



Arborist Memo

TO: Sean and Lori Kell
CC: Anne James Landscape Architects
SITE: 7450 N Mercer Way, Mercer Island
RE: Tree Inventory
DATE: December 21, 2018
PROJECT ARBORIST: Holly Iosso, Registered Consulting Arborist # 567
ISA Certified Arborist #PN-6298A
ISA Qualified Tree Risk Assessor
Tyler Bunton
ISA Certified Arborist #PN-8715A
ATTACHED: Table of Trees
Tree Inventory Site Plan

Summary

I inventoried and assessed 25 trees on this lot. Based on the Mercer Island City Code (MICC 19.10), trees measuring ten (10) inches or greater in diameter at standard height (DSH) are required to be assessed for development projects, as well as any tree smaller than 10 inches that may be considered exceptional. I also inventoried all trees greater than 6 inches within the city right of way. Tree identifier corresponds to the numbers on the site plan.

Of the trees assessed, one (1) met the exceptional tree criteria outlined in the MICC.

I found no exceptional tree groves on site. The City defines an exceptional grove a group of eight or more trees each ten (10) inches or more in diameter that form a continuous canopy. Trees that are part of a grove shall also be considered exceptional trees, unless they also meet the definition of a hazardous tree.

There were no adjacent trees that required documentation for this property. Trees on neighboring properties were documented if they appeared to be greater than 10 inches diameter and their driplines extended over the property line. All trees on adjacent properties were estimated from the subject site or public property such as the adjacent right of way.

Assignment & Scope of Report

This report outlines the site inspection by Holly Iosso and Tyler Bunton of Tree Solutions Inc, on December 11, 2018. I was asked to visit the site and provide a formal report including findings and

management recommendations. Anne James , Landscape Architect for the owner, requested these services for project planning purposes.

The tree size, species, health and structural condition, and related notes and recommendations for each tree can be found in the attached Table of Trees. Locations of the trees can be found in the attached Site Map. Photographs are followed by a glossary and list of references. Assumptions and limiting conditions can be found in Appendix A. General tree protection specifications can be found in Appendix B. Mercer Island City Code relating to trees can be found in Appendix C.

Observations and Discussion

Based on the landscape plan by Anne James dated November 26, 2018, I have the following observations and recommendations:

Trees 7 and 24 are proposed for removal within the 200-foot shoreline buffer. Neither are exceptional.

Trees 3, 4, 10, and 23 are buried from growing in a previously compacted parking area with gravel. Some fibrous roots have grown up through this gravel layer. I recommend decompaction of the area with an air-knife or equivalent. This tool can help remove the gravel where possible using hand methods, following with an incorporation of sandy loam topsoil and/or organic matter such as compost through the area.

Tree 5 may be impacted if driveway is redesigned. Recommendations to reduce impacts include:

- No tree roots should be severed within 10 feet of the root flare of the tree.
- Establish tree protection at limits of driveway. Delay moving tree protection in to new location of driveway until time to set forms for concrete.
- Temporary ground protection should be in place if tree protection is not placed at the limits of the concrete driveway, or the driveway is removed. This includes 4-6" of arborist wood chips below ½ inch plywood.
- During excavation for new driveway, field inspection should drive deviation from specifications and not cut roots where possible.

Trees 1 and 2 are surrounded by bare ground and have had crown raising in the past. Surface erosion is likely in this area unless mulch (ideally arborist wood chips) are installed 3-4 inches deep.

Many trees on site are heavily infested with ivy. Ivy should be removed wherever possible. Ivy in the canopy should be girdled at the base and allowed to die in the canopy. When a climber is in the tree next, ivy can be removed from the trunk. Ivy in the soil near trees should be grubbed out by hand, being careful not to disturb the root systems of adjacent trees.

One English holly (*Ilex aquifolium*) shrub is proposed for removal within the city ROW. The stump should not be pulled because it will damage adjacent tree roots. Stump can be treated with herbicide to reduce the likelihood that new sprouts will grow back after tree is removed.

Right of way trees have all been topped in the past to establish the required clearance for overhead utility wires. This pruning will continue to be done as required by utility crews.

Additionally my recommendations are as follows:

- Obtain all necessary permits and approval prior to commencement of site work.
- Tree protection consisting of chain link fencing should be installed as drawn on the plans. If this is not possible, I recommend 4-foot tall high visibility construction fencing.
- Fencing should have high visibility signage (minimum is 11x17 fluorescent and waterproof) with large letters stating "Tree Protection Fencing -- DO NOT MOVE" and list project contact and phone number. Signage should be firmly attached to fencing every 10 feet with bright flagging.
- Additionally, fencing and mulch should be installed immediately to protect trees 1 and 2 and minimize runoff and compaction from winter rains
- All offsite trees, including right of way trees, must be protected during construction.
- All pruning should be conducted by an ISA certified arborist and following ANSI A300 specifications.¹
- All tree retention and removal regulations should be followed and are outlined in Chapter 19.10 Trees, of Mercer Island City Code. (Appendix D)
- Ensure tree protection standards comply with MICC 19.10.080 and Best Management Practices (BMP).²

¹ ANSI A300 (Part 1) – 2008 American National Standards Institute. American National Standard for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance: Standard Practices (Pruning). New York: Tree Care Industry Association, 2008.

² Mercer Island City Code. 19.10.080. Tree Protection Standards.

Photographs



Photo 1: Tree #25 in foreground on left.



Photo 2: Trees #1, 2 require mulch and tree protection fencing.



Photo 3: Tree #7 proposed for removal.



Photo 4: Compacted area with tree protection fencing in place. Tree #3 in foreground on right.

Glossary

DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Matheny *et al.* 1998)

exceptional grove: a group of eight or more trees each 10 inches or more in diameter that form a continuous canopy. Trees that are part of a grove shall also be considered exceptional trees, unless they also meet the definition of a hazardous tree. (MICC)

exceptional tree: a tree measuring 36" DSH or greater or with a diameter that is equal to or greater than the diameter listed in the Exceptional Tree Table (MICC 19.16.010)

ISA: International Society of Arboriculture

large tree: A tree measuring 10 inches or greater DSH (MICC)

References

ANSI A300 (Part 1) – 2008 American National Standards Institute. American National Standard for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance: Standard Practices (Pruning). New York: Tree Care Industry Association, 2008.

ISA Best Management Practices: Managing Trees During Construction

Mercer Island Municipal Code 19.16.010 Definitions

Mercer Island Municipal Code 19.10.070 Tree Replacement

Mercer Island Municipal Code 19.10.080 Tree Protection Standards

Oregon State University. Tree Protection on Construction and Development Sites: A Best Management Practices Guidebook for the Pacific Northwest. 2009.

Appendix A - Assumptions & Limiting Conditions

1. Consultant has agreed to undertake Services on the subject Site. Consultant assumes that the Client owns or is the agent for the owner of the Site and that the legal description of the Site provided by the Client is accurate. Consultant assumes that Client has granted a license over, under, upon, and across the Site for the limited purpose of providing Services.
2. Consultant assumes that the Site and its use do not violate and is in compliance with all applicable codes, ordinances, statutes or regulations.
3. The Client is responsible for making all relevant records and related information available to the Consultant and for the accuracy and completeness of that information. Consultant may also obtain information from other sources that it considers reliable. Nonetheless, Client is responsible for the accuracy and completeness of that additional information and Consultant assumes no obligation for the accuracy and completeness of that additional information.
4. The Consultant may provide report or recommendation based on published municipal regulations. The Consultant assumes that the municipal regulations published on the date of the report are current municipal regulations and assumes no obligation related to unpublished city regulation information.
5. Any report by Consultant and any values expressed therein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event, or upon any finding to be reported.
6. Ownership of any documents produced passes to the Client only when all fees have been paid.
7. All photographs included in our reports were taken by Tree Solutions, Inc. during the documented Site visit, unless otherwise noted. Sketches, drawings and photographs in any report by Consultant, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by Consultant as to the sufficiency or accuracy of the information.
8. Unless otherwise agreed, (1) information contained in any report by Consultant covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring.
9. Consultant makes no warranty or guarantee, express or implied, that the problems or deficiencies of the plants or Site in question may not arise in the future. Any report is based on the observations and opinions of the authoring arborist, and does not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described assessed. Neither the Arborist nor Tree Solutions, Inc. has assumed any responsibility for liability associated with the trees on or adjacent to this project site, their future demise and/or any damage which may result therefrom. Any changes to an established tree's environment can cause its decline, death and/or structural failure.
10. Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks and canopies.
11. Tree Solutions did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. Tree Solutions staff are not and do not claim to be soils experts. An independent inventory and evaluation of the site's soil should be obtained by a qualified professional if an additional understanding of the site's characteristics is needed to make an informed decision.
12. Our assessments are made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.

Appendix B – Tree Protection Specifications

- **Tree Protection Fencing:** All trees planned for retention or on neighboring properties that overhang the site shall be protected for the entire duration of the construction project. Tree protection fencing shall consist of high visibility mesh or chain link fencing installed at the extent of the tree protection area. Where trees are being retained as a group the fencing should encompass the entire area.
- **Soil Protection:** No parking, materials storage, or dumping (including excavated soils) are allowed within the tree protection area. Any heavy machinery should remain outside of the protection area unless soils are protected from the load. Acceptable methods of soil protection include applying 1 inch plywood over 3 to 4 inches of wood chip mulch, or use of Alturna-mats (or equivalent product).
- **Duff/Mulch:** Retain and protect as much of the existing duff and understory as possible. Retained trees in areas where there are exposed soils shall have 4 to 6 inches of wood chips applied to help prevent water evaporation and compaction. Keep mulch 1 foot away from the base of the tree.
- **Excavation:** Excavation done at or within the tree protection area should be carefully planned to minimize disturbance. Where feasible consider using alternative methods such as pneumatic excavation which uses pressurized air to blow soil away from the root system, directional drilling to bore utility lines, or hand excavation to expose roots. Excavation done with machinery (backhoe) in proximity of trees should be performed slowly with flat front buckets, removing small amounts of soil at a time with one person on the ground spotting for roots. When roots are encountered, excavation should stop and roots should be cleanly pruned as needed so they are not ripped or torn.
- **Root Pruning:** Root pruning should be limited to the extent possible. All roots shall be pruned with a sharp saw making clean cuts. Avoid fracturing and breaking roots with excavation equipment. Root cuts shall be immediately covered with soil or mulch and kept moist.
- **Irrigation:** Retained trees will require supplemental water if construction occurs during summer drought periods.
- **Pruning:** Any pruning required for construction and safety clearance shall be done with a pruning specification provided by the project arborist in accordance with American National Standards Institute ANSI A300 Standard Practices for Pruning. Use of an arborist with an International Society of Arboriculture Certification to perform pruning is strongly advised.

Appendix C: Mercer Island City Code
(Updated August 18, 2018)

19.10.060 Tree removal – Associated with a development proposal.

A. Single-Family Zoning Designations.

1. In the R-8.4, R-9.6, R-12, and R-15 zoning designations, tree retention is required for the following development proposals:

- a. An addition or remodel to an existing single-family dwelling that will result in the addition of more than 500 square feet of gross floor area on a lot with a net lot area of 6,000 square feet or more;
- b. A new single-family dwelling on a lot with a net lot area of 6,000 square feet or more;
- c. A subdivision or short subdivision.

2. Retention Requirement. Development proposals specified under subsection (A)(1) of this section shall retain trees as follows:

a. A minimum of 30 percent of trees with a diameter of 10 inches or greater, or that otherwise meet the definition of large tree, shall be retained over a rolling five-year period.

b. In addition to the retention required in subsection (A)(2)(a) of this section, the development proposal shall be designed to further minimize the removal of large trees and maximize on-site tree retention as follows:

i. Site improvements, including but not limited to new single-family homes, additions to a single-family home, appurtenances, accessory structures, utilities, and driveways, shall be designed and located to minimize tree removal during and following construction.

ii. The following trees shall be prioritized for retention:

- (a) Exceptional trees;
- (b) Trees with a diameter of more than 24 inches;
- (c) Trees that have a greater likelihood of longevity; and
- (d) Trees that are part of a healthy grove.

iii. Trees shall not be removed outside the area of land disturbance except where necessary to install site improvements (e.g., driveways, utilities, etc.).

iv. Tree removal for the purposes of site landscaping should be limited to those trees that will pose a future safety hazard to existing or proposed site improvements.

c. Provide tree replacement pursuant to MICC 19.10.070.

3. Retention of Exceptional Trees. Development proposals specified under subsection (A)(1) of this section shall retain exceptional trees with a diameter of 24 inches or more. Exceptional trees with a diameter of 24 inches or more that are retained shall be credited towards compliance with the retention requirements of subsection (A)(2) of this section. Removal of exceptional trees with a diameter of 24 inches or more, shall be limited to the following circumstances:

a. Retention of an exceptional tree(s) with a diameter of 24 inches or more will result in an unavoidable hazardous situation; or

b. Retention of an exceptional tree(s) with a diameter of 24 inches or more will limit the constructable gross floor area to less than 85 percent of the maximum gross floor area allowed under Chapter 19.02 MICC; or,

c. Retention of an exceptional tree(s) with a diameter of 24 inches or more will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by this title.

4. Calculation of Rolling Five-Year Period. For the purposes of this section, the rolling five-year period begins five years prior to the date of application for a development approval that is subject to tree retention.

5. Compliance Required. Development proposals on lots that have removed more than 70 percent of large trees within the rolling five-year period, such that the 30 percent tree retention requirement under subsection (A)(2) of this section cannot be met, shall not receive approval unless and until compliance has been achieved. For example, a lot that has removed all of the trees in year "one" may not receive a preliminary subdivision approval in year "four." However, the preliminary subdivision approval may be granted in year "six," such that the rolling five-year period does not include the tree removal in year "one."

B. Commercial or Multifamily Zoning Designations – Tree Removal.

1. In the PI, B, C-O, PBZ, TC, MF-2, MF-2L, and MF-3 zoning designations a tree permit is required and will be granted if it meets any of the following criteria:

a. It is necessary for public safety, removal of hazardous trees, or removal of diseased or dead trees;

b. It is necessary to enable construction work on the property to proceed and the owner has used reasonable best efforts to design and locate any improvements and perform the construction work in a manner consistent with the purposes set forth in MICC 19.10.005;

c. It is necessary to enable any person to satisfy the terms and conditions of any covenant, condition, view easement or other easement, or other restriction encumbering the lot that was recorded on or before July 31, 2001; and subject to MICC 19.10.090(B);

d. It is part of the city's forest management program or regular tree maintenance program and the city is the applicant;

e. It is desirable for the enhancement of the ecosystem or slope stability based upon professional reports in form and content acceptable to the city arborist.

2. Design Commission Review Required in Commercial Zones. A tree permit for a development proposal, resulting in regulated improvements located in a commercial zone, that has previously received design commission approval must first be reviewed and approved by the city's design commission prior to permit issuance by the city. (Ord. 18C-05 § 1 (Att. A); Ord. 17C-15 § 1 (Att. A)).

19.10.070 Tree replacement.

Trees that are cut pursuant to a tree permit shall be replaced as specified in subsections A and B of this section, or a fee in lieu shall be paid as specified in subsection C of this section.

A. Tree Replacement Ratio. Removed trees shall have the following base replacement ratio:

Diameter of removed tree	Number of replacement trees required
Less than 10 inches	1
10 inches up to 24 inches	2
24 inches up to 36 inches	3
More than 36 inches and any exceptional tree(s)	6

B. Replacement Trees.

1. Location. Replacement trees shall be located in the following order of priority from most important to least important:

- a. On-site replacement adjacent to or within critical tree areas as defined in Chapter 19.16 MICC;
- b. On-site replacement outside of critical tree areas adjacent to other retained trees making up a grove or stand of trees;
- c. On-site replacement outside of critical tree areas; and
- d. Off-site in adjacent public right-of-way where explicitly authorized by the city.

2. Species. Replacement trees shall primarily be those species native to the Pacific Northwest. In making a determination regarding the species of replacement trees, the city arborist shall defer to the species selected by the property owner unless the city arborist determines that the species selected is unlikely to survive for a period of at least 10 years, represents a danger or nuisance,

would threaten overhead or underground utilities or would fail to provide adequate protection to any critical tree area.

3. Size.

- a. Coniferous trees shall be at least six feet tall; and
- b. Deciduous trees shall be at least one and one-half inches in caliper.

The city arborist may authorize the planting of smaller-sized replacement trees if the applicant can demonstrate that smaller trees are more suited to the species, the site conditions, neighborhood character, and the purposes of this section, and that such replacement trees will be planted in sufficient quantities to meet the intent of this section. The city arborist shall not authorize the planting of shrubs or bushes in lieu of required replacement trees.

4. Reduction. The city arborist may reduce the number of replacement trees as follows, where other measures designed to mitigate the tree loss by restoring the tree canopy coverage and its associated benefits are considered to be effective and consistent with the purposes of this chapter. The city arborist may consider, but is not limited to, the following measures:

- a. Replacement of hazardous, undesired, or short-lived trees with healthy new trees that have a greater chance of long-term survival;
- b. Restoration of critical tree areas with native vegetation; and
- c. Protection of small trees to provide for successional stages of tree canopy.

5. Timing. Replacement trees shall be planted in the wet season (October 1 through April 1), following the applicable tree removal or, in the case of a development proposal, completion of the development work, provided the city arborist may authorize an extension to ensure optimal planting conditions for tree survival.

C. Fee-in-Lieu. If the city arborist determines there is insufficient area to replant on the site or within the adjacent public right-of-way, the city arborist may authorize payment of a fee-in-lieu provided:

1. There is insufficient area on the lot or adjacent right-of-way for proposed on-site tree replacement to meet the tree replacement requirements of this chapter; or
2. Tree replacement or management provided within public right-of-way or a city park in the vicinity will be of greater benefit to the community.
3. Fees provided in lieu of on-site tree replacement shall be determined based upon:
 - a. The expected tree replacement cost including labor, materials, and maintenance for each replacement tree; and
 - b. The most current Council of Tree and Landscaper Appraisers Guide for Plant Appraisal.

4. Any fee-in-lieu is also optional for the applicant and requires an explicit written agreement.

D. Maintenance of Replacement Trees. The applicant shall maintain all replacement trees in a healthy condition for a period of five years after planting. The applicant shall be obligated to replant any replacement tree that dies, becomes diseased, or is removed during this five-year time period.

E. Private Utility Company. If the permit is granted to a private utility company and the property owner is unwilling to place any replacement trees on the owner's property, the private utility company shall pay to the city the amount necessary to purchase and plant replacement trees on public property necessary to mitigate the impact of the removed trees based upon arborist industry standards. Monies paid to the city for replacement trees shall be used for that purpose. (Ord. 17C-15 § 1 (Att. A)).

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)).

Table of Trees
Kell Residence
7450 N Mercer Way, Mercer Island

DSH (Diameter at Standard Height) is measured 4.5 feet above grade.

Multi-stem trees are noted, and a single stem equivalent is calculated using the method defined in the Plant Appraisal Guide.

Dripline is estimated from the center of the tree to the outermost extent of the canopy.

Tree ID	Scientific Name	Common Name	DSH (inches) / Single-Stem Equivalent	Measured Multi-stems	Health Condition	Structural Condition	Dripline Avg (ft)	Exceptional Threshold	Exceptional Status	Proposed Action	Notes
1	<i>Thuja plicata</i>	Western Redcedar	19.4		Fair	Good	12	30		Mulch w Wood Chips	Crown raised
2	<i>Thuja plicata</i>	Western Redcedar	22.8		Fair	Good	12	30		Mulch w Wood Chips	
3	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.9		Fair	Good	15	30		Decompact soil, unbury trunk	Buried
4	<i>Thuja plicata</i>	Western Redcedar	6.2		Fair	Fair	10	30		Decompact soil, unbury trunk	Two scars on north side of trunk, Buried
5	<i>Pseudotsuga menziesii</i>	Douglas-fir	33.3		Good	Fair	14	30	Exceptional		Lost top several years ago, Ivy - in canopy
6	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.2		Fair	Good	10	30			Subdominant
7	<i>Thuja plicata</i>	Western Redcedar	15.2		Good	Good		30			
8	<i>Crataegus monogyna</i>	Hawthorne	11.2		Good	Fair		16			Phototropic
9	<i>Camelia japonica</i>	Camelia	<10		Good	Good	10	30			
10	<i>Prunus cerasifera</i>	Flowering Plum	13.9	9.0, 7.0, 8.0,	Fair	Fair	15	21		Decompact soil, unbury trunk	Buried; Ivy - in canopy
11	<i>Pinus nigra</i>	Austrian Black Pine	19.7	12,12,10	Good	Fair	10	24		Remove Ivy at base	Visual obstruction! Ivy - in canopy, Ivy - at base
12	<i>Thuja plicata</i>	Western Redcedar	18.4	5.4, 17.6	Good	Good	15	30		Remove Ivy	Topped for utility lines above; Ivy - in canopy, Ivy - at base
13	<i>Ilex aquifolium</i>	Holly	6.0		Good	Good	10	#N/A		REMOVAL (remove tree at base and treat with systemic herbicide to prevent suckering)	
14	<i>Thuja plicata</i>	Western Redcedar	23.9	23.5, 4.4	Good	Good	18	30		Remove Ivy	Topped for utility lines above; Ivy - in canopy,
15	<i>Thuja plicata</i>	Western Redcedar	20.0	4.3, 7.7, 18.0,	Good	Good	25	30		Remove Ivy	Topped for utility lines above; Ivy - in canopy, Ivy - at base
16	<i>Thuja plicata</i>	Western Redcedar	6.3		Good	Good	10	30		Remove Ivy	Topped for utility lines above; Ivy - in canopy
17	<i>Thuja plicata</i>	Western Redcedar	7.8		Good	Good	10	30		Remove Ivy	Topped for utility lines above; Ivy - at base, Ivy - in canopy

Table of Trees
Kell Residence
7450 N Mercer Way, Mercer Island

Arborist: Holly Iosso, Tyler Bunton
Date of Inventory: 12.11.2018

Tree ID	Scientific Name	Common Name	DSH (inches) / Single-Stem Equivalent	Measured Multi-stems	Health Condition	Structural Condition	Dripline Avg (ft)	Exceptional Threshold	Exceptional Status	Proposed Action	Notes
18	<i>Thuja plicata</i>	Western Redcedar	11.9		Good	Good	10	30		Remove Ivy	Topped for utility lines above, Ivy - at base
19	<i>Thuja plicata</i>	Western Redcedar	8.7		Fair	Fair	10	30		Remove Ivy	Topped for utility lines above, Ivy - in canopy, Ivy - at base
20	<i>Thuja plicata</i>	Western Redcedar	7.8		Fair	Fair	10	30			
21	<i>Thuja plicata</i>	Western Redcedar	13.3		Fair	Good	10	30		Remove Ivy	Topped for utility lines above; Ivy - in canopy, Ivy - at base
22	<i>Thuja plicata</i>	Western Redcedar	13.6	5.0, 10.5, 7.1	Fair	Fair	10	30			Topped for utility lines above
23	<i>Prunus cerasifera</i>	Flowering Plum	12.6	4.4, 8.0, 5.0, 6.4, 3.0,	Fair	Fair	20	21		Remove Ivy	Buried, Ivy - in canopy, Ivy - at base
24	<i>Acer circinatum</i>	Vine Maple	7.6	2.1, 2.7, 2.8, 2.7, 3, 1.5, 3.9, 2.2	Good	Good	15	8			Grows next to tree #7
25	<i>Thuja plicata</i>	Western Redcedar	7.1		Good	Good	8	30			Located behind tree #5

Tree #	DBH	Species	Exceptional Tree?	Large Regulated Tree?	Proposed for Removal?	Notes
NATIVE EVERGREENS						
1	17"	Cedar	No	Yes	-	
2	20"	Cedar	No	Yes	-	
3	13"	Douglas Fir	No	Yes	-	
4	5"	Cedar	No	No	-	
5	30"	Douglas Fir	Yes	Yes	-	Owner arranging removal of English Ivy
6	12"	Douglas Fir	No	Yes	-	
7	13"	Cedar	No	Yes	YES	
8	9"	Common Hawthorn	No	No	-	
DECIDUOUS TREES						
9	6"	Deciduous Tree, need to assess	No	No	unsure	
10	6"	Red Leaf Plum	No	No	YES	
RIGHT OF WAY TREES						
11	8"	Pine, 3 stems	No	No	-	
12	16"	Cedar	No	Yes	-	*All Cedars in ROW have been topped by utility co
13	8"	American Holly	No	No	YES	Invasive species
14	16"	Cedar	No	Yes	-	*
15	14"	Cedar	No	Yes	-	*
16	6"	Cedar	No	No	-	*
17	6"	Cedar	No	No	-	*
18	9"	Cedar	No	No	-	*
19	7"	Cedar	No	No	-	*
20	7"	Cedar	No	No	-	*
21	11"	Cedar	No	Yes	-	*
22	2-6"	Cedar	No	No	-	*

Tree Protection

- All existing trees and shrubs on the property are to remain and be protected throughout construction, unless otherwise noted.
- Tree Protection Fencing:** Install tree protection fencing in locations indicated on plan. Fencing will need periodic adjustment as project work progresses. Proposed tree protection fence relocations to be reviewed in the field with Landscape Architect (LA).
- Restricted Activities in Tree Protection Areas:** Construction trailers, traffic and storage areas shall remain outside the fenced areas at all times. No materials, equipment, spoil, waste or washout/wastewater (i.e., cement, paint) may be stored, deposited, or parked within the tree protection zone (fenced area) at any time. Exemptions may be made by the LA to store materials on existing paved areas under trees.
- Restricted Activity in Root Zone of Trees:** No storage of equipment or materials shall be allowed within the drip-line of trees.
- Temporary access to root zones:** Where construction operations unavoidably require temporary access over tree root zones or other soil protection areas, provide protection as follows: For foot access or similar light surface impacts, apply a 6" layer of arborist wood chips mulch and water regularly to maintain moisture, control erosion and protect roots. For any vehicle or equipment access, apply a minimum one inch steel plate or 4 inch thick timber planking over 2-3 inches or arborist wood chip mulch to protect roots and root zone soil from disturbance or compaction.
- Protection from equipment stabilizers:** Steel planking, or timber planking made of 4-inch thick material, each plank covering a minimum of 8 square feet, shall be used to support backhoe/equipment stabilizers when set within the drip-line of a tree.
- Pruning:** All efforts shall be made to avoid conflicts with tree limbs by temporarily tying up low limbs in the way of the work. When the Contractor anticipates construction operations that will unavoidably affect tree limbs, the Contractor shall notify the LA at least five (5) Working Days in advance of any pruning needed, and shall notify the LA of the proposed method and the amount of pruning required. Pruning shall be done by an ISA certified arborist. Pruning shall not be done by the General Contractor.
- Tree Trunk Protection:** Provide individual tree trunk protection for trees as noted on plan. Tree trunk protection shall consist of 2" x 4" lumber, 8' long, wired together and spaced approximately 6" on center around individual tree trunks, or a freestanding wood "cage" built around the trunk.
- Trenching and Tunneling Within the Drip-Line:** Excavation within the drip line of trees shall be by hand digging or air spade excavation. Consult LA to review roots in areas to be excavated as the work begins.
- Trenching and Tunneling Outside the Drip Line:** Excavation around roots 2-inches in diameter and greater requires handwork or air spading. All individual tree roots 2-inches or greater in diameter shall be protected whenever encountered. Tree roots smaller than 2-inches in diameter shall be cleanly cut flush with the edge of the trench or tunnel when necessary. Disinfect cutting tools frequently. Ripping or tearing of tree roots will not be allowed.
- Root Hydration:** Exposed roots to be kept hydrated during exposure to air with wet natural burlap laid over the roots, watered at least once daily.

12. Repair, Replacement and Payment for Damage:

- Trees or other plants not ordered or designated to be removed but that are destroyed or irreparably damaged by Contractor operations as determined by the Landscape Architect, shall be repaired or replaced in kind and size by the Contractor in accordance with the Landscape Architect's recommendations.
 - Replacements shall be of the same species and as nearly as possible of the same size as the trees to be replaced.
 - The Contractor shall allow ten (10) Working Days advance notice for inspection of nursery stock replacements by the Landscape Architect.
 - Payment: In addition to the Contractor's restoration approved by the Landscape Architect, the Contractor will be assessed damages for the difference in the dollar value of the damaged tree, shrub, or other plants, and the dollar value of the replacement.
 - The dollar value will be determined by the Engineer from the "Guide for Establishing Values of Trees and Other Plants," prepared by the Council of Tree and Landscape Appraisers, current edition. Damages assessed will be deducted from moneys due or that may become due to the Contractor.
 - Planting of replacement stock shall be done in accordance with the requirements of the Contract Documents during the first fall or spring planting period, whichever comes first.
 - Any damage to trees shall be reported to the Landscape Architect immediately so that remedial action can be taken to the affected tree(s). Timeliness of the remedial action can be critical to the tree's health.
- 12. Tree and Shrub Removals:** Confirm all trees and shrubs to be removed in field with LA before any removals are completed.
- 13. Tree and Shrub Transplanting:** Confirm all trees and shrubs to be transplanted in field with Landscape Architect (LA) before transplanting begins. Transplanting of trees should be scheduled when trees are dormant in late fall and winter (end October - February). Shrubs to be transplanted should ideally be planted in new locations immediately after digging to avoid need for storage, extra care and double handling. If this is not possible, they should be heeled in a protected, shaded area, with adequate irrigation and mulch around the roots to keep them hydrated.

TREE INVENTORY

TREE PROTECTION NOTES

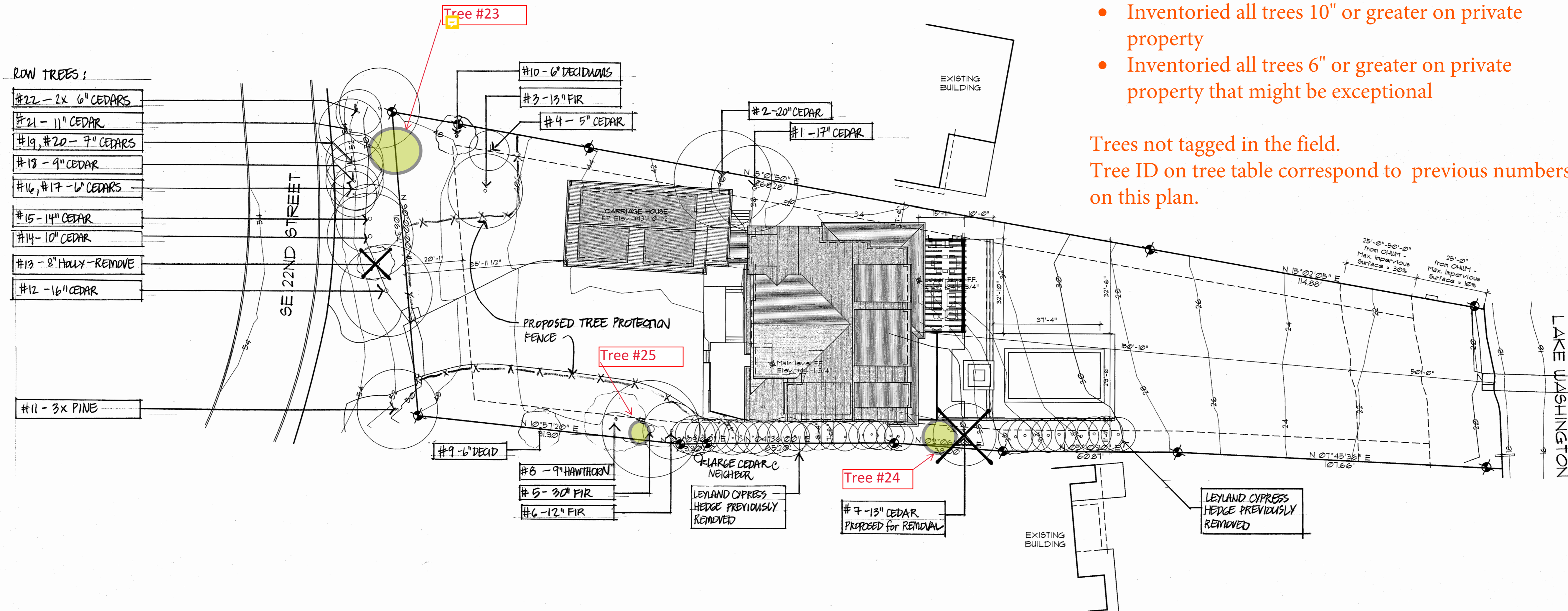
Tree Inventory

Completed by Tree Solutions Inc. 12.11.2018
206-528-4670

- Inventoried all trees 6" or greater along MI ROW
- Inventoried all trees 10" or greater on private property
- Inventoried all trees 6" or greater on private property that might be exceptional

Trees not tagged in the field.

Tree ID on tree table correspond to previous numbers on this plan.



① TREE INVENTORY, PROTECTION and REMOVAL PLAN
Scale 1/20" = 1'-0"

DRAWN BY
DESIGN BY
CHECKED BY
APPROVED BY
DATE
REVISIONS

ANNE JAMES LANDSCAPE ARCH
24539 NE 11th STREET
REDMOND, WASHINGTON 98074
425 894 9857

LBH RESIDENCE
7450 NORTH MERCER WAY
MERCER ISLAND, WASHINGTON

TREE INVENTORY
PROTECTION and
REMOVALS

11/26/18

