



AMERICAN FOREST
MANAGEMENT

ARBORIST REPORT
3453 74th Ave SE
Mercer Island, WA



October 31st, 2019

Updated 5/5/2020

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1. Introduction

American Forest Management, Inc. was contacted by Aaron Spell and asked to compile an arborist report for a parcel located in the City of Mercer Island, WA.

The proposed re-development encompasses the property at 3453 74th Ave SE. Our assignment is to prepare a written report on present tree conditions and the potential impacts to existing trees related to development of the 21,618 square foot property, Parcel #130030-1965. There is one single-family home located on site.

This report encompasses all of the criteria set forth under the City of Mercer Island's tree regulations (Chapter 19.10 of the Mercer Island City Code).

Date of Field Examination: **October 28th, 2019 & November 5th, 2018.**

2. Description

The City of Mercer Island defines a 'large tree' as any tree with a diameter of 10 inches or more, or any tree that meets the definition of an exceptional tree. Twenty large trees were located on the property. Three trees under 10 inches were assessed.

There were 19 Exceptional Trees located on the property. The City of Mercer Island may prioritize the retention of Exceptional Trees. The removal of Exceptional Trees over 24 inches DBH (Diameter at 4.5 feet above grade) may be limited by the City.

The City of Mercer Island defines a grove as a group of 8 or more trees 10 inches or more in diameter that form a continuous canopy. Trees 6 through 23 form a grove. In accordance with MICC 19.16.010, trees that form part of a grove are considered Exceptional Trees.

Based on the proposed site plan, trees 3, 4, and 5 are conflicting with proposed improvements. Trees 3 and 5 are Exceptional Trees.

There are 20 significant trees located on adjacent parcels that have canopies overhanging the subject property. These trees shall be protected throughout development activity.

Each subject tree has been identified with a numbered aluminum tag attached to its lower trunk. The tag number corresponds with the attached tree condition summary table and attached site survey.

The recommended Limits of Disturbance (LOD) measurement can be found on the tree summary table and delineated on the site plan. The LOD measurements are based on species, size, age, condition, drip-line or crown spread and prior improvements.

3. Methodology

The subject tree's diameters were measured by tape. Their total overall height was measured using a digital clinometer, and they were visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown of each tree is examined for current vigor. This is comprised of inspecting the crown (foliage, buds and branches) for color, density, form, and annual shoot growth, limb dieback and disease. The percentage of live crown is estimated for coniferous species only and scored appropriately.
- The bole or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insects, bleeding, callus development, broken or

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dead tops, structural defects and unnatural leans. Structural defects include crooks, forks with V-shaped crotches, multiple attachments, and excessive sweep.

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

The four condition categories are described below:

Excellent – free of structural defects, no disease or pest problems, no root issues, excellent structure/form with uniform crown or canopy, foliage of normal color and density, above average vigor, it will be wind firm if isolated, suitable for its location.

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.

The attached Tree Summary Table provides specific information on tree sizes and drip-line measurements.

4. Observations / Discussion

Twenty-three trees were tagged and assessed on site. Nine trees were assessed to be in good condition and 13 trees were assessed to be in fair condition. The tree species included Douglas-fir, bigleaf maple, red alder, flowering dogwood, Pacific dogwood, and Japanese white pine.

Per MICC 19.16.010, trees number 6 through 23 are considered a grove as all of their canopies overlap. Trees forming part of a grove are considered exceptional unless they meet the definition of a hazardous tree. Grove trees may be prioritized for retention by the City.

Trees 3, 4, and 5 conflict with proposed improvements. Trees 3 and 5 are exceptional due to size per MICC 19.16.010 Exceptional Tree Table. Exceptional trees may be prioritized for retention by the City.

According to the King County iMap interactive mapping tool the subject property is located in an Erosion Hazard Environmentally Sensitive Area.

See the attached Tree Table for specifics on each tree.

5. Tree Protection Measures

The following general guidelines are recommended to ensure that the designated areas set aside for the preserved trees are protected and construction impacts are kept to a minimum. Tree protection should adhere to best management practices for tree and soil protection during development activity.

1. Tree protection fencing shall be erected around retained trees and positioned as shown on the attached map 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.

2. Any existing improvements to be removed within the drip-lines or tree protection zones shall be removed by hand or utilizing a tracked mini-excavator.

3. Excavation limits should be laid out in paint on the ground to avoid over excavating.
4. Excavations within the drip-lines 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 “limits of disturbance”.
5. To establish sub grade for foundations, curbs and pavement sections near the trees, soil should 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.
6. Areas excavated within the drip-line of retained trees should be thoroughly irrigated daily during dry periods.
7. 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. Simply finish landscape within 10’ of retained trees with a 2” to 4” layer of organic mulch.

6. Recommendations

- Create a finalized site development plan that shows the location of all improvements and tree protection for preserved trees.
- Obtain all necessary permits from the City prior to commencing development activity on site.
- Comply with all applicable federal and state laws, rules and regulations per 19.10.130.

7. Tree Removal and Retention Per MICC 19.10.060

19.10.060 Tree removal – Associated with a development proposal. Revised 8/18

A. Single-Family Zoning Designations.

1. In the R-8.4, R-9.6, R-12, and R-15 zoning designations, [tree](#) retention is required for the following [development](#) proposals:
 - a. An addition or remodel to an existing [single-family dwelling](#) that will result in the addition of more than 500 square feet of [gross floor area](#) on a [lot](#) with a [net lot area](#) of 6,000 square feet or more;
 - b. A new [single-family dwelling](#) on a [lot](#) with a [net lot area](#) of 6,000 square feet or more;
 - c. A [subdivision](#) or [short subdivision](#).
2. Retention Requirement. [Development proposals](#) specified under subsection (A)(1) of this section shall retain [trees](#) as follows:
 - a. A minimum of 30 percent of [trees](#) with a [diameter](#) of 10 inches or greater, or that otherwise meet the definition of [large tree](#), shall be retained over a rolling five-year period.
 - b. In addition to the retention required in subsection (A)(2)(a) of this section, the [development proposal](#) shall be designed to further minimize the removal of [large trees](#) and maximize on-site [tree](#) retention as follows:
 - i. Site improvements, including but not limited to new single-family homes, additions to a single-family home, [appurtenances](#), [accessory structures](#), [utilities](#), and

[driveways](#), shall be designed and located to minimize [tree](#) removal during and following construction.

ii. The following [trees](#) shall be prioritized for retention:

- (a) Exceptional [trees](#);
- (b) Trees with a [diameter](#) of more than 24 inches;
- (c) Trees that have a greater likelihood of longevity; and
- (d) Trees that are part of a healthy grove.

iii. Trees shall not be removed outside the area of land disturbance except where necessary to install site improvements (e.g., [driveways](#), [utilities](#), etc.).

iv. Tree removal for the purposes of site [landscaping](#) should be limited to those [trees](#) that will pose a future safety hazard to existing or proposed site improvements.

c. Provide [tree](#) replacement pursuant to MICC [19.10.070](#).

3. Retention of [Exceptional Trees](#). [Development proposals](#) specified under subsection (A)(1) of this section shall retain [exceptional trees](#) with a [diameter](#) of 24 inches or more. [Exceptional trees](#) with a [diameter](#) of 24 inches or more that are retained shall be credited towards compliance with the retention requirements of subsection (A)(2) of this section. Removal of [exceptional trees](#) with a [diameter](#) of 24 inches or more, shall be limited to the following circumstances:

- a. Retention of an exceptional tree(s) with a [diameter](#) of 24 inches or more will result in an unavoidable hazardous situation; or
- b. Retention of an exceptional tree(s) with a [diameter](#) of 24 inches or more will limit the constructable [gross floor area](#) to less than 85 percent of the maximum [gross floor area](#) allowed under Chapter [19.02](#) MICC; or,
- c. Retention of an exceptional tree(s) with a [diameter](#) of 24 inches or more will prevent creation of a residential [lot](#) through a [subdivision](#) or [short subdivision](#) that is otherwise allowed by this title.

4. Calculation of Rolling Five-Year Period. For the purposes of this section, the rolling five-year period begins five years prior to the date of application for a [development](#) approval that is subject to [tree](#) retention.

5. Compliance Required. [Development proposals](#) on [lots](#) that have removed more than 70 percent of [large trees](#) within the rolling five-year period, such that the 30 percent [tree](#) retention requirement under subsection (A)(2) of this section cannot be met, shall not receive approval unless and until compliance has been achieved. For example, a [lot](#) that has removed all of the [trees](#) in year “one” may not receive a preliminary [subdivision](#) approval in year “four.” However, the preliminary [subdivision](#) approval may be granted in year “six,” such that the rolling five-year period does not include the [tree](#) removal in year “one.”

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There is no warranty suggested for any of the trees subject to this report. Weather, latent tree conditions, and future man-caused activities could cause physiologic changes and deteriorating tree condition. Over time, deteriorating tree conditions may appear and there may be conditions, which are not now visible which, could cause tree failure. This report or the verbal comments made at the site in no way warrant the structural stability or long term condition of any tree, but represent my opinion based on the observations made.

Nearly all trees in any condition standing within reach of improvements or human use areas represent hazards that could lead to damage or injury.

Please call if you have any questions or I can be of further assistance.

Sincerely,



Michael Tomco
ISA Certified Arborist #PN-8432A
Tree Risk Assessment Qualified (TRAQ)

Photographs

Photo 1. Facing north, showing the west property line.



Photo 2. Facing north, showing grove trees located north of the residence.



Photo 3. Facing east, showing tree number 1 located south of the residence and adjacent to the property line.



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Photo 4. Facing north, showing the area east of the residence.



Photo 5. Facing west, showing the grove trees number 9 through 14 located north of the residence.



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Photo 6. Showing the overlapping canopies of the grove trees.



Photo 7. Facing west, showing grove tree number 23 located north of the residence.



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Photo 8. Showing the overlapping canopies of the grove trees.



Tree Summary Table

For: 3453 74th Ave SE-Property Trees
City of Mercer Island

American Forest Management, Inc

Date: 11/5/2018
Inspector: Layton
Date: 10/28/2019
Inspector: Tomco

Tree/ Tag #	Species	Exceptional	DBH (inches)	Height (feet)	Drip-Line / Limits of Disturbance (feet)				Condition	Proposal	Comments
					N	S	E	W			
1	Japanese white pine	no	8	28	10	10	11	12	good	Retain	No concerns.
2	red alder	no	15	63	13	14	16	7	fair	Retain	Leans sw, declining top.
3	Pacific dogwood	yes	9	37	14	8	12	12/10	fair	Remove	Exceptional due to size. Several small cavities, mod anthracnose infection. Exceptional threshold 6".
4	flowering dogwood	no	5,6 (8)	31	7	6	5	12	fair	Remove	Leans west, pruned in past.
5	white fir	yes	27	92	10/14	10/14	10/6	10/14	good	Remove	Exceptional due to size. No concerns. Exceptional threshold 24".
6	bigleaf maple	no	24	83	0	24	4	16	poor	Retain	Extensive trunk rot, kretchmaria, major top dieback. Grove tree. Part of grove but poor health.
7	Douglas fir	yes	15	78	6	10	4	12	fair	Retain	Natural lean west, suppressed, minor decay column. Grove tree.
8	Douglas fir	yes	32	116	14	14	16	12	good	Retain	Exceptional due to size. Good form, natural lean east. Grove tree.
9	Douglas fir	yes	33	140	12	15	14	10	good	Retain	Exceptional due to size. 60% lcr. Grove tree.
10	Douglas fir	yes	12	33	7	8	10	6	fair	Retain	Old broken top, suppressed, moderate decay column. Grove tree.
11	Douglas fir	yes	36	144	na	11	13	10	good	Retain	Exceptional due to size. 70% lcr. Grove tree.
12	Douglas fir	yes	20	86	6	9	11	11	fair	Retain	Old broken top. Grove tree.
13	Pacific dogwood	yes	11	53	10	19	14	12	fair	Retain	Exceptional due to size. Large canker on east side, longevity in question. Grove tree.
14	Douglas fir	yes	37	127	12	15/12	16	14/13	good	Retain	Exceptional due to size. 70% lcr. Grove tree.
15	Douglas fir	yes	28	126	12	8/12	12	8	good	Retain	Natural lean north. Grove tree.
16	Pacific dogwood	yes	11	48	12	16/10	14	16	fair	Retain	Exceptional due to size. suppressed by Douglas fir. Grove tree.
17	Douglas fir	yes	32	128	12	16/14	12	12	good	Retain	Exceptional due to size. 70% lcr. Grove tree.
18	Douglas fir	yes	27	112	10	11/12	10	10	fair	Retain	60% lcr, old broken top. Grove tree.
19	Douglas fir	yes	32	118	14	10/14	12	12	good	Retain	Exceptional due to size. 60% lcr. Grove tree.
20	bigleaf maple	yes	12	40	20	0	12	16	fair-poor	Retain	Suppressed, old broken top, asymm crown to north. Grove tree.
21	bigleaf maple	yes	19	88	14	18	13	15	fair	Retain	Lots of dead cambium on ne side, suspect xylella. Grove tree.
22	Douglas fir	yes	22	97	12	8	10	10	fair	Retain	Old broken top. Grove tree.
23	Douglas fir	yes	24	90	8	13/12	14	10	fair	Retain	Old broken top. Grove tree.

Parcel Trees - Drip-Line and Limits of Disturbance measurements from face of trunk
 Trees on neighboring properties - Drip-Line and Limits of Disturbance measurements from property line
 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]).

Tree Summary Table

For: 3453 74th Ave SE-Neighboring Trees
City of Mercer Island

American Forest Management, Inc

Date: 11/5/2018
Inspector: Layton

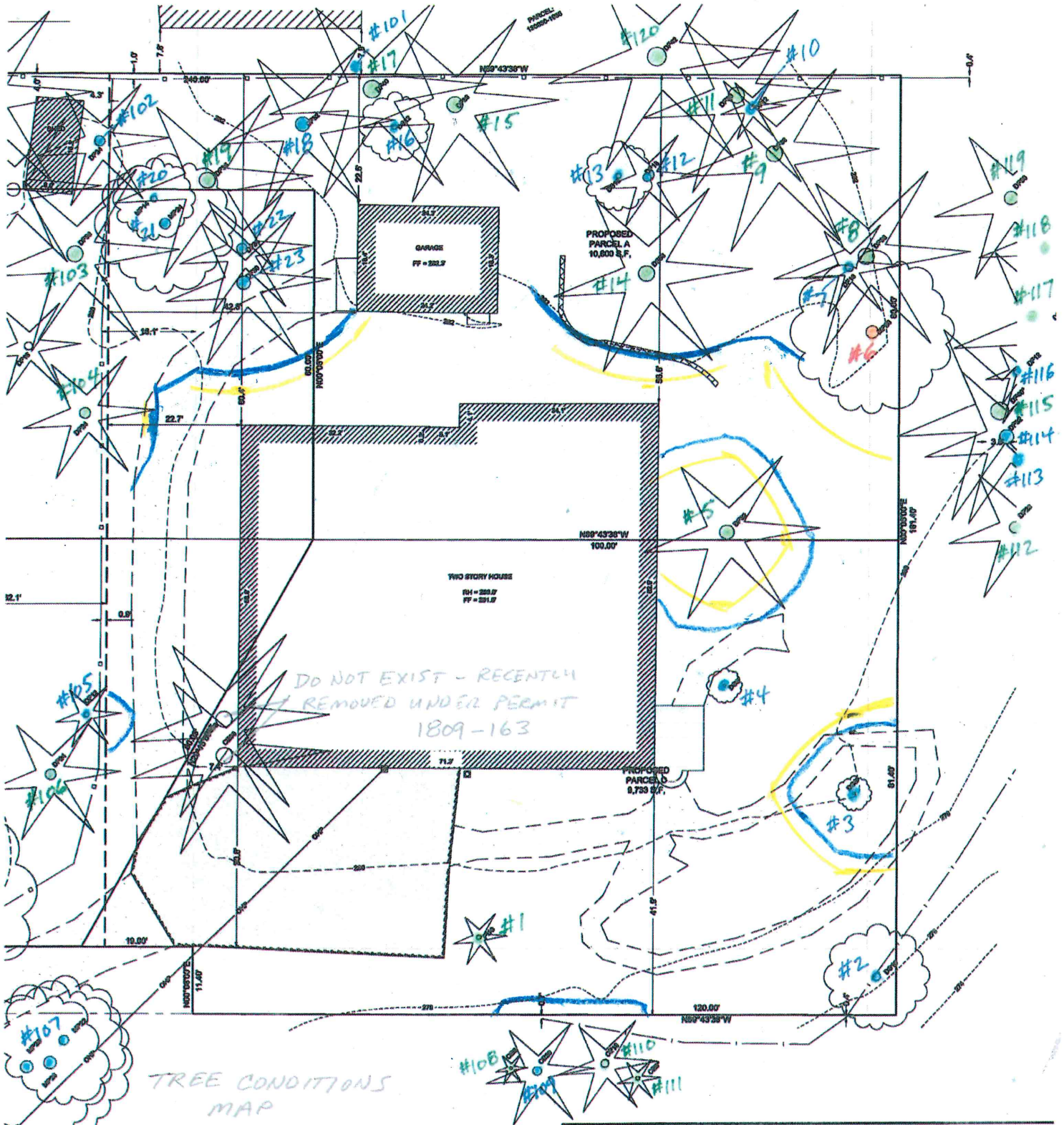
Tree/ Tag #	Species	Exceptional	DBH (inches)	Height (feet)	Drip-Line / Limits of Disturbance (feet)				Condition	Proposal	Comments
					N	S	E	W			
101	Douglas fir	yes	12	60		0/10			fair	Protect	suppressed, cannot isolate
102	Douglas fir	yes	19	106			4/10		fair	Protect	shhweinitizi conk 2' from root crown
103	Douglas fir	yes	30	125			4/5		good	Protect	no concerns
104	Douglas fir	yes	23	98			4/6		good	Protect	no concerns
105	Douglas fir	no	10	48			4/4		fair	Protect	old broken top, regrown
106	Douglas fir	no	20	96			2/2		good	Protect	approx 8' off pl
107	bigleaf maple	yes	21,23,23 (39)	95	16	na	22	30	fair	Protect	approx 8' off driveway
108	Lawson cypress	no	8	35	0/0				good	Protect	
109	Lawson cypress	no	16	50	0/2				fair	Protect	lean
110	Lawson cypress	no	16	52	2/4				good	Protect	
111	Lawson cypress	no	10	42	2/2				good	Protect	
112	Douglas fir	yes	22	86		19		17/16	good	Protect	natural lean southwest
113	Douglas fir	yes	24	90				12/14	fair	Protect	old broken top
114	Douglas fir	yes	21	62				19/14	fair	Protect	leans southwest, mod decay column
115	Douglas fir	yes	38	145				15/16	good	Protect	
116	Douglas fir	yes	11	67				6/8	fair	Protect	suppressed
117	Douglas fir	yes	28	130				10/14	good	Protect	good taper
118	Douglas fir	yes	35	132				10/18	good	Protect	
119	Douglas fir	yes	24	113				14/14	good	Protect	
120	Douglas fir	yes	36	135		14/16			good	Protect	

Trees on neighboring properties - Drip-Line and Limits of Disturbance measurements from property line, except for #112>#119, 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]).

Approx Scale
1" = 20'

3453 - 74TH AVE SE

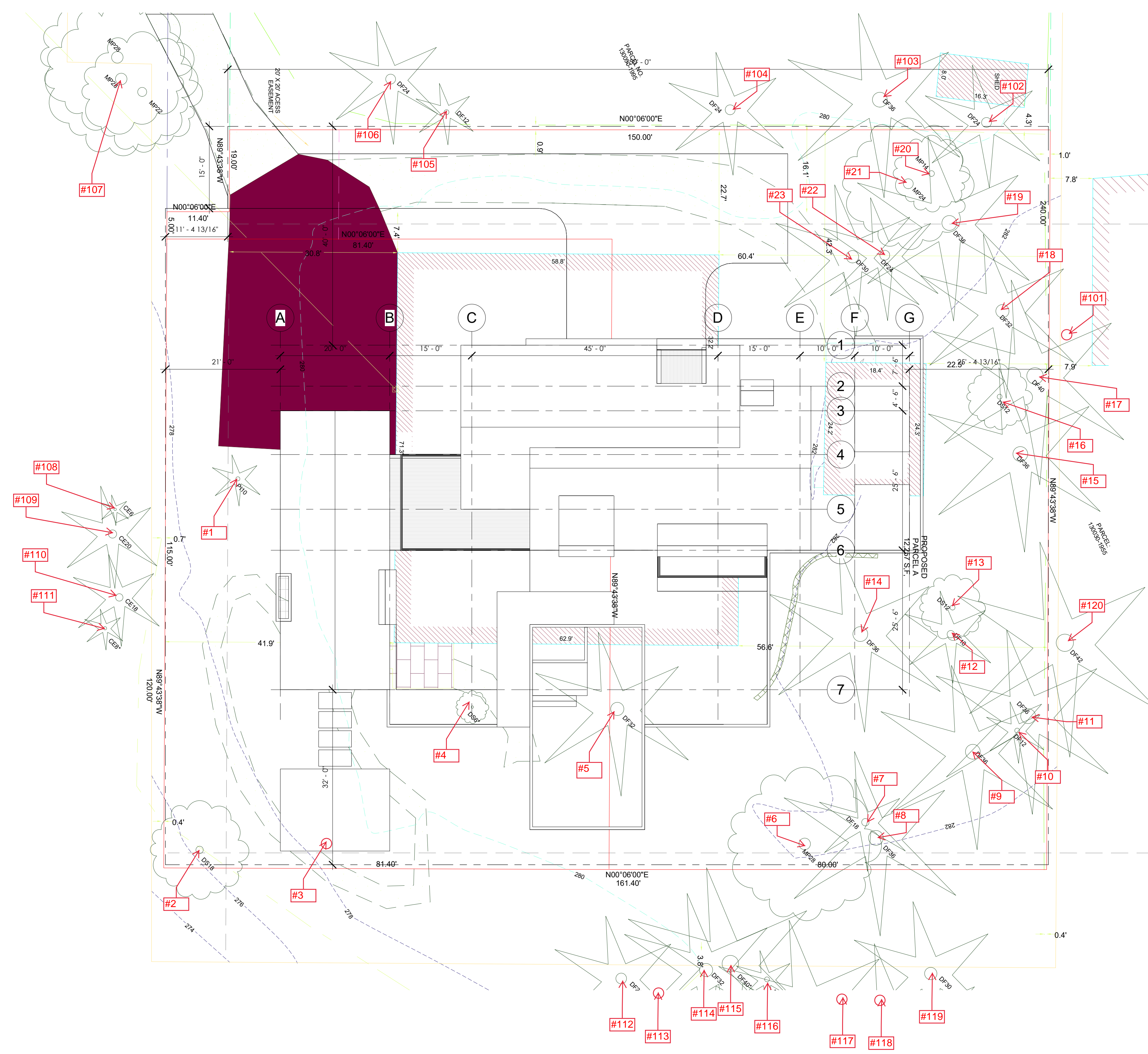
— Drip Line
— Limit of Disturbance



TREE CONDITIONS
MAP

- # - GOOD CONDITION
- # - FAIR CONDITION
- # - POOR CONDITION

NE 1/4, SW 1/4, SEC 12, TWP 24N, RNG 4E, W.M.



① SITE PLAN - ENLARGED
1" = 10'-0"

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- GENERAL NOTES:**
1. ALL CODE COMPLIANCE TO BE VERIFIED PRIOR TO CONSTRUCTION BY ARCHITECT AND ADA EXPERT.
 2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO THE START OF WORK.
 3. ALL REVISIONS SHOWN TO BE VERIFIED BY ARCHITECT TO COMPLY WITH ALL BUILDING CODES AND STANDARDS.
 4. MILLWORKER TO CONFIRM ALL CLEARANCES.
 5. PERMIT DRAWINGS - NOT TO BE USED FOR CONSTRUCTION.
 6. DO NOT SCALE FROM THIS DRAWING.
 7. ALL GLAZING TEMPERED SAFETY GLASS UNLESS OTHERWISE NOTED.
 8. ELECTRICAL & LIGHTING DRAWINGS FOR DESIGN PURPOSES ONLY. SUBCONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES OR NON-COMPLIANCE OF BUILDING CODES.

DATE 10/13/15	DRAWN BY Author
SCALE 1" = 10'-0"	CHECKED BY Checker

PROJECT
'FOO' RESIDENCE
3453 74th Ave SE
Mercer Island, WA
98040

REV	DATE	ISSUE/REVISION
NOT FOR CONSTRUCTION		

DPO DEDICATED APPROVAL STAMP SPACE

SHEET TITLE
SITE PLAN

REVISION NO.
SHEET NO.
A051