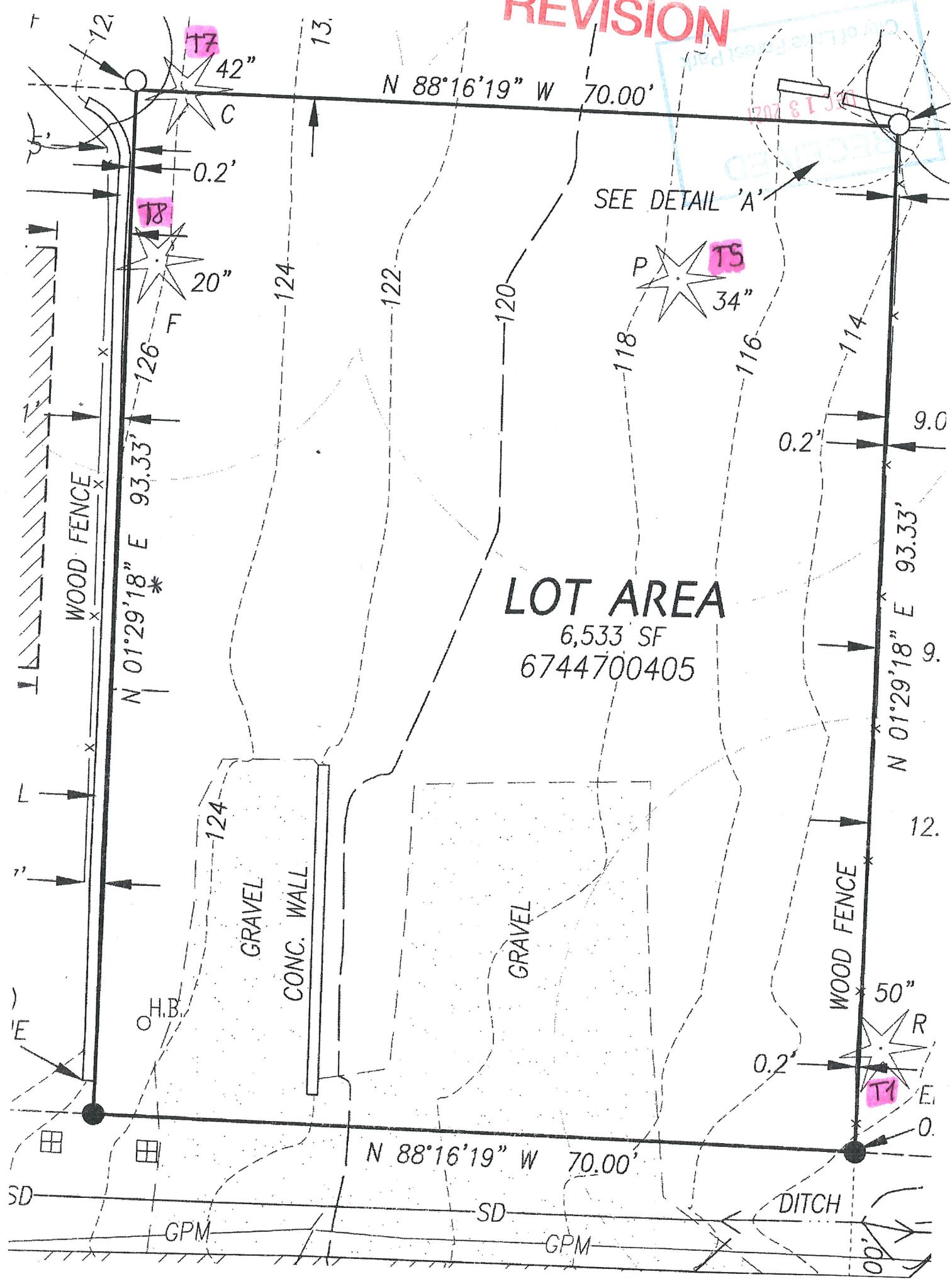


REVISION



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PO Box 55162
Lake Forest Park, WA 98155

July 29, 2015

Planning Dept.
City of Lake Forest Park
17425 Ballinger Way NE
Lake Forest Park, WA 98155

Re: Arborist Review Tree Permit #2015-ARP-0012, Review and Recommendations
Site: Miles property, 3832 NE 155th St., Lake Forest Park, WA 98155

The tree removal application was checked for compliance with the standards and requirements pursuant to Chapter 16.14 LFPMC. I conducted a site and tree inspection on June 3, 2015 and had a discussion with Mr. Miles regarding future plans for the lot. This report outlines my inspection and includes my findings, conclusions, and recommendations.

Proposed Activity

The proposed activity on this lot is the demolition of the existing house on the property and the removal of some trees that cannot be adequately protected during demolish work or that are unsuitable for long term retention. There are 4 to 6 trees that may be removed on the lot to allow the project to be completed as planned, refer to *Attachment: 2013 Aerial Site Photo*.

Methods

I conducted my tree inspection and evaluation for the trees following the protocol of the International Society of Arboriculture (ISA) for Visual Tree Assessment (VTA) that employs a visual and non invasive inspection of the overall health and external condition of each tree and site conditions. I also conducted a basic level tree risk assessment, adhering to tree care industry standards, protocols and practices set by the American National Standards Institute (ANSI), and the International Society of Arboriculture (ISA), that employs a 360-degree, ground- based detailed visual and non-invasive inspection of a tree, including tree crown, trunk, trunk flare, above ground roots and site conditions around the tree in relation to targets. The time frame for tree risk assessments, the period in which estimating the likelihood of failure, is generally 1-5 years, unless otherwise noted.

All significant trees, (a tree that is 6.0" in diameter at breast height (DBH), 4.5 feet above grade, on the site were inspected and assessed for species, size, health and structural condition, critical root zone, and drip line, see *Attachment: Table of Trees*.

All inspected trees were tagged with aluminum tree tags stapled at approximately six feet above grade. Trees are numbered #1 through #11, beginning with Tree #1 located in the SE corner of the lot, bordering along NE 155th St., and continuing north around the lot ending with Tree #11, located in front of the existing house. Tree locations are shown on the *Attachment: 2013 Aerial Site Photo*.

All significant trees with the potential to be retained and protected were thoroughly inspected and evaluated for their suitability to tolerate the expected construction impacts and for their overall worthiness for long term retention.

Findings

Site

This is a developed single-family residential lot, 6,510 square feet in size. The tree canopy coverage goal for this size lot, pursuant to Chapters 16.14.080, is 28 % (1,823 sq. ft.). The current canopy coverage, from trees originating on the lot, is approximately 65.4% (4,260 sq. ft.), as determined either by collected tree data and/or interpretation of high resolution aerial photography, see *Attachment: 2013 Aerial Site Photo*.

Subject Trees

There are eleven (11) individual significant trees on the lot. There are four or six (4-6) trees that would potentially be removed and five to seven (5-7) trees have the potential to retain. There are no offsite trees that could potentially be impacted by the project. See *Attachment: Table of Trees*, for complete inventory and assessment.

Trees numbered 2, 3, 9 and 11 are recommended for removal. They cannot be adequately protected from the proposed demolition activities or they are in poor health and condition and unworthy of long term retention. Tree 1 is located in the right-of-way of the overhead electric power lines(OHP). It was topped in the past for line clearance and now has multiple top leaders, a structural tree defect which makes failure more likely. There are available mitigation options to reduce risk, such as crown thinning and cabling. The tree is expendable, in my opinion, considering its location and potential for future conflict with the OHP. The crown of Tree 10 has thinning and fading foliage and appears to be in decline. It is located at the edge of the compacted driveway and I suspected root damage or root disease is creating the stress to the tree. The tree is expendable, in my opinion.

The proposed tree removals will reduce the total tree canopy coverage by approximately 600 (9%) to 1,700 sq ft. (26%), depending which trees are actually removed.

Trees numbered 4- 8 have the potential to be retained. They are generally in good overall health and condition and are suitable to tolerate the demolish work or construction activities. Activities impacts can be minimized by following the recommended tree protection measures, see *Attachment: Tree Protection Measures*.

Conclusion

The trees recommended to be removed will allow the project to go forward safely and as proposed. The 5 trees recommended to retain pose low levels of risk to the property and adjacent properties. The trees that will be retained on the property provide economic and environmental benefits that are an asset to the owner and to the community as a whole and are worthy of the energy required preserving them.

Tree Canopy Replacement

The current tree canopy coverage over the entire lot is approximately 4,260 sq. ft.(65%). The proposed tree removals will reduce tree canopy coverage, that originates from trees on the lot, by as much as 1,700 sq ft.(26%). The total amount of retained tree canopy coverage, over the lot, will be approximately 2,560 sq ft.(39%). Therefore, pursuant to Chapters 16.14.080 LFPMC, a Tree Replacement Plan is not required to replace canopy coverage.

Limitations

Tree risk assessment considers known targets and visible or detectable tree conditions. Unless expressed otherwise, information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection. It must be realized that trees are living organisms and their health and vigor constantly change over time. They are not immune to changes in the site conditions or seasonal variations in the weather.

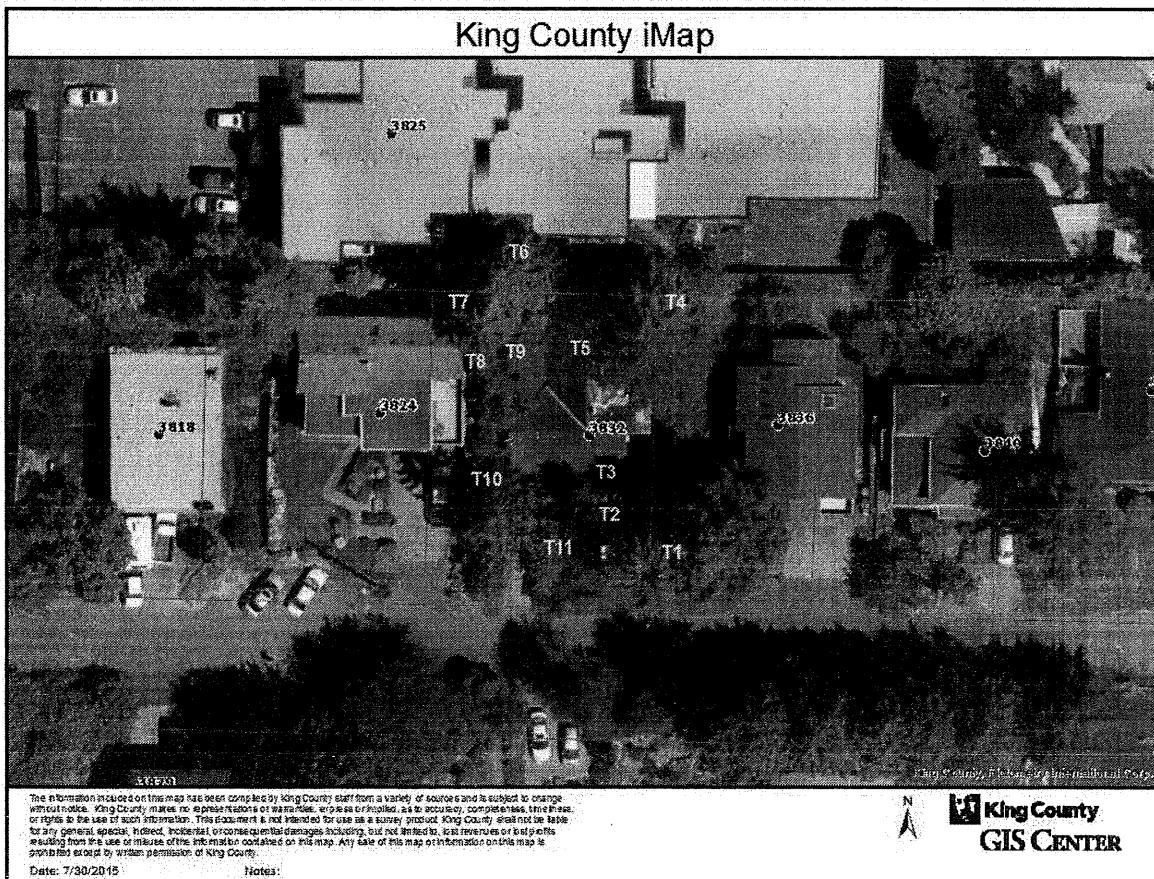
There is no warranty or guarantee expressed or implied that problems or deficiencies of the trees in question may not arise in the future. The report and conclusions expressed herein represent the opinion of Michael Woodbury d/b/a M. Woodbury Consulting Arborist.

Please contact me should you have questions regarding this report.

Respectfully submitted,
Michael A. Woodbury

Michael A. Woodbury, Consulting Arborist
ISA Certified Arborist PN-6545A
ISA Tree Risk Assessment Qualified

**ATTACHMENT: 2013 AERIAL SITE PHOTO
3832 NE 155th St.
Lake Forest Park, WA**



Locations of inventoried trees.

<u>Trees recommended for removal:</u>	<u>Trees to retain:</u>
T1	T4
T2	T5
T3	T6
T9	T7
T10	T8
T11	

Attachment: Tree Protection Measures

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and will possibly die. With proper preparation, often costing little, or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

The following minimum Tree Protection Measures are:

Trees #4-8, are located primarily along the perimeter of the lot and can all be protected with a single continuous Tree Protection Fence(TPF).

1. From Tree #4, in the NE corner of the lot, install a continuous TPF, of polyethylene laminar safety fencing material, a minimum of 4 feet high and supported by metal fence posts spaced approximately 4 feet apart, in a continuous line 15 feet from the trunk of each tree ending on the south side of tree #8 along the west side property line, (or the south side of tree #10, if tree #10 is retained). Installation of the TPF facing the construction zone shall be as close to the edge of work as feasible, if less than the recommended 15 feet.
2. Place a layer of mulch, woodchips are recommended, at least 4" in depth covering the area within the TPF.
3. The area within the tree protection fencing is the Tree Protection Zone (TPZ) and nothing must be parked or stored within the TPZ; no equipment, vehicles, soil, debris, or construction supplies of any sorts.

The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters:

**“TREE PROTECTION FENCE
DO NOT ENTER THIS AREA
DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTED AREA”
To report violations call the City of Lake Forest Park, 206-368-5440**

Additional Tree Protection Measures:

- During excavation roots over 1 inch in diameter can be cleanly cut back to the edge of disturbance using loppers. Roots over 2 inches in diameter shall be cleanly cut with a saws all saw.
- If pruning is needed for clearance, it should be done by a certified arborist or under his/her supervision. The construction crew should not perform the pruning task.
- Water the TPZ of the retained trees during the construction period.
- Other appropriate tree protection measures not notwithstanding to Chapter 16.14.090 LFPMC

Summary Timeline for Tree Protection Measures

1. Project crew to install tree protection fencing.
2. The City arborist to inspect tree protection fences and attend the pre-work meeting with the project and construction representatives.
3. The City arborist to make site visits during tree removal and demolition and during peak construction activities.
4. The City arborist to make a post - construction inspection and recommend post-construction tree maintenance treatments, as needed.

Attachment: Table of Trees
 Miles property
 3832 NE 155th St.
 Lake Forest Park, WA

Tree #	Species Common & (Scientific)	DBH (in.)	HT. (ft.)	Drip-line (ft.)	CRZ (feet)	Condition	Comments	Recommend
1	Deodar cedar(<i>Cedrus deodara</i>)	31	58	17	30	Fair	Under power lines, topped in the past.	Expendable
2	Sweetgum(<i>Liquidambar styraciflua</i>)	7	30	5	10	Poor	Unsuitable to retain	Remove
3	Scots pine(<i>Pinus sylvestris</i>)	11	45	15	11	Fair	Unsuitable to retain	Remove
4	Deodar cedar(<i>Cedrus deodara</i>)	31	80	16	30	V. Good	Can be pruned for vista	Retain/protect
5	English walnut(<i>Juglans regia</i>)	13	55	24	13	Fair	Overextending branches	Retain/protect
6	Western Red Cedar(<i>Thuja plicata</i>)	23,23	75	18	23	Fair	Codominant trunks; suspect minor butt decay	Retain/protect
7	Douglas fir(<i>Pseudotsuga menziesii</i>)	19	90	12	19	Good	Few overextending branches.	Retain/protect
8	Douglas fir(<i>Pseudotsuga menziesii</i>)	13	50	10	13	Good		Retain/protect
9	Unknown	7,7	20	8	10	Poor		Remove
10	Western Red cedar(<i>Thuja plicata</i>)	21	65	10	21	Fair	Forked top, poor crown condition.	Expendable
11	Japanese maple(<i>Acer palmatum</i>)	7	15	10	10	Fair	Unsuitable to retain	Remove

DBH: diameter at breast high in inches, measured at 4.5 feet above average ground level. **HT:** total height in feet. **Dripline:** the radius from the trunk of the tree to furthest branch tip. Trees in groups noted as shared canopy. **CRZ:** critical root zone. CRZ equals one -foot radius from the base of the tree for each inch in DBH. Project tree protection fencing and/or silt fencing is ideally set at least at the CRZ, or up to twice the radial CRZ distance from the tree. **Condition:** the general overall health and condition of the tree.

Date of inventory: June 3, 2015
 Table prepared: July 24, 2015