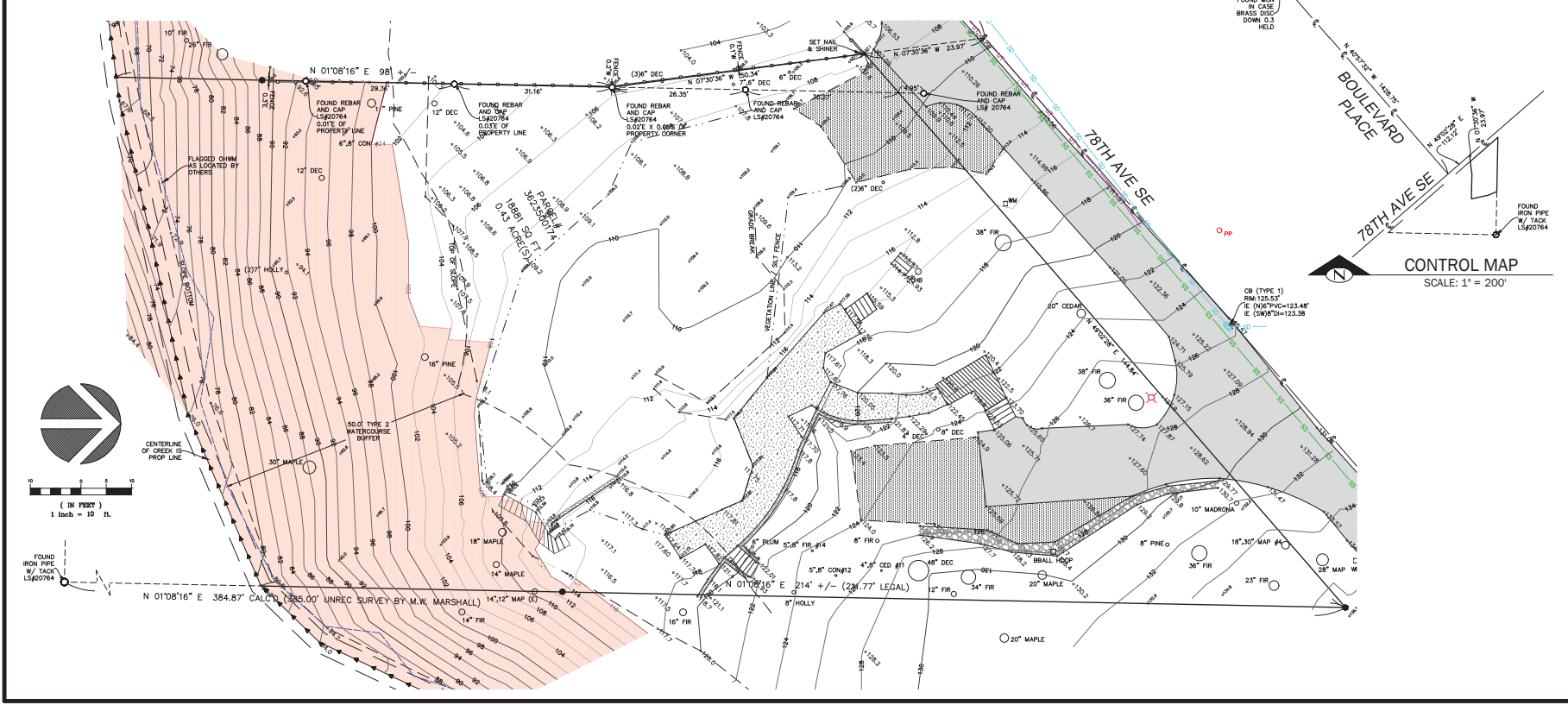
N.T.S.

LEGEND

- BUILDING
- CENTERLINE ROW
- CONCRETE SURFACE
- CONCRETE WALL
- CONTOUR (MAJOR)
- CONTOUR (MINOR)
- DECK
- CENTERLINE OF CREEK
- GAS METER
- GRAVEL SURFACE
- HALET (TYPE 266A)
- IRON PIPE (FOUND)
- MONUMENT IN CASE (FOUND)
- POWER METER
- POWER (OVERHEAD)
- POWER POLE
- REBAR AS NOTED (FOUND)
- ROCKERY
- SEWER LINE
- SEWER MAINTENANCE
- TREE (AS NOTED)
- WATER METER
- STEEP SLOPE >40%

SCHEDULE B ITEMS

ITEM 1
COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS IF ANY; BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, INCLUDING BUT NOT LIMITED TO THOSE BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH ON SURVEY OF RECORD.
RECORDING NO: 20160418900028 (SHOWN HEREON)



measure success

TOPOGRAPHIC & BOUNDARY SURVEY
 NW 1/4 OF NE 1/4 SEC 13, TWP. 34 N, RGE. 04 E, W4 W
 PARCEL NO. 3623500174

Terrane
 10801 Main Street, Suite 102, Bellevue, WA 98004
 phone 425-458-4488 support@terrane.net www.terrane.net

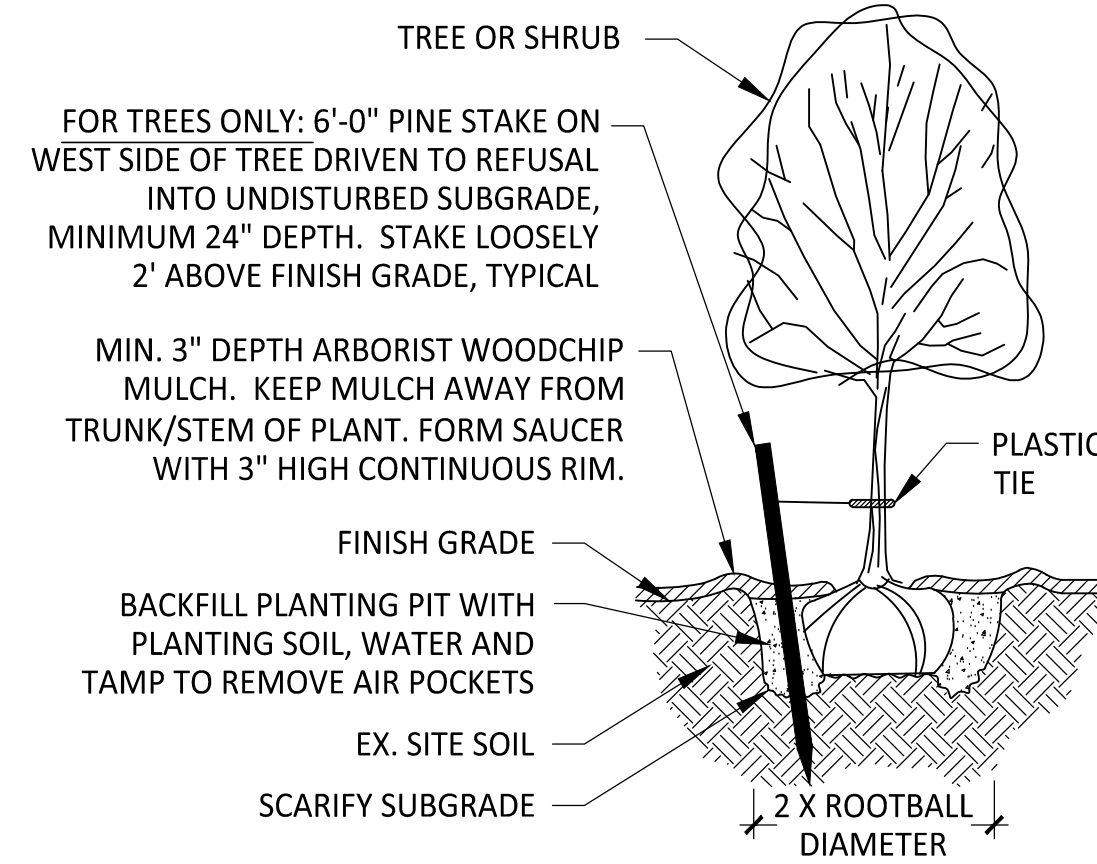
LEBOYLE RESIDENCE
 4160 BOULEVARD PL
 MERCER ISLAND, WA

JOB NUMBER: 151132
 DATE: 9/3/2015
 DRAFTED BY: AB/RLS
 CHECKED BY: EJ/UPS
 SCALE: 1" = 10'
 REVISION HISTORY
 2/1/19 UPDATE SITE FEATS
 2/22/19 ADD ECA AREAS
 2/25/19 ADJUST SETBACK

SHEET NUMBER
 1 OF 1

PLANT SCHEDULE

Common Name	Scientific Name	Container size	Minumum Height	Spacing	Zone 1 QTY	Zone 2 QTY
Indian plum	<i>Oemleria cerasiformis</i>	#2	18"	4'	5	
Vine maple	<i>Acer circinatum</i>	#2	18"	4'	5	
Snowberry	<i>Symphoricarpos albus</i>	#2	18"	4'	5	
Sword fern	<i>Polystichum munitum</i>	#1	6"	4'	10	
Evergreen huckleberry	<i>Vaccinium ovatum</i>	#2	18"	4'	5	
Black Twinberry	<i>Lonicera involucrata</i>	#2	18"	4'		15
Salmonberry	<i>Rubus spectabilis</i>	#2	18"	4'		10
Small Oregon Grape	<i>Mahonia nervosa</i>	#2	6"	4'	10	

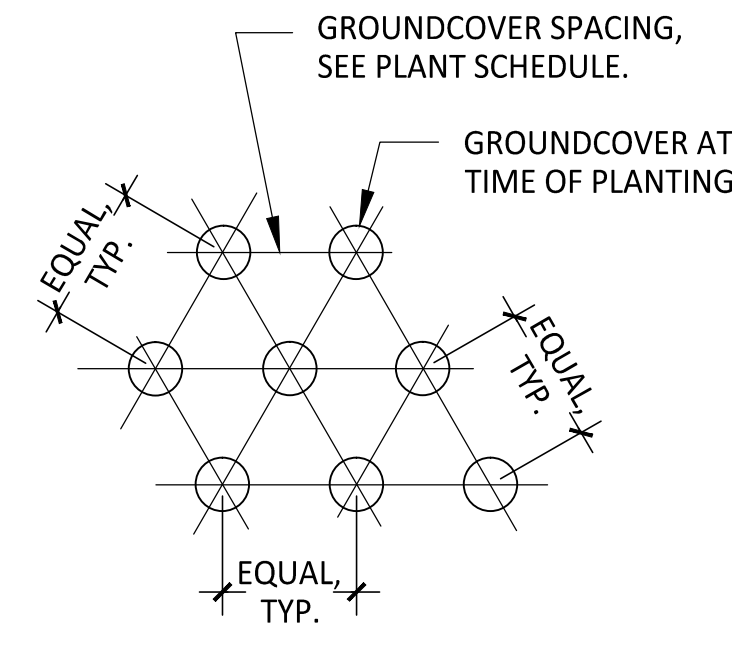


TYPICAL TREE OR SHRUB PLANTING

NOT TO SCALE

NOTES:

- MULCH COMPLETELY BETWEEN ALL PLANTS.
- STAKE TREES 5' IN HEIGHT OR GREATER.
- PLANT SO THAT TOP OF ROOT BALL IS EVEN WITH FINISHED GRADE.
- COMPLETELY REMOVE ALL WIRE AND LOOSEN FABRIC ON BALLED & BURLAPPED PLANTS.
- SCARIFY SIDES OF PLANTING PITS PRIOR TO BACKFILLING.



TYPICAL GROUNDCOVER SPACING

NOT TO SCALE

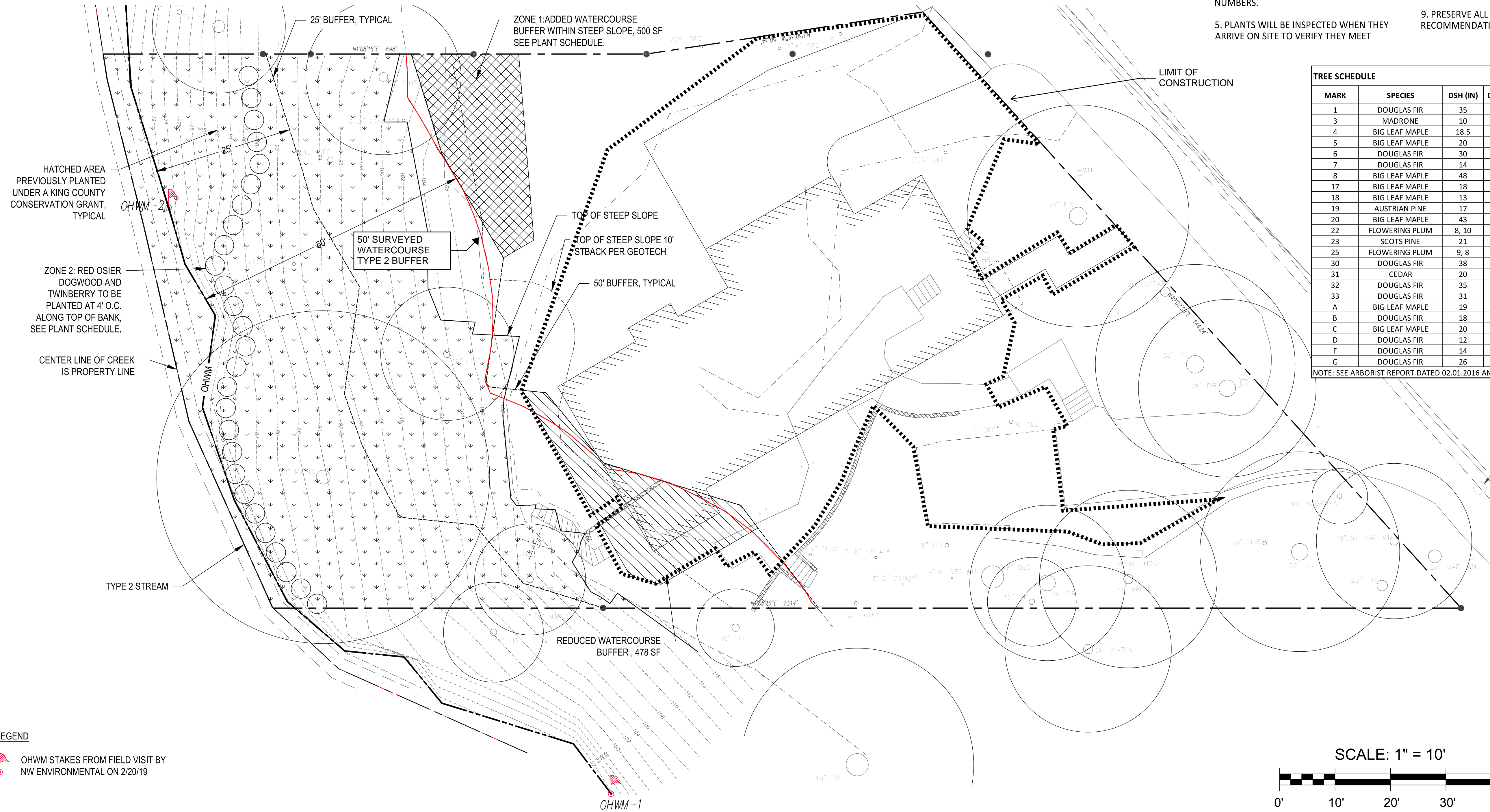
GENERAL NOTES:

- ALL NATIVE VEGETATION SHOULD BE LEFT IN PLACE. REMOVE ALL HIMALAYAN BLACKBERRY, JAPANESE KNOTWEED, BAMBOO, ENGLISH IVY FROM THE SITE USING KING COUNTY RECOMMENDATIONS. PHYSICAL REMOVAL IS PREFERRED.
- PLANT SPECIES PER PLANTING SCHEDULE, OFFSETTING PLANTS FROM EXISTING VEGETATION AS APPROPRIATE PRIORITIZING, GENERALLY 3 FEET FROM EXISTING SHRUBS AND 5 TO 10 FEET FROM PLANTED AND MATURE TREES RESPECTIVELY. AREAS OF INTENSIVE PLANTING ARE NOTED BY AREAS OF LESS TREES.
- PLANTING GUIDE NOTES SHOULD BE FOLLOWED FOR EACH PLANTING ZONE.
- THE CONTRACTOR SHALL SUBMIT DOCUMENTATION SPECIFYING THE QUANTITY AND SPECIES OF PLANTS WITH NAMES OF SUPPLIERS, ADDRESSES, AND PHONE NUMBERS.
- PLANTS WILL BE INSPECTED WHEN THEY ARRIVE ON SITE TO VERIFY THEY MEET NURSERY STOCK STANDARDS. THE INSPECTOR RESERVES THE RIGHT TO REFUSE ANY AND ALL MATERIAL IF IT IS DETERMINED THAT PLANT MATERIAL DOES NOT SPECIFICATIONS.
- SUBSTITUTIONS OF PLANT SPECIES OR SIZES MAY BE PERMITTED BASED ON PLANT AVAILABILITY, BUT ONLY WITH PRIOR APPROVAL BY THE MITIGATION CONSTRUCTION MONITOR.
- PLANT MATERIAL SHALL CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z601-2004 OR MOST RECENT EDITION) FOR PLANT SIZE AND CONDITION FOR SPECIFIED MATERIAL.
- PLACE 2, 5-GALLON BUCKETS OF MULCH OR ARBORIST CHIPS AROUND EACH PLANTING AND PULL BACK TO MAKE RING OR BROADCAST MULCH WITH 3 INCHES OF MULCH OR ARBORIST CHIPS.
- PRESERVE ALL TREES PER ARBORIST RECOMMENDATIONS.

TREE SCHEDULE

MARK	SPECIES	DSH (IN)	DRIPLINE EXTENT	RATING
1	DOUGLAS FIR	35	18" RADIAL	EXCEPT
3	MADRONE	10	5" RADIAL	EXCEPT
4	BIG LEAF MAPLE	18.5	14" RADIAL	REG
5	BIG LEAF MAPLE	20	16" RADIAL	REG
6	DOUGLAS FIR	30	14" RADIAL	EXCEPT
7	DOUGLAS FIR	14	8" RADIAL	REG
8	BIG LEAF MAPLE	48	HABITAT SPAR	N/A
17	BIG LEAF MAPLE	18	N/A	FAILED
18	BIG LEAF MAPLE	13	10" RADIAL	REG
19	AUSTRIAN PINE	17	12" RADIAL	REG
20	BIG LEAF MAPLE	43	30" RADIAL	EXCEPT
22	FLOWERING PLUM	8, 10	N/A	N/A
23	SCOTS PINE	21	14" RADIAL	REG
25	FLOWERING PLUM	9, 8	N/A	N/A
30	DOUGLAS FIR	38	20" RADIAL	EXCEPT
31	CEDAR	20	7" RADIAL	REG
32	DOUGLAS FIR	35	18" RADIAL	EXCEPT
33	DOUGLAS FIR	31	16" RADIAL	EXCEPT
A	BIG LEAF MAPLE	19	15" RADIAL	REG
B	DOUGLAS FIR	18	21" RADIAL	REG
C	BIG LEAF MAPLE	20	16" RADIAL	REG
D	DOUGLAS FIR	12	7" RADIAL	REG
F	DOUGLAS FIR	14	9" RADIAL	REG
G	DOUGLAS FIR	26	12" RADIAL	REG

NOTE: SEE ARBORIST REPORT DATED 02.01.2016 AND ADDENDA DATED 01.03.2019



3639 PALATINE AVE N
SEATTLE, WA 98103
206-634-9193



PLANTING PLAN AND DETAILS

LEE-BOYLE
4150 BOULEVARD PL
MERCER ISLAND, WA

REVISION:

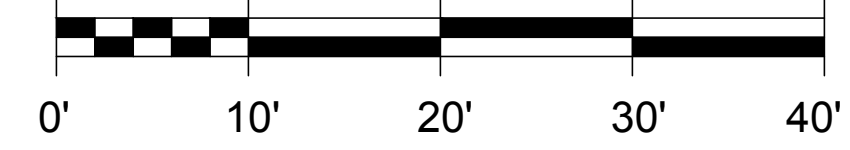
DATE:	DESCRIPTION:

DATE:
3/7/2019

SHEET NO.
W-1

OF SHEETS

SCALE: 1" = 10'



Appendix B: Site Photos



Photo 1. Stream typical with bank erosion on left bank.



Photo 2. Photo of typical step pools in stream.



Photo 3. OHWM flag along debris line near lower property line.



Photo 4. Steep slope conditions.



Photo 5. Stream conditions with OHWM flag at in background near upper property corner.

**Appendix C: King County
Conservation Grant Plan**



Legend

- Boyle_Property
- Project_Boundary

Service Layer Credits: King County



**Alexandra Boyle- 4150 Boulevard
Place, Mercer Island - Aq. Area Enhancement**



1:469



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Resource Specialist II: Rachel Konrady
Copyright ©2016 King Conservation District
February 15, 2018



JOB SHEET

Aquatic Area Buffer Planting- Riparian Forest Buffer

Landowner: Boyle	Lifetime of Practice: 15 years
------------------	--------------------------------

Purpose (check all that apply)	
<input checked="" type="checkbox"/> Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms	<input checked="" type="checkbox"/> Improve forest health reducing the potential of damage from pests and moisture stress
<input checked="" type="checkbox"/> Create or improve riparian habitat and provide a source of detritus and large woody debris	<input checked="" type="checkbox"/> Restore natural riparian plant communities
<input type="checkbox"/> Reduce excess amounts of pollutants in surface runoff and reduce excess nutrients and chemicals in shallow groundwater flow	<input type="checkbox"/> Improve wildlife habitat
<input type="checkbox"/> Reduce pesticide drift entering water body	<input checked="" type="checkbox"/> Increase carbon storage in vegetation and soils, and increase biomass in soils

Current Site Conditions *Provide a summary of the resource management problems addressed by the BMP. Also note any other current conditions pertinent to the project (slopes, erosion, flow, drainage)*

The project is located on an unnamed and unmapped tributary that runs year-around and that flows directly to Lake Washington, WRIA 8. The project area faces south and slopes from 105 feet to 75 feet. The northern half of the property is mapped as an erosion hazard (1990 SAO), but the project is not located in this area. There is currently partial canopy cover with mature Douglas Fir, Western Red Cedar, Pine and Big-leaf Maple. The shrub layer is sparse with mixed native and invasive species and the ground cover is dominated by English Ivy.

Riparian Forest Buffer Practice and Details *Provide the following:*

- 1) a basic description of the proposed planting area
- 2) calculate and record the square footage (acreage) of the planting area, the number of trees and shrubs to be planted, the linear footage of stream enhanced, the average and minimum width of the buffer:
- 3) list any native plant species currently existing on site
- 4) list native trees and shrubs selected for the project
- 5) please attach your proposed planting plan

- 1) **And 2) This project will enhance 4,800 sq. ft. of riparian forest buffer along 100 feet of an unnamed tributary to Lake Washington. Invasive species include holly, laurel, and ivy. They will be removed and replaced with native trees and shrubs. Straw wattles will be installed along the hill contour at intervals of 15 feet. Exposed soil will be protected through the installation of mulch. 210 trees and shrubs will be installed. The average buffer width is 45 feet.**
- 3) **Western Red Cedar, Shore Pine, Douglas Fir, Evergreen Huckleberry, Oceanspray, Tall Oregon Grape, Beaked Hazelnut, Vine Maple, Snowberry, and Sword Fern**
- 4) **Western Red Cedar, Cascara, Douglas Fir, Western Hemlock, Red Elderberry, Salmonberry, Evergreen Huckleberry, Hazelnut, Indian Plum, Pacific Rhododendron, Snowberry, Vine Maple, Low Oregon Grape, Salal, and Sword Fern**
- 5) **See attached planting plan**

Permits *Are there any permits necessary for the project? If so, please list below and include a copy of the permit*

Yes, Aquatic Noxious Weed General Permit has been obtained from the Washington State Department of Ecology and Washington State Department of Agriculture: Permit #WAG993000.

City of Mercer Island will review project design.

Aquatic Areas:

There may be permits needed to apply herbicide in aquatic areas or their buffers. See the WA State Department of Ecology website for further details: <http://www.ecy.wa.gov/programs/wq/pesticides/>

King County Jurisdiction:

Stream and wetland restoration projects that occur on property within the jurisdiction of King County may require a clearing and grading permit. Contact King County Permitting Office (www.kingcounty.gov/property/permits.aspx)

Municipal Jurisdiction of a Local City:

Stream and wetland projects that occur on property within the jurisdiction of a city may require a permit. Contact the Public Works Department of the local jurisdiction.

State and Federal Permit Requirements:

In addition to the above permit requirements, a Joint Aquatic Resources Permit Application (JARPA) may be necessary to obtain all relevant permits from state and federal agencies. Contact the State Department of Ecology Permit Assistance Center at (360) 407-7037.

Type and Source of Plant Material *Will you use potted plants, bareroot plants, b&b plants or a combination? Where will you get the plants from and when?*

Plant material will be native species adapted to the site to minimize maintenance and care.

King CD, the contractor, will plant 1 and 2 gallon containers, live stakes, and/or bareroot material that have been sourced from the Puget Sound region. If additional plant material is purchased to augment the initial planting, that material can be bareroot, live stake, or potted nursery stock. There are a number of local native plant nurseries where native trees, shrubs and emergents can be purchased. Refer to the attached list of native plant nurseries for local King County sources of native plant material as well as sources in the greater Puget Sound region.

Site Preparation *List what method(s) of site preparation will be used, who will be doing the work, when will the work be done.*

Specific weed control prescriptions are detailed below. If brush and debris are removed from the stand, all material will be hauled off-site or masticated /chipped in a staging area. If masticated material is intended for use as mulch on the site, invasive species should not be included in the masticating/chipping process.

Weed Control Prescriptions:

Himalayan & Evergreen Blackberry Control –

- *Manual control:* Mow or cut the blackberry canes to less than 1 foot in height, then grub/dig out the roots attached to the cut canes. Thorough removal of blackberry roots in this manner, while labor intensive can reduce the blackberry population and cover in the prepared area by 90 – 95%. Monitor for re-growth in the following growing seasons; dig up any re-growth.
- *Chemical Control:* An alternative control method includes herbicide. One technique involves cutting/mowing the canes and swabbing the freshly cut canes with an approved herbicide. Foliar

spray of blackberry is another effective control method. It is recommended that blackberry is mowed early in the summer and sprayed on the foliar re-growth the next fall (September/October). Do not spray planted seedlings. **Always follow label rates and instructions.**

English Ivy Control –

- *Manual Control:*
 - 1) Recommended manual methods include digging and pulling. First, remove any flowering or fruiting portion within reach and bag for removal from the site. Next, hand dig and pull out all accessible portions of plants including roots. Note that all cut stems/roots must be removed from soil contact. If composting on site, use cardboard or wood to create a raised platform. Consider wearing gloves and protective clothing as ivy sap is known to cause a reaction in some individuals. Mulching an area will significantly reduce re-growth of ivy. To properly mulch, apply an 8 inch thick mulch layer. Plants should be cut and removed and then mulched, preferably with a layer of cardboard below the mulch.
 - 2) Vertical ivy is controlled by girdling. To girdle vertical vines, cut the ivy vines at shoulder height and slightly above ground level. Remove the cut ivy section from the tree. This eliminates nutrient transport from the roots of ground ivy to the leaves and stems growing into the canopy of the tree. The lower cut section of ivy stems and roots must be pulled at least 6 feet away from tree. Root and stem fragments can re-grow and must be composted in a manner similar to ground ivy.

Holly & Laurel Control-

- *Chemical Control:* Large Holly and Laurel trunks should be cut as close to the ground as possible. Immediately (within minutes) treat the cut stump with an application of glyphosate herbicide (such as Rodeo or Roundup). An alternate technique, called frilling, involves incising deep cuts through bark into trunks at a 45 degree angle. Immediately treat the frills by pouring glyphosate herbicide into the cuts. Best results are achieved during periods of active growth and after full leaf expansion. Monitor for re-growth (seedlings and re-sprouting) and treat accordingly. Do not spray herbicide directly holly and laurel leaves, which have a waxy layer that prevents chemicals from being absorbed. **Always follow label rates and instructions.**

Care and Temporary Storage of Purchased Plant Material *Upon receiving the plant material, where will you store it and how will you care for it?*

All plant material should be stored in a cool location and well watered prior to planting. In the case of bare root plants, inventory should be held in the source refrigerated facility as long as possible prior to planting. Bare root plants can be stored in the field for up to one to three weeks prior to planting by placing them in a shaded location where they will remain cool. Such a location should prevent freezing as well as exposure to warm temperatures. Additionally, bareroot inventory should be covered with a tarp to prevent drying. Bareroot stock that is expected to emerge from dormancy prior to planting should be “healed” into a soil bed. To heal-in, dig a v-shaped trench to a depth that accommodates covering the seedling roots when back-filled with soil.

Installation *Provide the following details: 1) Plant Installation Prescription: 2)Plant Protection Prescription: 3) Weed Suppression Prescription: 4)Erosion Control Prescription*

1) Plant Installation Prescription:

Live Stake Inventory: Live Stakes and whips should be planted using a planting bar. Stakes and whips are to be 3 to 4 feet long, and a minimum of ½ inch in diameter. Stakes should be stored in a bucket of water until planted. Buds should face up in the bucket. Soaking before planting greatly increases the survival of live stakes and whips. Refer also to the attached planting instructions in *Planting Live Hardwood Stakes.*

Potted & Plug Inventory: Potted plant material should be shovel planted to the same depth that they grew in the pot. Plants will be well watered prior to planting. Prior to digging a hole for the plant, prepare the planting location by removing a grass sod within a 1.5 feet diameter circle, being careful to remove roots as well as above ground portions of the plant. Dig a hole for the container in the center of this cleared circle twice the size of the plant's pot. Backfill the hole with soil while using care to avoid leaving air pockets in the soil. Refer also to the attached planting instructions in *Planting Container Trees and Shrubs*.

Bareroot Inventory: Bare root seedlings should be shovel planted to the same depth that they grew in the nursery fields. Roots will remain moist once they are removed from the shipping bundles until they are planted. Roots will be placed in a natural position in the soil without being crowded or turned up. Soil will be packed firmly around the root system, leaving no air pockets. Prior to digging a hole for the plant, prepare the planting location by removing all grass sod within a 1.5-foot diameter circle, being careful to remove roots as well as above ground grass. Dig a hole for the bare root plant in the center of this cleared circle. Refer also to the attached planting instructions in *Planting Bare Root Trees and Shrubs*.

2) *Plant Protection Prescription:*

None needed

3) *Weed Suppression Prescription*

Mulching: In locations where ongoing weed suppression is a concern, prepare the area around each plant by placing a barrier of cardboard around the plant. After placing the barrier, apply a layer of mulch over the weed barrier to a depth of 4-6 inches. Mulching options include wood chips, fully composted organic material such as a commercial compost product, or weed free straw. Mulch should be weed free, if possible, to avoid introducing new weeds to the project site. Mulch is not necessary in the emergent plant zones.

4) *Erosion Control Prescription*

Mulch: In addition to weed suppression mulch products are effective for preventing soil erosion. Mulch may be used in areas with exposed soil that will need protection for less than 30 days (before plants are installed). Materials may include straw, wood fiber cellulose, compost, arborist chips, or chipped site vegetation (must not include live invasive plant material). Product will be applied 2 inches thick at a minimum.

Wattles: Wattles are erosion and sediment barriers consisting of straw wrapped in a tubular encasing material. Wattles are placed in shallow trenches and staked along the contour of disturbed or newly constructed slopes.

- 1) Wattles are installed perpendicular to the flow direction and parallel to the slope contour.
- 2) Narrow trenches should be dug across the slope, on contour, to a depth of 3 to 5 inches on clay soils and soils with gradual slopes. On loose soils, steep slopes, and during high rainfall events, the trenches should be dug to a depth of 5 to 7 inches, or $\frac{1}{2}$ to $\frac{2}{3}$ of the thickness of the wattle.
- 3) Start construction of trenches and installing wattles from the base of the slope and work uphill. Excavated material should be spread evenly along the uphill slope and compacted using hand tamping or other method. Construct trenches at contour intervals of 3 to 30 feet apart depending on the steepness of the slope, soil type, and rainfall. The steeper the slope the closer together the trenches should be constructed.
- 4) Install the wattles snugly in to the trenches and abut tightly end to end. Do no overlap the ends.
- 5) Install stakes at each end of the wattle, and at 4 foot centers along the entire length of the wattle.
- 6) If required, install pilot holes for the stakes using a straight bar to drive holes through the wattle and into the soil.
- 7) At a minimum, wooden stakes should be approximately $\frac{3}{4}$ x $\frac{3}{4}$ x 24 inches. Willow cuttings or $\frac{3}{8}$ inch rebar can also be used for stakes.
- 8) Stakes should be driven through the middle of the wattle, leaving 2 to 3 inches of the stake protruding above the wattle.

Fencing *Is fencing going to be installed? If so, what type, who will install it and when?*

No fencing needed

Planting Project Maintenance and Monitoring *The planting must be inspected periodically and protected from damage so proper function is maintained. The goal for the project is to reach 80% survival after 3 years. Please describe the maintenance and monitoring plan.*

King CD will maintain the project for 3-5 growing seasons. Maintenance activities will include control of invasive species and replanting if survivorship falls below 80%. The landowner is responsible for maintaining the project and providing photo documentation for the remaining 10-12 years of the practice. Photos must be submitted by 9/1 of each year.

Treatments must be inspected periodically and protected from damage so proper function is maintained and resource damage is minimized, including assessment of insects, disease and other pests, storm damage, and damage by trespass. The results of inspections shall determine the need for additional treatment under this practice.

Replace dead or dying trees and shrubs and control competing vegetation to support successful establishment. Periodic application of mulch may be needed to maintain plant vigor. Periodic harvest of trees and shrubs (thinning and brushing) may be necessary to maintain the health and vigor of the stand and support its development toward more mature stand conditions. Keep large dead and dying trees for cavity nesting wildlife and bird species and as a source of downed wood in the forest understory and in adjacent or interior aquatic habitats.

If areas were brushed in order to plant trees, maintain these openings until the leader of the tree surpasses the height of the surrounding vegetation.

Where droughty soils and hot growing conditions are anticipated, supplemental watering is recommended. In such cases the District recommends watering planted nursery stock for a minimum of 3 summers following planting. Young bare root, container, and ball/burlap plants have a reduced root system that hampers their ability to survive during the dry summer months (July through October). Watering a minimum of once every two weeks during the dry summer will promote greater rates of survival. Watering once per week is preferable.

Monitor treatment areas for re-growth of non-native/invasive species and control accordingly. Utilize weed control techniques prescribed in the Site Preparation section of the Job Sheet. Species to monitor include **English Ivy, Holly, Laurel** and any listed King County Noxious weeds.

All plant protection materials as well as any other non-biodegradable materials installed on-site will be removed within the 3-5 year project maintenance window.

Additional Specifications and Notes:

Planting Plan - Boyle

2/22/2018

Project Description: This project will enhance 4,800 sq. ft. of riparian forest buffer along 100 feet of an unnamed tributary to Lake Washington. Invasive species: holly, laurel, and ivy will be removed and replaced with native trees and shrubs. The project slopes from 105 feet of elevation to 75 feet of elevation. Light conditions are part sun to part shade. The aspect faces south.

Soil Type: Kitsap Silt Loam, 15 to 30 percent slopes

Targets	
Trees 18'oc	Shrubs +GC 4' oc
10	200

Zone 1: 4,800 sq. ft. (estimated 30% coverage- 3,360 sq. ft. plantable)

Type	Species	Total	Zone 1	Moisture, Sunlight	Spacing	Cluster
Trees - Wetter						
	Western Red Cedar (<i>Thuja plicata</i>)	4	4	Wet/moist, full shade/part sun		
	Cascara (<i>Rhamnus purshiana</i>)	2	2	Moist, part shade/full sun		
Trees - Drier						
	Douglas fir (<i>Pseudotsuga menziesii</i>)	2	2	Moist/dry, sun/shade		
	Western Hemlock (<i>Tsuga heterophylla</i>)	2	2	Moist, part shade/full sun		
	Trees Total	10	10			
Shrubs - Wetter						
	Red Elderberry (<i>Sambucus racemosa</i>)	10	10	Moist, shade/part sun		
	Red Osier Dogwood (<i>Cornus sericea</i>)	0		Wet/moist, part shade/full sun		
	Salmonberry (<i>Rubus spectabilis</i>)	50	50	Wet/moist, part shade/part sun		
Shrubs - Drier						
	Evergreen Huckleberry (<i>Vaccinium ovatum</i>)	15	15	Dry/Moist, shade/part sun		
	Hazelnut (<i>Corylus cornuta</i>)	5	5	Moist/Dry, part shade/part sun		
	Indian plum (<i>Oemleria cerasiformis</i>)	10	10	Moist, shade/part sun		
	Mock Orange (<i>Phyladelphus lewisii</i>)	0		Moist, part shade/part sun		
	Ocean Spray (<i>Holodiscus discolor</i>)	0		Dry/Moist, part shade/part sun		
	Red Flowering Current (<i>Ribes sanguineum</i>)	0		Dry/Moist, part shade/full sun		
	Pacific Rhododendron (<i>Rhododendron Macrophyllum</i>)	5	5	Moist, shade/part sun		
	Snowberry (<i>Symphoricarpos albus</i>)	30	30	Moist/dry, part shade/full sun		
	Thimbleberry (<i>Rubus parviflora</i>)	0		Moist, full sun, some shade		
	Vine Maple (<i>Acer circinatum</i>)	5	5	Moist, part shade/part sun		
	Shrubs Total	130	130			
Groundcover						
	Low Oregon Grape (<i>Mahonia nervosa</i>)	20	20	Dry/Moist, shade/part sun		
	Salal (<i>Gaultheria shallon</i>)	20	20	Dry/Moist, shade/part sun		
	Sword Fern (<i>Polystichum munitum</i>)	30	30	Moist, full shade/part sun		
	Groundcover Total	70	70			

Project Implementation

Cooperator: Boyle, Alexandra

Date: 2/22/2018

Land Use: Urban residential. Contains unnamed tributary to Lake Washington (WRIA 8)			
Zones	Planned		Land use Treatment/Conservation Practices (See Specification Sheets section for details)
	Amount	mo/yr	
Project Boundary	4,800 sq. ft	April 2018	Site Preparation – Invasive species present within the project are English Ivy, Blackberry, English Holly, Laurel, and vinca. King CD, the Contractor, will use an integrated pest management (IPM) approach following King County Noxious Weeds Best Management Practices to remove invasive or noxious weeds. It is planned that ivy and vinca will be removed by hand, and that holly, laurel, and balckberry will be cut down and receive a cut-stump herbicide treatment. Herbicide formulations will be aquatic approved if applying near the creek and will be limited to the following active ingredients of triclopyr, imazapyr or glyphosate. Herbicides will be applied by a WSDA Licensed Applicator.
Project Boundary	4,800 sq. ft	After Site Prep	Erosion Control - Install straw wattles along the contour of the hill through areas that have been exposed by removal of ivy. Straw wattles will be installed approximately 15 feet apart where needed. Protect exposed soils through the installation of burlap sacks and mulch.
Project Boundary	4,800 sq. ft	April 2018	Planting – King CD will install a diverse mix of native trees and shrubs. See the included "Planting Plan_Boyle" for the specific species selected for the project. Plant stock will be either stakes, bareroot, or 1 gallon potted material. Protection & Mulching - Install a ring of mulch (3-4 inches in depth) around each plant.
Project Boundary	4,800 sq. ft	Summers 2018-2021	Maintenance - The project site will be maintained for 3 consecutive growing seasons following project installation. Maintenance will involve removal and control of invasive species that re-grow during the growing season. Techniques will include manual, mechanical and chemical controls. Herbicide formulations will be will be limited to the following active ingredients of triclopyr, imazapyr or glyphosate. If applying near the stream, herbicides will be applied by a WSDA Licensed Applicator with an aquatic endorsement. If plant mortality is more than 20% , replanting will occur the following planting season.

The owner/operator is responsible for obtaining all right of ways, and/or easements that are needed to implement this plan. The owner/operator is responsible for contacting utilities and assuring the work does not harm their facilities. The owner/operator is responsible for compliance with all federal, state, and local laws, ordinances, codes, and regulations.