



April 30, 2019

AOA-5800

Kevin Sutton
MZA
600 - 108th Ave. NE, Suite 108
Bellevue, WA 98004

SUBJECT: Critical Areas Study - Watercourse Delineation and Buffer Averaging for: Paek Residence – 2215 80th Ave. SE, Mercer Island, WA Parcel 545230-2145, City File # PRE19-011

Dear Kevin:

On October 30, 2018 I conducted an initial wetland and stream reconnaissance on the subject property utilizing the methodology outlined in the May 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. The site is currently entirely developed with an existing single-family residence and associated maintained yard.

Although no wetlands or streams were identified on the property during the site review, one stream (Stream 1) was observed draining from south to north off-site to the west. The ordinary high water (OHW) of this stream adjacent the subject property was delineated on January 3, 2019 and subsequently surveyed.

1.0 EXISTING CRITICAL AREAS

Stream 1 is located within a well-defined historically ditched channel that drains north into a culvert along the south property line of Parcel 531510-1680. The stream was dry during the October 30th site review and conveys only intermittent or seasonal flows.

Vegetation within the riparian corridor of the stream consists of maintained lawn to the edge of the west property line on the site. Vegetation within the off-site portion of the riparian corridor consisted primarily of dense Himalayan blackberry (*Rubus armeniacus*), snowberry (*Symphoricarpos albus*), and English ivy (*Hedera helix*), with scattered Lombardy poplar trees.

Since Stream 1 does not contain fish habitat and conveys only seasonal or intermittent flows, it meets the criteria for a Type 3 watercourse per MICC 19.07.070.A. Type 3 watercourses require a standard buffer of 35 feet from the ordinary high water per MICC 19.070.B.1.

2.0 PROPOSED PROJECT

The standard 35-foot stream buffer currently extends to the western edge of the existing residence. The proposed project consists of a house remodel and a second story addition. A watercourse buffer averaging plan has been prepared for the re-development of the western edge of the house (**Drawings W-1 through W-3**). The area proposed for buffer reduction under the averaging plan currently consists of an existing patio, deck, and stairs and does not provide any functional benefit to the off-site stream. Since no native vegetation would be removed as part of the house addition, there would be no loss of stream buffer function from the expansion project.

2.1 Watercourse Buffer Averaging

The City of Mercer Island may allow buffer averaging if all of the provisions of MICC 19.07.070.B.3 are met:

- a. *The proposal will result in a net improvement of critical area function;*

The area of proposed buffer reduction is currently developed, and no native vegetation would be removed as part of the buffer averaging plan. Since the proposal includes planting native vegetation within the buffer adjacent the existing fence line there would be a net improvement of critical area function.

- b. *The proposal will include replanting of the averaged buffer using native vegetation;*

A planting plan using native vegetation has been prepared for the area of watercourse buffer located along the fence and includes the area of proposed buffer addition in the northwest corner of the site. Since there will be no vegetation removal as part of the buffer averaging plan, it is our opinion that the entire watercourse buffer does not require re-planting and that the proposed planting plan will adequately increase the stream buffer functions over current conditions.

- c. *The total area contained in the averaged buffers on the development proposal site is not decreased below the total area that would be provided if the maximum width were not averaged;*

As part of the buffer averaging plan, 141 s.f. of buffer area would be reduced and replaced with 141 s.f. of additional buffer in the northwest corner of the site and there would be no loss of buffer area.

- d. The standard buffer width is not reduced to a width that is less than the minimum buffer width at any location; and*

The proposed buffer width will not be less than the minimum buffer width (i.e., 25 feet) at any location.

- e. That portion of the buffer that has been reduced in width shall not contain a steep slope.*

The reduced buffer area is not within a steep slope.

3.0 PROPOSED BUFFER PLANTING

Although there would be no loss of buffer function as part of the house project, a mitigation planting plan has been prepared to plant native shrubs within the maintained yard along the west property line (**Drawings W-1 through W-3**). It is my understanding that additional native vegetation is also proposed as part of the overall landscape design for the project. Implementation of the buffer enhancement plan would increase the habitat value of the buffer over current conditions.

Due to the small size of the project it does not appear that long-term performance monitoring should be required. However, if the City determines that monitoring is a requirement, then the following performance standards apply:

3.1 Goal, Objective, and Performance Standard for Enhancement Area

The primary goal of the enhancement plan is to increase the habitat value of the watercourse buffer over current conditions. To meet this goal, the following objectives and performance standards have been incorporated into the design of the plan:

Objective A: Increase the structural and plant species diversity within the enhancement area.

Performance Standard: There will be 100% survival of all woody planted species throughout the enhancement area at the end of the first year of planting. Following Years 2 through 5, success will be based on an 80% survival rate.

Objective B: Limit the amount of invasive and exotic species within the enhancement area.

Performance Standard: After installation and at the end of the fifth year after planting, exotic and invasive plant species will be maintained at levels below 10% total cover in all planted areas.

3.2 Monitoring Methodology

If required, the monitoring program will be conducted for a period of five years, with annual reports submitted to the City of Mercer Island.

Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress in plant community establishment in the enhancement area. Review of the photos over time will provide a visual representation of success of the plan.

3.3 Maintenance

Maintenance should be conducted on a routine, year-round basis. Contingency measures and remedial action on the site shall be implemented on an as-needed basis at the direction of the consultant or the owner. Tall grasses and weeds shall be removed at the base of plants to prevent engulment. Weed control should be performed by hand removal.

3.4 Contingency Plan

All dead plants will be replaced with the same species or an approved substitute species. Plant material shall meet the same specifications as originally installed material. Replanting will not occur until after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.). Replanting shall be completed under the direction of the consultant, City of Mercer Island, or the owner.

3.5 As-built Plan

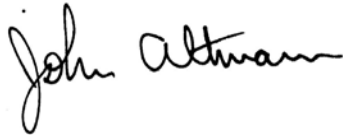
Following completion of construction activities, an as-built plan for the enhancement area will be provided to the City of Mercer Island. The plan will identify and describe any changes in relation to the original approved plan.

Kevin Sutton
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If you have any questions, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist



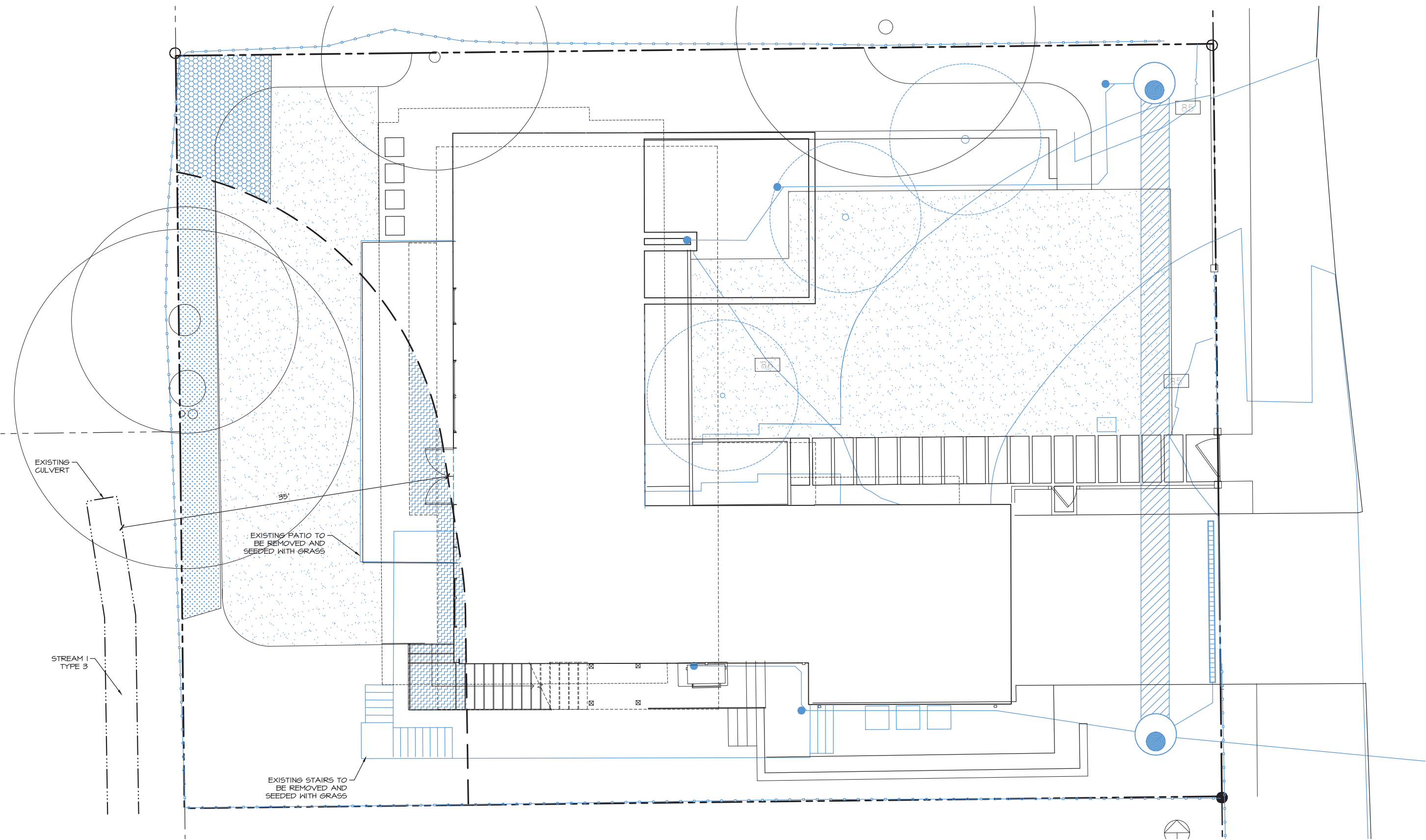
Photo 1: Panoramic View of back of house and buffer from NW corner of site.



Photo 2: Panoramic View of back of house and buffer looking north from south property line.



Photo 3: Typical view of ditched off-site watercourse.



PLAN LEGEND

- PROPERTY LINE
- - - - - ORDINARY HIGH WATER LINE OF TYPE 3 STREAM
- - - - - 35' STANDARD STREAM BUFFER

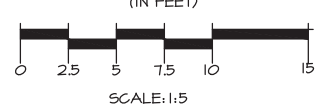
IMPACT LEGEND

- [Hatched Pattern] BUFFER REDUCTION 141 SF

MITIGATION LEGEND

- [Dotted Pattern] BUFFER REPLACEMENT 141 SF
- [Cross-hatched Pattern] STREAM BUFFER ENHANCEMENT 187 SF

GRAPHIC SCALE (IN FEET)



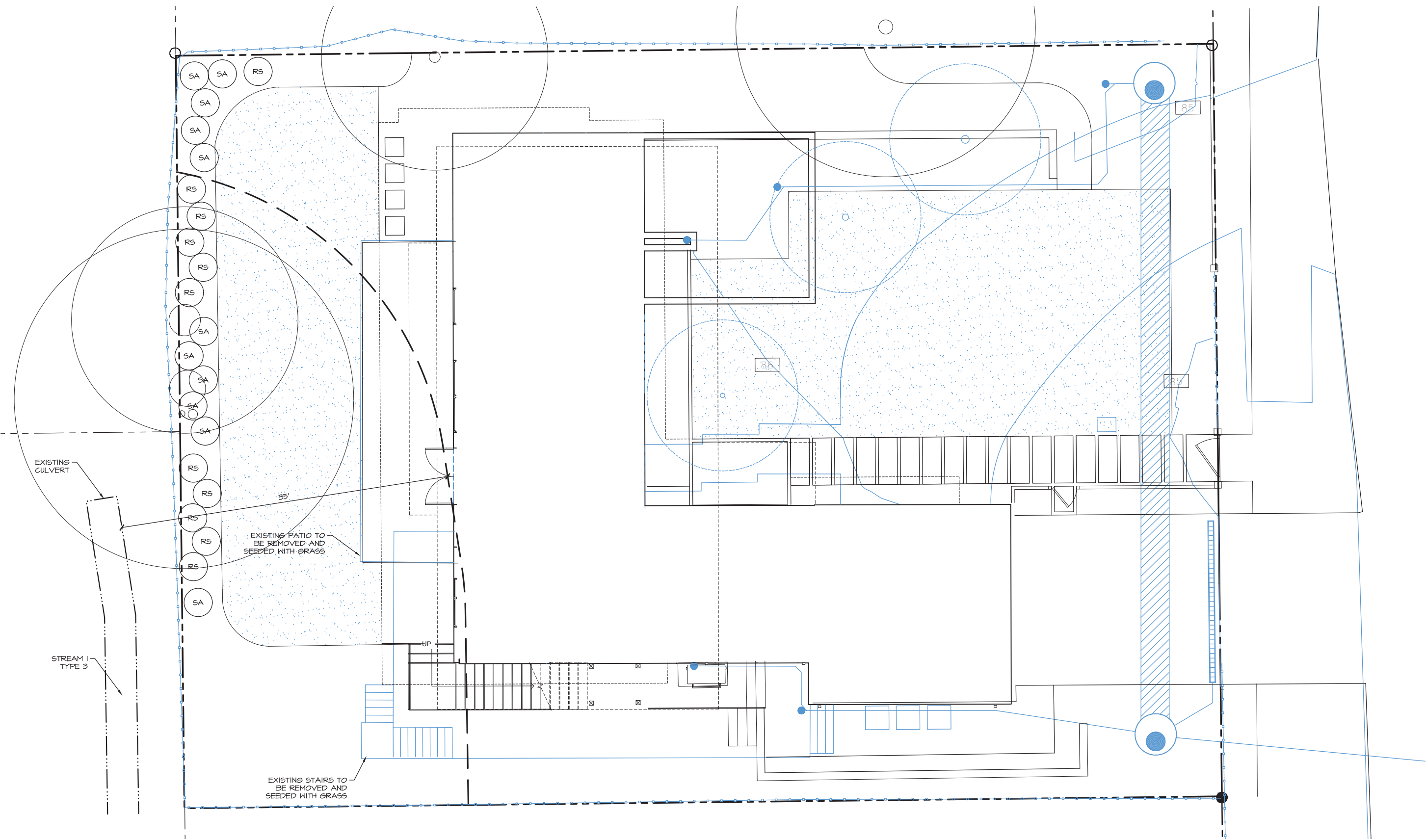
GENERAL NOTES

1. BASE INFORMATION PROVIDED BY MZA ARCHITECTURE, 600 108TH AVE NE, SUITE 108, BELLEVUE, WA 98004, (425) 554-7000.

**BUFFER AVERAGING PLAN
 PAKK RESIDENCE
 2215 80TH AVE SE
 MERCER ISLAND, WA 98040**

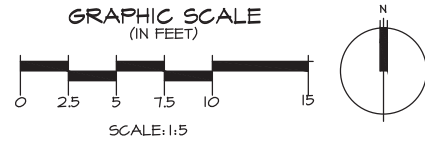
Revisions	Date	By

Date 04-30-19
 Scale AS NOTED
 Project # 5200



PLANT SCHEDULE

SHRUBS						
KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY.	SIZE (MIN.)	NOTES
RS	RIBES SANGUINEUM	RED CURRANT	3' O.C.	11	1 GAL.	MULTI-STEM (3 MIN.)
SA	SYMPHORICARPOS ALBUS	SNOWBERRY	3' O.C.	11	1 GAL.	MULTI-STEM (3 MIN.)



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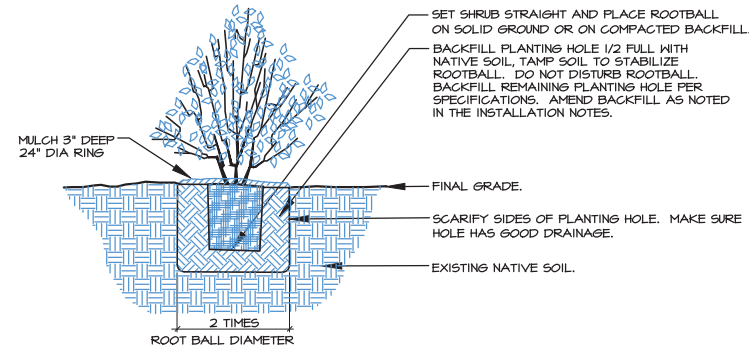
CONSTRUCTION SPECIFICATIONS

- ALL PLANTS SHOULD BE INSTALLED BETWEEN DECEMBER 1ST AND MARCH 15TH, UNLESS SUPPLEMENTAL IRRIGATION IS PROVIDED.
- INTERMEDIATE INSPECTIONS. ALL PLANTS SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE DESIGNER AND/OR WETLAND BIOLOGIST PRIOR TO INSTALLATION. CONDITION OF ROOTS OF A RANDOM SAMPLE OF PLANTS WILL BE INSPECTED, AS WELL AS ALL ABOVEGROUND GROWTH ON ALL PLANTS. ROOTS OF ANY BARE ROOT PLANTS, IF PERMITTED FOR USE, WILL BE INSPECTED. PLANT MATERIAL MAY BE APPROVED AT THE SOURCE, AT THE DISCRETION OF THE LANDSCAPE DESIGNER AND THE WETLAND BIOLOGIST, BUT ALL MATERIAL MUST BE RE-INSPECTED AND APPROVED ON THE SITE PRIOR TO INSTALLATION. PLANT LOCATIONS SHALL ALSO BE INSPECTED AND APPROVED PRIOR TO PLANTING.
- ALL PLANTS SHALL BE PIT-PLANTED IN PLANTING PITS EXCAVATED 2X THE DIAMETER OF THE PLANT. PITS SHALL BE BACKFILLED WITH A 30/70 MIX OF SIERCO TO NATIVE SOIL. PITS SHALL BE AMENDED WITH A HYDRATED SOIL POLYMER (INSTALLED AT RATES PER MANUFACTURER'S SPECIFICATIONS). PLANTS SHALL BE INSTALLED 3" HIGH AND SURFACED MULCHED TO A DEPTH OF 3" WITH PACIFIC GARDEN MULCH PLACED CONTINUOUSLY THROUGHOUT THE PLANTING BED.
- ALL PLANTS SHALL BE NURSERY GROWN (IN WESTERN WA OR OR) FOR AT LEAST 1 YEAR FROM PURCHASE DATE, FREE FROM DISEASE OR PESTS, WELL-ROOTED, BUT NOT ROOT-BOUND AND TRUE TO SPECIES.
- PLANT LAYOUT SHALL BE APPROVED BY AOA PRIOR TO INSTALLATION AND APPROVED UPON COMPLETION OF PLANTING.
- UPON COMPLETION OF PLANTING, ALL PLANTS SHALL BE THOROUGHLY WATERED.
- UPON APPROVAL OF PLANTING INSTALLATION BY AOA, THE CITY OF MERCER ISLAND WILL BE NOTIFIED TO CONDUCT A SITE REVIEW FOR FINAL APPROVAL OF CONSTRUCTION.
- MAINTENANCE SHALL BE IMPLEMENTED ON A REGULAR BASIS ACCORDING TO THE SCHEDULE BELOW.

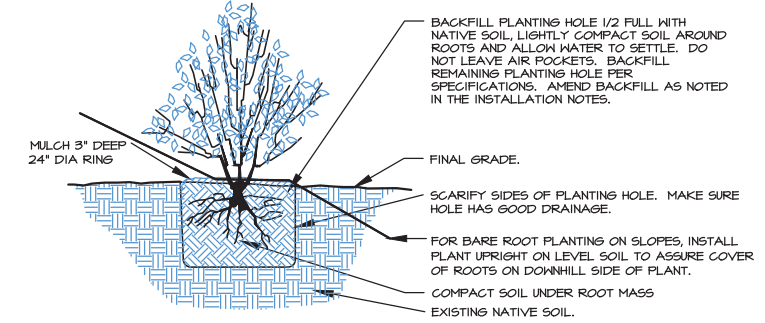
ANNUAL MAINTENANCE SCHEDULE

MAINTENANCE ITEM	J	F	M	A	M	J	J	A	S	O	N	D
WATERING - YEARS 1 & 2							Ø	Ø	Ø	Ø		
WEED CONTROL			I		I		I			I		
GENERAL MAINT.			I		I		I			I		

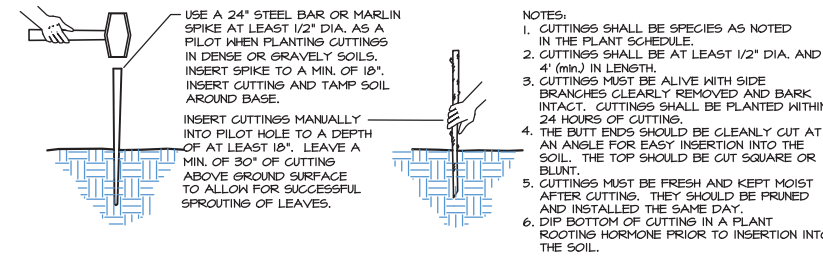
I-Ø = NUMBER OF TIMES TASK SHALL BE PERFORMED PER MONTH.



1 CONTAINER PLANTING DETAIL (TYP.)
SCALE: NTS



2 BARE-ROOT PLANTING DETAIL (TYP.)
SCALE: NTS



3 CUTTING INSTALLATION (TYP.)
SCALE: NTS

- NOTES:
- CUTTINGS SHALL BE SPECIES AS NOTED IN THE PLANT SCHEDULE.
 - CUTTINGS SHALL BE AT LEAST 1/2" DIA. AND 4' (min.) IN LENGTH.
 - CUTTINGS MUST BE ALIVE WITH SIDE BRANCHES CLEARLY REMOVED AND BARK INTACT. CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS OF CUTTING.
 - THE BUTT ENDS SHOULD BE CLEANLY CUT AT AN ANGLE FOR EASY INSERTION INTO THE SOIL. THE TOP SHOULD BE CUT SQUARE OR BLUNT.
 - CUTTINGS MUST BE FRESH AND KEPT MOIST AFTER CUTTING. THEY SHOULD BE PRUNED AND INSTALLED THE SAME DAY.
 - DIP BOTTOM OF CUTTING IN A PLANT ROOTING HORMONE PRIOR TO INSERTION INTO THE SOIL.



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SPECIFICATIONS & DETAILS
PAEK RESIDENCE
2215 80TH AVE SE
MERCER ISLAND, WA 98040

Revisions	Date	By

Date 04-30-19
Scale AS NOTED
Project# 5200

Sheet # N-3