

Corinne R. Hollister

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

Consulting Arborist Services

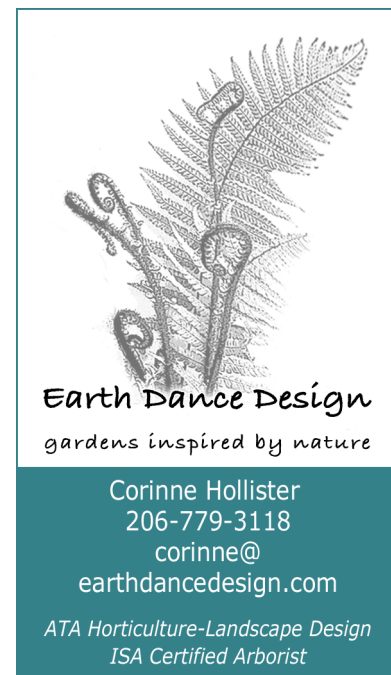
To: Gray Upper
JayMarc Homes

Reference: Tree Inventory Report

Date: May 31, 2023

Site Address: 8434 SE 38th, Mercer Island 98040

Parcel: 5021900691



Dear Mr. Upper

You contacted me and subsequently contracted my services on behalf of JayMarc Homes to develop a tree inventory for the property referenced above. I received a topographic and boundary survey developed by Terrain, dated March 24, 2021. You also sent me a site plan but no review of that plan is provided here. I visited the site on May 23, 2023, to inspect the regulated trees, which are the focus of this report.

Summary:

Total Onsite Regulated Trees	12
Total Onsite Significant Trees	10
Significant Trees Proposed for Removal	TBD
Total Onsite Exceptional Trees	2
Exceptional Trees Proposed for Removal	0
Total Trees Proposed for Retention	TBD
Total Small Trees Onsite	8
Replacement Trees Required	TBD
Total ROW Trees	1
Total Offsite Trees w/Overhanging Branches	3
Total Replacement Trees Currently Onsite	11
Total Regulated Trees	35

I visually inspected the trees and identified twelve (12) significant trees, and two (2) exceptional trees on the property – both Pacific dogwood (*Cornus nutalii*). There are eight (8) small trees on the parcel, mostly Japanese cedar (*Cryptomeria japonica* spp.) and at least eleven (11) replacement trees – a mix of Thundercloud plum (*Prunus cerasifera* 'Thundercloud') and Himalayan cedar (*Cedrus deodara* 'Karl Fuchs').

There is a cluster of Hawthorn (*Crataegus monogyna*) which I measured as two (2) trees in the ROW, and three (3) offsite trees across the fence on the northeast corner.

All trees are listed in the tree table on page 9. Ratings for health and structure are included, as are tree categories, notes on any visible defects or diseases, along with limits of disturbance (LOD).

MICC 19.10.080 Tree Protection Standards establishes tree protection based on best management practices from the International Society of Arboriculture (ISA). Limits of disturbance (LOD) are provided here and calculated using rootplate¹ and trunk diameter,^{2,3} and ISA BMPs⁴. The LOD is the minimum distance from a tree for any soil disturbance, represents the area to be protected during construction and assumes impact on only one side of the tree. This LOD measurement may be adjusted during the design and construction process, only if reviewed and approved by a city planner and/or the project arborist.

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¹ Coder, Kim D. 2005. Tree Biomechanics Series. University of Georgia School of Forest Resources.

² Smiley, E. Thomas, Ph. D. Assessing the Failure Potential of Tree Roots, Shade Tree Technical Report. Bartlett Tree Research Laboratories.

³ Fite, Kelby and E. Thomas Smiley. 2009. Managing Trees During construction; Part Two. Arborist News. ISA.

⁴ Companion publication to the ANSI A300 Series, Part 5: Managing Trees During Construction. 2016. ISA.

Introduction

I visually inspected the trees on the parcel and identified two (2) exceptional trees, twelve (12) significant trees, and eight (8) small trees. There are two (2) trees located in a cluster in the ROW, and three (3) offsite trees with overhanging branches. There are also at least eleven (11) replacement trees. The trees are a mix of native deciduous and ornamental species, two (2) fruiting species and twelve (12) Japanese cedar planted in a row along the east boundary behind the existing home.

All the trees are listed in the inventory table which begins on page 9.

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. 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. 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, and/or permission would be required to obtain access and accurate measurements or identification. 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 results of this inspection are based on what was visible at the time of my site visit.

The inventory table on pages 9 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/significant, or exceptional, as defined by Mercer Island Municipal Code, 19.16.010. Replacement tree identifies those trees associated with a previous required planting.
- 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).
- Limits of Disturbance – (LOD) is the minimum distance from a tree for any soil disturbance, represents the area to be protected during construction and assumes impact on only one side of the tree. This LOD measurement may be adjusted during the design and construction process, only if reviewed and approved by a city planner and/or the project arborist.
- Visible defects – Visible structural defects or diseases:
 - Anthrachnose – common fungal infection in Dogwood species. Symptoms include lesions in leaves, stems, fruits, or flowers and cankers on twigs and branches.*
 - Cavity – open or closed hollow area within the trunk or a branch, usually associated with decay.*
 - Decay – process of wood degradation by micro-organisms resulting in weak and defective structure.*
 - Lean – angle of trunk from vertical.*
 - Multiple leaders – tree has multiple stem attachments, which may lead to tree failure and require maintenance or monitoring over time.*
 - Trunk flare – transition zone from trunk to roots where the trunk expands into the buttress or structural roots. When hidden, indicates the tree is buried too deep which can lead to decline.*
 - Watersprouts – upright, epicormic shoot arising from the trunk or branches, which is sometimes a response from over pruning.*

Tree Protection Guidelines – Preliminary

Tree removal: Removal of all trees adjacent to any tree protection area shall occur under the direction of the project arborist and be completed without impact to any retained tree. Tree stumps and roots shall be ground in place if necessary, rather than pushed over or pulled out by heavy equipment if adjacent to any retained tree.

Tree protection fencing: A six-foot temporary chain-link fence or approved orange polyurethane equivalent shall be installed outside the driplines of all retained trees. All site plans shall include tree

protection fencing placement. Fencing shall be installed before any site disturbance, demolition or construction, and after tree removal and pruning for clearance is complete. The project arborist or a city planner shall approve fencing material and placement prior to demolition or construction. Any modifications to tree protection measures shall be approved by the project arborist or a city planner.

General tree protections: No stockpiling of materials, vehicular or pedestrian traffic, material storage or use of equipment or machinery shall be allowed inside the tree protection fencing, or under any trees located in or adjacent to the ROW.

A 6- to 8- inch layer of arborist chips is recommended in the dripline area of all trees to retain moisture and limit soil compaction. Where the tree protection fencing is placed inside any dripline to allow for access, working space, demolition, construction, or grade changes, 5/4-inch plywood shall be placed on top of a minimum 6-inch layer of arborists chips for additional protection.

Onsite monitoring and documentation by project arborist shall be developed if necessary once plans are finalized.

All stormwater management and drainage shall be directed outside the driplines and away from any tree.

Fill or cuts to grade: No fill shall be placed inside tree protection areas as indicated by fencing or as work zones on the site plan. Any plans for fill deeper than 3 inches placed over roots within the dripline shall be reviewed by the project arborist and/or a city planner. No cuts to grade within the tree protection area are allowed without review and approval of a city planner and the project arborist.

Landscaping: Soil amendment and planting within the dripline of any retained tree shall be kept to a minimum to limit root disturbance. Irrigation lines should not cross into undisturbed areas and increased watering added only as part of a long-term management plan for tree survival.

Pruning specifications shall be developed as necessary once plans are finalized. All pruning shall be performed by an ISA certified arborist following ANSI A300 standards.

A post-construction monitoring and maintenance plan shall be developed, including strategies for mulch, fertilization, irrigation, soil aeration and pruning, where necessary. All trees – retained and replanted – shall be inspected annually for five years after construction to assess changes in condition and signs of stress or disease.

Tree protection is required throughout construction.

Tree Replacement – Preliminary Notes

MICC 19.10.070 requires replacement trees to be predominantly native species. Conifer species must be six (6) feet tall and deciduous species must be a minimum of 1.5 inches in caliper.

The total number of replacement trees, species and final placement will be determined as the project design is finalized, and included in a landscape plan. Any required fee-in-lieu of planting will be determined by the City of Mercer Island.

Tree Removal

I recommend an advanced tree risk assessment be performed on Tree #18 if Tree #19 is removed. Tree #18, a 14-inch Mountain ash, exhibits trunk decay and leans to the north. Removing Tree #19 would likely increase likelihood of tree failure as it provides protection from prevailing southwest winds.

Mercer Island Tree Code Links

Trees and Construction: 19.10

<https://www.mercerisland.gov/sites/default/files/fileattachments/planning/page/1811/treesandconstruction.pdf>

Tree Inventory and Replacement Submittal Worksheet

https://www.mercerisland.gov/sites/default/files/fileattachments/community_planning_amp_development/page/21988/mercerislandtreeinventory.pdf

Tree Submittal Checklist

https://www.mercerisland.gov/sites/default/files/fileattachments/community_planning_amp_development/page/21988/treessubmittalchecklist.pdf

Attachment 1: Assumptions and Limiting Conditions

1. A field examination of the site was made on May 23, 2023. My observations and conclusions are as of that 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 report is based on a survey developed by Terrain, March 24, 2021. 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 included in the tree inventory table; and 2) the inspection was 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 trees 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.

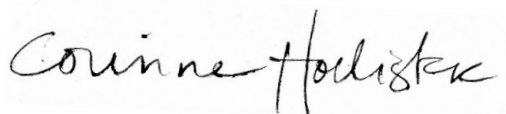
Attachment 2: Certificate of Performance

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: May 31, 2023

Attachment 3: Tree Inventory Table

Tree #	Species	DBH	Dripline	Category	Health	Structure	Notes	Tree Type	Viable	LOD
1	<i>Malus spp.</i> Crabapple	11.7	12	Sig.	1	1	Five stems: 6, 5.5, 4.5, 5, 5. Quadratic mean calculation (QMC).	D	Yes	8
2	<i>Pyrus communis spp.</i> Fruiting pear	5	9	Small	1	2	Watersprouts from overpruning. Not on survey.	D	Yes	6
3	<i>Malus spp.</i> Crabapple	8	10	Sig.	1	2	Watersprouts from overpruning	D	Yes	7
4	<i>Cornus nutallii</i> Pacific Dogwood	10.5	18	Exc	2	1	Signs of Anthracnose fungus on leaves.	D	Yes	11
5	<i>Cornus nutallii</i> Pacific Dogwood	11.5	18	Exc	2	1	Signs of Anthracnose fungus on leaves.	D	Yes	12
6	<i>Cryptomeria japonica spp.</i> Japanese cedar	7.8	6	Small	1	2	Multi-stem. QMC. Not on survey.	C	Yes	6
7	<i>Cryptomeria japonica sp.</i> Japanese cedar	7.6	8	Small	1	2	Multi-stem. QMC. Not on survey.	C	Yes	6
8	<i>Cryptomeria japonica spp.</i> Japanese cedar	7	7	Small	1	2	Multi-stem. QMC. Not on survey.	C	Yes	6
9	<i>Cryptomeria japonica spp.</i> Japanese cedar	6.7	6	Small	1	2	Multi-stem. QMC. Not on survey.	C	Yes	6
10	<i>Cryptomeria japonica spp.</i> Japanese cedar	8.9	6	Small	1	2	Multi-stem. QMC. Not on survey.	C	Yes	6
11	<i>Cryptomeria japonica spp.</i> Japanese cedar	11.3	6	Sig.	1	2	Multi-stem. QMC. Not on survey.		Yes	6
12	<i>Cryptomeria japonica spp.</i> Japanese cedar	7	7	Small	1	2	Multi-stem. QMC. Not on survey.	C	Yes	6
13	<i>Cryptomeria japonica spp.</i> Japanese cedar	10.4	9	Sig.	1	2	Multi-stem. QMC.	C	Yes	8

Tree #	Species	DBH	Dripline	Category	Health	Structure	Notes	Tree Type	Viable	LOD
14	<i>Cryptomeria japonica</i> spp. Japanese cedar	10.3	8	Sig.	1	2	Multi-stem. QMC.	C	Yes	8
15	<i>Cryptomeria japonica</i> spp. Japanese cedar	12.6	8	Sig.	1	2	Multi-stem. QMC.	C	Yes	9
16	<i>Cryptomeria japonica</i> spp. Japanese cedar	8.5	9	Sig.	1	2	Multi-stem. QMC.	C	Yes	6
17	<i>Cryptomeria japonica</i> spp. Japanese cedar	10	9	Sig.	1	2	Multi-stem. QMC.	D	Yes	8
18	<i>Sorbus aucuparia</i> Mountain ash	14	14	Sig.	1	2	Cavity, decay in trunk. Lean to north. Risk of failure likely increases if Tree #19 is removed.	D	Level 2	11
19	<i>Acer rubrum</i> Red maple	17.4	15	Sig.	1	2	Two stems: 11.5, 13 inches. QMC.	D	Yes	11
20	<i>Ilex aquifolium</i> English holly	7	7	Small	1	1	May be considered a shrub.	C/E	Yes	6
Replacement Trees Onsite										
A	<i>Prunus cerasifera</i> 'Thundercloud' Thundercloud plum	1.5		Repl.			Relatively new tree. Trunk released from stake and lines. Not on survey.	D	Yes	5
B	<i>Prunus cerasifera</i> 'TC' Thundercloud plum	1.5		Repl.			See above.	D	Yes	5
C	<i>Prunus cerasifera</i> 'TC' Thundercloud plum	1.5		Repl.			See above.	D	Yes	5
D	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	1.5		Repl.			See above.	C	Yes	5
E	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	1.5		Repl.			See above.	C	Yes	5

Tree #	Species	DBH	Dripline	Category	Health	Structure	Notes	Tree Type	Viable	LOD
F	<i>Prunus cerasifera</i> 'TC,' Thundercloud plum	1.5		Repl.			See above.	D	Yes	5
G	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	2		Repl.			See above.	C	Yes	5
H	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	2.5		Repl.			See above.	C	Yes	5
I	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	2		Repl.			See above.		Yes	5
J	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	2		Repl.			See above.	C	Yes	5
K	<i>Cedrus deodara</i> 'Karl Fuchs' Himalayan cedar	2		Repl.			See above.	C	Yes	5
L	<i>Prunus cerasifera</i> 'TC' Thundercloud plum	2		Repl.			See above. There are three (3) Thundercloud plum trees near Tree K which may be replacement trees.	D	Yes	7
ROW and Offsite Trees										
101	<i>Crataegus monogyna</i> Common hawthorn	8.5	13	ROW	2	2	Cluster. Located in ROW. Buried deep – no trunk flare. Signs of decay. Two stems: 6 in each. QMC.	D	Yes	10
102	<i>Crataegus monogyna</i> Common hawthorn	14	13	ROW	2	2	Cluster. Located in ROW. Buried deep – no trunk flare. Signs of decay. Ten stems: 8, 6, 6, 5, 3, 3, 3, 2, 2, 2 inches. QMC.	D	Yes	10
103	<i>Prunus emarginata</i> Bitter cherry	See note	OH:14	Sig.			Offsite, NE corner. Could not see trunk due to fence. Not enough data to provide ratings. Estimated LOD.	D	Yes	9 from fence

Tree #	Species	DBH	Dripline	Category	Health	Structure	Notes	Tree Type	Viable	LOD
104	Prunus emarginata Bitter cherry	See note	OH: 14	Sig.			Offsite, NE corner. Could not see trunk due to fence. Estimated LOD.	D	Yes	9 from fence
105	Unidentified deciduous	See note	OH: 14	Sig.			Offsite, NE corner. Could not see trunk due to fence. Access limits accurate tree identification. High canopy. May be Ginkgo. Est. LOD.	D	Yes	9 from fence

Ratings: See Page 4.

Exceptional: Exc.

LOD: See Page 4

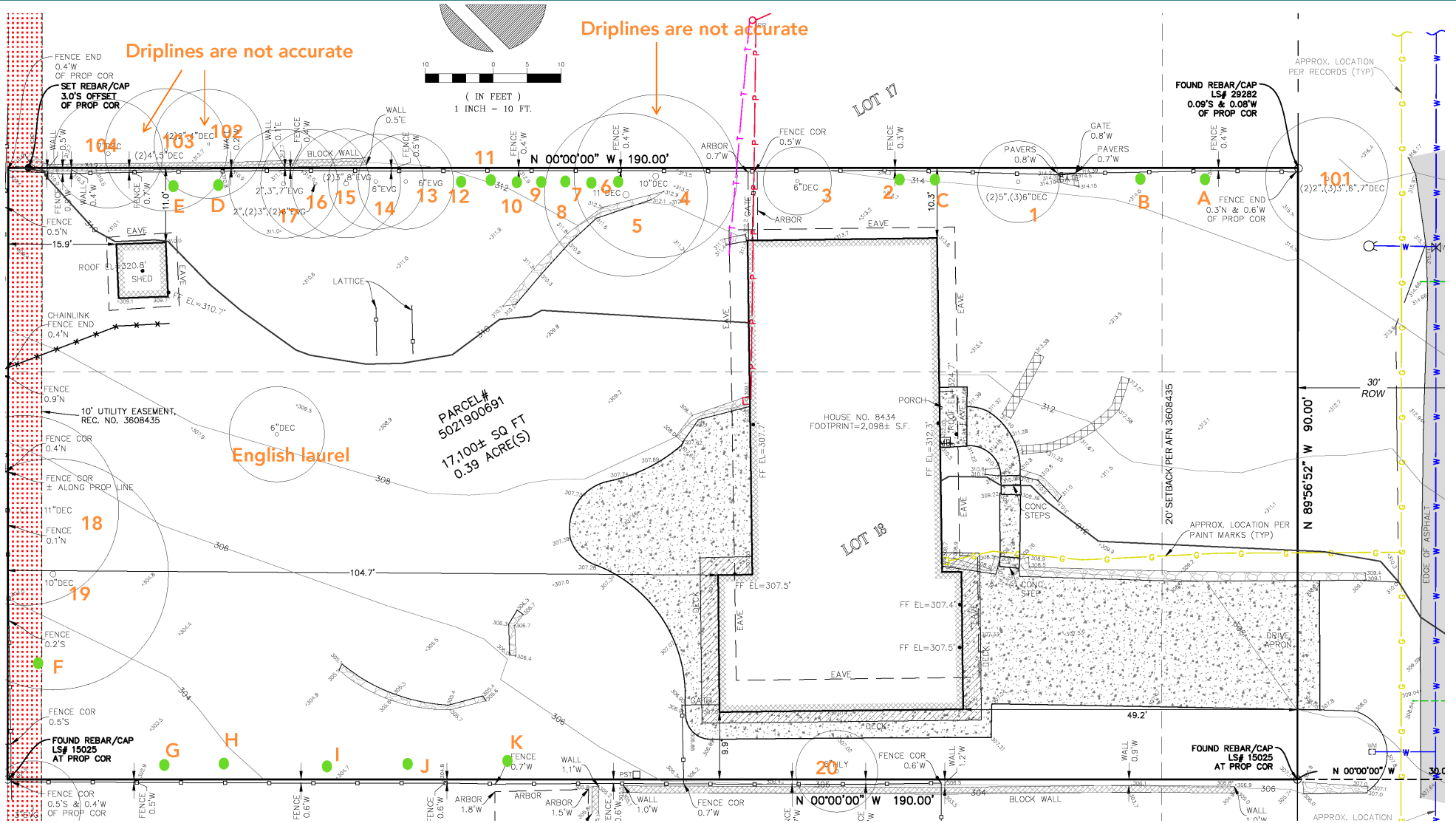
Overhanging branches: OH

Quadratic mean (QMC): The square root of the sum of each stem squared — an industry standard to calculate DBH on multi-stem trees.

Significant: Sig.

Replacement: Repl.

Attachment 4: Annotated Survey



Attachment 5: Site Exhibit – Photos



Two (2) Exceptional Pacific dogwoods are located at the NE corner of the existing home.

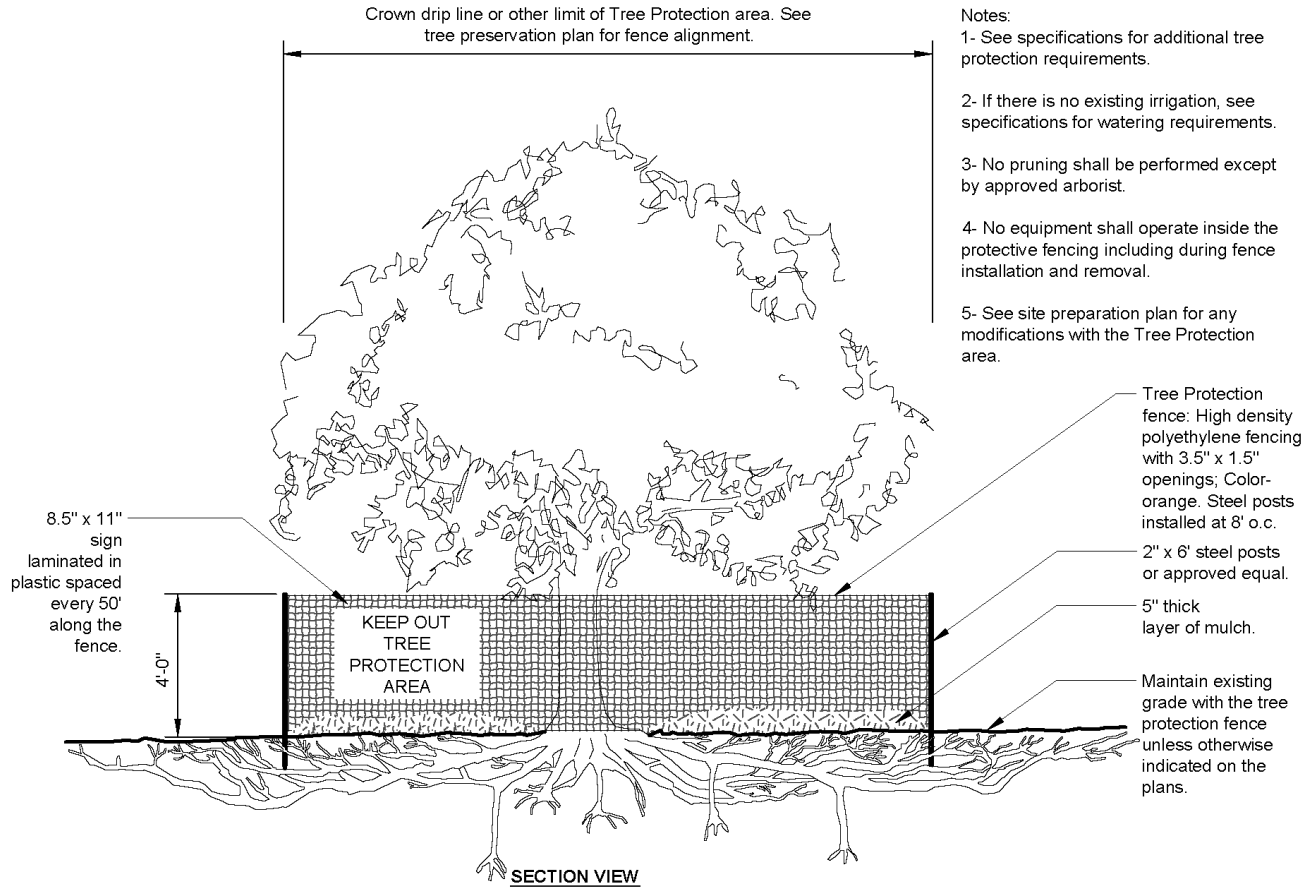


Tree #19 (right) and Tree #18 (left) located at the back of the existing home, along the north property line.



There are three (3) offsite trees with overhanging branches at the northeast corner of the lot.

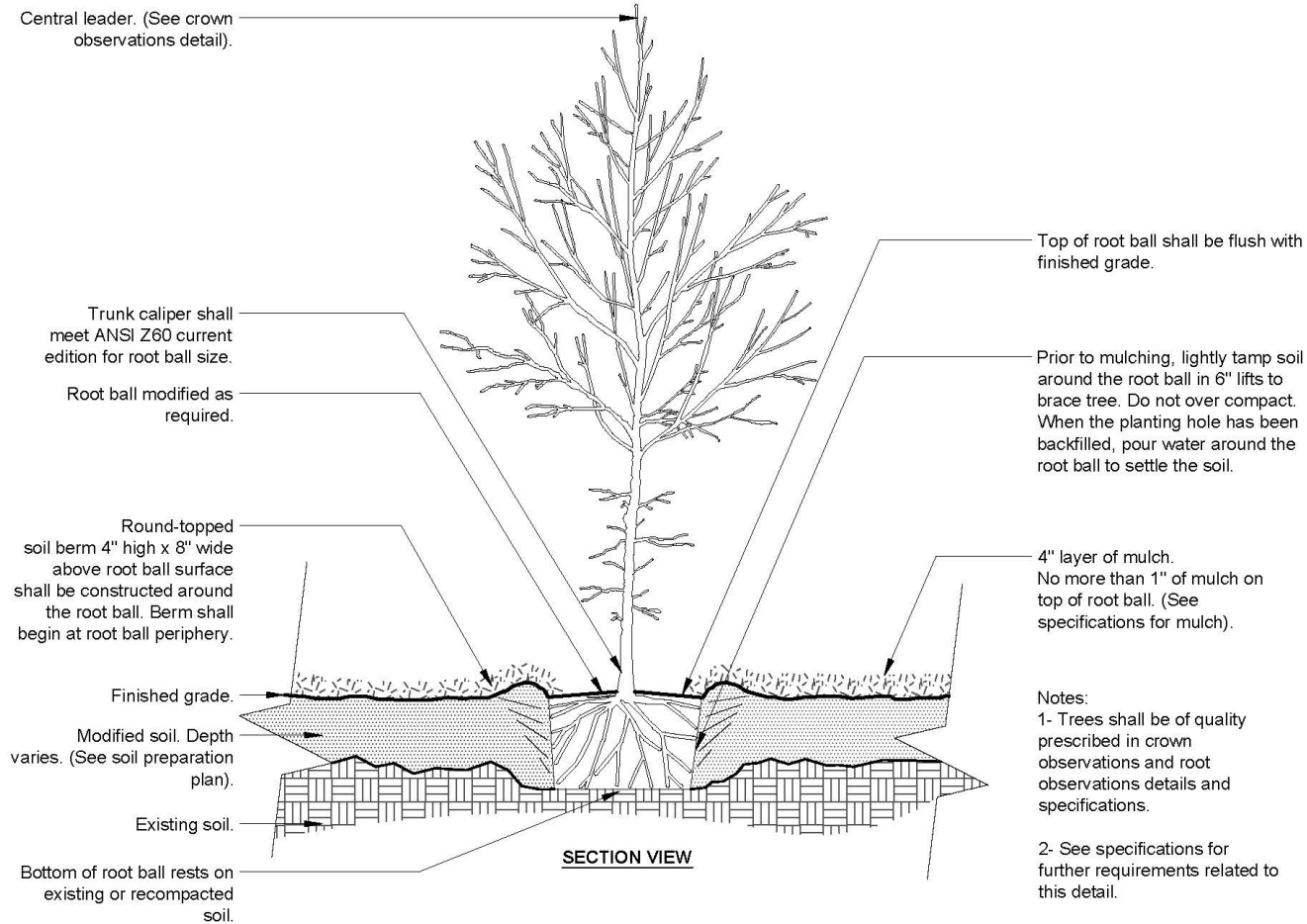
Attachment 6: Tree Protection Fencing Detail



TREE PROTECTION

URBAN TREE FOUNDATION © 2014
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Attachment 7: Planting Detail



P-X

TREE w/ BERM (EXISTING SOIL MODIFIED)

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