

December 19, 2022

Wes Giesbrecht
Atlin Investments, Inc.
Mercer Island, WA 98040

Site: 7414 78th Ave SE
Mercer Island, WA 98040
TPN: 2524049075
Area: 68,825 sq. ft. = 1.6 acre

Dear Wes:

Thank you for requesting my services. On November 10th, 2022, we performed a Level 2 Tree Risk Assessment (TRA) for all onsite trees as well as any offsite trees with driplines that overhang the property lines. The information gathered is required to obtain a short-plat permit. (MICC 19.10.090(C)(1) & (2))

In summary:

| Tree Density Calculations | |
|---|-----------|
| Total number of onsite trees | 86 |
| Total number of non-viable trees | 39 |
| Total number of viable trees | 47 |
| Total number of trees removed for site improvements | 29 |
| Total number of required tree credits (30% X 47) | 14 |
| Total number of retained tree credits | 18 |
| Mitigation: | |
| Exceptional trees >36" (6: 1) - 3 | 18 |
| Large trees 24"-36" (3:1) - 0 | 0 |
| 10"-24" (2:1) - 26 | 52 |
| Mitigation Total | 70 |

I have included a detailed report of my findings, if you have any questions, please contact me. I can be reached on my cell phone: 425.890.3808 or by email: sprince202@aol.com

Warm regards,



Susan Prince
Creative Landscape Solutions
ISA Certified Arborist #1481
TRAQ Certified Arborist #481
Landscape Designer
425.890.3808

*The City of Mercer Island defines a *significant tree* as an existing tree over 10" in diameter

Personal qualifications, scope of work and methodology:

My examination was limited to a visual one, and did not involve any root excavation, trunk or limb coring, or any soil testing. To evaluate the trees and prepare the report, I drew on my formal college education in botany, preparation and training used to obtain my ISA certification in addition to my certification as a Tree Risk Assessor. I have worked in the field of arboriculture since 1994, have been an ISA Certified Arborist since 1999 and have been TRACE/TRAQ certified since 2009.

I followed protocol delineated by the International Society of Arboriculture (ISA) for Visual Risk Assessment (VRA). By doing so, I am examining each tree independently as well as collectively as groups or stands of trees provide stability and can lower risk of independent tree failure. This scientific process examines tree health (e.g. size, vigor, and insect and disease process) as well as site conditions (soil moisture and composition, quantity of impervious surfaces surrounding the tree etc.)

Introduction:

Identifying and managing the risks associated with trees is still largely a subjective process. Since the exact nature of tree failures remains largely unknown, our ability as scientists and arborists to predict which trees will fail and in what fashion remains limited. As currently practiced, the science of hazard tree evaluation involves examining a tree for structural defects, including genetic problems, those caused by the local environmental that the tree grows in and those attributed to man (pruning etc.).

The assessment process involves evaluating three components: 1) a tree with the potential to fail, 2) an environment that may contribute to that failure, and 3) a person or object that would be injured or damaged (the target). A defective tree cannot be considered hazardous without the presence of a target. All trees have a finite life-span though it is not pre-programmed internally in the same manner as annual plantings. As trees age, they are less able to compartmentalize structural damage following injury from insects, disease or pruning. Trees in urban settings have a shorter life span than trees grown in an undisturbed habitat.

Each species of trees grows differently. Evergreen trees have a "reputation" of growing slowly and defensively. These trees allocate a high proportion of their resources to defending themselves from pathogens, parasites and wounds. As a rule, trees with this type of growth tend to be long lived. Though like all other living things, they have a predictable life span. Examples of this type of tree include the northwest *Pseudotsuga menziesii* - Douglas fir, and *Thuja plicata* - Western red cedar.

Deciduous trees are trees that annually shed leaves or needles. These trees tend to grow quickly and try to "outgrow" problems associated with insects, disease and wounds. They allocate a relatively small portion of their internal resources to defense and rely instead upon an ability to grow more quickly than the pathogens which infect them. However, as these trees age, their growth rate declines and the normal problems associated with decay begins to catch up and compromise the tree's structural integrity. Examples of this type of tree include *Salix*, *Populus* and *Alnus*.

Knowledge of the growth and failure patterns of individual tree species is critical to effective hazard analysis. Species vary widely in their rates of failure. The hazard tree evaluation rating system used by most arborists was developed by the Colorado Urban Forest Council and recognizes this variation in species failure and includes a species component as part of the overall hazard evaluation.

Method's used to determine tree location and tree health:

Trees were identified previously by numbered aluminum tags attached to the western side of the tree. All the trees on site were examined using the Matheny and Clark¹ criteria for determining the potential hazard of trees in an urban environment as well as the Tree Risk Assessment in Urban Areas and The Urban/Rural Interface by Julian Dunster². Tree diameters were measured at DSH (diameter standard height - 4.5' above ground) using a logger's tape. Tree driplines were measured using a PRO Laser Rangefinder™.

Spreadsheet Legend:

1. Tree tag #: Numbered aluminum tags attached to the trees in the field*¹
2. Species: The common name of each tree
3. Species: Species ID: Spreadsheet contains common names of trees which correspond to scientific names as follows:
 - Apple: *Malus sp.*
 - American sycamore: *Plantanus occidentalis*
 - Austrian pine: *Pinus nigra*
 - Bigleaf maple: *Acer macrophyllum*
 - Birch: *Betula nigra*
 - Bitter Cherry: *Prunus emarginata*
 - Blue atlas cedar: *Cedrus atlantica 'Glauca'*
 - Cedar: *Thuja plicata*
 - Cherry: *Prunus sp.*
 - Dawn redwood: *Chamaecyparis nootkatensis*
 - Deodora cedar: *Cedrus deodara*
 - Colorado blue spruce: *Picea pungens*
 - Cottonwood: *Populus trichocarpa*
 - Dogwood: *Cornus nuttallii*
 - Douglas fir: *Pseudotsuga menziesii*
 - English laurel: *Prunus laurocerasus*
 - Filbert: *Corylus avellana var.*
 - Grand fir: *Abies grandis*
 - Hemlock: *Tsuga heterophylla*
 - Holly: *Ilex aquifolium*
 - Japanese maple: *Acer palmatum*
 - Leylandii cypress: *Cupressocyparis leylandii*
 - Lodgepole pine: *Pinus contorta*
 - Mountain ash: *Sorbus americana*
 - Nobel fir: *Abies procera*
 - Pear: *Pyrus sp.*
 - Plum: *Prunus*
 - Red Alder: *Alnus rubra*
 - Red maple: *Acer rubrum*
 - Walnut: *Juglans sp.*
 - Western red cedar: *Thuja plicata*
 - Weeping Alaska cedar: *Metasequoia glyptostrobides*
 - White fir: *Abies concolor*
 - White pine: *Pinus strobus*
4. DBH: Diameter of the tree measured at 48" above grade
5. Adjusted Diameter of the tree: Calculated equivalent for multi-stemmed tree
6. Dripline Radius: Measurement in feet of the tree canopy from tree trunk to outermost branch tip
7. Windfirm: Whether the tree can withstand wind if surrounding grove is changed
8. Health: A measurement of overall tree vigor and vitality rated as excellent, good, and fair or poor based on an assessment of crown density, leaf color and size, active callusing, shoot growth rate, extent of crown dieback, cambium layer health, and tree age
 - Excellent: Tree is an ideal specimen for the species with no obvious flaws
 - Good: Tree has minimal structural or situational defects
 - OK: Tree has minimal structural defects AND minimal environmental concerns
 - Fair: Tree has structural or health issues that predispose it to failure if further stressed, it is not suitable for retention as a single tree but may sometimes be retained if it is retained in a grove
 - Poor: Tree has significant structural and/or health issues. It is exempt from total tree count.
9. Defects/Concerns: A measure of the tree's structural stability and failure potential and rated as good, fair or poor based on assessment of specific structural features, e.g., decay, conks, co-dominant trunks, included bark, abnormal lean, one-sided canopy, history of failure, prior construction impact, pruning history, etc.
10. Proposed action:
 - Retain
 - Remove due to viability
 - Remove due to planned development (tree is otherwise healthy)
11. Limits of disturbance: The area surrounding the tree that defines the area that surrounds the trunk that cannot be encroached upon during construction. This may be a multiple of the trunk diameter (1 -1.5 times the trunk diameter converted to feet.) or it may be related to the width of the canopy. It is always determined by tree species and environment and is up to the discretion of the ISA Certified Arborist to determine
12. Value: The value the municipality assigns a tree with the specific DBH, species or location of the assessed tree; notification of size (exceptional etc.)

13. Mitigation:

C. Size – All replacement trees shall be at least 6’ tall for conifers and at least 1.5” diameter at the base for deciduous trees. Shrubs and bushes are not an acceptable replacement for trees. Smaller replacement trees are allowed if the applicant can demonstrate that smaller trees are more suited to the species, site conditions, neighborhood character, and the purposes of MICC 19.10 and that such replacement trees will be planted in sufficient quantities to meet the intent of MICC 19.10.

D. Number of Replacement Trees – Removed trees shall have the following base replacement ratio:

| Tree Replacement Ratios | |
|--|---|
| Diameter of Removed Tree (measured 4.5’ above ground) | 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 |

E. Maintenance – the applicant must maintain 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.

Specific Tree Observations:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|---|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 1 | 8118 | Bigleaf maple | 40.5 | 40.5 | 20 | | Y | Fair | Ivy @ root crown up to 70', co-dominant leaders with included bark x2 @ 5', dead wood, broken branches, moss and lichen | | | 1 | 20 | 20 | 20 | 20 | E | 1 | 1 | | 6 |
| 2 | 8119 | Bigleaf maple | 15.8 | 15.8 | 4 | | | Poor | Co-dominant leaders with included bark x2 reduced to 1 @ 6', previous top loss @ 12', ivy @ root crown up to 12' | | 1 | | 4 | 4 | 4 | 4 | | 1 | | | |
| 3 | 8121 | Bigleaf maple | 23.8 | 23.8 | 15 | | Y | Fair | Previous ivy @ root crown up to 60', asymmetric canopy towards east | | | 1 | 15 | 15 | 15 | 15 | | 1 | 1 | | 2 |
| 4 | 8122 | Bigleaf maple | 10 | 10 | 24 | | Y | Fair | Moss and lichen, typical of species, previous top loss @ 60', 2 leaders, asymmetric canopy towards west, dead wood, broken branches, dead scaffolds, low live crown ratio <10% | | | 1 | 24 | 24 | 24 | 24 | | 1 | 1 | | 2 |
| 5 | 8124 | Bigleaf maple | 26.1 | 26.1 | 20 | | | Fair | Previous ivy @ root crown up to 50', moss and lichen, previous top loss, weak leaders | | 1 | | 20 | 20 | 20 | 20 | L | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|---|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
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| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 6 | 8125 | Bigleaf maple | 17.8 | 17.8 | 18 | | | Fair | Ivy @ root crown up to 50', low live crown ratio <10%, moss and lichen | | 1 | | 18 | 18 | 18 | 18 | | 1 | | | |
| 7 | 8126 | Douglas fir | 27.8 | 27.8 | 16 | | | Poor | Ivy @ root crown up to 50', abnormal bark, shedding bark, popping bark, woodpecker activity, racoon scat, laminated root rot? | | 1 | | 16 | 16 | 16 | 16 | L | 1 | | | |
| 8 | 8127 | Bigleaf maple | 31.2 | 31.2 | 24 | | | Poor | Large cavity @ root crown up towards north, self-corrected lean towards east, ivy @ root crown up to 60', asymmetric canopy towards east, dead wood, broken branches, dead scaffolds | | 1 | | 24 | 24 | 24 | 24 | E | 1 | | | |
| 9 | 8131 | Bigleaf maple | 23.2 | 23.2 | 20 | | Y | Fair | Ivy @ root crown up to 20', moss and lichen, cavity @ 2' up to 4' towards east, asymmetric canopy towards north, typical of species | | | 1 | 20 | 20 | 20 | 20 | | 1 | 1 | | 2 |
| 10 | 8167 | Cherry | 20.8 | 20.8 | 24 | | | Fair | No taper, girdled root? Previous ivy @ root crown up to 30', moss and lichen | | 1 | | 24 | 24 | 24 | 24 | | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|-------------------|----------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viability | Nonviable | Construction | N | W | E | S | | | | | |
| 11 | 8175 | Bigleaf maple | 26.4 | 26.4 | 24 | | | Fair | Ivy @ root crown up to 40', moss and lichen, cavity @ 3' up to 4' towards east, typical of species | | 1 | | 24 | 24 | 24 | 24 | L | 1 | | | |
| 12 | 8178 | Red alder | 11.1 | 11.1 | 13 | | | Poor | Failing towards east | | 1 | | 13 | 13 | 13 | 13 | | 1 | | | |
| 13 | 8179 | Leylandii cypress | 10.1 | 10.1 | 10 | | | OK | Self-corrected lean towards north, exposed roots, hanger, typical of species | | | 1 | 10 | 10 | 10 | 10 | | 1 | 1 | | 2 |
| 14 | 8180 | Red alder | 11.2 | 11.2 | 15 | No | | OK | Exposed roots, failing towards south, typical of species, average health, structurally OK but not windfirm. | | 1 | | 15 | 15 | 15 | 15 | | 1 | | | |
| 15 | 8183 | Douglas fir | 47.1 | 47.1 | 27 | | | OK | Abnormal bark, shedding bark, popping bark, horizontal crack in bark @ 10' towards south, woodpecker activity, elongated branches, coning, co-dominant leaders with included bark x2 @ 50', typical of species | | | 1 | 27 | 27 | 27 | 27 | E | 1 | 1 | | 6 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | | | |
|----|------------|-------------------|----------|---------------|-----------------------|-----------|-------------|--------|---|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|---|--|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement | | |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | | | |
| 16 | 8233 | Bigleaf maple | 41.4 | 41.4 | 22 | | | Fair | Roots cut 1' towards south, decay in roots, Hypoxylon canker, moss and lichen, previous top loss @ 15', multiple strong leaders, galls, dead scaffolds, dead wood, broken branches, light fixture | | 1 | | 2 | 2 | 2 | 2 | 2 | E | 1 | | | | |
| 17 | 8234 | Kousa dogwood | 14 | 14 | 22 | | | OK | Suppressed canopy, asymmetric canopy-west, dead wood, broken branches, typical of species | | | 1 | 22 | 22 | 22 | 22 | | | 1 | 1 | | 2 | |
| 18 | 8238 | Western red cedar | 18.6 | 18.6 | 12 | | | OK | Previous ivy @ root crown up to 50', thin canopy, typical of species | 1 | | | 12 | 12 | 12 | 12 | | | 1 | 1 | 1 | | |
| 19 | 8239 | Red alder | 12.5 | 12.5 | 13 | | Y | Fair | Exposed roots, serpentine trunk, lean towards north, typical of species | 1 | | | 13 | 13 | 13 | 10 | | | 1 | 1 | 1 | | |
| 20 | 8241 | Leylandii cypress | 13.5 | 13.5 | 9 | | | OK | Typical of species | 1 | | | 9 | 9 | 9 | 9 | | | 1 | 1 | 1 | | |
| 21 | 8242 | Leylandii cypress | 14.8 | 14.8 | 10 | | | OK | Typical of species, dead wood, broken branches | 1 | | | 10 | 10 | 10 | 10 | | | 1 | 1 | 1 | | |
| 22 | 8244 | Leylandii cypress | 12 | 12 | 9 | | | OK | Dead wood, broken branches, typical of species | 1 | | | 9 | 9 | 9 | 9 | | | 1 | 1 | 1 | | |
| 23 | 8245 | Leylandii cypress | 7, 14 | 15.5 | 10 | | | OK | Co-dominant leaders with included bark x2 @ 3', typical of species | 1 | | | 10 | 10 | 10 | 10 | | | 1 | 1 | 1 | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|-------------------|----------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
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| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 24 | 8246 | Leylandii cypress | 11 | 11 | 8 | | | OK | Dead wood, broken branches, typical of species | 1 | | | 8 | 8 | 8 | 8 | | 1 | 1 | 1 | |
| 25 | 8247 | Douglas fir | 23.2 | 23.2 | 18 | | | OK | Previous light fixture, slight serpentine trunk, typical of species | 1 | | | 18 | 18 | 18 | 15 | | 1 | 1 | 1 | |
| 26 | 8248 | Douglas fir | 16 | 16 | 16 | | | OK | Dead wood, broken branches, typical of species | 1 | | | 16 | 16 | 16 | 12 | | 1 | 1 | 1 | |
| 27 | 8250 | Douglas fir | 14 | 14 | 14 | | | OK | Dead wood, broken branches, typical of species | | | 1 | 14 | 14 | 14 | 14 | | 1 | 1 | | 2 |
| 28 | 8251 | Douglas fir | 13 | 13 | 14 | | | OK | Co-dominant canopy, typical of species | | | 1 | 14 | 14 | 14 | 14 | | 1 | 1 | | 2 |
| 29 | 8252 | Hemlock | 16.1 | 16.1 | 14 | | | Fair | Raccoon scat, serpentine trunk, suppressed canopy, dead wood, broken branches, thin canopy, typical of species | | 1 | | 14 | 14 | 14 | 14 | | 1 | | | |
| 30 | 8253 | Douglas fir | 17.9 | 17.9 | 16 | | | OK | Typical of species | | | 1 | 16 | 16 | 16 | 16 | | 1 | 1 | | 2 |
| 31 | 8254 | Bitter cherry | 13 | 13 | 19 | | | Fair | Ivy root crown to 20', self-corrected lean west, low live crown ratio < 10, gummosis, dead wood, broken branches | | 1 | | 19 | 19 | 19 | 19 | | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|-------------------|-------------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 32 | 8261 | Western red cedar | 56.6 | 56.6 | 28 | | Y | Fair | Raccoon scat, candelabra @ 10', vertical crack @ 5' up to 15' towards north, multiple 24" diameter branches fused towards south, coning, thin canopy | 1 | | | 28 | 25 | 25 | 25 | E | 1 | 1 | 1 | |
| 33 | 8262 | Western red cedar | 19.2 / 16.3 | 25 | 12 | | | OK | Co-dominant leaders with included bark x2 @ root crown, thin canopy, nurse tree, typical of species | 1 | | | 12 | 12 | 12 | 12 | L | 1 | 1 | 1 | |
| 34 | 8263 | Western red cedar | 17.1 | 17.1 | 13 | | | OK | Asymmetric canopy towards south, slight lean towards south, typical of species | 1 | | | 13 | 13 | 13 | 13 | | 1 | 1 | 1 | |
| 35 | 8264 | European plum | 14 | 14 | 14 | | | Poor | Mostly dead, decay throughout | | 1 | | 14 | 14 | 14 | 14 | | 1 | | | |
| 36 | 8265 | European plum | 8, 12 | 14.5 | 20 south only | | | Fair | Co-dominant leaders with included bark x2 @ root crown, lean towards south, asymmetric canopy towards south | | 1 | | 20 | 20 | 20 | 20 | | 1 | | | |
| 37 | 8267 | Hemlock | 14 | 14 | 16 | | | Poor | Self-corrected lean towards north, lean towards north, exposed roots, asymmetric canopy towards south | | 1 | | 16 | 16 | 16 | 16 | | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|-------------|----------------------|-------------|---------------|-----------------------|-----------|-------------|-------------|---|-----------------|-----------|--------------|----------------|-----------|-----------|-----------|---|----------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 38 | 8269 | Grand fir | 18.2 | 18.2 | 18 | | | OK | Thin canopy, vertical crack in bark root crown up to 30', typical of species | 1 | | | 11 | 18 | 18 | 18 | | 1 | 1 | 1 | |
| 39 | 8272 | Bigleaf maple | 22.9 | 22.9 | 20 | | | Fair | Nurse tree, exposed roots, previous top loss, asymmetric canopy towards west, typical of species, dead scaffolds | | 1 | | 20 | 20 | 20 | 20 | | 1 | | | |
| 40 | 8273 | Bigleaf maple | 19.2 | 19.2 | 23 | | Y | Fair | Nurse tree, self-corrected lean towards north, lean towards south, moss and lichen, asymmetric canopy towards south | | | 1 | 23 | 23 | 23 | 23 | | 1 | 1 | | 2 |
| 41 | 8274 | Bigleaf maple | 26 | 26 | 18 | | | Poor | Mostly dead, Ganoderma | | 1 | | 18 | 18 | 18 | 18 | L | 1 | | | |
| 42 | 8275 | Bigleaf maple | 23 | 23 | 20 | | | OK | Moss and lichen, exposed roots, ivy @ root crown up to 30', dead wood, broken branches, typical of species | | | 1 | 20 | 20 | 20 | 20 | | 1 | 1 | | 2 |
| 43 | 8276 | Bigleaf maple | 27.1 | 27.1 | 16 | | | Poor | Taps hollow, Ganoderma @ 3' towards east, ivy @ root crown up to 60', nurse tree, previous top loss @ 50', cavity @ root crown up to 4' towards west, Hypoxylon canker | | 1 | | 16 | 16 | 16 | 16 | L | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | | |
|----|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|---|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement | |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | | |
| 44 | 8277 | Bigleaf maple | 34.4 | 34.4 | 24 | | | Poor | Co-dominant leaders with included bark x2 @ 8', ivy @ root crown to top of tree 60', cavity @ root crown up to 4' towards east | | 1 | | 24 | 24 | 24 | 24 | F | 1 | | | | |
| 45 | 8279 | European plum | 14 | 14 | 16 | | | Poor | Twisted trunk, large cavity @ root crown up to 4' towards east, dead scaffolds, gummosis | | 1 | | 16 | 16 | 16 | 16 | | 1 | | | | |
| 46 | 8281 | Bigleaf maple | 11.5 | 11.5 | 24 | | | OK | Moss and lichen, serpentine trunk, typical of species, lean towards north, asymmetric canopy towards north, dominant canopy | | | 1 | 24 | 24 | 24 | 24 | | 1 | 1 | | | 2 |
| 47 | 8283 | Bigleaf maple | 10.8 | 10.8 | 18 | | | OK | Moss and lichen, exposed roots, typical of species | | | 1 | 18 | 18 | 18 | 18 | | 1 | 1 | | | 2 |
| 48 | 8284 | Bigleaf maple | 21.8 | 21.8 | 16 | | Y | Fair | Ivy @ root crown up to 50', moss and lichen, low live crown ratio <10%, horizontal crack @ 4' towards south | | | 1 | 16 | 16 | 16 | 16 | | 1 | 1 | | | 2 |
| 49 | 8285 | Bigleaf maple | 16.5 | 16.5 | 16 | | | Poor | Sweep towards south, moss and lichen, previous top loss @ 40', weak leaders | | 1 | | 16 | 16 | 16 | 16 | | 1 | | | | |
| 50 | 8286 | Bigleaf maple | 14.8 | 14.8 | 18 | | Y | Fair | Moss and lichen, serpentine trunk, lead towards east, typical of species | | | 1 | 18 | 18 | 18 | 18 | | 1 | 1 | | | 2 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 51 | 8289 | Bigleaf maple | 20.2 | 20.2 | 22 | | | Fair | Moss and lichen, self-corrected lean towards east, dead wood, broken branches, typical of species, racoon scat, Hypoxylon canker @ 1' towards east | | 1 | | 22 | 22 | 22 | 22 | | 1 | | | |
| 52 | 8290 | Bigleaf maple | 14.8 | 14.8 | 18 | | | OK | Moss and lichen, typical of species | | | 1 | 18 | 18 | 18 | 18 | | 1 | 1 | | 2 |
| 53 | 8291 | Bigleaf maple | 11 | 11 | 16 south only | | | OK | Lean towards south, asymmetric canopy towards south, moss and lichen, typical of species | | | 1 | 16 | 16 | 16 | 16 | | 1 | 1 | | 2 |
| 54 | 8292 | Red alder | 17.1 | 17.1 | 21 | | | Poor | Abnormal bark, shedding bark, previous top loss @ 40', no leaders | | 1 | | 21 | 21 | 21 | 21 | | 1 | | | |
| 55 | 8294 | Bigleaf maple | 12 | 12 | 14 | | | OK | Asymmetric canopy towards north, typical of species, no access | | | 1 | 14 | 14 | 14 | 14 | | 1 | 1 | | 2 |
| 56 | 8295 | Bigleaf maple | 12 | 12 | 16 | | | OK | Typical of species, no access | | | 1 | 16 | 16 | 16 | 16 | | 1 | 1 | | 2 |
| 57 | 8296 | Bitter cherry | 19 | 19 | 24 | | | OK | Moss and lichen, previous top loss, vertical cracks in bark | | | 1 | 24 | 24 | 24 | 24 | | 1 | 1 | | 2 |
| 58 | 8298 | Bitter cherry | 10 | 10 | 14 | | | OK | Ivy @ root crown up to 20', typical of species | | | 1 | 14 | 14 | 14 | 14 | | 1 | 1 | | 2 |
| 59 | 8300 | European plum | 12 | 12 | 26 | | | Poor | Failing towards southeast, lean >45° | | 1 | | 26 | 26 | 26 | 26 | | 1 | | | |
| 60 | 8304 | Bigleaf maple | 16.4 | 16.4 | 18 | | | Poor | Abnormal bark, shedding bark, mostly dead | | 1 | | 18 | 18 | 18 | 18 | | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|-------------------|---------------|---------------|-----------------------|-----------|-------------|--------|---|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 61 | 8305 | Bigleaf maple | 6, 5, 4, 4, 3 | 10 | 16 | | | Fair | Co-dominant leaders with included bark x5 @ root crown, moss and lichen, twisted trunks, dead scaffolds | | 1 | | 16 | 16 | 16 | 16 | | 1 | | | |
| 62 | 8306 | Bigleaf maple | 10.4 | 10.4 | 20 | | | OK | Moss and lichen, asymmetric canopy towards west, typical of species | | | 1 | 20 | 20 | 20 | 20 | | 1 | 1 | | 2 |
| 63 | 8309 | Bigleaf maple | 17.5 | 17.5 | 24 | | | Poor | Exposed roots, mostly dead, previous root failure, previous top loss @ 40', weak leader | | 1 | | 24 | 24 | 24 | 24 | | 1 | | | |
| 64 | 8312 | Bigleaf maple | 12 | 12 | 20 | | | Poor | Previous top loss @ 15', weak leaders, poor pruning with decay | | 1 | | 20 | 20 | 20 | 20 | | 1 | | | |
| 65 | 8313 | Bigleaf maple | 11 | 11 | 12 | | | Fair | Ivy @ root crown up to 45' top of tree, low live crown ratio <5%, dead wood, broken branches, moss and lichen | | 1 | | 12 | 12 | 12 | 12 | | 1 | | | |
| 66 | 8314 | Western red cedar | 45.7 | 45.7 | 22 | | | OK | Thin canopy, previous top loss, elongated branches, racoon scat, drought stress | | | 1 | 2 | 2 | 2 | 2 | E | 1 | 1 | | 6 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | | |
|----|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|---|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|---|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement | |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | | |
| 67 | 8318 | Bigleaf maple | 39.1 | 39.1 | 28 | | | Poor | Ivy @ root crown up to 30', column of decay 7' up to 12' towards north, co-dominant leaders with included bark x2 @ 7', low live crown ratio <10%, moss and lichen, exposed roots, previous top failure @ 40' | | 1 | | 28 | 28 | 28 | 28 | E | 1 | | | | |
| 68 | 8320 | Red alder | 18 | 18 | 10 | | | Poor | Previous large trunk failure, resprout | | 1 | | 10 | 10 | 10 | 10 | | 1 | | | | |
| 69 | 8321 | Bigleaf maple | 28.2 | 28.2 | 12 | | | Poor | Mostly dead, ivy @ root crown up to 70', dead top | | 1 | | 12 | 12 | 12 | 12 | L | 1 | | | | |
| 70 | 8323 | Bigleaf maple | 13.8 | 13.8 | 10 | | | Poor | Ivy @ root crown up to 50' top of tree | | 1 | | 10 | 10 | 10 | 10 | | 1 | | | | |
| 71 | 8324 | Bigleaf maple | 11.4 | 11.4 | 18 west only | | | Fair | Ivy @ root crown up to 40' | | 1 | | 18 | 18 | 18 | 18 | | 1 | | | | |
| 72 | 8325 | Douglas fir | 42 | 42 | 24 | | | Poor | Previous ivy @ root crown up to 40', previous top loss @ 80', weak leaders | | 1 | | 24 | 24 | 24 | 24 | E | 1 | | | | |
| 73 | 8326 | Bigleaf maple | 15.6 | 15.6 | 23 | | | OK | Asymmetric canopy to south, co-dominant canopy, moss and lichen, typical of species | | | 1 | 23 | 23 | 23 | 23 | | 1 | 1 | | | 2 |
| 74 | 8327 | Bigleaf maple | 2, 6.5 | 7 | 16 east only | | | Poor | Co-dominant leaders with included bark x2 @ 3', dead spur, hangers | | 1 | | 16 | 16 | 16 | 16 | | 1 | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|---|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Retain | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viable | Nonviable | Construction | N | W | E | S | | | | | |
| 75 | 8329 | Bigleaf maple | 10.5 | 10.5 | 15 | | | OK | Moss and lichen, ivy @ root crown up to 60', previous top loss, elongated branches, co-dominant canopy, typical of species | | | 1 | 15 | 15 | 15 | 15 | | 1 | 1 | | 2 |
| 76 | 8330 | Bigleaf maple | 11.1 | 11.1 | 14 | | | OK | Serpentine trunk, previous ivy @ root crown up to 40', low live crown ratio <10%, co-dominant canopy, lean towards north | | | 1 | 14 | 14 | 14 | 14 | | 1 | 1 | | 2 |
| 77 | 8332 | Bigleaf maple | 12.3 | 12.3 | 12 | | | Poor | Ivy @ root crown up to 40', no visible canopy | | 1 | | 12 | 12 | 12 | 12 | | 1 | | | |
| 78 | 8333 | Bigleaf maple | 16, 17.2 | 23.5 | 26 | | | Fair | Co-dominant leaders with included bark x2 @ root crown, ivy @ root crown up to 40', previous top loss, moss and lichen, asymmetric canopy towards north, dead wood, broken branches, dead spur, decay in center | | 1 | | 26 | 26 | 26 | 26 | | 1 | | | |
| 79 | 8334 | Bigleaf maple | 14.2 | 14.2 | 22 | | | Fair | Ivy @ root crown up to 20', suppressed canopy, previous top loss, asymmetric canopy towards east, moss and lichen, low live crown ratio dying | | 1 | | 22 | 22 | 22 | 22 | | 1 | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|-------------|--------------------|-------------|---------------|-----------------------|-----------|-------------|-------------|--|-----------------|-----------|--------------|----------------|-----------|-----------|-----------|---|----------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viability | Nonviable | Construction | N | W | E | S | | | | | |
| 80 | 8340 | Bigleaf maple | 14 | 14 | 14 | | | OK | Ivy @ root crown up to 12', lean towards south, typical of species | 1 | | | 14 | 14 | 14 | 14 | | 1 | 1 | 1 | |
| 81 | 8347 | Bigleaf maple | 12 | 12 | 18 | | | OK | Serpentine trunk, moss and lichen, typical of species | | | 1 | 18 | 18 | 18 | 18 | | 1 | 1 | | 2 |
| 82 | 8356 | Douglas fir | 37.2 | 37.2 | 18 | | Y | Fair | Previous ivy @ root crown up to 30', abnormal bark, shedding bark, popping bark, previous top loss, elongated branches, dead wood, broken branches, hanger, debris over crown, typical of species | 1 | | | 18 | 18 | 18 | 18 | E | 1 | 1 | 1 | |
| 83 | 8357 | Bigleaf maple | 11.4 | 11.4 | 12 | | Y | Fair | Co-dominant leaders with included bark x2 reduced to 1 @ 15', weak leader, previous ivy @ root crown up to 20' | 1 | | | 12 | 12 | 12 | 12 | | 1 | 1 | 1 | |
| 84 | 8358 | Bigleaf maple | 10.6 | 10.6 | 10 | | | OK | Low live crown ratio <30%, asymmetric canopy towards north, suppressed canopy, dead wood, broken branches, typical of species | 1 | | | 10 | 10 | 10 | 10 | | 1 | 1 | 1 | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | | 11 | | | | 12 | | | | |
|----|------------|---------------|----------|---------------|-----------------------|-----------|-------------|--------|--|-----------------|-----------|--------------|----------------|----|----|----|---|-------|---------------|----------------|-------------|
| # | Tree Tag # | Species ID | DBH (in) | Adj. DBH (in) | Drip-line radius (ft) | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | | CRZ/TPZ/LOD | | | | Large tree DBH > 24" Exceptional Tree MICC 19.16 | Value | Healthy Trees | Retained trees | Replacement |
| | | | | | | | | | | Ret. | Remove | | Radius in feet | | | | | | | | |
| | | | | | | | | | | Viability | Nonviable | Construction | N | W | E | S | | | | | |
| 85 | 8360 | Bigleaf maple | 14.2 | 14.2 | 18 | | Y | Fair | Ivy @ root crown up to 15', moss and lichen, asymmetric canopy towards north, typical of species | | | 1 | 18 | 18 | 18 | 18 | | 1 | 1 | | 2 |
| 86 | 8361 | Bigleaf maple | 23 | 23 | 18 | | Y | Fair | Moss and lichen, ivy @ root crown up to 30', dead wood, broken branches, wrapped by 6" Red alder, dead scaffolds | 1 | | | 18 | 12 | 18 | 12 | | 1 | 1 | 1 | |

86

18 39 29

86 47 18 70

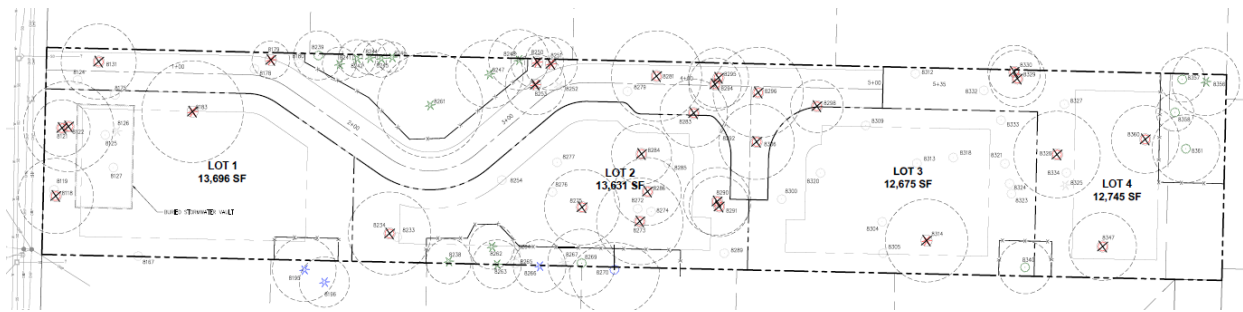
Offsite Potentially Impacted trees:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | | 11 | | | |
|----|------------|-------------------|------------|-----------------|-----------------------|-----------|-------------|--------|--|-----------------|--------------|----------------|----|----|----|
| # | Tree Tag # | Species ID | DBH inches | Adj. DBH inches | Drip-line radius feet | Wind-firm | OK in Grove | Health | Defects/Comments | Proposed Action | | CRZ/TPZ/LOD | | | |
| | | | | | | | | | | Retain | | Radius in feet | | | |
| | | | | | | | | | | Vi-able | Non- vi-able | N | W | E | S |
| 1 | 8195 | Deodora cedar | 26 | 26 | 12 over fence | | X | Fair | thin canopy, asymmetric canopy south dead wood, broken branches | 1 | | 12 | 12 | 12 | 12 |
| 2 | 8196 | Hemlock | 20 | 20 | 2 over fence | | | Poor | 2 large vertical caracks 30-45' East, previous top loss @ 50', coning, thin canopy | | 1 | 2 | 2 | 2 | 2 |
| 3 | 8266 | Western red cedar | 18 | 18 | 14 | | | OK | Thin canopy, typical of species, vertical crack @ root crown up to 6' towards north | 1 | | 11 | 14 | 14 | 14 |
| 4 | 8270 | Bigleaf maple | 36 | 36 | 24 over fence | | | Poor | Cavity @ root crown up to 4' towards east, serpentine trunk, previous large scaffold failure @ 15' towards north resulting in a large cavity | | 13 | 13 | 24 | 24 | 24 |
| 5 | 8400 | Grand fir | 12 | 12 | 2 over fence | | | OK | Suppressed canopy, typical of species | 1 | | 2 | 2 | 2 | 2 |
| 6 | 8401 | Bigleaf maple | 28 | 28 | 0 over fence | | Y | Fair | Previous top loss, strong leaders, asymmetric canopy towards south, typical of species | 1 | | 0 | 0 | 0 | 0 |
| 7 | 8402 | Bigleaf maple | 26 | 26 | 4 over fence | | | OK | Serpentine trunk, decay @ root crown, lean towards south, typical of species | 1 | | 4 | 4 | 4 | 4 |
| 8 | 8403 | Hemlock | 13 | 13 | 9 over fence | | | Fair | Exposed roots, thin canopy, suppressed canopy | | 1 | 9 | 9 | 9 | 9 |
| 9 | 8404 | Norway spruce | 12 | 12 | 0 over fence | | | Poor | Previous top loss, elongated branches, free flowing sap, lean towards south | | 1 | 0 | 0 | 0 | 0 |
| 10 | 8405 | Grand fir | 18 | 18 | 0 over fence | | | OK | Dead wood, broken branches, co-dominant canopy | 1 | | 0 | 0 | 0 | 0 |
| 11 | 8406 | Bigleaf maple | 26 | 26 | 0 over fence | | | Poor | Previous top loss @ 70' | | 1 | 0 | 0 | 0 | 0 |

Aerial View of Site:



Proposed Site Improvements (for reference only, see Civil Engineering Plans for details):



Discussion:

| Tree Density Calculations | |
|---|-----------|
| Total number of onsite trees | 86 |
| Total number of non-viable trees | 39 |
| Total number of viable trees | 47 |
| Total number of trees removed for site improvements | 29 |
| Total number of required tree credits (30% X 47) | 14 |
| Total number of retained tree credits | 18 |
| Mitigation: | |
| Exceptional trees >36" (6: 1) - 3 | 18 |
| Large trees 24"-36" (3:1) - 0 | 0 |
| 10"-24" (2:1) - 26 | 52 |
| Mitigation Total | 70 |

The applicate requesting to short plat the existing 1.6-acre SFR into four (4) SFR parcels. Currently there is a single-family residence on the parcel accessed by a gravel driveway that wraps around the back of the home to the garage area.

There are eighty-six (86) trees with DBH's 10" or greater on the parcel; thirty-nine (39) are non-viable, forty-seven (47) are viable and suitable for retention.

The trees include nine (9) Exceptional trees, #8118, 8183, 8233, 8261, 8277, 8314, 8318, 8325, 8356 – four (4) are non-viable and five (5) are viable and suitable for retention (#8118, 8183, 8261, 8314, 8356).

MICC requires that the applicant retain 30% of the existing trees (30% X 47 = 14). Proposed site improvements retain eighteen (18) trees located in three permanent groves. The new roadway was determined by weaving it amongst the largest number of retained trees.

The retained trees are in three (3) grove areas; the understory of native shrubs and ground-covers in and around the groves of trees should be retained intact. Any work in the area to remove invasive species (especially holly, ivy, and blackberries) should be completely by hand and 4" of arborist bark (or hog fuel) should be applied around any retained tree that has been impacted by site construction. Additional water should be provided three (3) times per week (approximately 1" of water per week).

The following summary shows the breakdown of retained and removed site trees based on size:

| Tree Distribution Summary | | | |
|------------------------------------|-----------|---------|----------|
| Exceptional trees | | | |
| Total | Nonviable | Removed | Retained |
| 9 | 4 | 3 | 2 |
| Large | | | |
| 8 | 7 | 0 | 1 |
| Regulated not large or exceptional | | | |
| 69 | 28 | 26 | 15 |

| Tree Distribution Summary | | | |
|---------------------------|----|----|----|
| Total | | | |
| 86 | 39 | 29 | 18 |

Exceptional tree Removal:

There are three (3) exceptional trees (#8118, 8183, 8314) proposed to be removed. Permission to remove marginally viable Exceptional tree # 8118 (a 40" DBH Bigleaf maple) is requested because:

1. The tree is intertwined with a non-viable tree #8119, both are encased in ivy up to 70'
2. The detention vault is located within the iCRZ

Exceptional tree # 8183 (#8183 is a 47" DBH Douglas fir) is located north of lot 1 where it is impacted by new roadway construction on the north side of the tree, and by the building pad of Lot 1) to the south. The loss of 50% of the roots of this senescent tree would likely cause its decline and death over the next decade.

Lastly, Exceptional tree # 8314 (46" DBH western red cedar) located south of Lot 3 is proposed to be removed due to necessary grading and building in the dripline of the tree.

Mitigation:

| Mitigation: | |
|-----------------------------------|-----------|
| Exceptional trees >36" (6: 1) - 3 | 18 |
| Large trees 24"-36" (3:1) - 0 | 0 |
| 10"-24" (2:1) - 26 | 52 |
| Mitigation Total | 70 |

Required mitigation for the removed viable trees is seventy (70) supplemental trees. The replacement trees should be at least 6' tall for conifers and at least 1.5" caliper for deciduous trees. (MICC 19.10)

Tree Protection Fencing: Tree Protection fencing should be erected prior to any site grading

First, protect roots that lie in the path of construction. Approximately 90 to 95 percent of a tree's root system is in the top three feet of soil, and more than half is in the top one foot. Construction activities should be avoided in this area. Protect as much of the area beyond the tree's dripline as possible. Some healthy trees survive after losing half of their roots. However, other species are extremely sensitive to root damage even outside the dripline.

Do not disturb the Critical Root Zone (CRZ). The CRZ is defined by its "critical root radius." It is more accurate than the dripline for determining the CRZ of trees growing in forests or that have narrow growth habits. To calculate critical root radius, measure the tree's diameter (DBH) in inches, 4.5 feet above the ground. For each inch, allow for 1 to 1.5 feet of critical root radius. If a tree's DBH is ten inches, its critical root radius is 10 to 15 feet.

In addition to the CRZ, it is important to determine the Limits of Disturbance (LOD) for preserved trees. Generally, this is approximating the CRZ however in previously excavated areas around the dripline the LOD may be smaller, or in the case of a tree situated on a slope the LOD may be larger. The determination of LOD is also subject to the tree species. Some tree species do better than others after root disturbance.

Tree protection is advised throughout the duration of any construction activities whenever the critical root zone or leaf canopy may be encroached upon by such activities.

The Critical Root Zone (CRZ) or LOD should be protected with fencing adequate to hinder access to people vehicles and equipment. Fencing detail is provided. It should consist of continuous 4 ft. high temporary chain-link fencing with posts set at 10' on center or polyethylene laminar safety fencing or similar. The fencing must contain fencing signage detailing that the tree protection area cannot be trespassed on.

Soil compaction is one of the most common killers of urban trees. Stockpiled materials, heavy machinery and excessive foot traffic damage soil structure and reduce soil pore space. The affected tree roots suffocate. When construction takes place close to the protected CRZ, cover the site with 4 inches of bark to reduce soil compaction

Tree Protection fencing must be erected prior to soil excavation, boring, grading or fill operations. It is erected at the LOD. If it is necessary to run utilities within the LOD, the utilities should be combined into one cut, as practical. Trenching is not allowed in the LOD. In these areas boring or tunneling techniques should be used. In the event that roots greater than 1" diameter near the LOD are damaged or torn, it is necessary to hand trim them to a clean cut. Any roots that are exposed during construction should be covered with soil as soon as possible.

During drought conditions, trees must be adequately watered. Site should be visited regularly by a qualified ISA Certified Arborist to ensure the health of the trees. Tree protection fencing is the last item to be removed from the site after construction is completed.

After construction has been completed, evaluate the remaining trees. Look for signs and symptoms of damage or stress. It may take several years for severe problems to appear.

In the event that fencing around portions of the CRZ of a tree to be retained are not practical to erect due to construction or obstacles, tree protection fencing should be placed three feet laterally from the obstruction (ex. three feet back of a curb, building, or other existing or planned permanent infrastructure.

Glossary:

ANSI A300: American National Standards Institute (ANSI) standards for tree care

Chlorotic: discoloration caused by lack of chlorophyll in the foliage

Conifer: A tree that bears cones and has evergreen needles or scales

Crown: the above ground portion of the tree comprised of branches and their foliage

Crown raise pruning: a pruning technique where the lower branches are removed, thus raising the overall height of the crown from the ground

DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade

Deciduous: tree or other plant that loses its leaves annually and remains leafless generally during the cold season

Epicormic: arising from latent or adventitious buds

Evergreen: tree or plant that keeps its needles or leaves year round; this means for more than one growing season

Increment: the amount of new wood fiber added to a tree in a given period, normally one year.

ISA: International Society of Arboriculture

Landscape function: the environmental, aesthetic, or architectural functions that a plant can have

Lateral: secondary or subordinate branch

Limits of disturbance: The boundary of minimum protection around a tree, the area that cannot be encroached upon without possible permanent damage to the tree. It is a distance determined by a qualified professional and is based on the age of the tree, its health, the tree species tolerance to disruption and the type of disturbance. It also considers soil and environmental condition and previous impacts. It is unique to each tree in its location.

Limited visual assessment: a visual assessment from a specified perspective such as foot, vehicle, or aerial (airborne) patrol of an individual tree or a population of trees near specified targets to identify specified conditions or obvious defects (ISA 2013)

Live crown ratio: the percentage of living tissue in the canopy versus the tree's height. It is a good indicator of overall tree health and the trees growing conditions. Trees with less than a 30% Crown ratio often lack the necessary quantity of photosynthetic material necessary to sustain the roots; consequently, the tree may exhibit low vigor and poor health.

Monitoring: keeping a close watch; performing regular checks or inspections

Owner/manager: the person or entity responsible for tree management or the controlling authority that regulates tree management

Pathogen: causal agent of disease

Phototropic growth: growth toward light source or stimulant

ROW: Right-of-way; generally referring to a tree that is located offsite on a city easement

Reaction wood: Specialized secondary xylem which develops in response to a lean or similar mechanical stress, it serves to help restore the stem to a vertical position

Self-corrected lean: a tree whose trunk is at an angle to the grade but whose trunk and canopy changes to become upright/vertical

Significant tree: a tree measuring a specific diameter determined by the municipality the tree grows in. Some municipalities deem that only healthy trees can be significant, other municipalities consider both healthy and unhealthy trees of a determined diameter to be significant

Snag: a tree left partially standing for the primary purpose of providing habitat for wildlife

Soil structure: the size of particles and their arrangement; considers the soil, water, and air space

Sounding: process of striking a tree with a mallet or other appropriate tool and listening for tones that indicate dead bark, a thin layer of wood outside a cavity, or cracks in wood

Structural defects: flaws, decay, or other faults in the trunk, branches, or root collar of a tree, which may lead to failure; may be genetic, or environmental

Tree credit: A number assigned to a tree by a municipality that may be equal to the diameter of the tree or a numerical count of the tree, or related to diameter by a factor conveyed in a table of the municipal code

Trunk area: the cross-sectional area of the trunk based upon measurement at 54 inches (4.5 ft.) above grade

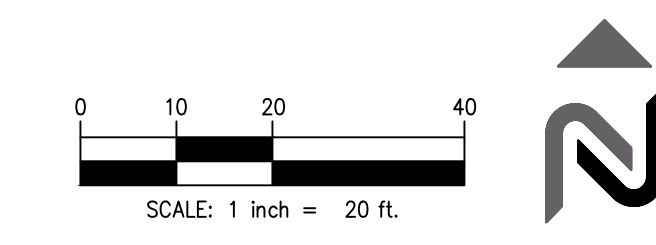
Visual Tree Assessment (VTA): method of evaluating structural defects and stability in trees by noting the pattern of growth. Developed by Claus Mattheck (Harris, et al 1999) detailed visual inspection of a tree and surrounding site that may include the use of simple tools. It requires that a tree risk assessor walk completely around the tree trunk looking at the site, aboveground roots, trunk, and branches (ISA 2013)

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Assumptions and Limiting Conditions

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes or other governmental regulations.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.
4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of the report unless subsequent contractual arrangements are made including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
5. Loss or alteration of any part of this report invalidates the entire report.
6. 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 the prior expressed written or verbal consent of the consultant/appraiser.
7. Neither all nor any part of the contents of the report, nor copy thereof, shall be conveyed by anyone, including the client to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser – particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant/appraiser as stated in her qualification.
8. The report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of subsequent event, nor upon any finding to be reported.
9. Sketches, diagrams, graphs and photographs in this report, being intended as visual aid, are not necessarily to scale and should not be construed as engineering or architectural reports or survey.
10. Unless expressed otherwise: 1) information contained in this report covers only those items that were 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 or coring. There is not warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.



CLIENT/OWNER

PROJECT NAME

SEARS

PROJECT ADDRESS

**7414 78TH AVE SE
 MERCER ISLAND, WA 98040**

STAMP

REVISIONS

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SECTION, TOWNSHIP, RANGE:

**SECTION 25, TOWNSHIP 24
 NORTH, RANGE 4 EAST, W.M.**

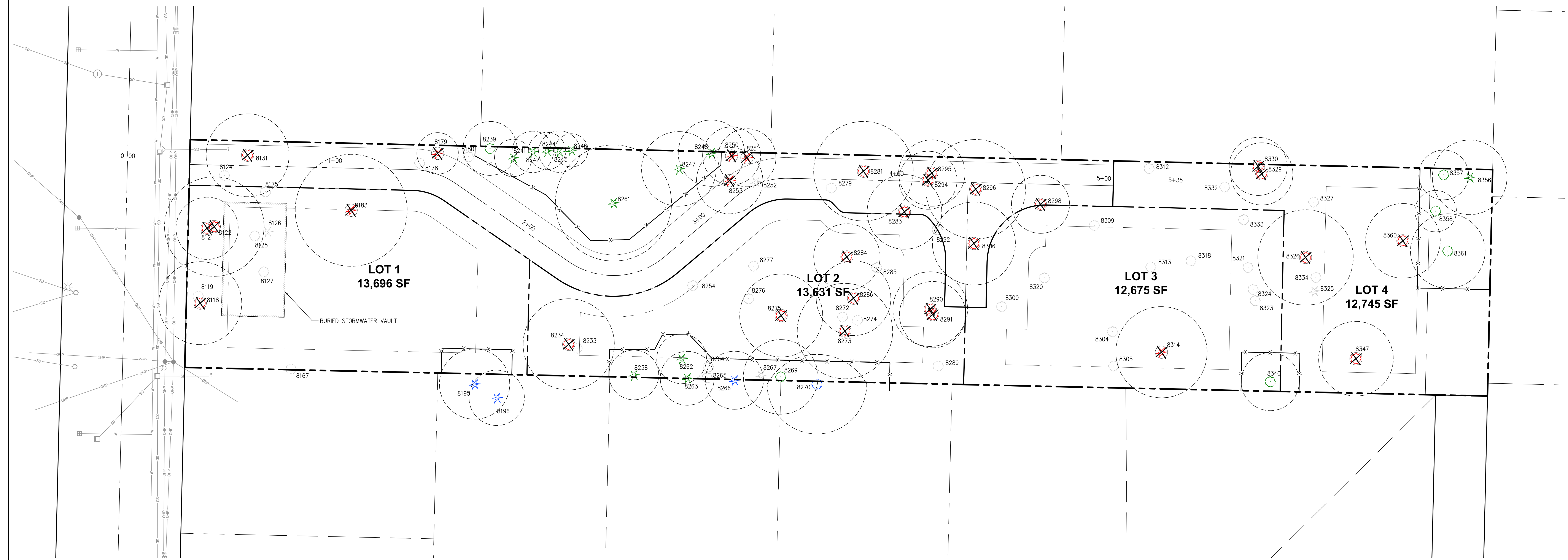
PROJECT TEAM
 REVIEWED BY: J.TAFLIN
 DESIGNED BY: G.GOUDY

SHEET NAME

**PRELIMINARY
 TREE
 EXHIBIT**

SHEET NUMBER

1



- x — x — x — TREE PROTECTION
- - - - - TREE DRIPLINE
- TREE TO REMAIN
- SIGNIFICANT TREE TO BE REMOVED FOR CONSTRUCTION
- DEAD OR NON-VIABLE TREE
- OFF-SITE TREE

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