

Arborist Report

To: Anne James Landscape Architecture LLC
Site: 6236 SE 22nd St, Mercer Island, WA 98040
Re: Tree Inventory
Date: January 25, 2024
Project Arborist: George White,
ISA Certified Arborist #PN-8908A
ISA Qualified Tree Risk Assessor
Reviewed By: Katherine Taylor
ISA Certified Arborist #PN-8022A
ISA Qualified Tree Risk Assessor
Referenced Documents: Overall Landscape Plan L-1.0 (Anne James Landscape Architecture LLC,
1.18.2024)
Attached: Table of Trees
Tree Site Map

Summary

I inventoried and assessed 22 trees within the project area of a proposed landscape renovation. Based on the Mercer Island City Code (MICC) large (regulated) and exceptional trees are required to be assessed for development projects. I tagged each inventoried tree with a round, aluminum tree tag. Tree identifiers correspond to the number on each tag.

None of the assessed trees met the exceptional tree criteria outlined in the MICC based on size. However, all the assessed site trees are exceptional due to grove condition. I found one tree grove on site that encompasses all of the trees. A tree grove is defined by MICC as “eight or more trees that are 10 inches in diameter or greater that form a continuous canopy”. Trees that are part of a grove are also considered exceptional trees unless they also meet the definition of a hazardous tree.

Based on my review of the provided plans, four assessed trees would require removal. These trees are exceptional due to grove status but are less than 24 inches in diameter.

There were no adjacent trees that required documentation for this property. Trees on neighboring properties are typically documented if they appeared to be greater than 10 inches diameter and their driplines extended over the property line into the project area.

Assignment and Scope of Work

This report outlines the site inspection by George White and Josh Urri of Tree Solutions Inc, on December 28, 2023. We were asked to visit the site and provide a formal report including findings and management recommendations. Anne James, landscape architect, requested these services for project planning purposes.

Observations and Discussion

Site

This 53,544 square foot site is comprised of two parcels (parcels no. 5442300796 and 5442300765) and is located off of SE 22nd St. on the north side of Mercer Island, WA. The majority of the project area and the majority of the trees inventoried are located on the southern parcel (parcel no. 5442300765). According to King County iMap, an erosion hazard environmentally critical area (ECA) exists on the eastern portion of the site.

Understory vegetation on site was mixture of native, ornamental, and invasive plant species. Invasive plants found on-site included Himalayan blackberry (*Rubus bifrons*), English ivy (*Hedera sp.*), cherry laurel (*Prunus laurocerasus*), and herb Robert (*Geranium robertianum*). Invasive plants should be removed during development.

Proposed Plans

The most recent plans (Overall Landscape Plan L-1.0, Anne James Landscape Architecture LLC, 1.18.2024) propose the demolition of the existing driveway, and the construction of a new driveway, fencing, gate, rock retaining walls, and pickle-ball court. New landscaping, tree installation, and bark-mulch paths are also proposed.

Trees

The trees inventoried within the project area are primarily large native conifers such as Douglas-fir (*Pseudotsuga menziesii*) and western redcedar (*Thuja plicata*). Other inventoried tree species include Portuguese laurel (*Prunus laurocerasus*), red maple (*Acer rubrum*), black cottonwood (*Populus trichocarpa*), and Austrian black pine (*Pinus nigra*).

Trees on-site are primarily in good health and structural condition.

Tree 401

Tree 401 is a 19.6-inch Douglas-fir located near the southern property line. A small dyer's polypore (*Phaeolus schweinitzii*) fruiting body was found at the base of this tree. Dyer's polypore is a native pathogen that commonly associates with Douglas-fir. This fungus causes basal heartwood and root decay in affected trees. While this has little impact on tree health, trees with hollowed bases are more susceptible to windthrow. This tree is currently proposed for removal.

Tree 405

Tree 405 is an 18.7-inch red maple that is in fair health and structural condition. This tree has a narrow, codominant union at approximately 20 feet above grade with included bark. Brittle cinder fungus (*Kretschmeria deusta*), a root rot, was also found at the base of this tree. This tree is currently proposed for removal.

Palms

We observed three Chinese windmill palms (*Trachycarpus fortunei*) on-site near the southern property line. Palm trees are taxonomically distinct from woody trees and are therefore not regulated as trees under most municipal code unless explicitly stated. All three palms are proposed for removal.

I have attached an annotated site plan to serve as the site map and a table of trees that has detailed information about each tree. Photographs can be found in Appendix C.

Discussion—Construction Impacts

Tree Retention Requirements

Retention Percentage

MICC 19.10.060.2.a requires the retention of 30 percent of all regulated trees located on-site during development projects. Four regulated trees are currently proposed for removal out of the 22 regulated trees that were inventoried within the project area for a retention rate of 82 percent satisfying this requirement. Several additional trees exist on-site outside of the project area; therefore, the actual retention percentage is higher.

Exceptional Trees

MICC 19.10.060.3 requires the retention of all exceptional trees that are greater than 24 inches in diameter unless specific exceptions apply. While all four trees are extended exceptional status due to their location within a tree grove, none of these trees exceed 24 inches in diameter, or would be considered exceptional if not located within a grove. Removal of these trees is therefore permitted to facilitate proposed improvements.

Replacement Trees

Replacement trees are required for all regulated trees removed as part of a development project per MICC 19.10.070. Required replacement tree quantities per removed tree are outlined in Table 1 below.

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
Greater than 36 inches and any exceptional tree(s)	6

Table 1. Replacement Tree Requirements

Four exceptional trees are currently proposed for removal; therefore 24 replacement trees are required for this project. Replacement trees must adhere to the tree replacement requirements outlined in MICC 19.10.070.B.

Twenty-seven katsura (*Cercidiphyllum japonica*) trees are currently proposed to be planted on-site to satisfy replacement planting requirements. While these trees are not native to the pacific northwest, they complement the neighborhood character, are well-suited to the site, and will provide a net increase in canopy coverage.

Tree Removal

Trees 401 and 405 are proposed for removal because they conflict with the proposed driveway grading and the installation of the proposed gate. Trees 421, and 422 are currently proposed for removal

because they conflict with the installation of stone steps as part of the proposed bark-mulch pathway. All removed trees should be felled directionally or should be removed in pieces to avoid damaging the adjacent trees. Stumps of removed trees located within the recommended limits of disturbance (see RLOD and MLOD below) of a retained tree should be ground in place rather than be ripped out to avoid damaging the adjacent root systems.

In my professional opinion, none of the remaining trees will be negatively impacted by the proposed tree removals.

Tree Protection

All regulated, retained trees must be protected during construction per MICC 19.10.080. A Tree Protection Plan detailing proposed tree protection efforts must be included as part of the development plan set.

MLOD and RLOD

No ground disturbance is allowed within the minimum limits of disturbance (MLOD), defined as five times trunk diameter at standard height, or 6-feet, whichever is greater. Development work within the MLOD has high a potential for mechanical damage to structural roots and may destabilize trees.

Development work may occur within the recommended limits of disturbance (RLOD), defined as eight times trunk diameter at standard height or greater, depending on individual tree species and/or condition. All work proposed within the RLOD must be reviewed and approved by the project arborist and the City of Mercer Island.

The RLOD and MLOD measurements for each tree are listed in the attached table of trees.

Tree Protection Zone and Tree Protection Fencing

Tree protection fencing consisting of 6-foot-high chain-link fencing must be installed at the agreed upon limits of disturbance for each retained tree or at the shared limits of disturbance for a group of retained trees. The location of tree protection fencing must be approved by the project arborist and the City of Mercer Island. Tree protection fencing should be installed prior to the commencement of construction activity and should remain in place for the duration of the project. A pre-construction inspection of the tree protection fencing by the project arborist is recommended prior to construction.

The area enclosed within the tree protection fencing shall be referred to as the Tree Protection Zone (TPZ). No excavation, grading, materials storage, or machine/vehicle access is permitted within the TPZ of a protected tree without arborist coordination. Any work proposed within the TPZ of a retained tree will likely require alternative construction methods, careful soil protection, and the supervision of the project arborist.

Installation of 3-4 inches of uncomposted woody mulch and temporary supplemental irrigation is recommended within the TPZ to help mitigate construction stress.

Rock Retaining Wall Construction and Associated Grading East of Proposed Driveway

Proposed plans show a proposed, 24-inch rock retaining wall east of the proposed driveway. This retaining wall and associated grade cuts encroach on the RLOD of trees 401, 402, 409-411, and 414-417. No grade cuts are proposed within the MLOD of a retained tree.

Tree protection fencing shall be installed at the edge of the proposed impacts at the top of the proposed rock wall. All grade cuts within the RLOD of disturbance of retained trees shall be conducted carefully using a flat-fronted bucket under close supervision of the project arborist. Any roots encountered should be cut cleanly using a sharp reciprocating saw or hand tool and be immediately backfilled to prevent desiccation.

Protection of Trees 418-420

Trees 418-420 are growing above an existing rockery southeast of the proposed pickle-ball court. The rockery and associated grade change are sufficient to contain the root systems of these trees from extending into the footprint of the proposed court. No changes are proposed to the existing rockery; therefore, these trees will be protected adequately if tree protection fencing is placed at the rockery edge.

Installation of Bark-Mulch Path

A bark-mulch path is currently proposed within the TPZ of several protected trees. In my professional opinion, this path will have a negligible impact on the retained trees provided that it is constructed using traditional trail building methods. Under no circumstances should machinery be used to excavate, grade or transport building materials within the TPZ of a protected tree.

Fencing Installation

New chain-link fencing is proposed within the TPZ of several trees located adjacent to the southern property edge. Post-holes for the chain-link fencing shall be dug by hand. The precise locations of fence posts should be field adjusted to avoid any roots encountered.

Additional tree protection specifications are included in Appendix F.

Recommendations

- Obtain all necessary permits and approval from the city prior to commencement of site work.
- All tree retention and removal regulations must be followed and are outlined in MICC Chapter 19.10 Trees.
- Update site plans to include the recommended limits of disturbance, minimum limits of disturbance, proposed locations of tree protection fencing, relevant tree protection specifications, and call-outs describing indicating areas proposed for arborist monitoring.
- Tree protection consisting of chain link fencing should be installed at the RLOD of retained trees or at the locations specified in the body of this report. Trees growing in a group should be protected at the edge of their shared RLOD. General tree protection specifications can be found in Appendix f.
- Ensure tree protection standards comply with MICC 19.10.080, and ISA Best Management Practices (BMP) – Managing Trees During Construction
- Manage all invasive species during development.

Respectfully submitted,

George White,

Appendix A Glossary

DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Council of Tree and Landscape Appraisers 2019)

tree 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 19.16.010)

exceptional tree: a tree measuring 36 inches 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 (regulated): A tree measuring 10 inches or greater DSH (MICC 19.16.010)

MLOD (Minimum Limits of Disturbance) Minimum Limits of Disturbance: represents a distance five (5) times that of the trunk or 6-feet, whichever is greater, and is the minimum distance from a trunk that a structural root can be cut to maintain tree stability.

RLOD (Recommend Limits of Disturbance): As outlined in ISA Best Management Practices: Managing Trees During Construction, this is calculated as a radial distance 8 times the trunk diameter or greater depending on tree species and/or condition. For the purpose of this report, this represents the critical root zone (CRZ).

Visual Tree Assessment (VTA): method of evaluating structural defects and stability in trees by noting the pattern of growth (Mattheck & Breloer 1994)

Appendix B References

Accredited Standards Committee A300 (ASC 300). ANSI A300 (Part 1) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Londonderry: Tree Care Industry Association, 2017.

Council of Tree and Landscape Appraisers, Guide for Plant Appraisal, 10th Edition Second Printing. Atlanta, GA: The International Society of Arboriculture (ISA), 2019.

Fite, Kelby and Dr. E. Thomas Smiley. Best Management Practices: Managing Trees During Construction, Second Edition. Champaign, IL: International Society of Arboriculture (ISA), 2016.

Mattheck, Claus and Helge Breloer, The Body Language of Trees.: A Handbook for Failure Analysis. London: HMSO, 1994.

Mercer Island Municipal Code (MICC) 19.16.010. Definitions

Mercer Island Municipal Code (MICC) 19.10. Trees

Appendix C Photographs



Photo 1. A view looking north along the existing driveway. Most tree impacts will occur on the east (right) side of this driveway.



Photo 2. A small Phaeolus fruiting body found near the base of tree 401.



Photo 3. Tree 405, a red maple I fair health/fair structural condition that is currently proposed for removal.



Photo 4. Chinese windmill palms near the driveway entrance. These plants are not regulated and are proposed for removal



Photo 5. Trees 418-420 (Red arrows) growing above an existing rockery.



Photo 5. Trees 421 and 422 (red arrows), two Portuguese laurels currently proposed for removal.

Appendix D Assumptions & Limiting Conditions

- 1 Consultant assumes that the site and its use do not violate, and is in compliance with, all applicable codes, ordinances, statutes or regulations.
- 2 The consultant may provide a 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.
- 3 Any report by the 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.
- 4 All photographs included in this report were taken by Tree Solutions, Inc. during the documented site visit, unless otherwise noted. Sketches, drawings and photographs (included in, and attached to, this report) are intended as visual aids and are not necessarily to scale. They should not be construed as engineering drawings, 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 the consultant as to the sufficiency or accuracy of the information.
- 5 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.
- 6 These findings are based on the observations and opinions of the authoring arborist, and do not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described and assessed.
- 7 Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks and canopies.
- 8 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.
- 9 Our assessments are made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.

Appendix E Methods

Measuring

I measured the diameter of each tree at 54 inches above grade, diameter at standard height (DSH). If a tree had multiple stems, I measured each stem individually at standard height and determined a single-stem equivalent diameter by using the method outlined in the city of Seattle Director's Rule 16-2008 or the [Guide for Plant Appraisal, 10th Edition Second Printing](#) published by the Council of Tree and Landscape Appraisers. A tree is regulated based on this single-stem equivalent diameter value. Because this value is calculated in the office following field work, some unregulated trees may be included in our data set. These trees are included in the tree table for informational purposes only and not factored into tree totals discussed in this report.

Tagging

I tagged each tree with a circular aluminum tag at eye level. I assigned each tree a numerical identifier on our map and in our tree table, corresponding to this tree tag. I used alphabetical identifiers for trees off-site.

Evaluating

I evaluated tree health and structure utilizing visual tree assessment (VTA) methods. The basis behind VTA is the identification of symptoms, which the tree produces in reaction to a weak spot or area of mechanical stress. A tree reacts to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts. An understanding of the uniform stress allows the arborist to make informed judgments about the condition of a tree.

Rating

When rating tree health, I took into consideration crown indicators such as foliar density, size, color, stem and shoot extensions. When rating tree structure, I evaluated the tree for form and structural defects, including past damage and decay. Tree Solutions has adapted our ratings based on the Purdue University Extension formula values for health condition (*Purdue University Extension bulletin FNR-473-W - Tree Appraisal*). These values are a general representation used to assist arborists in assigning ratings.

Health

Excellent - Perfect specimen with excellent form and vigor, well-balanced crown. Normal to exceeding shoot length on new growth. Leaf size and color normal. Trunk is sound and solid. Root zone undisturbed. No apparent pest problems. Long safe useful life expectancy for the species.

Good - Imperfect canopy density in few parts of the tree, up to 10% of the canopy. Normal to less than ¾ typical growth rate of shoots and minor deficiency in typical leaf development. Few pest issues or damage, and if they exist, they are controllable, or tree is reacting appropriately. Normal branch and stem development with healthy growth. Safe useful life expectancy typical for the species.

Fair - Crown decline and dieback up to 30% of the canopy. Leaf color is somewhat chlorotic/necrotic with smaller leaves and "off" coloration. Shoot extensions indicate some stunting and stressed growing conditions. Stress cone crop clearly visible. Obvious signs of pest problems contributing to lesser condition, control might be possible. Some decay areas found in main stem and branches. Below average safe useful life expectancy

Poor - Lacking full crown, more than 50% decline and dieback, especially affecting larger branches. Stunting of shoots is obvious with little evidence of growth on smaller stems. Leaf size and color

reveals overall stress in the plant. Insect or disease infestation may be severe and uncontrollable. Extensive decay or hollows in branches and trunk. Short safe useful life expectancy.

Structure

Excellent - Root plate undisturbed and clear of any obstructions. Trunk flare has normal development. No visible trunk defects or cavities. Branch spacing/structure and attachments are free of any defects.

Good - Root plate appears normal, with only minor damage. Possible signs of root dysfunction around trunk flare. Minor trunk defects from previous injury, with good closure and less than 25% of bark section missing. Good branch habit; minor dieback with some signs of previous pruning. Codominant stem formation may be present, requiring minor corrections.

Fair - Root plate reveals previous damage or disturbance. Dysfunctional roots may be visible around the main stem. Evidence of trunk damage or cavities, with decay or defects present and less than 30% of bark sections missing on trunk. Co-dominant stems are present. Branching habit and attachments indicate poor pruning or damage, which requires moderate corrections.

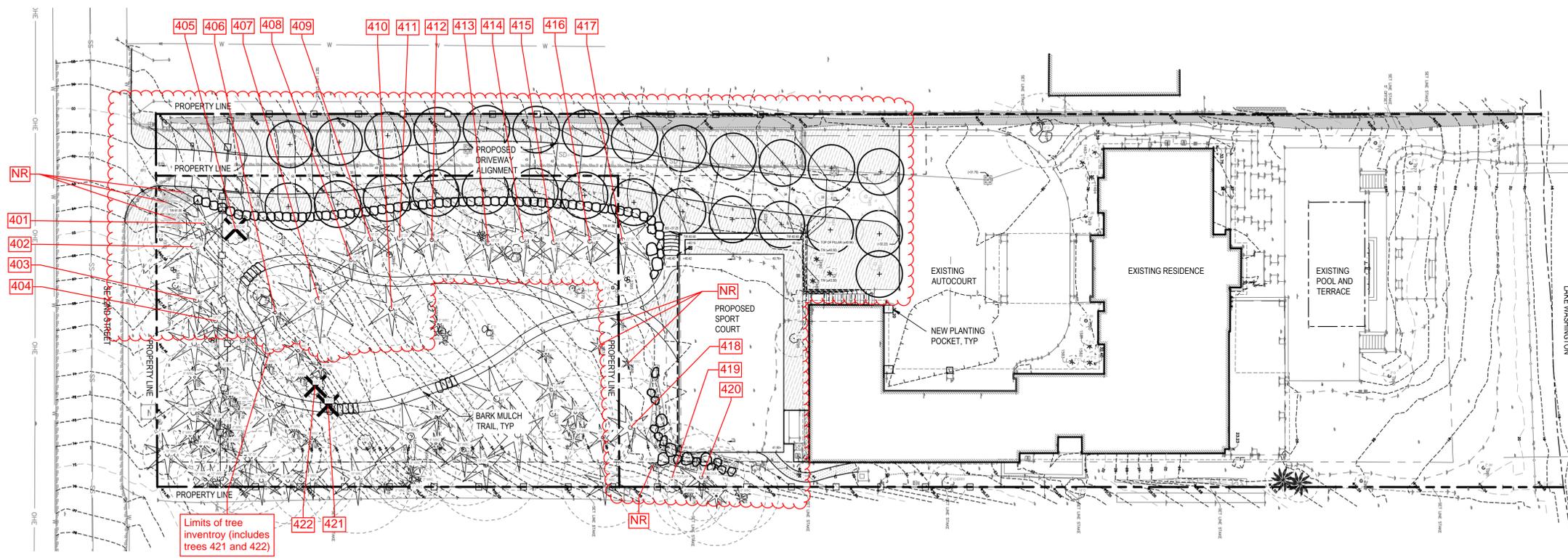
Poor - Root plate disturbance and defects indicate major damage, with girdling roots around the trunk flare. Trunk reveals more than 50% of bark section missing. Branch structure has poor attachments, with several structurally important branches dead or broken. Canopy reveals signs of damage or previous topping or lion-tailing, with major corrective action required.

Appendix F Tree Protection Specifications

The following is a list of protection measures that must be employed before, during and after construction to ensure the long-term viability of retained trees.

1. **Project Arborist:** The project arborists shall at minimum have an International Society of Arboriculture (ISA) Certification and ISA Tree Risk Assessment Qualification.
2. **Tree Protection Zone (TPZ):** The area within the tree protection fencing/approved limits of disturbance. In some cases, the TPZ may extend outside tree protection fencing. Work within the TPZ must be approved and monitored by the project arborist.
3. **Tree Protection Fencing:** Tree protection shall consist of 6-foot chain-link fencing installed at the TPZ as approved by the project arborist. Fence posts shall be anchored into the ground or bolted to existing hardscape surfaces.
 - a. Where trees are being retained as a group the fencing shall encompass the entire area including all landscape beds or lawn areas associated with the grove.
 - b. Per arborist approval, TPZ fencing may be placed at the edge of existing hardscape within the TPZ to allow for staging and traffic.
 - c. Where work is planned within the TPZ, install fencing at edge of TPZ and move to limits of disturbance at the time that the work within the TPZ is planned to occur. This ensures that work within the TPZ is completed to specification.
 - d. Where trees are protected at the edge of the project boundary, construction limits fencing shall be incorporated as the boundary of tree protection fencing.
4. **Access Beyond Tree Protection Fencing:** In areas where work such as installation of utilities is required within the TPZ, a locking gate will be installed in the fencing to facilitate access. The project manager or project arborist shall be present when tree protection areas are accessed.
5. **Tree Protection Signage:** Tree protection signage shall be affixed to fencing every 20 feet. Signage shall be fluorescent, at least 2' x 2' in size, with 3" tall text. Signage will note: "Tree Protection Area – Do Not Enter: Entry into the tree protection area is prohibited unless authorized by the project manager." Signage shall include the contact information for the project manager and instructions for gaining access to the area.
6. **Filter / Silt Fencing:** Filter / silt fencing within the TPZ of retained trees shall be installed in a manner that does not sever roots. Install so that filter / silt fencing sits on the ground and is weighed in place by sandbags or gravel. Do not trench to insert filter / silt fencing into the ground.
7. **Monitoring:** The project arborist shall monitor all ground disturbance at the edge of or within the TPZ, including where the TPZ extends beyond the tree protection fencing.
8. **Soil Protection:** No parking, foot traffic, materials storage, or dumping (including excavated soils) are allowed within the TPZ. Heavy machinery shall remain outside of the TPZ. Access to the tree protection area will be granted under the supervision of the project arborist. If project arborist allows, heavy machinery can enter the area if soils are protected from the load. Acceptable methods of soil protection include applying 3/4-inch plywood over 4 to 6 inches of wood chip mulch or use of AlturnaMats® (or equivalent product approved by the project arborist). Retain existing paved surfaces within or at the edge of the TPZ for as long as possible.
9. **Soil Remediation:** Soil compacted within the TPZ of retained trees shall be remediated using pneumatic air excavation according to a specification produced by the project arborist.
10. **Canopy Protection:** Where fencing is installed at the limits of disturbance within the TPZ, canopy management (pruning or tying back) shall be conducted to ensure that vehicular traffic does not damage canopy parts. Exhaust from machinery shall be located five feet outside the dripline of retained trees. No exhaust shall come in contact with foliage for prolonged periods of time.

11. **Duff/Mulch:** Apply 6 inches of arborist wood chip mulch or hog fuel over bare soil within the TPZ to prevent compaction and evaporation. TPZ shall be free of invasive weeds to facilitate mulch application. Keep mulch 1 foot away from the base of trees and 6 inches from retained understory vegetation. Retain and protect as much of the existing duff and understory vegetation as possible.
12. **Excavation:** Excavation done at the edge of or within the TPZ shall use alternative methods such as pneumatic air excavation or hand digging. If heavy machinery is used, use flat front buckets with the project arborist spotting for roots. When roots are encountered, stop excavation and cleanly sever roots. The project arborist shall monitor all excavation done within the TPZ.
13. **Fill:** Limit fill to 1 foot of uncompacted well-draining soil, within the TPZ of retained trees. In areas where additional fill is required, consult with the project arborist. Fill must be kept at least 1 foot from the trunks of trees.
14. **Root Pruning:** Limit root pruning to the extent possible. All roots shall be pruned with a sharp saw making clean cuts. Do not fracture or break roots with excavation equipment.
15. **Root Moisture:** Root cuts and exposed roots shall be immediately covered with soil, mulch, or clear polyethylene sheeting and kept moist. Water to maintain moist condition until the area is back filled. Do not allow exposed roots to dry out before replacing permanent back fill.
16. **Hardscape Removal:** Retain hardscape surfaces for as long as practical. Remove hardscape in a manner that does not require machinery to traverse newly exposed soil within the TPZ. Where equipment must traverse the newly exposed soil, apply soil protection as described in section 8. Replace fencing at edge of TPZ if soil exposed by hardscape removal will remain for any period of time.
17. **Tree Removal:** All trees to be removed that are located within the TPZ of retained trees shall not be ripped, pulled, or pushed over. The tree should be cut to the base and the stump either left or ground out. A flat front bucket can also be used to sever roots around all sides of the stump, or the roots can be exposed using hydro or air excavation and then cut before removing the stump.
18. **Irrigation:** Retained trees with soil disturbance within the TPZ will require supplemental water from June through September. Acceptable methods of irrigation include drip, sprinkler, or watering truck. Trees shall be watered three times per month during this time.
19. **Pruning:** 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 2017 Standard Practices for Pruning. Pruning shall be conducted or monitored by an arborist with an ISA Certification.
20. **Plan Updates:** All plan updates or field modification that result in impacts within the TPZ or change the retained status of trees shall be reviewed by the senior project manager and project arborist prior to conducting the work.
21. **Materials:** Contractor shall have the following materials onsite and available for use during work in the TPZ:
 - **Sharp and clean bypass hand pruners**
 - **Sharp and clean bypass loppers**
 - **Sharp hand-held root saw**
 - **Reciprocating saw with new blades**
 - **Shovels**
 - **Trowels**
 - **Clear polyethylene sheeting**
 - **Burlap**
 - **Water**



1 - OVERALL LANDSCAPE PLAN
SCALE: 1" = 20'-0"



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Tree Inventory

Arborist: GW
Inventory date: 12.28.2023
Map Created: 1.25.2024

This map documents the site visit of GW and JU, of Tree Solutions Inc. on December 28, 2023. All regulated on-site within the tree inventory limits trees were tagged and assigned a numerical identifier. Trees that are below regulated size or are otherwise unregulated, are marked NR.

Map Key

NR: Surveyed tree unregulated

MERCER LAKEHOUSE TRUST
6236 SE 22ND ST, MERCER ISLAND, WA 98040

GENERAL LEGEND

	PROPERTY LINE		CONCRETE DRIVEWAY
	FRONT AND SIDE YARD SETBACK		GRAVEL SURFACING
	STEEP SLOPE SETBACK		PLANTING AREA
	TREE TO REMAIN		
	TREE PROPOSED		
	ROCKERY WALL		

GENERAL ABBREVIATIONS

CAL	CALIPER
DIA	DIAMETER
DWG	DRAWINGS
EQ	EQUAL
EXST	EXISTING
HT	HEIGHT
L.A.	LANDSCAPE ARCHITECT
N.I.C.	NOT IN CONTRACT
O.C.	ON CENTER
PA	PLANTING AREA
R	RADIUS
SF	SQUARE FEET
SIM	SIMILAR
TYP	TYPICAL

GENERAL NOTES

- LANDSCAPE DOCUMENTS ARE BASED ON A SURVEY BY TERRANE DATED 01.08.2020, AND BY FIELD OBSERVATIONS. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO BEGINNING WORK. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
- FOR SITE REMOVALS AND TREE PROTECTION REFERENCE DEMOLITION PLANS.

GRADING LEGEND

	EXISTING CONTOUR - 1 FT INTERVAL	FFE	FINISH FLOOR ELEVATION
	PROPOSED MAJOR CONTOUR - 5 FT INTERVAL	FS	FINISH SURFACE ELEVATION (HARDSCAPE)
	PROPOSED MINOR CONTOUR - 1 FT INTERVAL	FG	FINISH GRADE ELEVATION (SOFTSCAPE)
	GRADE BREAK	RE	RIM ELEVATION
	EXISTING SPOT ELEVATION	TW	TOP OF WALL ELEVATION
	SPOT ELEVATION	BW	BOTTOM OF WALL ELEVATION
	SLOPE PERCENT, FOR REFERENCE ONLY	TS	TOP OF STAIR ELEVATION
	SLOPE RATIO (RUN/RISE), FOR REFERENCE ONLY	BS	BOTTOM OF STAIR ELEVATION
		TC	TOP OF CURB ELEVATION
		TE	TOP OF EDGING ELEVATION
		BE	BOTTOM OF EDGING ELEVATION
		TP	TOP OF PLANTER ELEVATION

GRADING NOTES

- SLOPES PROVIDED BY SLOPE ARROW ARE FOR REFERENCE ONLY.
- ADJUST ALL INCIDENTAL STRUCTURES, MANHOLE LIDS, VALVE BOXES, ETC. TO FINISH GRADE.
- ALL PLANTED AREAS TO SLOPE AWAY FROM BUILDINGS AT 2% MIN.

STAMP

DATE	DESCRIPTION

ISSUE DATE:
11/16/2023

SCALE: AS SHOWN

SHEET

L-1.0
OVERALL LANDSCAPE
PLAN

DSH (Diameter at Standard Height) is measured 4.5 feet above grade, or as specified in the Guide for Plant Appraisal, 10th Edition, published by the Council of Tree and Landscape Appraisers.

DSH for multi-stem trees are noted as a single stem equivalent, which is calculated using the method defined in the Guide for Plant Appraisal, 10th Edition.

Letters are used to identify trees on neighboring property with overhanging canopies.

Minimum Limit of Disturbance (MLOD) is defined as 5 times trunk diameter or 6 feet, whichever is greater.

Recommended Limit of Disturbance (RLOD) is 8 times trunk diameter or greater depending on tree species and/or condition.

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

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Dripline (feet)	Exceptional Threshold	Grove	Exceptional	24-Inch DSH or Greater	MLOD (feet)	RLOD (feet)	Proposed Action	Notes
401	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.6	Good	Good	15.8	30.0	Grove	Yes- Grove	-	8	13	Remove	Swept base, Phaeolus conk on lower trunk, phototropic lean to west
402	<i>Pseudotsuga menziesii</i>	Douglas-fir	24.9	Good	Good	16.5	30.0	Grove	Yes- Grove	Yes	10	17	Retain	Phototropic crown to south, portuguese laurel at base
403	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.4	Good	Good	14.5	30.0	Grove	Yes- Grove	-	10	16	Retain	Pitch flows from old crack on north side of trunk at 40 feet above grade
404	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.6	Good	Good	14.2	30.0	Grove	Yes- Grove	-	7	10	Retain	Light pitch flows on base with no apparent origin, armillaria possible, subdominant tree
405	<i>Acer rubrum</i>	Red maple	18.7	Good	Fair	35.8	25.0	Grove	Yes- Grove	-	8	12	Remove	Phototropic crown to west, Codominant at 20 feet with narrow union, Kretschmeria deusta at base
406	<i>Thuja plicata</i>	Western redcedar	12.4	Good	Good	15.5	30.0	Grove	Yes- Grove	-	6	8	Retain	Swept base
407	<i>Pseudotsuga menziesii</i>	Douglas-fir	25.5	Good	Good	18.6	30.0	Grove	Yes- Grove	Yes	11	17	Retain	Vegetation at base, somewhat thin crown, slight swelling at base
408	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.2	Good	Good	16.7	30.0	Grove	Yes- Grove	-	7	11	Retain	Slight lean to outeast, several burls with heavy pitch flow on trunk
409	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.4	Good	Good	16.3	30.0	Grove	Yes- Grove	-	8	13	Retain	Phototropic crown to west southwest
410	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.9	Good	Good	15.8	30.0	Grove	Yes- Grove	-	8	13	Retain	Heavy epicormic sprouting on west side of trunk
411	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.5	Good	Good	14.4	30.0	Grove	Yes- Grove	-	9	14	Retain	Dieback of lower limbs on east side of trunk (shaded out)
412	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.1	Good	Good	18.7	30.0	Grove	Yes- Grove	-	7	11	Retain	Crown somewhat sparse, jog in trunk near apex
413	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.4	Good	Good	15.7	30.0	Grove	Yes- Grove	-	7	12	Retain	Crown somewhat thin
414	<i>Pseudotsuga menziesii</i>	Douglas-fir	27.1	Good	Good	19.6	30.0	Grove	Yes- Grove	Yes	11	18	Retain	Portuguese laurel at base

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Dripline (feet)	Exceptional Threshold	Grove	Exceptional	24-Inch DSH or Greater	MLOD (feet)	RLOD (feet)	Proposed Action	Notes
415	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.5	Good	Good	18.9	30.0	Grove	Yes- Grove	-	9	15	Retain	Portuguese laurel at base
416	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.0	Good	Fair	15.8	30.0	Grove	Yes- Grove	-	8	12	Retain	Bare soils to west
417	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.8	Good	Good	20.4	30.0	Grove	Yes- Grove	-	9	15	Retain	Limited tip dieback on west side of lower crown, bare landscape soils near base
418	<i>Thuja plicata</i>	Western redcedar	16.0	Good	Good	16.2	30.0	Grove	Yes- Grove	-	7	11	Retain	6 feet south of existing rockery
419	<i>Populus trichocarpa</i>	Black cottonwood	24.0	Good	Good	20.0	-	Grove	Yes- Grove	Yes	10	16	Retain	Phototropic lean to west northwest, growing in steeply slope above existing rockery
420	<i>Pinus nigra</i>	Austrian black pine	14.8	Good	Good	9.6	24.0	Grove	Yes- Grove	-	6	10	Retain	Growing above existing rockery
421	<i>Prunus lusitanica</i>	Portuguese cherry laurel	10.4	Poor	Good	16.4	-	Grove	Yes- Grove	-	6	7	Remove	Dead top, tree to be removed
422	<i>Prunus lusitanica</i>	Portuguese cherry laurel	10.9	Good	Good	17.5	-	Grove	Yes- Grove	-	6	7	Remove	To be removed for path