

Corinne R. Hollister

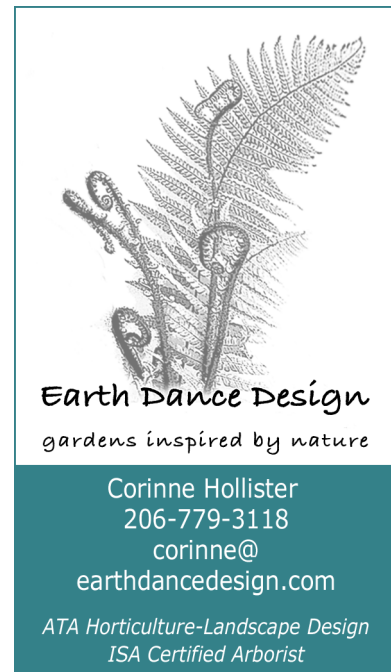
ISA CERTIFIED ARBORIST — *PN-6981A*  
ISA TREE RISK ASSESSMENT QUALIFIED  
American Society of Consulting Arborists, Member

Consulting Arborist Services

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To: JayMarc Homes, Jay Mesistrano  
Reference: Tree Inventory Report  
Updated with Tomography Results  
Date: September 28, 2021  
Site Address: 45XX 90th SE, Mercer Island 98040  
Parcel: 0191100190

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Dear Mr. Mesistrano,

You contacted me and subsequently contracted my services on behalf of JayMarc Homes to develop a tree inventory for the property referenced above. I visited the site on April 27, 2021, and collected data on all regulated trees. After my site visit, you sent me a topographic and boundary survey developed by Terrane, dated May 12, 2021. On September 14, 2021, I met Christopher Rippey (WE-7672AUTM) at the property to coordinate tomography testing on five (5) of the large Douglas-fir trees (*Psuedotsuga menziesii*), three (3) of which are adjacent to proposed construction on the parcel to the south. An inventory of all regulated trees, along with tree health and structure are the focus of this report. Tree retention and replacement calculations are included, as are limits of disturbance on one exceptional tree proposed for removal. This report does not include tree protection guidelines.

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### Summary:

I visually inspected the trees and identified eleven (11) exceptional trees on the parcel, due to trunk size or location in a tree grove as defined by Mercer Island Code 19.16.010. There are five (5) large trees on the parcel, and four (4) small trees, as indicated on the survey. Off-site trees potentially impacted by any proposed construction include a 41.6-inch exceptional Western red cedar (*Thuja plicata*) located in the right of way along 90th Ave. SE, and two (2) exceptional Douglas-fir trees on adjoining properties.

The regulated trees are a mix of predominantly native evergreen species, along with a few Bitter cherry trees (*Prunus emarginata*). There are several large shrubs on the parcel, which are not included in this report. All of the trees are listed in the table beginning on page 11. Ratings for health and structure are included, as are tree categories, and notes on any visible defects or diseases.

Total exceptional trees on site	11
Total large trees on site	5
Total exceptional trees in ROW	1
Total off-site exceptional trees	2
Total regulated trees	19

Total On-site Trees	16
Trees proposed for removal	8
Retention percentage	50%
Tree replacement requirement	18

Tomography test results on five (5) of the Douglas-fir trees indicate minor decay. Tomography details begin on page 5. Root disturbance on three (3) of these trees is proposed as part of a new home construction on the parcel to the south, under a separate permit. No root disturbance is proposed for the other two (2) trees testing. Tomography was recommended due to the presence of red ring rot in a smaller adjacent tree. That tree, along with a double-leader Bitter cherry, leaning to the SE, are recommended for removal.

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7. Limits of Disturbance on Exceptional Western Red Cedar (Tree #112)

## Introduction

I visually inspected the trees on site and identified eleven (11) exceptional trees on the parcel, five large trees, four (4) small trees as indicated on the survey. Offsite trees include one (1) exceptional tree in the ROW, and two (2) exceptional trees with overhanging branches located on adjoining properties to the north and west. Some measurements are estimated due to lack of access. The trees are predominantly native evergreen species – Douglas-fir and Western red cedar, as mentioned. There is a grove of trees located at the back of the parcel which continues on neighboring properties to the west and northwest.

All the trees are listed in the inventory table beginning on page 11.

## Limitations and Use of this Report

This tree report establishes existing conditions of the trees on the property, utilizing the most practical means available. This report is based primarily on what is readily visible and observable, without any invasive means, except on specific trees which were tested with tomography. Ratings for health and structure, as well as any recommendations, are valid only through project development and construction, and within a reasonable amount of time.

There are several factors that can affect a tree's condition, which may be pre-existing and indeterminable with only a visual analysis. No attempt was made to establish the presence of hidden or concealed conditions which may contribute to the risk or failure potential of trees on or adjacent to the site, except as indicated. These conditions include root and stem (trunk) rot, internal cracks, structural defects or construction damage to roots, which may be hidden beneath the soil. In addition, construction and post-construction circumstances can cause a relatively rapid deterioration of a tree's condition.

There were no limitations preventing access to most of the trees, except to those located on neighboring properties where fences blocked views of the trunks or permission would be required to obtain access and accurate measurements. Any measurements estimated are indicated as such.

## Tree Inspection:

This inspection identifies both the health and the structure of each tree. Tree health assesses disease, insect infestation and old age. Tree structure is the manner in which a tree is constructed, along with observable defects, which can indicate if a tree is subject to failure.

The inventory table on page 6 reflects the results of my inspection, including the following for each tree:

- Number – as shown on the annotated survey attached.
- Species – both common and Latin names.
- DBH – stem diameter measured in inches, 4.5 feet from the ground, unless otherwise indicated.
- Dripline – average branch extension from the trunk, measured as radius in feet from trunk center.
- Category – small, large, exceptional, and/or grove as defined by Mercer Island Municipal Code, 19.16.010.
- Ratings – from 1 to 3 (where '1' indicates no visible defects in structure or health; '2' indicates minor to moderate problems that may require action; '3' indicates significant problems or defects and tree removal is recommended).
- Visible defects – Visible structural defects or diseases:

*Asymmetrical canopy – tree has an unbalanced canopy often due to space and light competition from adjacent trees or structures.*

*Conk – the bracket or shelf-shaping fruiting body of a decay fungus on trunks which can indicate significant internal decay, dying or dead trees.*

*Dog-leg – trunk with a bow or defective bend.*

*Grove – a group of trees growing in close proximity where limited light and space can cause asymmetrical canopies, suppressed conditions and low live crown ratio. Retention or removal of any tree within a grove can impact the health and structure of the entire grove.*

*Lean – angle of trunk from vertical.*

*Live Crown Ratio (LCR) – ratio of height of the crown containing live foliage to the overall height of the tree. Stand-alone trees with an LCR of 30 and lower or at a higher risk of failure.*

*Multiple leaders – tree has multiple stem attachments, which may lead to tree failure and require maintenance or monitoring over time.*

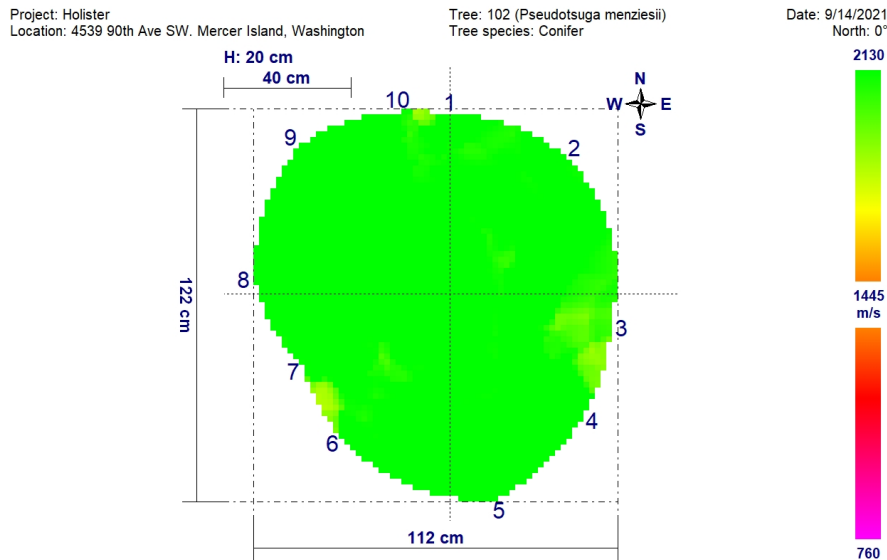
*Poor structure – tree's structure is deformed and defective/unsightly.*

*Resin on trunk – may or may not indicate stress or decline.*

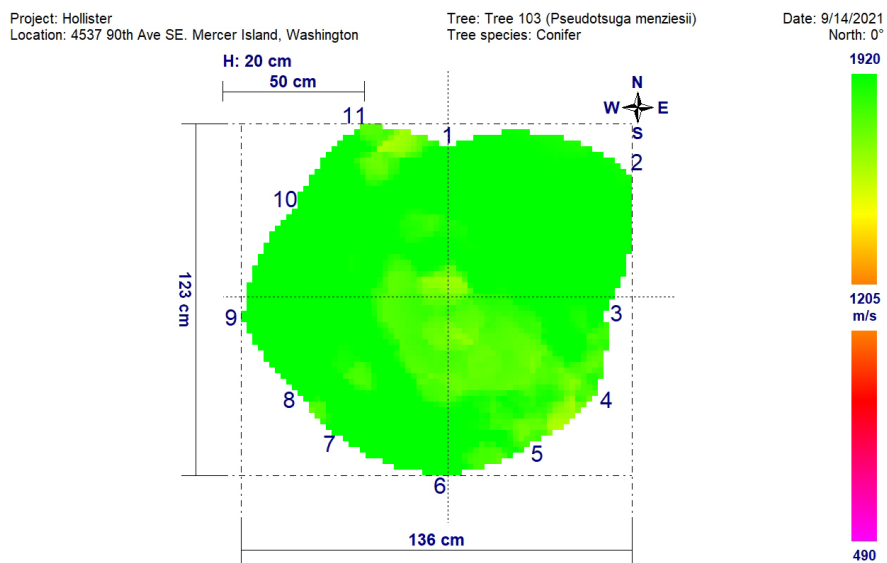
*Suppressed – tree crowded by larger adjacent trees, with possible defective structure and/or low vigor. Retain tree only as part of a grove, not a stand-alone.*

**Tomography Results:**

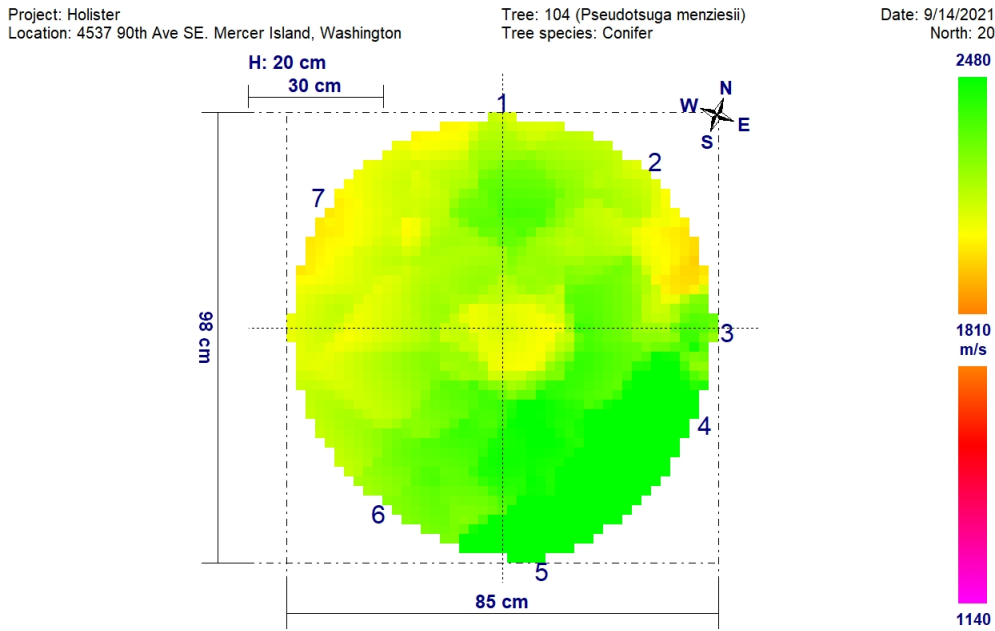
Tree 102 has two superficial cracks in the north and southwest quadrant, and some sapwood decay in the eastern quadrant. Reassessment in five years recommended.



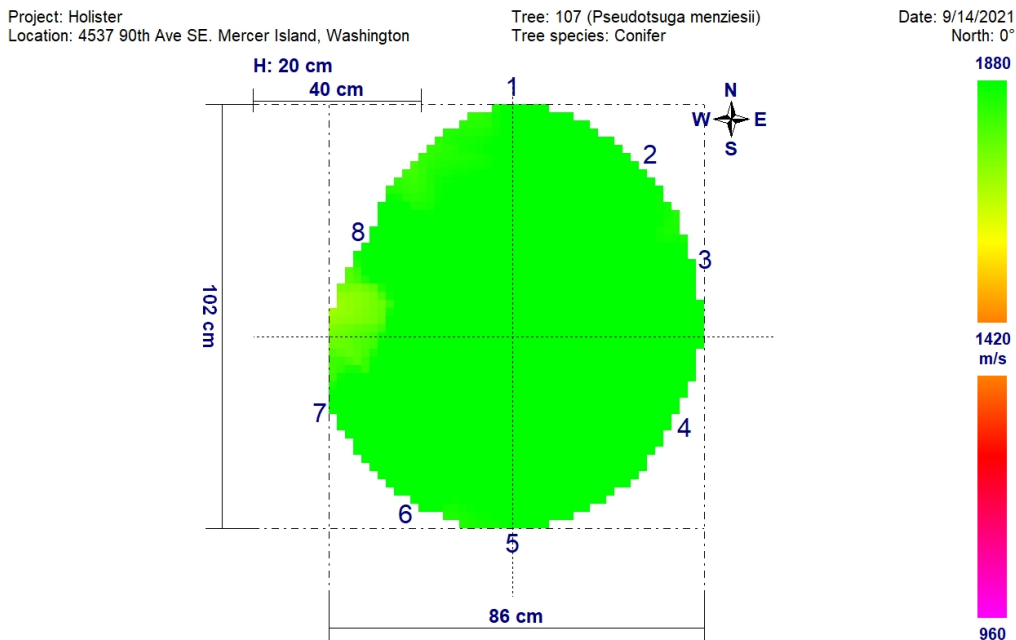
Tree 103 has sapwood decay in its northeast and southwest quadrants, and some heartwood decay emanating to the southeast. Reassessment after planned construction or two years from initial test recommended.



Tree 104 has sapwood decay on its northwest and northeast quadrants, and some centralized heartwood decay. The decay in the tree is estimated to be causing a 13% strength loss. Provide appropriate tree protection during construction. Reassessment after planned construction or two years from initial test recommended.



Tree 107 has a superficial crack in the west quadrant. Reassessment in five years recommended.

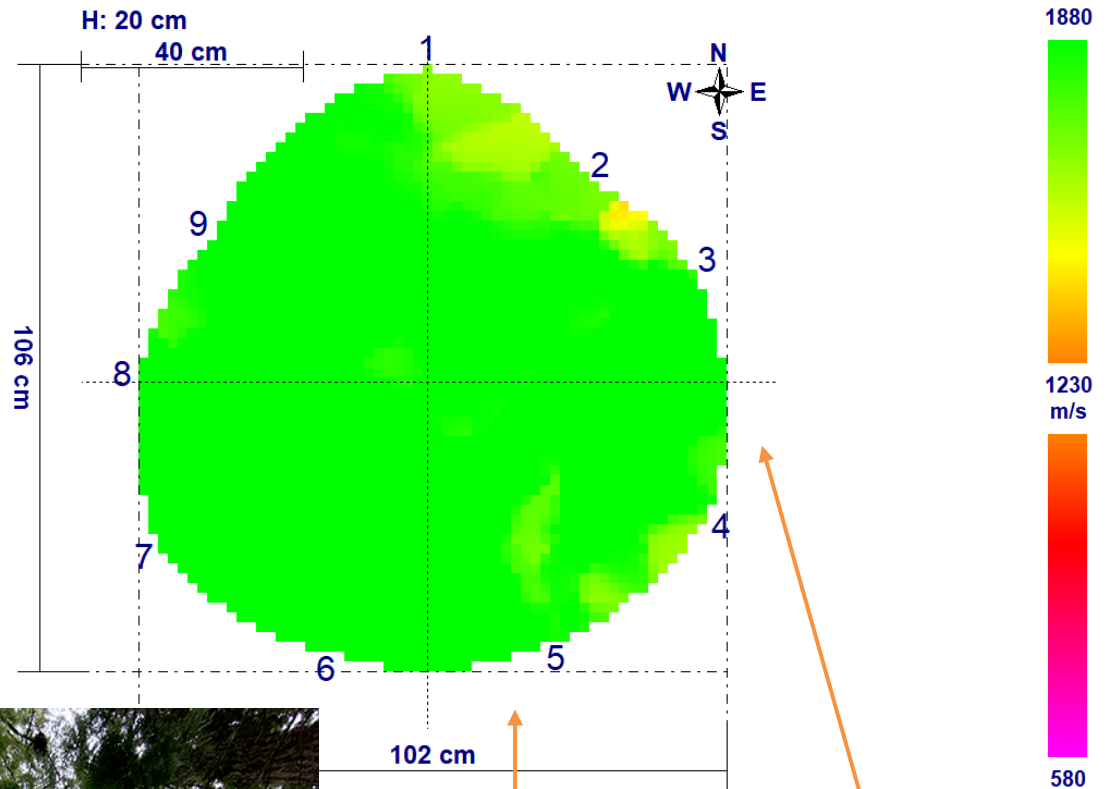


Tree 108 has two superficial cracks in its northeast and southeast quadrants and one area of sapwood decay in its northeast quadrant. Reassessment in five years recommended.

Project: Holister  
 Location: 4537 90th Ave SE. Mercer Island, Washington

Tree: 108 (*Pseudotsuga menziesii*)  
 Tree species: Conifer

Date: 9/14/2021  
 North: 0°



Potential construction impacts East – new foundation, and South – shed demolition.

Tree #108, center, a 35-inch Douglas-fir, this page.  
 Tree #107, left of center, a 29-inch, Douglas-fir, page 6.  
 Tree #109, a 20-inch Douglas-fir, in background.

**Tree Retention and Replacement:**

Tree#	Species	DBH	Dripline	Category	Retain	Replacement
101	Douglas-fir	24 in.	18 ft	Exceptional/Grove	Yes	
102	Douglas-fir	36.5 in.	26 ft.	Exceptional/Grove	Yes	
103	<i>Douglas-fir</i>	40 in.	26 ft	Exceptional/Grove	Yes	
104	Douglas-fir	30.5 in.	26 ft.	Exceptional/Grove	Yes	
105	Douglas-fir	11 in.	9 ft.	Exceptional/Grove	Yes	
106	Douglas-fir	14 in.	9 ft.	Potential high-risk	No	NA
107	Douglas-fir	29 in.	10 ft.	Exceptional/Grove	Yes	
108	Douglas-fir	35 in.	22 ft.	Exceptional/Grove	Yes	
109	Douglas-fir	20 in.	11 ft.	Exceptional/Grove	Yes	
110	Bitter cherry	6 in.	12 ft.	Small Tree	Yes	
111	Portugal laurel	7 in.	11 ft.	Small Tree	Yes	
112	Western red cedar	50 in.*	28 ft.	Exceptional/Grove	No	6
113	Bitter cherry	6 in.	12 ft.	Small Tree	Yes	
114	<i>Bitter cherry</i>	10 in.	14 ft.	Potential high-risk	No	NA
115	Western red cedar	13 in.	17 ft.	Large Tree	No	2
116	Western red cedar	18 in.	17 ft.	Large Tree	No	2
117	Western red cedar	15 in.	17 ft.	Large Tree	No	2
118	Western red cedar	28.8 in. *	15 ft.	Large Tree	No	3
119	Western red cedar	21 in.	19 ft.	Large Tree	No	2
120	Orchard apple	4 in.	5 ft.	Small Tree	No	1
<b>ROW and Offsite Trees</b>						
A	Western red cedar	41.6 in. *	20 ft	Exceptional	Yes	
E	Douglas-fir	30 in.	see notes	Exceptional/Grove	Yes	
F	Douglas-fir	34 in.	see notes	Exceptional/Grove	Yes	
G	Mountain ash	6 in.	7 ft.	Small Tree	No	
Total Regulated Trees On-site = 16 Total Trees Retained = 8 Total Trees Removed = 8				High-Risk Trees = 2 Retention = 50% Total Tree Replacement On-site = 18		



## Attachment 1: Assumptions and Limiting Conditions

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1. A field examination of the site was made on April 27, 2021. Tomography testing was performed by Christopher Rippey of Rippey Arboriculture on September 1, 2014. Observations and conclusions are as of that most recent date.
2. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, as the consultant/arborist I can neither guarantee nor be responsible for the accuracy of information provided by others.
3. I am not a qualified land surveyor, and this tree report is based on an aerial photo from the King County iMap web site. I received a topographic survey after my site visit. Sketches and photographs in this report are not necessarily to scale and should not be construed as an accurate survey.
4. I, as consultant/appraiser, shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made.
5. Unless stated otherwise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied that problems or deficiencies of the subject tree may not arise in the future.
6. Unless required by law otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without prior written or verbal consent of the consultant.
7. All trees possess the risk of failure. Trees can fail at any time, with or without obvious defects, and with or without applied stress. Risk management is solely the responsibility of the landowner.
8. Construction activities can impact trees in unpredictable ways. All retained trees should be inspected at the completion of construction, and regularly thereafter as part of ongoing maintenance.

## Attachment 2: Certificate of Performance

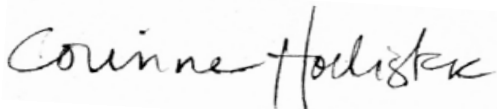
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I, Corinne Hollister, certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinion, and conclusions stated herein are my own and are based on current industry standards, scientific procedures and facts.
- My analysis, opinion, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated within the report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of the International Society of Arboriculture (ISA), and the ISA PNW Chapter, I am an ISA Certified Arborist (#PN-6981A) and am Tree Risk Assessment Qualified. I also am a member of the American Society of Consulting Arborists (ASCA).

Signed,



Corinne Hollister

Date: September 28, 2021

**Attachment 3: Tree Inventory Table**

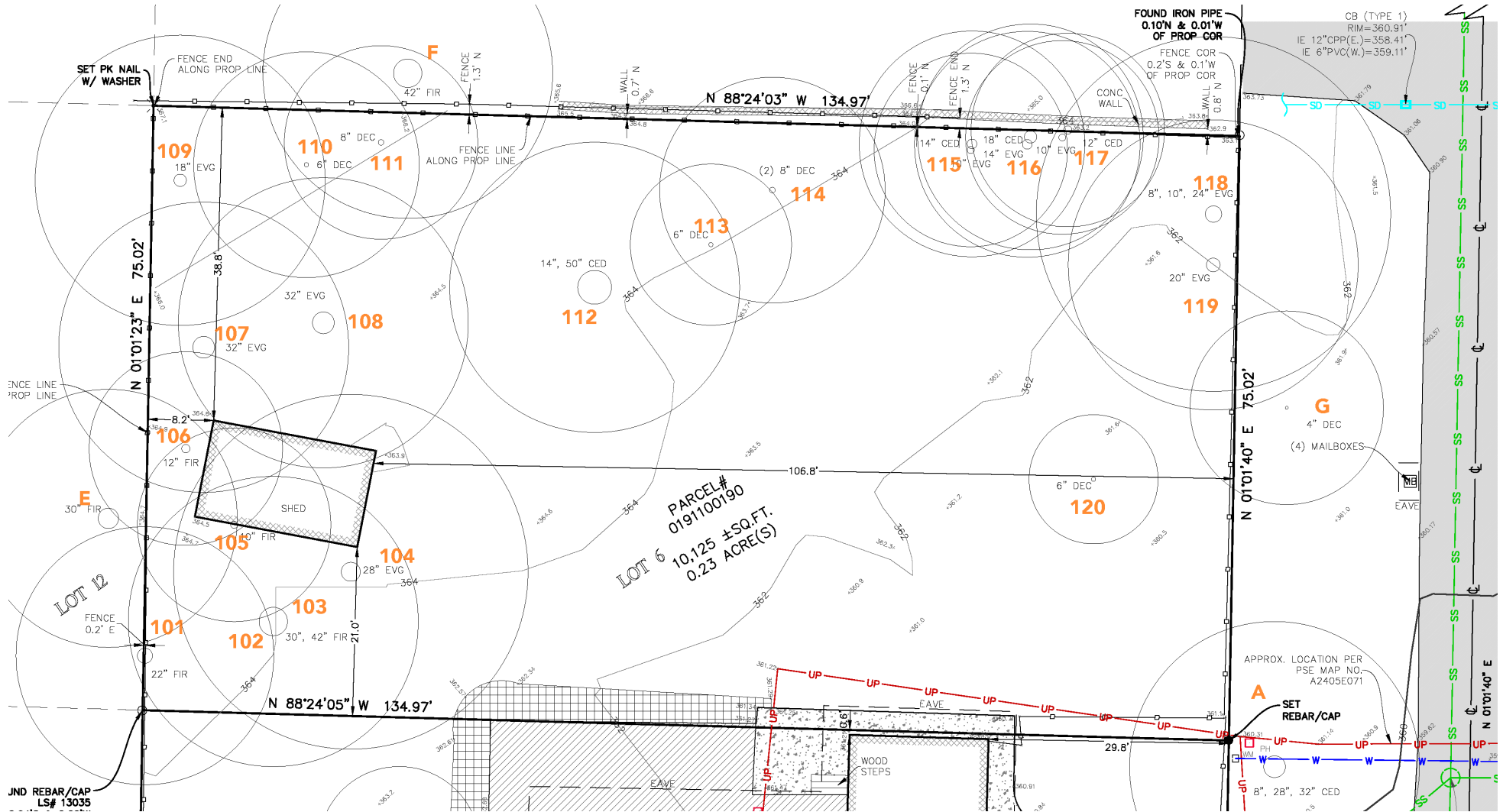
Tree#	Species	DBH	Dripline	Health	Structure	Category	Notes
101	<i>Pseudotsuga menziesii</i> Douglas-fir	24 in.	18 ft	1	1	Exceptional Grove Tree	Located in the middle of the fenceline at back of parcel.
102	<i>Pseudotsuga menziesii</i> Douglas-fir	36.5 in.	14 ft.	1	1	Exceptional Grove Tree	Very close to Tree #103 near existing shed. Level 3 tomography testing – completed.
103	<i>Pseudotsuga menziesii</i> Douglas-fir	40 in.	26 ft	1	1	Exceptional Grove Tree	Very close to Tree #102 near existing shed. Level 3 tomography testing – completed.
104	<i>Pseudotsuga menziesii</i> Douglas-fir	30.5 in.	26 ft.	2	2	Exceptional Grove Tree	Resin on trunk, low live crown ratio. Level 3 tomography testing – completed.
105	<i>Pseudotsuga menziesii</i> Douglas-fir	11 in.	9 ft.	1	2	Exceptional Grove Tree	Suppressed. Low live crown ratio. Growing through cutout in roof of shed.
106	<i>Pseudotsuga menziesii</i> Douglas-fir	14 in.	9 ft.	3	3	Potential high-risk	Exceptional due to grove. Tree is dead or dying. Conks on trunk. Removal recommended.
107	<i>Pseudotsuga menziesii</i> Douglas-fir	29 in.	10 ft.	1	2	Exceptional Grove Tree	Low live crown ratio. Resin on trunk. Level 3 tomography testing – completed.
108	<i>Pseudotsuga menziesii</i> Douglas-fir	20 in.	8 ft.	1	2	Exceptional Grove Tree	Level 3 tomography testing – completed.
109	<i>Prunus emarginata</i> Bitter cherry	20 in.	11 ft.	1	2	Exceptional Grove Tree	Located in NW corner of parcel. Suppressed. Low LCR.
110	<i>Prunus emarginata</i> Bitter cherry	6 in.	12 ft	1	2	Small Tree	Suppressed. Unregulated tree.
111	<i>Prunus lusitanica</i> Portugal laurel	7 in.	11 ft.	1	1	Small Tree	Unregulated tree.
112	<i>Thuja plicata</i> Western red cedar	50 in.*	28 ft.	1	1	Exceptional Grove Tree	Two stems: 47 and 13.5 inches.
113	<i>Prunus emarginata</i> Bitter cherry	6 in.	12 ft.	1	1	Small Tree	Unregulated tree.

Tree#	Species	DBH	Dripline	Health	Structure	Category	Notes
114	<i>Prunus emarginata</i> Bitter cherry	10 in.	14 ft.	2	3	Potential high-risk	Exceptional due to grove. Poor structure, low LCR, suppressed. Lean to SE. Removal recommended.
115	<i>Thuja plicata</i> Western red cedar	13 in.	17 ft.	1	1	Large Tree	
116	<i>Thuja plicata</i> Western red cedar	18 in.	17 ft.	1	1	Large Tree	
117	<i>Thuja plicata</i> Western red cedar	15 in.	17 ft.	1	1	Large Tree	
118	<i>Thuja plicata</i> Western red cedar	28.8 in. *	15 ft.	1	1	Large Tree	Three main stems: 25.5, 9 and 10 inches.
119	<i>Thuja plicata</i> Western red cedar	21 in.	19 ft.	1	1	Large Tree	
120	<i>Malus spp.</i> Orchard apple	4 in.	5 ft.	1	1	Small Tree	Unregulated tree.
Off-site and ROW Trees							
A	<i>Thuja plicata</i> Western red cedar	41.6 in. *	20 ft	1	1	Exceptional	Two stems: 28 and 31 inches. Located in right of way in front of 4537 90th Ave SE.
E	<i>Pseudotsuga menziesii</i> Douglas-fir	30 in.	see notes	1	2	Exceptional Grove Tree	Located off-site to west. Slight dog-leg in trunk. Estimated measurements. Branches overhang by 8 ft.
F	<i>Pseudotsuga menziesii</i> Douglas-fir	34 in.	see notes	1	2	Exceptional Grove Tree	Located off-site to north. Low live crown ratio. Measurements estimated. 12 ft. overhanging branches.
G	<i>Sorbus aucuparia</i> Mountain ash	6 in.	7 ft.	1	2	Small Tree	Four stems, 2 to 3 inches in diameter. Located in right of way.

Health and Structure ratings – '1' indicates none to minor visible health-related problems or structural defects, '2' indicates moderate to major visible problems or defects that may require attention if the tree is retained, and '3' indicates significant visible problems or defects and tree removal is recommended.

Tree categories – small, large, exceptional, grove as defined by MICC 19.16.010.

Attachment 5: Annotated Survey



Corinne Hollister

Earth Dance Design

117 E. Louisa St. #128

Seattle, WA 98102

Attachment 6: Photos of site



Above: Looking west. Trees #115-117.

Right: Tree #112, a 50-inch Western red cedar.



Above: Looking north. Tree A in foreground (R), Trees #115-119 in background (R), and Tree #112, an exceptional Western red cedar, located west of a break in continuous canopy.

Right: Tree #1, adjacent to existing home.



Above: Looking west at back of parcel. Trees #102, #103, #104 (partial view).

Above Right: Tree Grove.

Right: Fruiting bodies or red ring rot on Tree #106 indicates significant internal decay.  
Removal recommended. Level 2/3 Risk Assessment completed on adjacent trees.

Attachment 7: Tree Grove





## Attachment 7: Limits of Disturbance on Exceptional Western Red Cedar

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Date: June 17, 2021

Dear Mr. Mesistrano,

This letter is in response to your request for limits of disturbance on Tree #112, an exceptional Western red cedar (*Thuja plicata*) located on the parcel referenced above. You sent me a site study for review as part of my assignment. I submitted a full tree inventory for this property on May 17, 2021.

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### Summary:

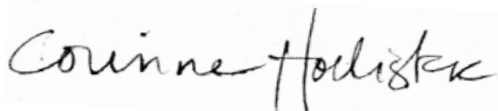
Tree #112 is located in the center of the lot and is part of a grove of trees that crosses the western boundary of the property. It has two main stems and measures 50 inches in diameter using a quadratic mean calculation, which is standard industry practice for multi-stem trees. Using visual assessment techniques, I assigned high ratings for both health and structure. The dripline – measured as a radius from trunk center – is 28 feet. This tree is considered exceptional as defined by Mercer Island Municipal Code, 19.16.010, due to size and grove status.

Mercer Island Code for tree protection is defined in 19.10.080 and follows best management practices published by the International Society of Arboriculture (ISA) in *Managing Trees During Construction*, Kelby Fite and E. Thomas Smiley, 2016. Companion publication to ANSI A300 Part 5: Management of Trees and Shrubs During Site Planning, Site Development and Construction.

Given the size and maturity of the cedar, and species tolerance to construction impacts, I recommend the Tree Protection Zone (TPZ) be set at the edge of the dripline, or 28 feet from trunk center. I have included alternative methods for defining the TPZ for your consideration. These limits of disturbance assume impact on one side of the tree.

Tree Species	DBH	Dripline	Tolerance	Relative Age	TPZ – Dripline	TPZ – Trunk Formula
Western red cedar	50 in.	28 ft.	Moderate	Mature	28 ft.	X 6 = 25 ft. x 8 = 33.3 ft. x 12 = 50 ft.

Signed,



Corinne Hollister

Date: June 17, 2021

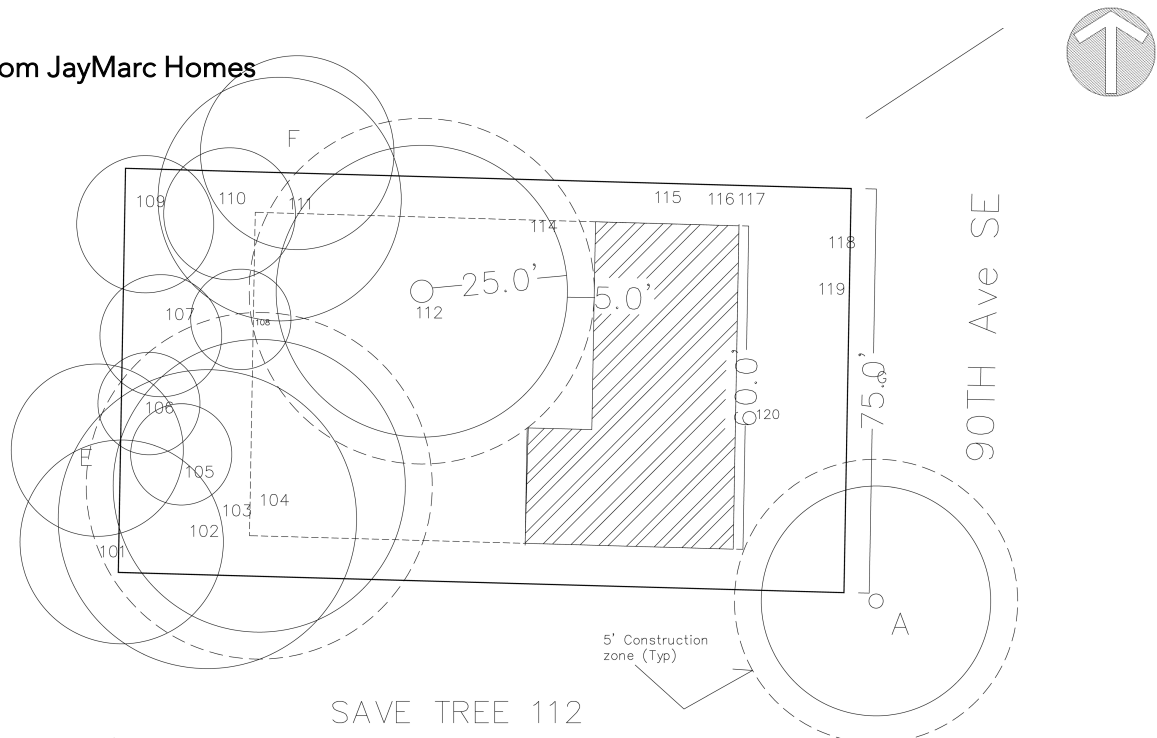
### 19.10.080 Tree Protection Standards

A. To ensure long-term viability of trees identified for protection, permit plans and construction activities shall comply with the then-existing Best Management Practices (BMP) – Managing Trees During Construction, published by the International Society of Arboriculture, adopted by reference. The tree protection plan shall be prepared by a qualified arborist and the plan shall be reviewed for adequacy by the city arborist. All minimum required tree protection measures shall be shown on the development plan set and tree replanting/restoration/protection plan.

B. *Alternative Methods.* The city arborist may approve construction-related activity or work within the tree protection barriers if the city arborist concludes:

1. That such activity or work will not threaten the long-term health of the retained tree(s); and
2. That such activity or work complies with the protective methods and best building practices established by the International Society of Arboriculture. (Ord. 17C-15 § 1 (Att. A)).

#### Site Study from JayMarc Homes



SAVE TREE 112

Max FAR is  $.4 \times 10,125 = 4050$  sf  
 85% of that is 3,442 sf  
 This Footprint yields 3,248 sf which is 81%

PARCEL #  
0191100190  
10,125 ± SQ. FT.  
0.23 ± ACRE(S)

Tree Protection Zone set at factor of 6, or 25 feet, using Trunk Formula from ISA BMPs.  
 Dripline is 28 feet from trunk center.