LAYTON TREE CONSULTING, LLC

ARBORIST REPORT

5330 Butterworth Road
Mercer Island, WA

Report Prepared by:

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May 28, 2024

It's all about trees……

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Assignment

Layton Tree Consulting, LLC was asked to compile an Arborist Report for a property on Mercer Island. The subject property is located at 5330 Butterworth Road. My assignment is to prepare a written report on present tree conditions, and to provide appropriate recommendations for the protection of retained and/or protected trees during the proposed remodel project.

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 8, 2024

Description

The property contains a significant amount of tree cover. 54 trees were identified and assessed on the property. Of these, 44 are 'regulated' trees or 10-inches or more in diameter. Regulated trees are found scattered around the property.

Subject trees have been identified with a numbered aluminum tag attached to the lower trunk. Tree tag numbers correspond with the numbers on the attached Tree Summary Table and maps.

Two additional off-site trees were assessed. These are both semi-mature Western red cedars. One is located close to the property line northeast of the tennis court and the other located close to the south property line.

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

The property contains a significant amount of tree cover. Trees are found scattered around the property. There is a wide mix of species to include both deciduous and coniferous varieties. The majority of trees are of good vigor and are structurally sound, with no concerning issues. Trees have been well maintained or managed (pruned) in the past. Most common species include Katsura, flowering plum, Southern magnolia and white or paper birch.

Five of the subject trees were found to be in a ‘poor’ condition. Tree #3 is a mature native bigleaf maple at the front of the property. It has an advanced soft rot infection, *Kretzschmaria deusta*. This is evident by multiple fruiting bodies of the fungus observed on the root crown and lower trunk. See pictures

below. These appear as black crusty nodules resembling dried tar. Tree #18, another mature bigleaf maple also has an advanced infection. There is risk of complete trunk failure for both of these.

Tree #15 is a young to semi-mature Alaska cedar on the north perimeter. The main trunk forks at roughly 16-feet above ground into codominant (equal diameter) stems or tops. There is a significant buildup of included or embedded bark between the forked stems. One or both of these forked stems are likely to split away from the main trunk in the future.

Tree #34 is a semi-mature to mature apple variety. The root crown has failed in the past. The tree is being propped up by wooden posts. It is low risk and can be left if desired.

Tree #39 is a semi-mature to mature black cottonwood. It has advanced decay within the mid and upper stem, evident by nesting holes or open cavities. There is an elevated risk of trunk or stem failure. This tree is well within the striking distance of the house.

Discussion/Recommendations

No viable trees are proposed for removal as part of this project. To protect trees during work, position a tree protection barrier/construction fencing between the trees and building. Do not cut silt fencing into the existing grade near trees as this will damage roots. Position the fencing as far from trees as possible while allowing for adequate construction clearance. The approximate location of a tree protection barrier is shown on the attached map.

When working on the building exterior near trees, cover the ground to protect soils and surface roots with plywood, rubber matts or a +/- 4-inch layer of wood chip mulch or hog fuel. Any tree branches within 5-feet of the building(s) can be pruned to provide adequate clearance.

To reduce the risk associated with Trees #3 and #18, significant crown reduction or retrenchment pruning is recommended. Reduce the height by roughly 50%. This will dramatically decrease the loading on the lower trunks and make the trees much more stable.

Tree #15 is likely to split apart in the near future. If the desire is to retain the tree, the forked stems could be cabled together (dynamic cabling) to decrease risk of failure. Cables will need to be periodically inspected and adjusted as the tree grows.

Tree #39 has significant decay within the mid and upper trunk. Habitat snagging this tree to a safe height of +/- 20-feet is recommended to abate its hazard potential.

Tree Protection Guidelines

Tree protection fencing shall be positioned around any retained trees or off-site protected trees prior to the start of work or bringing any heavy equipment onto the site. This will help to define clearing limits and protect soils and surface roots. Existing grades within the tree protection fenced area shall not be altered.

Any excavation within the driplines of retained trees and/or the neighboring trees shall be monitored by the project arborist so necessary precautions can be taken to minimize overall impacts. Any roots damaged during site work outside of the tree protection area shall be pruned clean at sound tissue prior to backfilling or finishing areas. Sound tissue is where the root is undamaged and the bark is completely intact with the root. This will help roots to seal off potential decay and allow them to sprout new growth. Any disturbed areas near protected trees shall be watered weekly during the dry season of June through September. This will help to create a favorable environment for new root growth and reduce the overall stress associated with root loss and disturbance.

Care shall be taken to continue to protect trees during finish landscape work. Any landscape work within the protection areas shall be accomplished using hand-labor only. Simply finish the landscape within the tree protection areas by cutting/hand-pulling any unwanted vegetation and applying a 2 to 4-inch covering of organic mulch/beauty bark. Avoid large plantings, irrigation trenches and the construction of hardscapes within the driplines of retained trees.

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.

- 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.

- 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 has been authorized or approved within the dripline 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 dripline. Any roots damaged during these excavations shall be hand-excavated and exposed to sound tissue and cut cleanly with a saw prior to backfilling or finishing areas.

- Areas excavated within the dripline of retained trees shall be thoroughly irrigated weekly during dry periods.

- Preparations for final landscaping shall be accomplished by hand within the driplines of retained trees. Large equipment shall be kept outside of the tree protection zones at all times.

Tree Retention/Tree Replacement

MICC 19.10.060 - Tree removal—Associated with a development proposal.2.Retention requirement. Development proposals specified under subsection (a)(1) of this section shall retain trees as follows' minimum of 30 percent of trees with a diameter of ten inches or greater, or that otherwise meet the definition of large tree, shall be retained over a rolling five-year period.

No viable trees are proposed for removal as part of this project. No replacement trees are required.

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

Looking west down entrance driveway from house

Looking east down entrance driveway from Butterworth Road

Base of Tree #3, advanced soft rot infection

Base of Tree #3, advanced soft rot infection

Tree #8 in northwest corner of site

Lower trunk of #18, advanced soft rot infection

Tree #23 near sports pavilion building

Upper crown of #23, decent vigor

Trees #25, #31 and #32

Tree #26 close to existing building

Tree #30 close to property line

Looking east along north side of house, Trees #38, #39 and #40 in background

Tree #34 has failed at the root crown and is being propped up

Trees #35, #36 and #37

Trees #38 > #41

Lower trunks, #38, #39 and #40

Tree #39 in middle, multiple nesting holes/cavities on mid and upper bole

Looking south across back of house

Back of house, Trees #42 and #43 on left

Looking west down south perimeter

Portuguese laurel cluster (#45) south of house, most are of non-regulated size

Trees #47 and #48 south of house

Trees #49 and #51 on south perimeter

Trees #52 > #55

Layton Tree Consulting LLC

For: MacPherson Construction
Site: 5330 Butterworth RD - Mercer Island

Tree Summary Table
Date: 2/8/2024

Tree/ Tag #	Species Common Name	Species Scientific Name	DBH (inches)	Height (feet)	Dripline (feet)				Health Condition	Structural Condition	Regulated Yes/No	Viable Tree	Exceptional Yes/No	Comments	Proposal
					N	S	E	W							
1	flowering plum	*Prunus cerasifera*	16	40	12	14	18	6	Good	Good	Yes	Yes	No	lean, asymmetric canopy east	Retain
2	Japanese maple	*Acer palmatum*	8	26	8	6	14	8	Good	Good	No	Yes	No	no concerns	Retain
3	bigleaf maple 7	*Acer macrophyllum*	14 to 24	90	32	18	24	28	Fair	Fair	Yes	No	Yes	large cluster, extensive soft rot fungus	TBD
4	Japanese maple	*Acer palmatum*	5,5,5,4 (9)	18	12	10	12	6	Good	Good	No	Yes	No	no concerns	Retain
5	Serbian spruce cv.	*Picea omorika*	8	45	4	6	6	6	Good	Good	No	Yes	No	no concerns	Retain
6	Southern magnolia	*Magnolia grandiflora*	5	20	4	4	8	2	Good	Fair	No	Yes	No	lean, asymmetric canopy east	Retain
7	Serbian spruce cv.	*Picea omorika*	8	40	2	8	8	2	Good	Fair	No	Yes	No	natural lean east	Retain
8	Western red cedar	*Thuja plicata*	33	75	14	10	16	12	Good	Good	Yes	Yes	Yes	no concerns	Retain
9	Katsura	*Cercidiphyllum japonicum*	14	36	10	18	12	8	Good	Fair	Yes	Yes	No	old broken top	Retain
10	Katsura	*Cercidiphyllum japonicum*	14	45	12	14	8	10	Good	Fair	Yes	Yes	No	forked top	Retain
11	Western red cedar	*Thuja plicata*	24,22 (32)	70	18	16	16	14	Excellent	Good	Yes	Yes	Yes	trunks fork at root crown	Retain
12	Alaska cedar	*Chamaecyparis nootkatensis*	13	50	12	14	12	8	Excellent	Excellent	Yes	Yes	No	no concerns	Retain
13	Katsura	*Cercidiphyllum japonicum*	20	45	16	10	8	14	Good	Fair	Yes	Yes	No	trunk forks at 5 feet, crown reduced	Retain
14	Katsura	*Cercidiphyllum japonicum*	13	35	12	8	8	6	Fair	Fair	Yes	Yes	No	suppressed, crown reduced	Retain
15	Alaska cedar	*Chamaecyparis nootkatensis*	10	45	8	8	8	8	Excellent	Poor	Yes	No	No	forked at 16 feet, codominant stems	TBD
16	Katsura	*Cercidiphyllum japonicum*	14	40	12	10	8	8	Good	Fair	Yes	Yes	No	forked top,crown reduced	Retain
17	Katsura	*Cercidiphyllum japonicum*	10	40	10	12	6	6	Good	Good	Yes	Yes	No	no concerns	Retain
18	bigleaf maple	*Acer macrophyllum*	36	65	12	16	20	4	Poor	Fair	Yes	No	Yes	extensive soft rot fungus	TBD
19	Katsura	*Cercidiphyllum japonicum*	15	40	12	6	8	8	Good	Good	Yes	Yes	No	crown reduced	Retain
20	Western red cedar	*Thuja plicata*	48	90	12	16	20	10	Good	Fair	Yes	Yes	Yes	significant trunk decay, forked top, slight lean south	Retain
21	flowering plum	*Prunus cerasifera*	10,12 (16)	40	14	12	16	10	Good	Fair	Yes	Yes	No	forked at 4 feet, codominant stems	Retain
22	flowering plum	*Prunus cerasifera*	11	45	12	10	4	12	Good	Fair	Yes	Yes	No	forked at 10 feet, codominant stems	Retain
23	Western red cedar	*Thuja plicata*	45,34 (56)	100	16	10	22	16	Good	Good	Yes	Yes	Yes	close to building, foliage somewhat sparse	Retain
24	Paulownia/Empress	*Paulownia tomentosa*	22	50	8	10	18	6	Good	Fair	Yes	Yes	No	lean, asymmetric canopy east,some trunk decay	Retain
25	Japanese stewartia	*Stewartia pseudocamellia*	7	36	10	8	10	8	Good	Good	No	Yes	No	no concerns	Retain
26	Katsura	*Cercidiphyllum japonicum*	18	55	14	12	12	14	Good	Fair	Yes	Yes	No	forked top, weak attachment, not crown reduced	Retain
27	Katsura	*Cercidiphyllum japonicum*	14	55	10	12	8	12	Good	Fair	Yes	Yes	No	forked top, weak attachment, not crown reduced	Retain
28	Katsura	*Cercidiphyllum japonicum*	18	50	12	10	10	14	Good	Good	Yes	Yes	No	no concerns	Retain
29	Katsura	*Cercidiphyllum japonicum*	21	55	18	6	14	14	Good	Good	Yes	Yes	No	natural lean,asymmetric canopy north	Retain
31	Katsura	*Cercidiphyllum japonicum*	21	45	12	12	12	10	Good	Good	Yes	Yes	No	crown reduced in past	Retain
32	Katsura	*Cercidiphyllum japonicum*	14	40	14	12	12	12	Good	Good	Yes	Yes	No	no concerns	Retain
33	Japanese maple	*Acer palmatum*	12	22	14	10	8	10	Good	Good	Yes	Yes	No	close to building, well maintained	Retain
34	apple	*Malus domestica*	*10	10	x	x	x	x	Good	Poor	No	No	No	extensive basal decay,falling over	TBD
35	apple	*Malus domestica*	*20	12	10	10	10	10	Good	Good	Yes	Yes	No	well maintained	Retain
36	apple	*Malus domestica*	*12	10	10	10	10	10	Good	Good	Yes	Yes	No	well maintained	Retain
37	apple	*Malus domestica*	*13	10	10	10	10	10	Good	Good	Yes	Yes	No	well maintained	Retain
38	black cottonwood	*Populus trichocarpa*	43	130	12	12	16	12	Fair	Good	Yes	Yes	Yes	mature, crown reduced in past	Retain
39	black cottonwood	*Populus trichocarpa*	41	125	12	18	8	18	Fair	Fair	Yes	No	Yes	noteworthy bole decay,multiple cavities	TBD
40	black cottonwood	*Populus trichocarpa*	34	110	0	18	12	10	Fair	Fair	Yes	Yes	No	asymmetric canopy SE,bent top	Retain
41	flowering plum	Prunus cerasifera	8	12	6	6	6	6	Good	Good	No	Yes	No	well maintained	Retain
42	Southern magnolia	*Magnolia grandiflora*	12	32	10	12	10	12	Excellent	Excellent	Yes	Yes	No	no concerns	Retain
43	Southern magnolia	*Magnolia grandiflora*	11	28	10	10	12	10	Excellent	Excellent	Yes	Yes	No	close to building	Retain
44	Corsican pine	*Pinus nigra var. maritima*	7,5,4,4 (10)	20	8	10	8	8	Good	Fair	Yes	Yes	No	cluster, more shrub-like	Retain
45	Portuguese laurel	*Prunus lusitanica*	6 to 12	34					Fair	Fair	Yes	Yes	No	large grouping of 13 trees, 3 are > 10 inches diam.	Retain
46	hollywood juniper	*Juniperus chinensis*	8,6 (10)	12	6	10	8	10	Good	Good	Yes	Yes	No	no concerns	Retain
47	Portuguese laurel	*Prunus lusitanica*	14	30	12	12	10	10	Good	Good	Yes	Yes	No	no concerns	Retain
48	white birch	*Betula papyrifera*	14	60	8	12	16	14	Good	Good	Yes	Yes	No	no concerns	Retain

Layton Tree Consulting LLC

For: MacPherson Construction
Site: 5330 Butterworth RD - Mercer Island

Tree Summary Table
Date: 2/8/2024

Tree/ Tag #	Species Common Name	Species Scientific Name	DBH (inches)	Height (feet)	Dripline (feet)				Health Condition	Structural Condition	Regulated Yes/No	Viable Tree	Exceptional Yes/No	Comments	Proposal
					N	S	E	W							
50	Serbian spruce cv.	*Picea omorika*	10	60	6	6	6	6	Good	Fair	Yes	Yes	No	poor stem taper	Retain
51	photinia cv.	*Photinia*	11,10,5 (16)	45	14	14	18	14	Good	Good	Yes	Yes	No	tree form	Retain
52	white birch	*Betula papyrifera*	12	60	14	10	16	0	Good	Fair	Yes	Yes	No	asymmetric canopy NE, forked at 12 feet, 3 tops	Retain
53	white birch	*Betula papyrifera*	13	70	8	14	4	12	Good	Fair	Yes	Yes	No	asymmetric canopy SW, forked at 12 feet, 3 tops	Retain
54	white birch	*Betula papyrifera*	9	55	10	6	10	8	Good	Fair	No	Yes	No	decay pocket below fork	Retain
55	Chinese catalpa	*Catalpa ovata*	39	80	24	26	24	16	Good	Good	Yes	Yes	Yes	sound,good form	Retain
56	flowering plum	*Prunus cerasifera*	9	22	12	10	8	10	Good	Good	No	Yes	No	no concerns	Retain
	Neighboring Trees														
30	Western red cedar	*Thuja plicata*	26	70	14	16	16	12	Good	Fair	Yes	Yes	No	forked at 16 feet, codominant stems	Protect
49	Western red cedar	*Thuja plicata*	24	75	16	12	14	14	Good	Good	Yes	Yes	No	next to creek	Protect

cv - cultivated variety
* - caliper measurement at one-foot above ground
Dripline 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]).
TBD - to be determined

5330 Butterworth Road

King County iMap

Tree Locator Map

Date: 2/12/2024

Notes:

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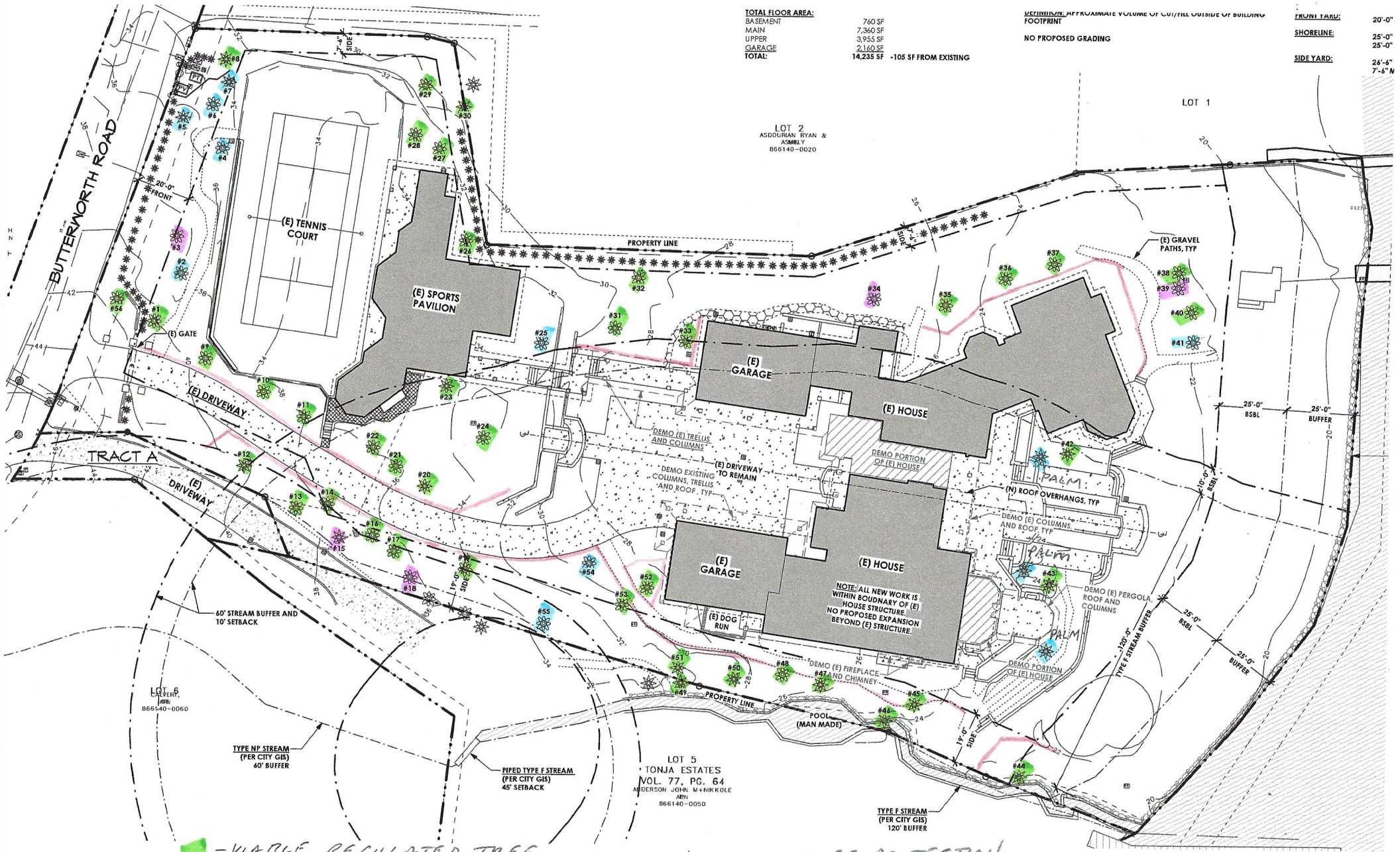
King County

5330 BUTTERWORTH ROAD
TREE PLAN MAP



- VIABLE REGULATED TREE
- SMALL, NON-REGULATED TREE
- POOR CONDITION/NON-VIABLE TREE
- TREE PROTECTION BARRIER

APPROX. SCALE
1" = 47.25'