



LAYTON TREE CONSULTING, LLC

ARBORIST REPORT/TREE PLAN

73XX SE 38th Street
Mercer Island, WA



Report Prepared by:

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February 23, 2021

It's all about trees.....

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Tree Inventory & Replacement Submittal Information' worksheet

Assignment

Layton Tree Consulting, LLC was asked to compile an Arborist/Tree Plan Report for a property on Mercer Island. The vacant subject property is located at 73XX SE 38th Street. My assignment is to prepare a written report on present tree conditions, and to provide appropriate recommendations for the protection of retained trees during development of a new single-family residence.

This report encompasses all of the criteria set forth under the City of Mercer Island's tree regulations, particularly Chapter 19.10 Trees, of the Unified Development Code Title 19. A 'Regulated' tree is any tree with a diameter of more than 10-inches or any tree that meets the definition of an 'Exceptional' tree.

Date of Field Examination: February 12, 2021

Description

A tree evaluation by Gilles Consulting was done on the subject property for the previous owner back in January of 2019. That data is used as the basis of this report. Tree conditions were verified during a recent February 12th site visit. Noteworthy changes to tree conditions are described under the observations section of this report.

35 'regulated' trees were identified and assessed on the subject property. These are comprised primarily of native species.

Nine off-site trees were also assessed. These exist within a proximity of property lines and within the right-of-way of SE 38th Street.

A numbered aluminum tag was attached to the lower trunks of subject trees back in 2019. These tag numbers correspond with the numbers on the tree summary table and attached maps in this report.

Methodology

Each tree in this report was visited. Tree diameters were measured by tape. The tree heights were measured using a Spiegel Relaskop. Each tree was visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown or canopy of the tree is examined for current vigor/health by examining the foliage for appropriate color and density, the vegetative buds for color and size, and the branches for structural form and annual shoot growth; and the overall presence of limb dieback and/or any disease issues.
- The trunk or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insect pests, bleeding or exudation of sap, callus development, broken or dead tops, structural defects and unnatural leans. Structural defects can include but are not limited to excessive or unnatural leans, crooks, forks with V-shaped crotches, multiple attachments.

- The root collar and exposed surface roots are inspected for the presence of decay, insect damage, as well as if they have been injured or wounded, undermined or exposed, or the original grade has been altered.

Based on these factors a determination of condition is made.

Judging Condition

The three condition categories are described as follows:

Good – free of significant structural defects, no disease concerns, minor pest issues, no significant root issues, good structure/form with uniform crown or canopy, foliage of normal color and density, average or normal vigor, will be wind firm if isolated or left as part of a grouping or grove of trees, suitable for its location

Fair – minor to moderate structural defects not expected to contribute to a failure in near future, no disease concerns, moderate pest issues, no significant root issues, asymmetric or unbalanced crown or canopy, average or normal vigor, foliage of normal color, moderate foliage density, will be wind firm if left as part of a grouping or grove of trees, cannot be isolated, suitable for its location

Poor – major structural defects expected to cause fail in near future, disease or significant pest concerns, decline due to old age, significant root issues, asymmetric or unbalanced crown or canopy, sparse or abnormally small foliage, poor vigor, not suitable for its location

Judging Retention Suitability

Not all trees necessarily warrant retention. The three retention suitability categories as described in ANSI A300 Part 5 (Standard Practices for the Management of Trees During Site Planning, Site Development and Construction) are as follows:

Good – trees are in good health condition and structural stability and have the potential for longevity at the site

Fair – trees are in fair health condition and/or have structural defects that can be mitigated with treatment. These trees may require more intense management and monitoring, and may have shorter life-spans than those in the “good” category.

Poor – trees are in poor health condition and have significant defects in structure that cannot be mitigated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess characteristics that are incompatible or undesirable in landscape settings or be unsuited for the intended use of the site.

Observations

A ‘Tree Conditions’ map is attached which identifies the condition of trees found at the site. Several trees have died over the last couple of years. These include Trees #4, #11, #17, #18, #22, #25 and #32. Dead trees down on the slope away from the building footprint can be left as snags to provide wildlife

habitat. These are low risk trees. Dead trees #22, #25 and #32 will need to be removed for site improvements and to maintain risk at acceptable levels.

Tree #33 and F have advanced decay within the lower and mid-trunk caused by *Porodaedalea pini*, red ring rot. Multiple fruiting bodies of the fungus can be observed on all sides of the main stem of #33. On Tree F, there are multiple conks on the south side of the lower trunk and mid-stem. Tree F has a lean to the neighbor's house. Tree #30 has an incipient infection.

Tree #21, a mature Pacific madrone is located just south of the proposed building footprint. It is heavily diseased and has a major lean downhill to the south. The subject is in a general state of decline as evidenced by the decline and mortality of most of the madrone trees in the vicinity. Ground disturbances south of the tree on the uphill side are likely to compromise structural stability. Removal is recommended.

Off-site or neighboring trees are in fair to good condition. No overly concerning issues were observed from the street or from the subject property. Tree E has been impacted to some degree in the past. Foliage appears somewhat sparse. Overall condition is fair.

Discussion/Recommendations

The extent of driplines (farthest reaching branches) for the subject trees can be found on the tree summary table at the back of this report. The driplines for trees within a proximity of the proposed building footprint have been delineated on the attached tree plan map. The information on the attached maps and in this report shall be used by the project architect to create the final tree retention plan sheet for City submittal, once the final site design has been completed.

The recommended Limit of Disturbance (LOD) boundaries are shown on the attached 'Tree Plan' map. The LOD measurements are based on species, age, condition, drip-line, prior improvements, proposed impacts and the anticipated cumulative impacts to the entire root zone. This is the maximum allowable encroachment. Encroachment (soil excavations) beyond the LOD is likely to cause decline or compromise long-term structural stability. These measurements shall be referenced when determining tree retention feasibility.

The owner desires to retain as many healthy trees as possible. Tree #23 is close to the proposed building footprint but can be successfully preserved if measures are taken to protect the root system. It is my understanding the garage floor will be floated above the existing grade to minimize root disturbance for Tree #23 and the neighboring trees. Only small footing pads shall be excavated within the defined LOD boundary. Footing pads within the LOD boundaries shall be hand-excavated only. Heavy equipment shall be limited to only those areas that are outside of the fenced protection areas and defined LOD. Exposed LOD areas outside of the fenced protection area shall be protected by covering the ground surface with a protective covering of a 6 to 8-inch layer of arborist wood chip mulch or hog fuel, rubber mats or plywood to prevent damage from equipment.

Tree #33 is high-risk, given its condition and proximity to the proposed building footprint. Multiple conks or fruiting bodies of the white rot fungus (red ring rot) suggest advanced decay within the lower

and mid-trunk. In the early stages of infection, pockets of decay can be expected behind each conk¹. In its advanced stage, there may be more extensive columns of decay and significant loss of wood strength. Trees with extensive heart rot are considered to have a high likelihood of failure. Tree #33 is recommended for removal to abate the hazardous condition.

The cut stumps of #32 and #33 shall be grinded down to the existing grade and not pulled, or simply cut at ground level. Pulling or excavating these stumps would cause damage to the roots of nearby trees as the root systems are likely entangled or intertwined.

Tree F also has an advanced red ring rot infection. The tree has a slight lean towards the neighboring house. Trunk failure would result in severe damage to the neighbor's house. Removal is recommended to abate the hazardous condition. Tree #30 has an incipient infection. Continued retention appears appropriate at this time. Periodic follow-up assessments of tree condition and risk are warranted for this property in the future. Recommend having trees assessed at least every two years.

The removal of the proposed trees from the subject property will not have any adverse impacts on trees to remain at the site. Trees to be retained will not be subjected to a notable increase in loading from unfamiliar southwest prevailing winds.

The proposed walkway to be constructed next to Tree #23 is to be elevated above the existing grade. Care shall be taken when working near trees to protect soils and surface roots that likely extend beyond the dripline. Cover areas with a protective 6 to 8-inch layer of arborist wood chip mulch or hog fuel to protect soils from compaction and damage to surface roots.

The trench location for the sewer line will be field located with the arborist to keep impacts to retained trees to a minimum. Only the use of a tracked mini-excavator shall be allowed on the lower slope to reduce the potential for soil compaction and damage to surface roots that would be caused by larger equipment.

The project arborist shall be on-site to monitor any authorized excavation within the defined LOD so necessary precautions can be taken to maintain these in a viable condition.

Tree Protection Measures

The following guidelines are recommended to ensure that the designated space set aside for the preserved trees are protected and construction impacts are kept to a minimum. Standards have been set forth under MICC 19.10.080. Please review these standards prior to any development activity.

- Tree protection fencing shall be erected per attached tree plan prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within root zones of retained trees.

¹ Dunster J.A. and Edmonds R. Common Fungi Affecting Pacific Northwest Trees – Implications for Tree Risk Assessment. 8 Dunster & Associates Ltd. 2014. Page 24

- Excavation limits shall be laid out in paint on the ground to avoid over excavating.
- Excavations within the driplines shall be monitored by a qualified tree professional so necessary precautions can be taken to decrease impacts to tree parts. A qualified tree professional shall monitor excavations when work is required and allowed within the drip-line or critical root zone.
- To establish sub grade for foundations, curbs and pavement sections near the trees, soil shall be removed parallel to the roots and not at 90-degree angles to avoid breaking and tearing roots that lead back to the trunk within the drip-line. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw. Cutting tools should be sterilized with alcohol.
- Areas excavated within the drip-line of retained trees shall be thoroughly irrigated weekly during dry periods.
- Preparations for final landscaping shall be accomplished by hand within the drip-lines of retained trees. Large equipment shall be kept outside of the tree protection zones at all times.

Tree Replacement

Replacement trees will be required per 19.10.070 Tree Replacement. The replacement ratios per tree removed are as follows:

Trees less than 10-inches in diameter = 1:1

Trees 10-inches to 24-inches = 2:1

Trees 24-inches to 36-inches = 3:1

Any 'Exceptional' tree = 6:1

Based on the attached 'Tree Inventory & Replacement Submittal Information' worksheet, only two viable trees are proposed for removal. Four replacement trees are required. All replacement trees are to be planted on site. Replacement trees shall be at a minimum – 1 ½ inch caliper for deciduous species and 6 feet in height for coniferous species.

Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine and assess trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risks associated with living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that grow, respond to their environment, mature, decline and sometimes fail in ways we do not fully understand. Conditions are often hidden within trees and below ground.

Arborists cannot guarantee that a tree will be healthy and/or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed. Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Photo Documentation

Proposed building footprint, Tree #23 on right



East property line adjacent to proposed building footprint, neighboring trees on left



Tree #33 (advanced pini infection), dead Tree #2 on right



Tree #33, pini fruiting bodies on lower trunk (arrows)



West property line below proposed building footprint, Trees #36 (center) and F (right)



Tree #21, diseased, major lean south



Tree #21 center, at edge of proposed building footprint, dead tree #22 on left



East property line, looking north, Trees #12 and #13 in foreground



Neighboring Tree E



Neighboring Tree E – upper crown, foliage somewhat sparse



Neighboring Trees A > D



Trees in ROW of SE 38th Street – no impacts expected





Layton Tree Consulting LLC

For: Paul Bosveld
 Site: 73XX SE 38th ST - Mercer Island

Tree Summary Table

Date: 2/12/2021

Tree/ Tag #	Species Common Name	Species Scientific Name	DBH (inches)	Height (feet)	Drip-Line / Limits of Disturbance (feet)				Condition	Regulated Yes/No	Exceptional Yes/No	Comments	Proposal	
					N	S	E	W						
2	red alder	<i>Alnus rubra</i>	10						Poor	Yes	No		Remove	
3	bigleaf maple	<i>Acer macrophyllum</i>	27						Fair	Yes	No	OK to leave, needs crown clean pruning	Save	
4	red alder	<i>Alnus rubra</i>	11						Down	NA	NA	dead, fell down	Leave	
5	Douglas fir	<i>Pseudotsuga menziesii</i>	30						Good	Yes	Yes		Save	
6	Douglas fir	<i>Pseudotsuga menziesii</i>	41						Fair	Yes	Yes		Save	
7	bigleaf maple	<i>Acer macrophyllum</i>	cluster						Fair	Yes	No	OK to leave, needs crown clean pruning	Save	
8	Douglas fir	<i>Pseudotsuga menziesii</i>	21						Fair	Yes	No		Save	
9	bigleaf maple	<i>Acer macrophyllum</i>	22						Poor	Yes	No	70% dead, lean to powerlines	Remove	
10	Pacific dogwood	<i>Cornus nuttallii</i>	11,11 (16)	59					Fair	Yes	Yes	OK to leave, low risk	Save	
11	Mountain ash	<i>Sorbus aucuparia</i>	8,4 (9)						Dead	NA	NA		Remove	
12	Pacific madrone	<i>Arbutus menziesii</i>	11						Poor	Yes	Yes	90% dead, low risk, OK to leave	Leave	
13	Douglas fir	<i>Pseudotsuga menziesii</i>	53						Fair	Yes	Yes		Save	
14	Douglas fir	<i>Pseudotsuga menziesii</i>	38						Good	Yes	Yes		Save	
15	Douglas fir	<i>Pseudotsuga menziesii</i>	35						Good	Yes	Yes		Save	
16	bigleaf maple	<i>Acer macrophyllum</i>	11						Fair	Yes	No		Remove	
17	red alder	<i>Alnus rubra</i>	16						Dead	NA	NA		Remove	
18	red alder	<i>Alnus rubra</i>	15						Fair	Yes	No	typical, leans to neighbors	Remove	
19	red alder	<i>Alnus rubra</i>	15						Dead	NA	NA	Dead snag	Remove	
20	red alder	<i>Alnus rubra</i>	14						Poor	Yes	No	90% dead	Remove	
21	Pacific madrone	<i>Arbutus menziesii</i>	32						Poor	Yes	Yes	diseased, heavy lean downhill	Remove	
22	Pacific madrone	<i>Arbutus menziesii</i>	12						Dead	NA	NA		Remove	
23	Douglas fir	<i>Pseudotsuga menziesii</i>	52			16/16	16/16	12/16	18	Good	Yes	Yes		Save
24	Douglas fir	<i>Pseudotsuga menziesii</i>	43	155		20/16	10/16	14/16	12	Good	Yes	Yes	old broken top	Save
25	Douglas fir	<i>Pseudotsuga menziesii</i>	14							Dead	NA	NA	Dead snag	Remove
29	Douglas fir	<i>Pseudotsuga menziesii</i>	30			14/16	10	10/16	NA	Fair	Yes	Yes	cambial ruptures	Save
30	Douglas fir	<i>Pseudotsuga menziesii</i>	30	130		12/16	14/16	10/16	14	Fair	Yes	Yes	incipient pini infection, south side	Save
31	Douglas fir	<i>Pseudotsuga menziesii</i>	18	90		14/14	6/12	10/12	8	Fair	Yes	No		Save
32	Douglas fir	<i>Pseudotsuga menziesii</i>	17			NA	NA	NA	NA	Dead	NA	NA	Dead snag	Remove
33	Douglas fir	<i>Pseudotsuga menziesii</i>	36			NA	NA	NA	NA	Poor	Yes	Yes	Advanced pini infection, all sides	Remove
34	bigleaf maple	<i>Acer macrophyllum</i>	26			16	22	22	NA	Fair	Yes	No	decent form, some dead wood	Save
35	bigleaf maple	<i>Acer macrophyllum</i>	20			16/14	NA	18/14	NA	Fair	Yes	No	decent form, some dead wood	Save
36	Douglas fir	<i>Pseudotsuga menziesii</i>	37							Fair	Yes	Yes		Save
37	black cottonwood	<i>Populus trichocarpa</i>	21							Poor	Yes	No	suspect internal decay	Remove
38	bigleaf maple	<i>Acer macrophyllum</i>	40							Fair	Yes	Yes	asymmetric crown to east	Save
39	Douglas fir	<i>Pseudotsuga menziesii</i>	39	142						Fair	Yes	Yes	old broken top, upper foliage a little sparse	Save
F	Douglas fir	<i>Pseudotsuga menziesii</i>	31	100						Poor	Yes	Yes	advanced pini infection, leans west to house	Remove
Neighboring Trees														
1	bigleaf maple	<i>Acer macrophyllum</i>	7							Fair	No	No	in ROW	
26	Douglas fir	<i>Pseudotsuga menziesii</i>	46							Good	Yes	Yes	in ROW	Protect



Layton Tree Consulting LLC

For: Paul Bosveld
 Site: 73XX SE 38th ST - Mercer Island

Tree Summary Table

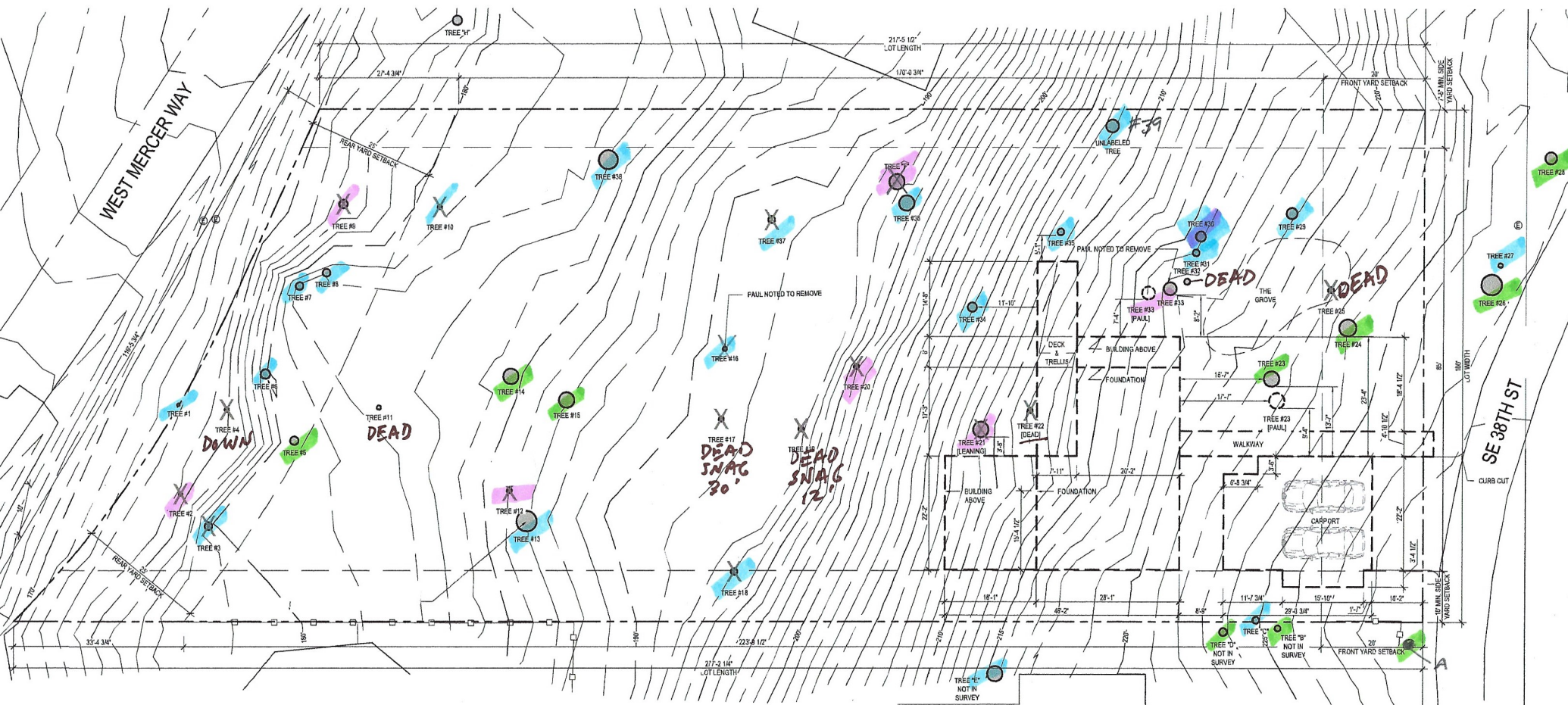
Date: 2/12/2021

Tree/ Tag #	Species Common Name	Species Scientific Name	DBH (inches)	Height (feet)	Drip-Line / Limits of Disturbance (feet)				Condition	Regulated Yes/No	Exceptional Yes/No	Comments	Proposal
					N	S	E	W					
27	bigleaf maple	<i>Acer macrophyllum</i>	19						Fair	yes	No	in ROW	Protect
28	Douglas fir	<i>Pseudotsuga menziesii</i>	31						Good	Yes	Yes	in ROW	Protect
A	Douglas fir	<i>Pseudotsuga menziesii</i>	36		16	14/16	NA	18/14	Good	Yes	Yes		Protect
B	Douglas fir	<i>Pseudotsuga menziesii</i>	30		10	8	NA	10	Good	Yes	Yes	6-feet off PL/fence	Protect
C	Douglas fir	<i>Pseudotsuga menziesii</i>	19		8	12	NA	16/10	Fair	Yes	No		Protect
D	Douglas fir	<i>Pseudotsuga menziesii</i>	32		6	12	NA	14/14	Good	Yes	Yes		Protect
E	Douglas fir	<i>Pseudotsuga menziesii</i>	42		18	16	NA	17	Fair	Yes	Yes	Foliage somewhat sparse	Protect

Drip-Line and Limits of Disturbance measurements from face of trunk

Calculated DBH: the DBH is parenthesis is the square root of the sum of the dbh for each individual stem squared (example with 3 stems: dbh = square root [(stem1)2 +(stem2)2 +(stem3)2]).

73XX SE 38TH STREET TREE CONDITIONS MAP





TREE CONDITIONS

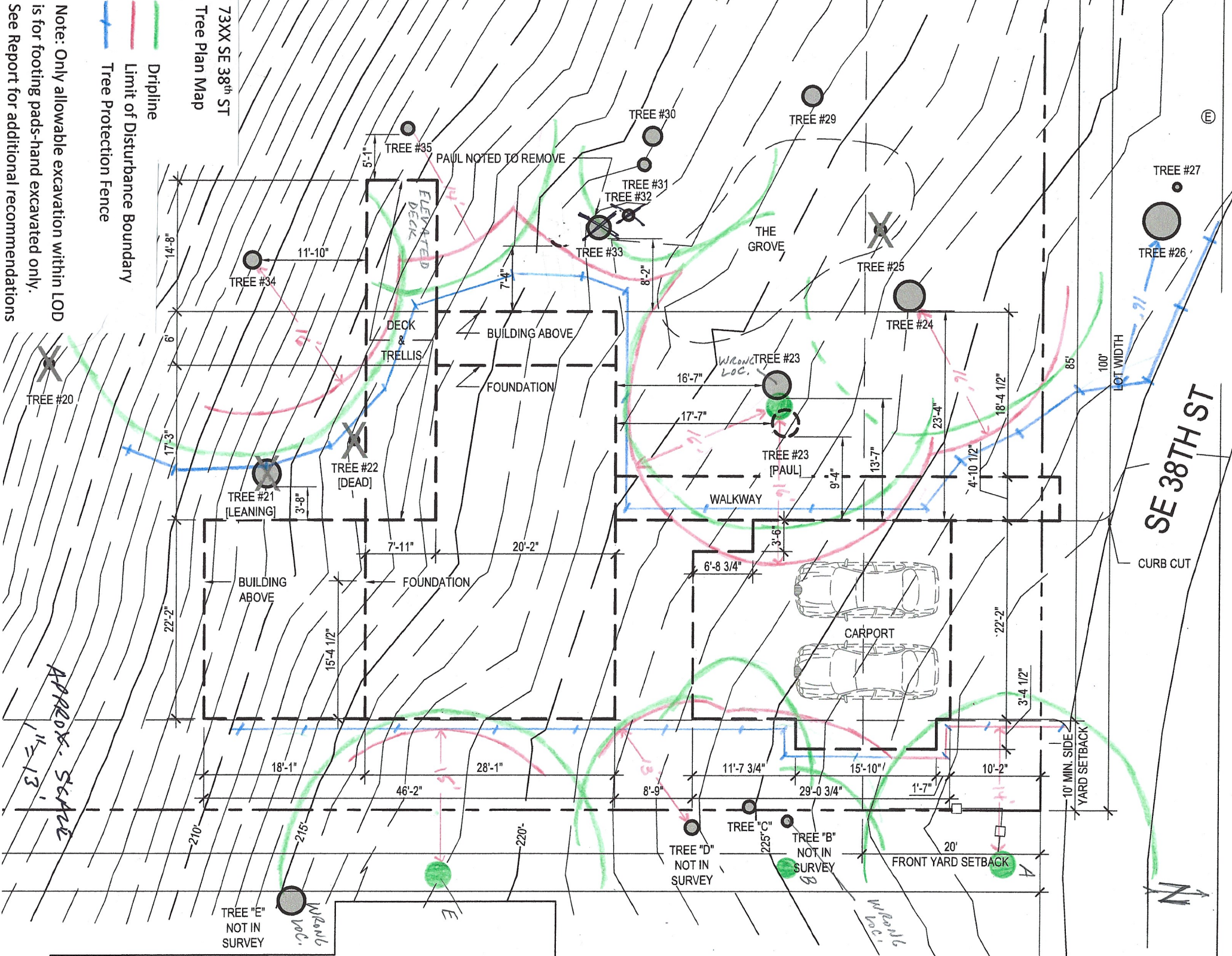
- - GOOD
- - FAIR
- - POOR

TREES PROPOSED FOR REMOVAL -
 DEAD TREES - #11, #17, #19, #22, #25, #32
 POOR CONDITION / NON-VIABLE TREES -
 #2, #9, #20, #21, #33, #37, #F
 TREES #16 & #18

73XX SE 38th ST
Tree Plan Map

-  Dripline
-  Limit of Disturbance Boundary
-  Tree Protection Fence

Note: Only allowable excavation within LOD is for footing pads-hand excavated only. See Report for additional recommendations



SE 38TH ST

CURB CUT



CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

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TREE INVENTORY & REPLACEMENT SUBMITTAL INFORMATION

EXCEPTIONAL TREES

Exceptional Trees- means a tree or group of trees that because of its unique historical, ecological or aesthetic value constitutes an important community resource. A tree that is rare or exceptional by virtue of its size, species, condition, cultural/historical importance, age, and/or contribution as part of a tree grove. Trees with a diameter of more than 36 inches, or with a diameter that is equal to or greater than the diameter listed in the Exceptional Tree Table shown in MICC 19.16 under Tree, Exceptional.

List the total number of trees for each category and the tree identification numbers from the arborist report.

Number of trees 36" or greater 8

List tree numbers: 6, 13, 14, 23, 24, 33, 36, 39

Number of trees 24" or greater (including 36" or greater) 6

List tree numbers: 3, 5, 15, 21, 30, F

Number of trees from Exceptional Tree Table (MICC 19.16) 15

List tree numbers: 5, 6, 10, 12, 13, 14, 15, 21, 23, 24, 30, 33, 36, 39, F

LARGE REGULATED TREES

Large Regulated Trees- means any tree with a diameter of 10 inches or more, and any tree that meets the definition of an Exceptional Tree.

Number of Large Regulated Trees on site 34 (A)

List tree numbers: #2, #3, #5 > #10, #12 > #25, #29 > #39 and F

Number of Large Regulated Trees on site proposed for removal 11 (B)

List tree numbers: 2, 9, 16, 20, 21, 22, 25, 32, 33, 37, F

Percentage of trees to be retained ((A-B)/Ax100) note: must be at least 30% 68 %

RIGHT OF WAY TREES

Right of Way Trees- means a tree that is located in the street right of way adjacent to the project property.

Number of Large Regulated Trees in right of way 4

List tree numbers: 1, 26, 27 and 28

Number of Large Regulated Trees in right of way proposed for removal 0

List tree numbers: 22, 25 and 32 are dead; 2, 9, 20, 21, 33, 37 and F are

Reason for removal: non-viable/poor condition; 16 and 18 for utilities

TREE REPLACEMENT

Tree replacement- removed trees must be replaced based on the ratio in the table below. Replacement trees shall be conifers at least six feet tall and or deciduous at least one and one-half inches in diameter at base.

Diameter of Removed Tree (measured 4.5' above ground)	Tree replacement Ratio	Number of Trees Proposed for Removal	Number of Tree Required for Replacement Based on Size/Type
Less than 10"	1		
10" up to 24"	2	2 (#16,#18)	4
Greater than 24" up to 36"	3		
Greater than 36" and any Exceptional Tree	6		
TOTAL TREE REPLACEMENTS			4