

Chen Harvey

Response to Mercer Island comments letter

Tree 556 will be trimmed to below scaffold branch decay pocket/ crown reduced, which will leave a 25' tall live habitat tree.

The tree protection fencing has been adjusted out to 40' for tree 508. The dripline is artificially wider than normal due to damaged treetop. Tree 579 has had its dripline rescaled to the correct size

Air Spading was undertaken on the 15<sup>th</sup> of May 2019, pictures of the trenches are attached for tree 510, 511 and 512. The root crown was exposed on tree 510 also. No roots were found and the burying of and damage to T 510 was exposed.

While we were inspecting 510, we noticed butt swell. As butt swell can be indicative of a tree's response to an internal weakness a decision was for further evaluation. We used a core bore and found decay as outlined in our original report. Air-Spading was done on the root crown of tree 510 to a depth of 18" see the photo. It is our opinion that the tree's root crown was buried in the past and this has resulted in the trees inner defect. Note the bark deterioration just below the red line in the picture of the root crown.

Excerpt from initial site inspections: Tree #510 a 36.5" DBH Douglas Fir (*Pseudotsuga menziesii*). Special attention was afforded this tree as it needs to be removed to position the proposed building as designed and is an exceptional tree as defined by city regulations. At first glance the tree appears to be in good condition. Good color foliage and no obvious deadwood. However, the tree has Butt Swell and this drew extra attention. Butt swell is a symptom of an internal weakness as the tree adds tissue to itself to overcome the weakness. Using a 27" long Haglof increment Bore, 2 samples were pulled from the tree. One on the East side and the other on the West side. Full length core samples could not be obtained as the tree has a cavity and decayed wood. The sample from the west side was 7" long with the tissue at the end of the core discolored and crumbling. Even while adding extra force to the borer it would not advance deeper and the tissue if any were in place it was not firm enough to let the bore grip and dig into the tree. The core on the east side of the tree was 11" long. The first 2.5" was sound wood (wood without defect), after this the tissue dried out and became discolored, then finally turned brown and crumbled. Again, the bore was unable to grip the remaining tissue and bore deeper. The International Society of Arboriculture standard for minimum sound wood is 30%. Averaging the 2 cores to a length of 4.75" puts the sound wood percentage of this tree at 12.32. One more measurement of the diameter was taken above the butt swell at 6' the diameter at this height is 31" for a 4.5" difference in a foot-foot and a half travel up the trunk. In my opinion that is drastic. Further inspection using an air spade to a depth of 18" revealed that the "root flair" had been buried more than a foot deep and close to 15-6" deep. This in my opinion is a contributing factor that allows me to recommend removal and replacement of this tree.

Spading was done to a depth of 18" and no roots were found 8' north of the trunks of 511 & 512 again see the photos. See the photos that show the trench which runs from the base of tree 510 to 20' west of tree 512.

Trees 511 & 512 Exceptional Douglas Firs on neighboring property. The proposed building foundation is with the dripline of the trees. Air Spade work was done 8' from the trees to a depth of 18' from tree 510 to a point outside of the dripline to the west. No roots were found connected to these trees. It is my opinion that tree protection fencing be positioned at the trench formed and the tree will flourish after construction.

The impact of the tree removal on neighboring retained trees will be minimal as trees to be removed are "downwind" of the main retained trees blocked from the prevailing winds. The area of removals is an open area where bigger trees have stopped young trees from sprouting under them. The area to be cleared is now largely covered in overgrown grasses and ground covers.

Replanting plan: has been updated to include 55 trees.

Regarding the determination of critical root zones: The tree protection fencing is located outside of the driplines of all retained trees and is mapped as such. Given as there are large swaths of trees on the West and north side of the proposed construction individual limits of disturbance are not included and would be redundant. Again, Limits of Disturbance on trees directly adjacent construction are located outside their driplines, this covers any tree behind those adjacent as well.

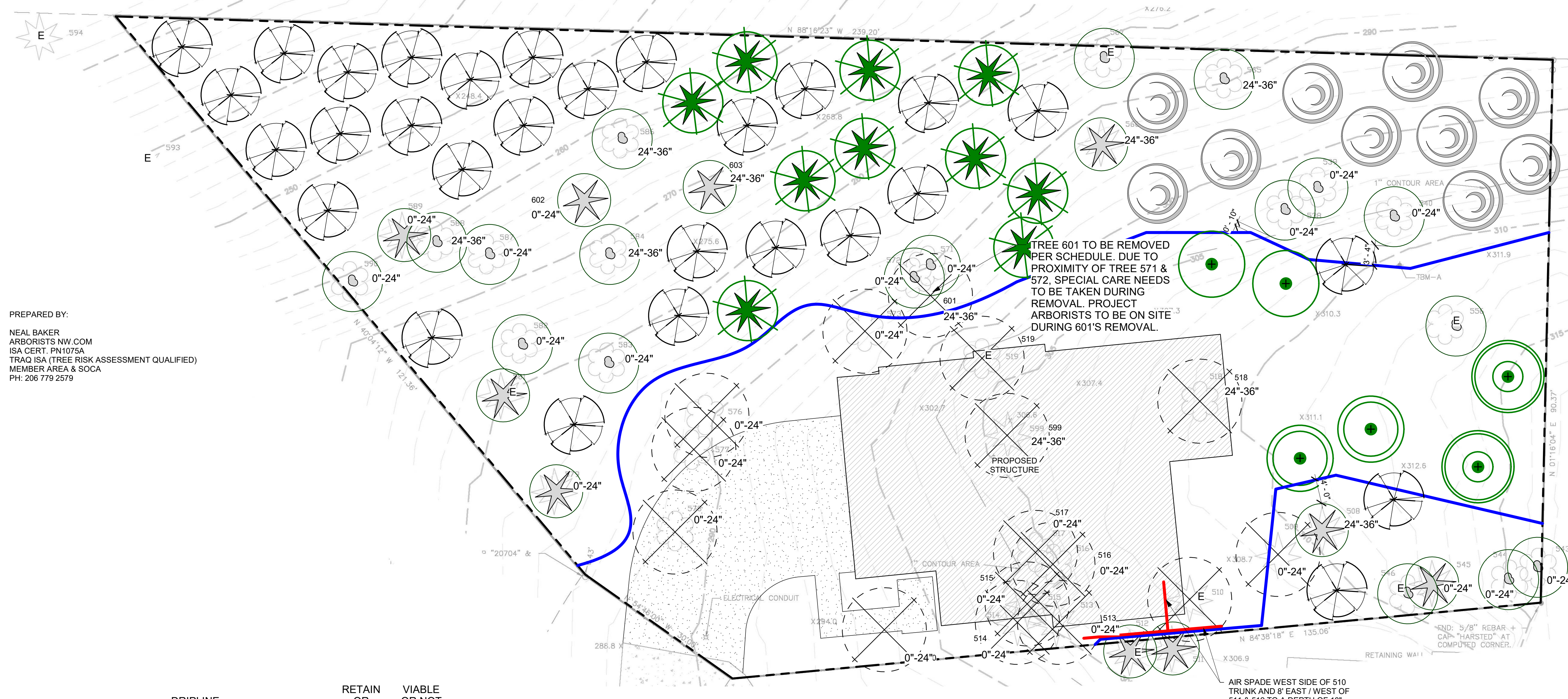
Respectfully Submitted



6/10/22

Neal Baker  
ArboristsNW.com  
ISA Cert. PN1075A  
TRAQ ISA (Tree Risk Assessment Qualified)  
Member AREA & SOCA

No.	Description	Date



PREPARED BY:  
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MEMBER AREA & SOCA  
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TREE #	TREE TYPE	DBH	DRIPLINE CRZ/LOD	CONDITION	RETAIN OR REMOVE	VIABLE OR NOT VIABLE	NOTES
508.	DOUGLAS FIR (Pseudotsuga menziesii)	30"	40'	FAIR/GOOD	RETAIN	VIABLE	
509	DOUGLAS FIR (Pseudotsuga menziesii)	16"	24'	FAIR/GOOD	REMOVE	VIABLE	
510	DOUGLAS FIR (Pseudotsuga menziesii)	36.5"	45'	POOR	REMOVE	NOT VIABLE	SEE ARBORIST COVER DESCRIBING RESULTS OF ISA LEVEL 3 INSPECTION. DISTORTED WITH BUTT SWELL
511	DOUGLAS FIR (Pseudotsuga menziesii)	28"	35'	FAIR/GOOD	RETAIN	VIABLE	
512	DOUGLAS FIR (Pseudotsuga menziesii)	36"	50'	FAIR/GOOD	RETAIN	VIABLE	
513	DOUGLAS FIR (Pseudotsuga menziesii)	8"	15'	FAIR/GOOD	REMOVE	VIABLE	
514	BLACK PINE (Pinus thunbergia)	8"	15'	FAIR/GOOD	REMOVE	VIABLE	
515	DOUGLAS FIR (Pseudotsuga menziesii)	8"	15'	FAIR/GOOD	REMOVE	VIABLE	
516	BIG LEAF MAPLE (Acer macrophyllum)	12"	20'	FAIR/GOOD	REMOVE	VIABLE	
517	BIG LEAF MAPLE (Acer macrophyllum)	18"	28'	FAIR/GOOD	REMOVE	VIABLE	
518	BIG LEAF MAPLE (Acer macrophyllum)	30"	60'	EXC. LEAN	REMOVE	NOT VIABLE	TRUNK ROT
519	BIG LEAF MAPLE (Acer macrophyllum)	36"	40'	FAIR/GOOD	REMOVE	NOT VIABLE	18", 12" 24" & 16" STOCKS
538	BIG LEAF MAPLE (Acer macrophyllum)	12"	20'	FAIR/GOOD	RETAIN	VIABLE	
539	BIG LEAF MAPLE (Acer macrophyllum)	18"	28'	FAIR/GOOD	RETAIN	VIABLE	
540	BIG LEAF MAPLE (Acer macrophyllum)	7"	15'	FAIR/GOOD	RETAIN	VIABLE	
543	RED ALDER (Alnus rubra)	12"	16'	POOR	RETAIN	NOT VIABLE	PARTIALLY DEAD AND TOPPED
544	BIG LEAF MAPLE (Acer macrophyllum)	8"	15'	FAIR/GOOD	RETAIN	VIABLE	
545	DOUGLAS FIR (Pseudotsuga menziesii)	28"	45'	FAIR/GOOD	RETAIN	VIABLE	
546	MADRONA (Arbutus menziesii)	12"	20'	FAIR/GOOD	RETAIN	VIABLE	
556	BIG LEAF MAPLE (Acer macrophyllum)	36"	48'	POOR	RETAIN	NOT VIABLE	LIVE HABITATE
565	BIG LEAF MAPLE (Acer macrophyllum)	14"	20'	FAIR/GOOD	RETAIN	VIABLE	
566	WESTERN RED CEDAR (Thuja plicata)	10"	18'	FAIR/GOOD	RETAIN	VIABLE	
567	BIG LEAF MAPLE (Acer macrophyllum)	36"	45'	FAIR/GOOD	RETAIN	VIABLE	
571	BIG LEAF MAPLE (Acer macrophyllum)	14"	20'	FAIR/GOOD	RETAIN	VIABLE	
572	BIG LEAF MAPLE (Acer macrophyllum)	8"	13'	FAIR/GOOD	RETAIN	VIABLE	
573	BIG LEAF MAPLE (Acer macrophyllum)	18"	30'	FAIR/GOOD	REMOVE	VIABLE	
576	BIG LEAF MAPLE (Acer macrophyllum)	11"	15'	FAIR/GOOD	REMOVE	VIABLE	
577	BIG LEAF MAPLE (Acer macrophyllum)	6"	10'	FAIR/GOOD	REMOVE	VIABLE	
578	BIG LEAF MAPLE (Acer macrophyllum)	16.7"	25'	FAIR/GOOD	REMOVE	VIABLE	12", 10", & 6" STOCKS
579	DOUGLAS FIR (Pseudotsuga menziesii)	18"	28'	FAIR/GOOD	RETAIN	VIABLE	
581	WESTERN RED CEDAR (Thuja plicata)	36"	45'	FAIR/GOOD	RETAIN	VIABLE	
582	BIG LEAF MAPLE (Acer macrophyllum)	9"	15'	FAIR/GOOD	RETAIN	VIABLE	
583	BIG LEAF MAPLE (Acer macrophyllum)	12"	20'	FAIR/GOOD	RETAIN	VIABLE	
584	BIG LEAF MAPLE (Acer macrophyllum)	30"	40'	FAIR/GOOD	RETAIN	VIABLE	
586	BIG LEAF MAPLE (Acer macrophyllum)	28.4"	25'	FAIR/GOOD	RETAIN	VIABLE	24", 14", & 6" STOCKS
587	BIG LEAF MAPLE (Acer macrophyllum)	12"	17'	FAIR/GOOD	RETAIN	VIABLE	
588	BIG LEAF MAPLE (Acer macrophyllum)	27.7"	32'	FAIR/GOOD	RETAIN	VIABLE	24" & 14" STOCKS (SPRAWL)
589	WESTERN RED CEDAR (Thuja plicata)	6"	10'	FAIR/GOOD	RETAIN	VIABLE	
590	BIG LEAF MAPLE (Acer macrophyllum)	19.7"	32'	FAIR/GOOD	RETAIN	VIABLE	16", 10", & 6" STOCKS
593	WESTERN RED CEDAR (Thuja plicata)	36"	48'	FAIR/GOOD	RETAIN	VIABLE	
594	WESTERN RED CEDAR (Thuja plicata)	36"	48'	FAIR/GOOD	RETAIN	VIABLE	
599	NORWAY SPRUCE (Picea abies)	11"	14'	GOOD	REMOVE	VIABLE	
600	PORTUGUESE LAUREL (Prunus lusitanica)	10.6"	14'	FAIR/GOOD	RETAIN	VIABLE	7" & 8" STOCKS
601	BIG LEAF MAPLE (Acer macrophyllum)	28"	32'	DEAD	REMOVE	NOT VIABLE	CUT TO SHORT HABITAT TREE SEE ARBORIST COVER (SEE COMMENT ON PLAN)
602	DOUGLAS FIR (Pseudotsuga menziesii)	22"	32'	DEAD	RETAIN	NOT VIABLE	SEE COVER LETTER WITH DISCUSSION
603	WESTERN RED CEDAR (Thuja plicata)	30"	STUB	DEAD	RETAIN	NOT VIABLE	SEE COVER LETTER WITH DISCUSSION

ARBORISTS SITE PLAN

1" = 10'-0"

TREE PROTECTION AREA (TPZ)

KEEP OUT!

DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

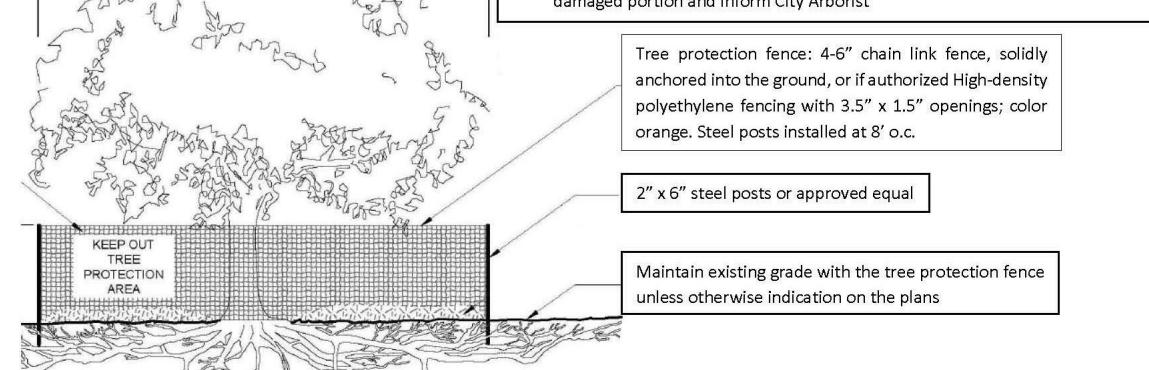
Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees
3. Arborist reports recommending mitigation

Cover drip line or other part of Tree Protection Area. See Site/Utility Plan for fence alignment.

Notes

1. No pruning shall be performed unless under the direction of an arborist
2. No equipment shall be stored or operated inside the protective fencing including during fence installation and removal
3. No storage of materials shall occur inside the protective fencing
4. Refer to Site/Utility Plan for allowable modifications to the tree protection area.
5. Unauthorized activities in tree protection area may require evaluation by private arborist to identify impacts and mitigation required
6. Exposed roots: For roots > 1" damaged during construction, make a clean straight cut to remove damaged portion and inform City Arborist



Any Work in the protected area must be with the permission of the City Arborist [john.kenney@mercergov.org](mailto:john.kenney@mercergov.org)

	TREE DRIP LINE
	EVERGREEN TREE
	DECIDUOUS TREE
	TREE TO BE REMOVED
	TREE PROTECTION FENCING MUST BE PLACED PRIOR TO CONSTRUCTION ACTIVITY
	"E" REPRESENTS EXCEPTIONAL TREES. IN EXCESS OF 36" DBH

	DOUGLAS FIR	10
	WESTER RED CEDAR	10
	VINE MAPLE	29
	Fuyu persimmon	2
	Magnolia	2
	Flowering dogwoods	2

REPLANTING PLAN:

WESTERN RED CEDAR *Thuja plicata*  
VINE MAPLE *Acer circinatum*  
DOUGLAS FIR *Pseudotsuga menziesii*

Conifers at least six feet tall and deciduous at least one and one-half inches in diameter at base.

NOTE: RANGE FINDER WAS USED TO DETERMIN DRIPLINE/CRZ/LOD

CHEN RESIDENCE

50xx W MERCER WAY, MERCER ISLAND 98040

CHEN RESIDENCE

ARBORIST TREE PLAN

Project number	
Date	
Drawn by	CW
Checked by	NB

A102

Scale As indicated

Deformity that trigger core sampling

T 510

Bark shedding and deformity from burial of root crown



East end of trench to butt of T510, 18"  
deep no roots found





Mid trench 8' from 511-2 18" deep no roots found

Note bark deformity fill had  
been added at some point  
Exposed 18"





**Terminal end of 18" deep trench 8' from T511-2  
extends to base of T510 no roots found**





Tree 518 whole leader is  
dead