8215 SE 78th Street

Arborist Report

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Submitted to:

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Assignment

Chapter 19.10 of the Mercer Island City Code applies to this project. This report documents the trees near and within the work zone which have a potential to be impacted. A permit is not required because no trees are proposed for removal, but this work requires tailored tree protection based on the ISA Managing Tree During Construction BMP. The tailored tree protection recommendations are overlayed onto the site plan, sheet A1, in figure 1.

This arborist report was written and submitted by Tom Early, ISA Certified Arborist with a Tree Risk Assessment Qualification (PN-5622A). The site visit was conducted on Thursday September 10, 2020.

Project Work

The proposed project work is to install a new wood utility pole with two new utility vaults at the base of the pole in the right-of-way at 8215 SE 78th Street, Mercer Island, Washington. This work entails placing one wood utility pole with a burial depth of 9-feet. Two utility boxes will be placed on both sides of the utility pole. Trenching will connect the utility boxes to power and communications approximately 17-feet west of the proposed pole location.

Project Area with four subject trees outlined with red dashed rectangle, Lakeridge Elementary School is southeast of project site; King County Parcel Viewer aerial image

Discussion

No trees are recommended for removal. The construction impacts are likely to have minimal root zone loss. There are four trees within the project area; these four trees are also in the SE 78th Street right-of-way. All four trees are located on figure 1. Species, size, dripline radius and height are also noted on figure 1.

The greatest tree impacts are associated with the open trench from the existing pole to the proposed pole. A vactor truck and hand digging is recommended for excavation of both the vault and trenching. This recommendation is based on the greater than average surface rooting by trees #1 and 4. The surface rooting exhibited leads me to believe that the subgrade is compacted, and the topsoil depth is shallow. Using a vactor truck and hand digging the vaults on both sides of the proposed pole will help minimize disturbance to existing tree roots, allow for precise, clean root pruning, minimize the amount of root pruning required and reduce damage to unknown infrastructure.

Tree Health Assessment Tables

On-site Tree Health Assessment Table

Tree #	Species	DBH (inches)*	Health Rating**	Image	Notes
1	*Cercidiphyllum japonicum*	12.4	fair	1	Lack of summer irrigation adding stress to tree; constrained vertical growth hypothesized to be resulting from reduced root anchorage due to compacted soil in planting bed
2	*Pinus contorta*	9	good	2	Poor location beneath overhead power lines, will be power line clearance pruned in next few cycles of pruning; canopy space competition with tree #3 and 4 creates naturally unbalanced canopy
3	*Pseudotsuga menziesii*	8.1	good	2	Poor location beneath overhead power lines, will be power line clearance pruned in next few cycles of pruning; canopy space competition with tree #2 and 4 creates naturally unbalanced canopy
4	*Cercidiphyllum japonicum*	10.4	Fair	2, 3	Canopy space competition with tree #2 and 3 creates naturally unbalanced canopy; lack of summer irrigation adding stress to tree

***** *DBH of multi-stem trees is converted to single stem*

*** Five health ratings are excellent, good, fair, poor, dead/dying*

Tailored Tree Protection Recommendations

The tailored tree protection measures incorporate the ISA Managing Trees During Construction BMP's. Images show approximate locations of proposed work, suggested tree protection fencing and potential clearance pruning for equipment 6 to 8' above ground on proposed pole.

Tree #1

Laurel shrub removal should use a pinch, lift and shake approach with a mini excavator rather than excavating into the ground with the bucket; this will minimize damage to the roots of tree #1. Root pruning should target clearance for pole installation, utility box excavation and trenching alignment. Likely root sizes encounterd are 1-inch diameter and less; roots requiring pruning shall be cut cleanly at edge of excavation. Damaged roots, i.e. split or torn roots during laurel shrub removals, shall be pruned no more than 4-inches closer to the trunk than the root injury. Tree protection should be placed after laurel shrubs are removed, and before trenching. Tree protection fencing should be placed approximately 3 feet north of the trunk, extending linearly east to west from curb to curb and wrapping southward around the planting island on the inside of the curb. After pole is placed, excavate two vaults using hand or vactor truck. The vactor truck is recommended to avoid impacts to unknown utilities.

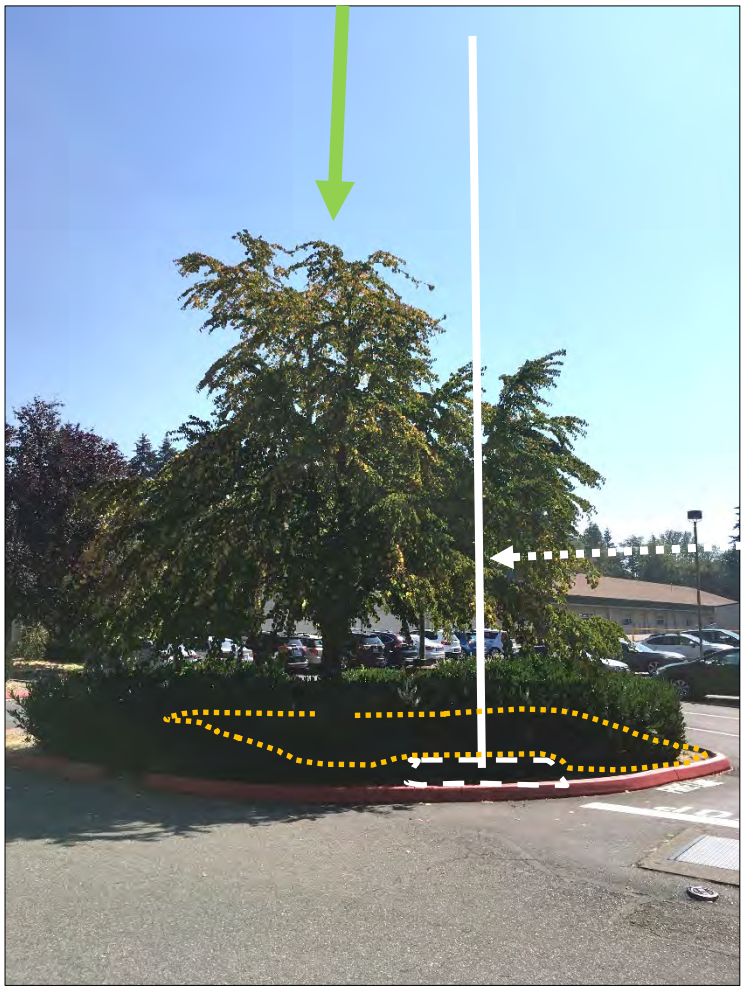

Image 1: tree #1 indicated with green arrow, white dashed line showing approximate vaults location at base of proposed pole, dashed white arrow indicates approximate location of minor pruning to provide clearance to equipment on pole between 6 and 8' above ground surface, orange dotted line shows approximate base of tree protection fencing encircling tree #1; view is looking east-southeast

Tree #2, 3 and 4

Laurel shrub removal should use a pinch, lift and shake approach with a mini excavator rather than excavating into the ground with the bucket. An alternative would be to remove the shrubs by hand, this will minimize damage to the roots of tree #2, 3 and 4. Root pruning shall be for trenching alignment. Likely root sizes encounterd are 1-inch diameter and less; roots requiring pruning shall be cut cleanly at edge of trench excavation. Damaged roots shall be pruned no more than 4-inches closer to the trunk than the root injury. Tree protection should be placed after laurel shrubs are removed and before trenching. Using a vactor truck for trenching after pavement removal is completed is recommended to avoid impacts to unknown utilities.

Image 2: Trees #2, 3 and 4 in planter west of proposed pole location, dotted orange line indicates approximate tree protection fencing encircling trees #2, 3 and 4, laurel shrub at northeast corner of planter is likely to be removed for trenching; view is northwest

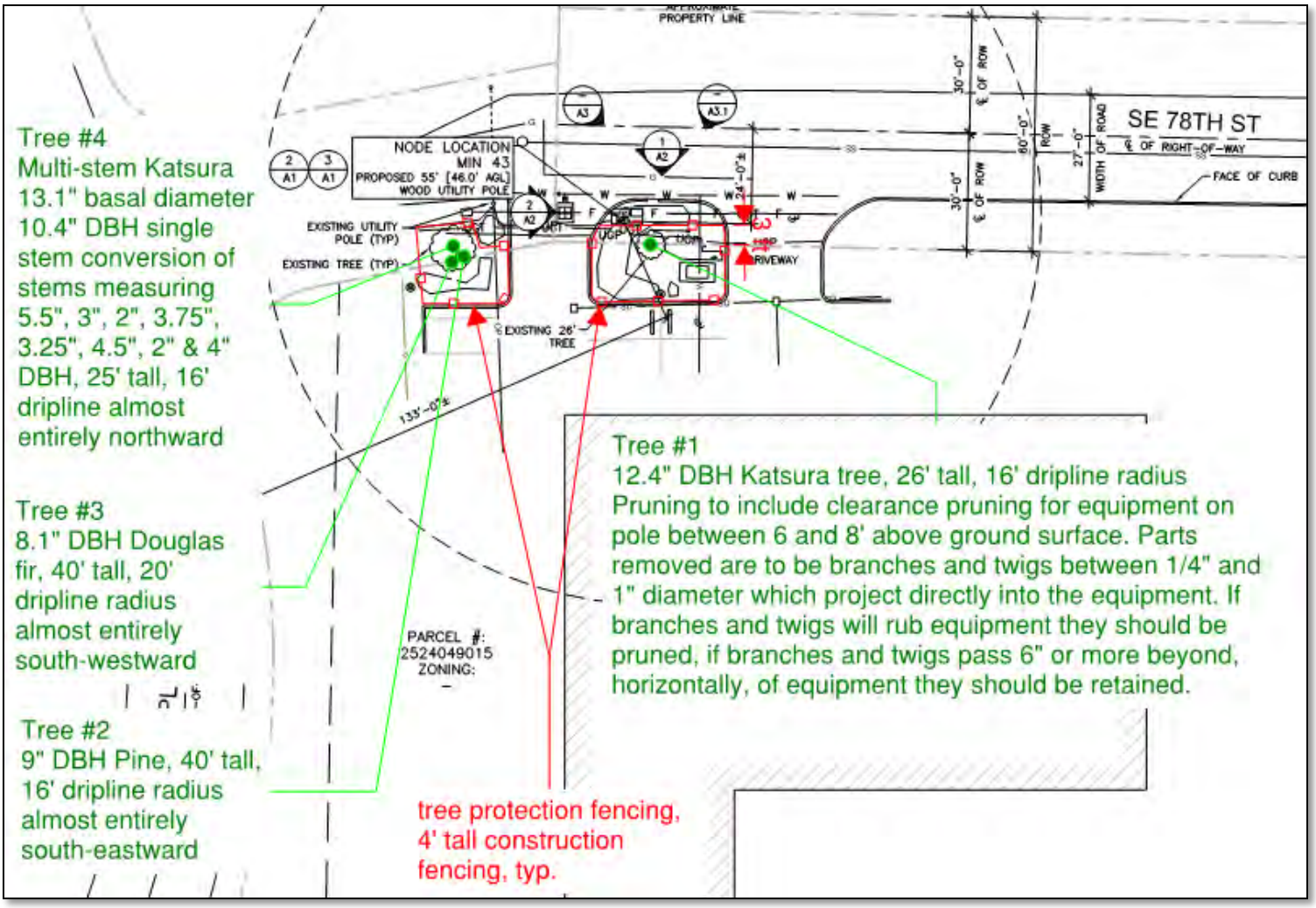

Figure 1–Tree Map and Notes

Image 1: existing pole in foreground with tree #2, 3, and 4 at right edge of photo; tree #1 is just beyond existing pole; image is looking east

Image 2: existing pole on left edge of image; approximately trenching will align with "Stop" bar on pavement; view is eastward with back to trees #2, 3 and 4

Image 3: proximity of trees #2, 3 and 4; view is looking northwest

Image 4: tree #1 showing signs of late summer stress hypothesized to be from limited soil volume, compacted soils and lack of irrigation; view is westward