

MEMORANDUM

Exhibit F

DATE: April 25, 2022

TO: Mac Even (Even Better Homes)

FROM: Todd Prager, RCA #597, ISA Board Certified Master Arborist

RE: Updated Tree Plan for The Bornstedt Views Subdivision

Summary

This report includes updated tree removal, preservation, and protection recommendations for the proposed Bornstedt Views Subdivision in Sandy, Oregon.

Background

Even Better Homes is proposing to construct a 43-lot subdivision with new streets, sidewalks, and utilities at 19618 SE Bornstedt Road in Sandy, Oregon. The topographic survey of existing trees is provided in Attachment 1, the proposed site plans with the proposed retention is provided in Attachment 2, and the inventory of existing trees is provided in Attachment 3.

The assignment requested of our firm for this project was to:

- Assess the trees within the development site;
- Identify the trees to be removed and retained; and
- Provide tree protection recommendations for the trees to be retained.

Tree Assessment

In July 2020 I completed the inventory of existing trees at the site.

The complete inventory data for each tree is provided in Attachment 3 and includes the tree number, common name, scientific name, trunk diameter (DBH), crown radius, health condition, structural condition, pertinent comments, and whether it is an onsite 11-inch DBH or greater tree in good condition.¹

All County Surveyors and Planners added color coded labels to the inventory to denote trees that are 11-inch DBH or greater and in good condition (yellow), trees

¹ Section 17.102.50 of the City of Sandy Code requires three onsite trees over 11-inch DBH that are in good condition to be retained.

that are not 11-inch DBH or greater and/or not in good condition (red), trees to be retained (green), and trees to be removed (salmon).

The tree numbers in the inventory in Attachment 3 correspond to the tree numbers on the plans in Attachments 1 and 2. The trees were also tagged with their corresponding numbers in the field.

Tree Removal and Retention

This section of the report includes tree removal and retention recommendations based on the proposed site plan.

Tree Removal

The standard tree protection requirements in the City of Sandy Code range from at least 10 feet from the trunks of retained trees (SDC 17.102.50.B.1) to five feet beyond the driplines (SDC 17.92.10.D) unless otherwise approved by the Planning Director.

A typical alternative minimum protection zone allows encroachments no closer than a radius from a tree of .5 feet per inch of DBH if no more than 25 percent of the critical root protection zone area (estimated at one foot radius per inch of DBH) is impacted. Figure 1 illustrates this concept.

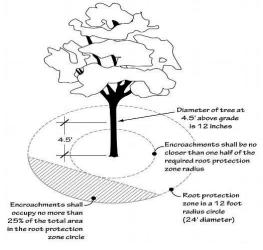


Figure 1: Alterative minimum protection zone

Using these criteria, while considering the tree conditions and their locations relative to construction and other site improvements, 709 of the assessed trees at the site are proposed for removal.

Tree Retention

A total of 38 trees are proposed to be retained. All 38 of these are in good condition, over 11-inch DBH, and not considered nuisance species according to the City of Sandy. Section 17.102.50.A of the City of Sandy Code includes five criteria for tree retention with development. The five criteria followed by my findings in *italics* are listed below:

1. At least three trees 11 inches DBH or greater are to be retained for every one-acre of contiguous ownership.

Finding: The site is 12.739 acres in size so 38 non-nuisance trees over 11-inch DBH in good condition are required to be retained. The proposed preservation includes 38 non-nuisance trees over 11-inch DBH in good condition. This criterion is met.

2. Retained trees can be located anywhere on the site at the landowner's discretion before the harvest begins. Clusters of trees are encouraged.

Finding: The retained trees are clustered at the north, central, and east ends of the site as shown in Attachment 2. This criterion is met.

3. Trees proposed for retention shall be healthy and likely to grow to maturity, and be located to minimize the potential for blow-down following the harvest.

Finding: All the trees subject to this standard are in good health condition and likely to grow to maturity. The structural condition of all retained trees is fair to good. The proposed clustering of retained trees will help to minimize blow down hazards. Therefore, this criterion is met.

4. If possible, at least two of the required trees per acre must be of conifer species.

Finding: Thirty-three (33) of the 38 non-nuisance trees over 11-inch DBH and in good condition to be retained are conifer species. This criterion is met.

5. Trees within the required protected setback areas may be counted towards the tree retention standard if they meet these requirements.

Finding: There is no protected setback area at the site. This criterion is not applicable.

Tree Protection Recommendations

The standard tree protection requirements in the City of Sandy Code range from at least 10 feet from the trunks of retained trees (SDC 17.102.50.B.1) to five feet beyond the driplines (SDC 17.92.10.D) unless otherwise approved by the Planning Director.

A typical alternative minimum protection zone allows encroachments no closer than a radius from a tree of .5 feet per inch of DBH if no more than 25 percent of the critical root protection zone area (estimated at one foot radius per inch of DBH) is impacted. Figure 1 illustrates this concept.

The reason for using this alternative is because it allows the tree protection zone to better relate to the size of the tree and its root zone. For example, a 10-foot tree protection setback would not be adequate for a 48-inch DBH tree which should have a minimum setback of at least 24 feet. Also, driplines can be highly variable based on species growth habits and onsite conditions such as the presence of adjacent trees or past pruning.

The trees to be retained can be adequately protected by placing tree protection fencing as shown in Attachment 2. The tree protection fencing will protect at least 75 percent of their critical roots zones and avoid any encroachments closer than a radius of .5 feet per inch of DBH to a tree to be retained. No grading, stockpiling, storage, disposal, or any other construction related activity shall occur in the tree protection zones unless specifically reviewed and approved by the project arborist.

The following additional protection measures shall apply to the trees at the site:

- *Tree Protection Fencing*: Establish tree protection fencing in the locations shown in Attachment 1. Required fencing shall be a minimum of six feet tall supported with metal posts placed no farther than ten feet apart installed flush with the initial undisturbed grade. Fence installation may be delayed until immediately after tree removal is complete.
- *Directional Felling*: Fell the trees to be removed away from the trees to be retained so they do not contact or otherwise damage the trunks or branches of the trees to be retained. No vehicles or heavy equipment shall be permitted within the tree protection zones during tree removal operations.
- *Stump Removal*: The stumps of the trees to be removed from within the tree protection zones shall either be retained in place or stump ground to protect the root systems of the trees to be retained.
- *Protect Tree Crowns*: Care will need to be taken to not contact or otherwise damage the crowns of the trees that may extend into the construction area.
- Monitoring of New Grove Edges: It will be important to reassess and monitor the trees along the newly exposed tree grove edges following site clearing and periodically during construction and after high wind events to ensure they do not pose a high risk. This monitoring should occur for the next two to three storm seasons following site clearing.
- Sediment Fencing: Shift sediment fencing to outside the tree protection zones. If erosion control is required inside the tree protection zones, use straw wattles to minimize root zone disturbance of the trees to be retained.

Additional tree protection recommendations for the trees to be retained are provided in Attachment 4.

Conclusion

Thirty-eight (38) non-nuisance trees over 11-inch DBH in good condition are proposed to be retained at The Views Bornstedt Subdivision site. The required tree retention for the 12.739 acres site is 38 trees.

The trees to be retained will be adequately protected by adhering to the recommendations in this report.

Please contact me if you have questions, concerns, or need any additional information.

Sincerely,

Todd Prager

ASCA Registered Consulting Arborist #597 ISA Board Certified Master Arborist, WE-6723B

ISA Qualified Tree Risk Assessor AICP, American Planning Association

Todd Prager

Attachments: Attachment 1 - Topographic Survey with Existing Trees

Attachment 2 - Site Plans w/ Tree Retention and Protection

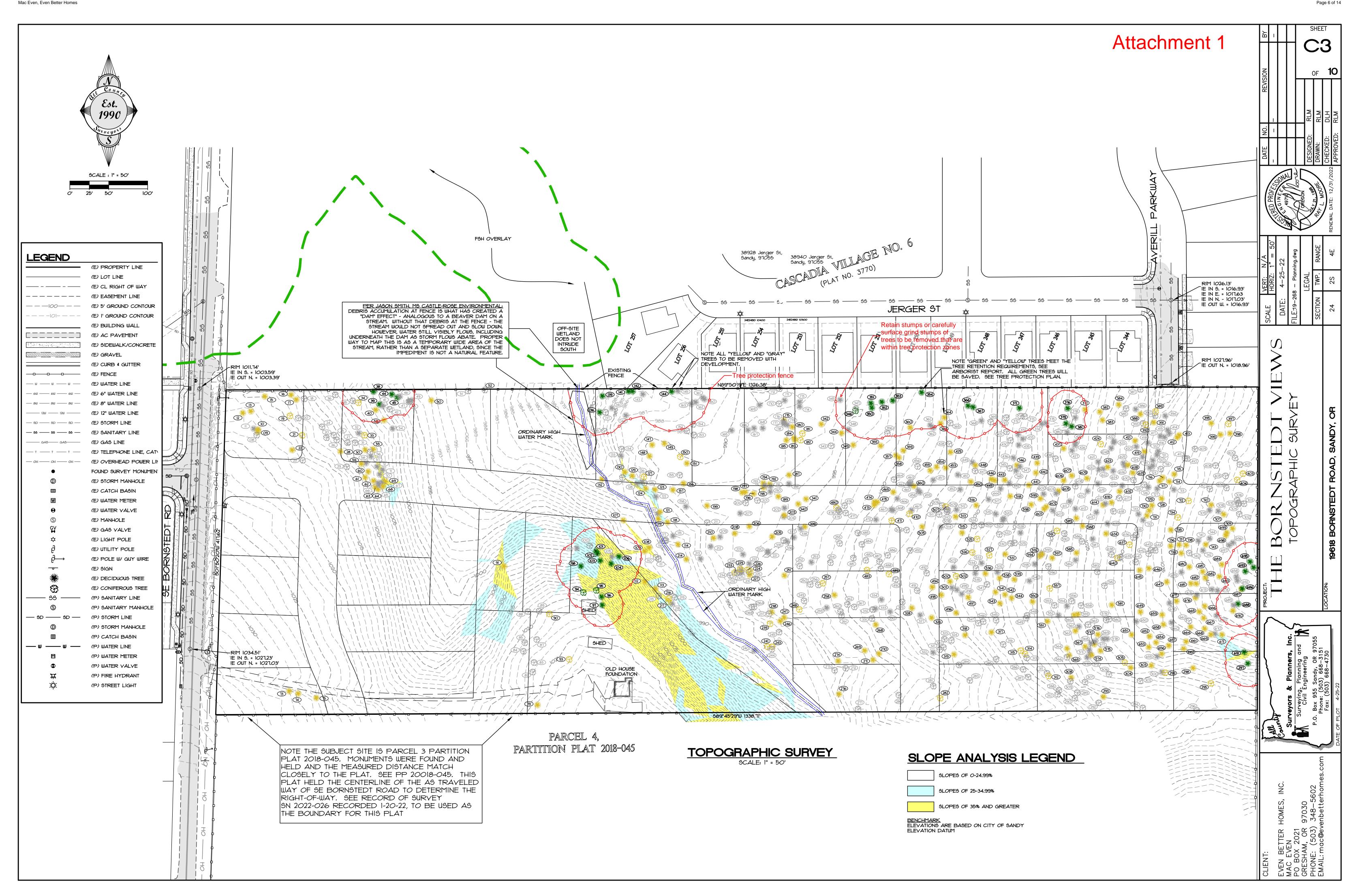
Attachment 3 - Tree Inventory

Attachment 4 - Tree Protection Recommendations Attachment 5 - Assumptions and Limiting Conditions Updated Tree Plan for Bornstedt Views Subdivision

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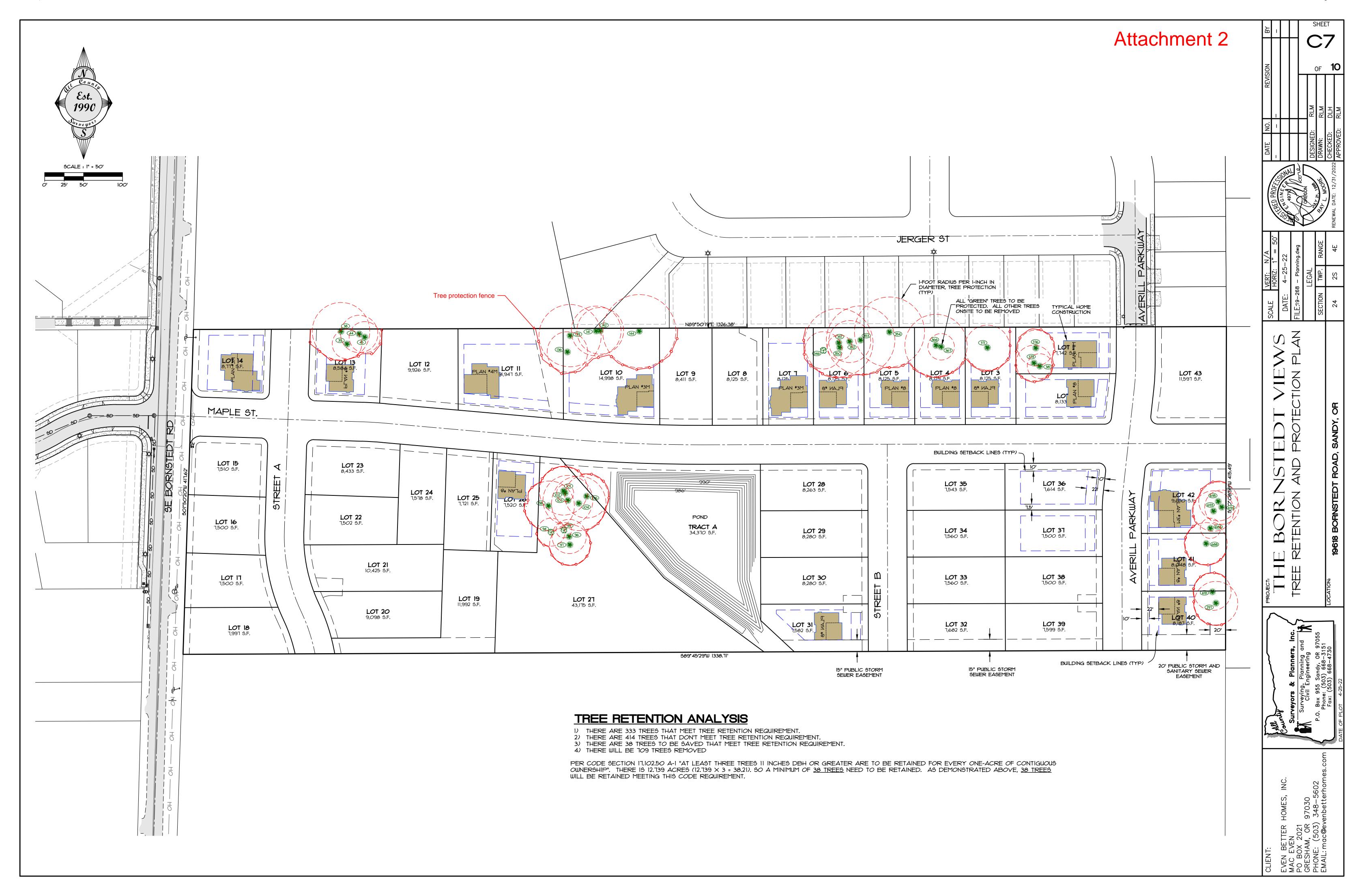
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Updated Tree Plan for Bornstedt Views Subdivision

April 25, 2022

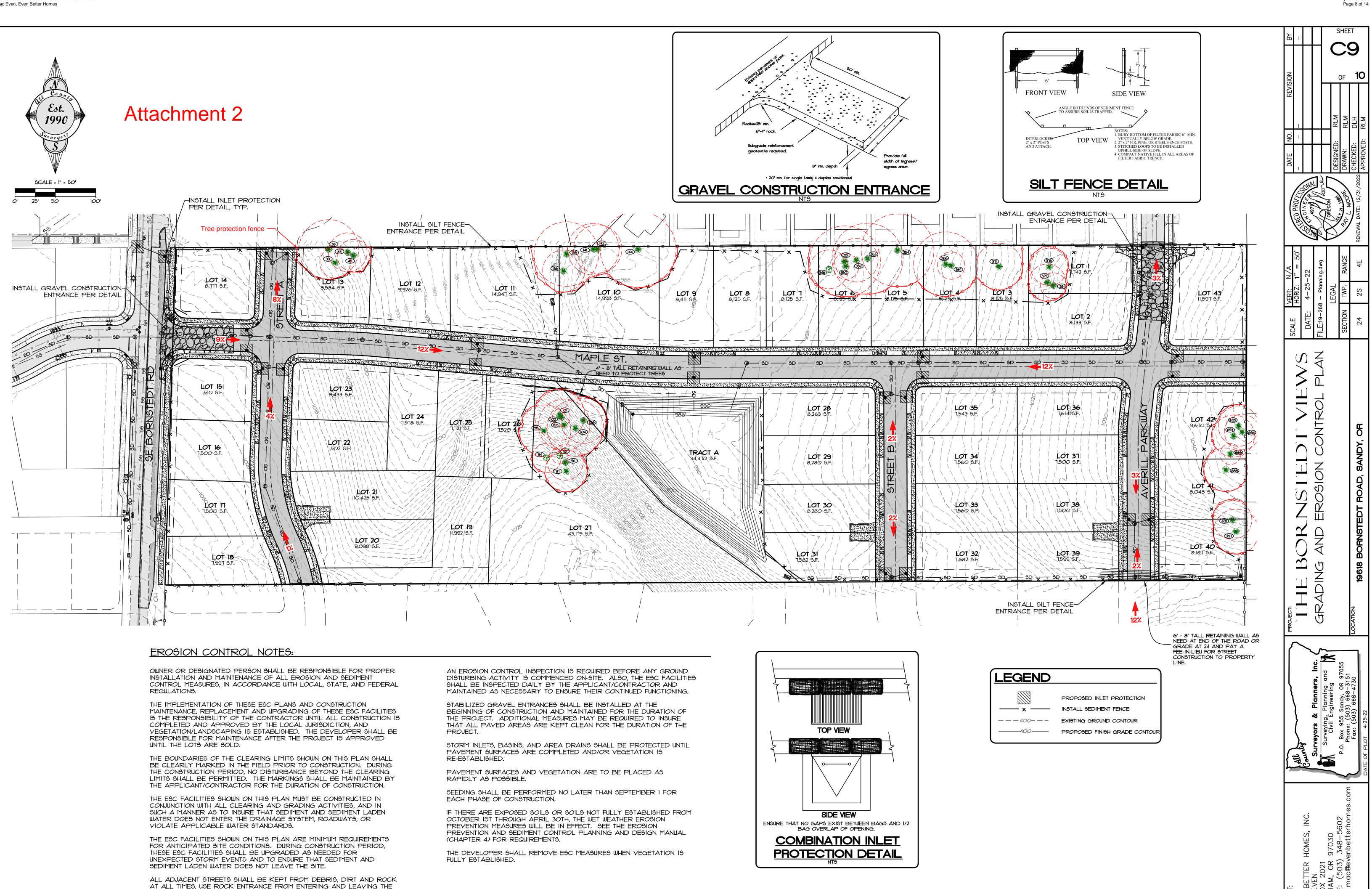
Mac Even, Even Better Homes



Updated Tree Plan for Bornstedt Views Subdivision
Mac Even, Even Better Homes

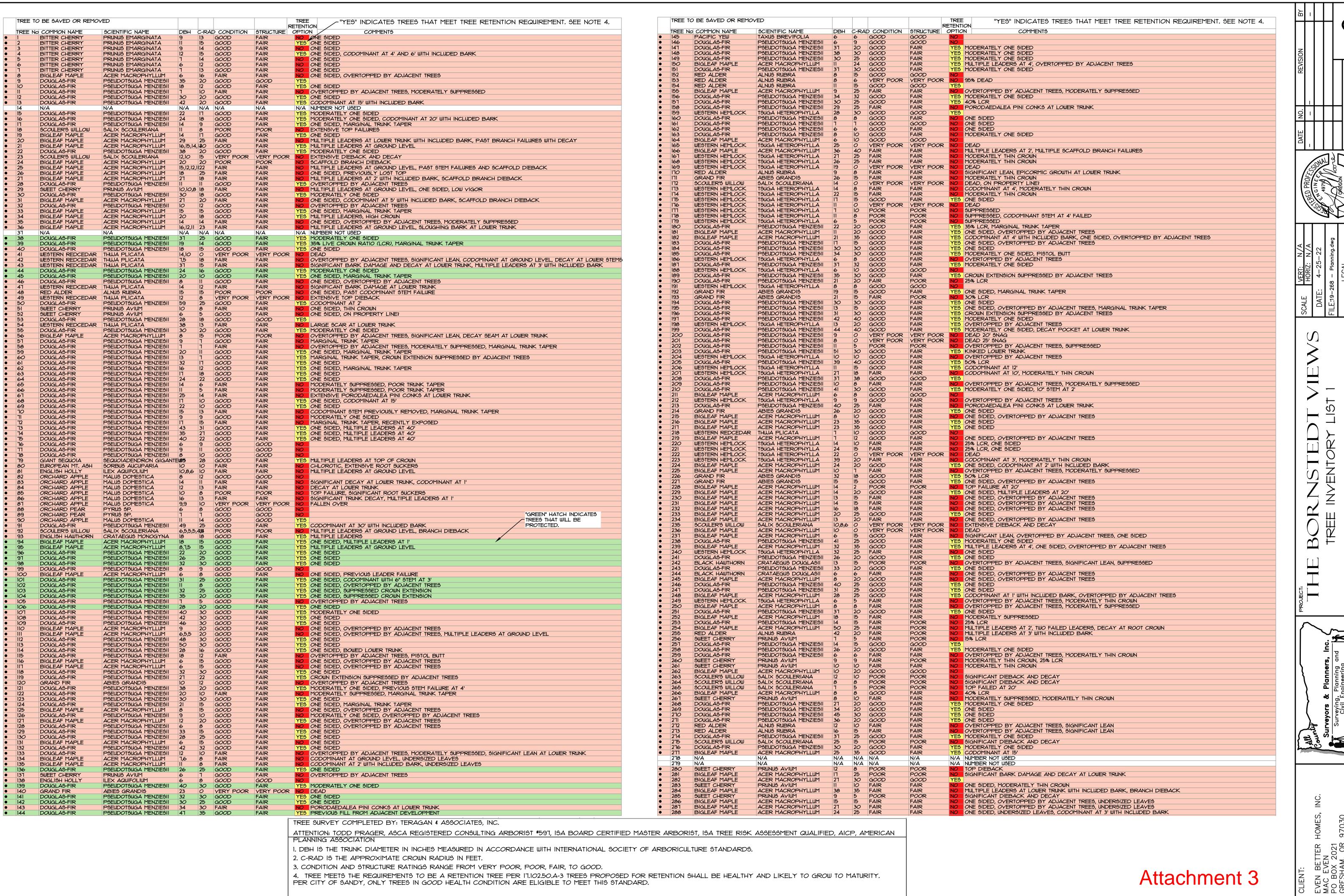
SITE, ANY DIRT OR DEBRIS LEAVING THE SITE SHALL BE CLEANED UP

IMMEDIATELY.



April 25, 2022

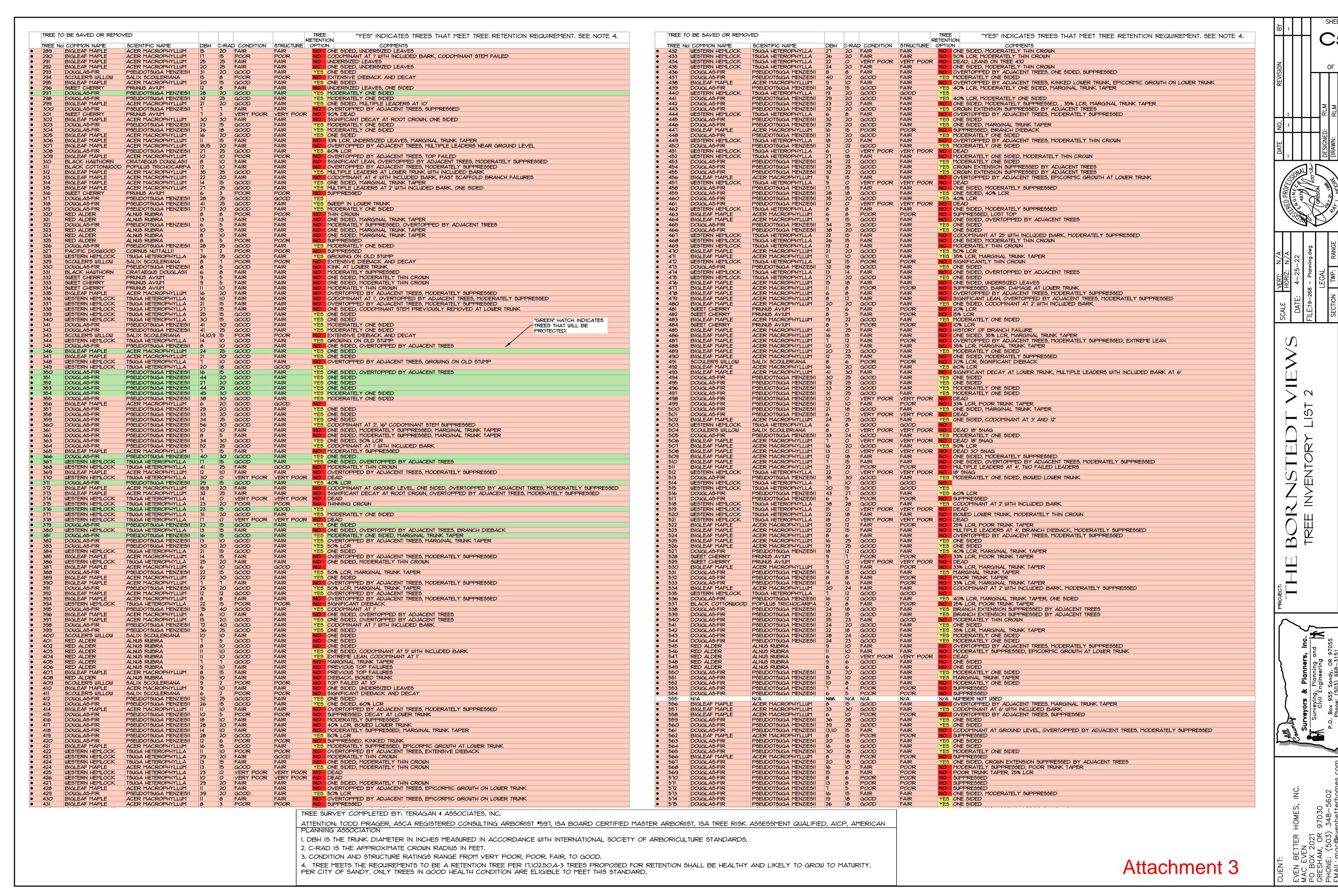
Updated Tree Plan for Bornstedt Views Subdivision April 25, 2022 Mac Even, Even Better Homes



Updated Tree Plan for Bornstedt Views Subdivision

April 25, 2022

Mac Even, Even Better Homes



Updated Tree Plan for Bornstedt Views Subdivision

Mac Even, Even Better Homes

April 25, 2022

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EE N	O BE SAVED OR REMO O COMMON NAME	SCIENTIFIC NAME) COŅDITION		TRI RETEN TURE OPT	NTION COMMENTS
16 17	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	15 27	10 15	G00D G00D	FAIR FAIR		ONE SIDED, MARGINAL TRUNK TAPER, 40% LCR 5 35% LCR, MARGINAL TRUNK TAPER
18 19	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	12 13	10 18	FAIR FAIR	FAIR FAIR	NO NO	ONE SIDÉD, OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED MODERATELY SUPPRESSED, EPICORMIC GROWTH AT LOWER TRUNK, CODOMINANT AT 2' WITH INCLUDED BARK
30 31	BIGLEAF MAPLE DOUGLAS-FIR	ACER MACROPHYLLUM PSEUDOTSUGA MENZIESII	1 45		FAIR GOOD	FAIR GOOD	NO YE	MODERATELY SUPPRESSED, EPICORMIC GROWTH AT LOWER TRUNK
32 33	SCOULER'S WILLOW BIGLEAF MAPLE	SALIX SCOULERIANA ACER MACROPHYLLUM	6	6	POOR GOOD	POOR FAIR		25% LCR, SIGNIFICANT DIEBACK
34 35	BIGLEAF MAPLE BIGLEAF MAPLE	ACER MACROPHYLLUM ACER MACROPHYLLUM	12		FAIR GOOD	FAIR FAIR	NO	ONE SIDED, OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED MODERATELY ONE SIDED
36	BIGLEAF MAPLE	ACER MACROPHYLLUM	10	16	FAIR	FAIR	NO	OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
87 88	WESTERN HEMLOCK DOUGLAS-FIR	TSUGA HETEROPHYLLA PSEUDOTSUGA MENZIESII	21	18	GOOD GOOD	FAIR FAIR	YE	ONE SIDED ONE SIDED, 60% LCR
39 30	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	44 11	8	GOOD POOR	FAIR POOR	NO	MODERATELY ONE SIDED SUPPRESSED
91 92	BIGLEAF MAPLE WESTERN HEMLOCK	ACER MACROPHYLLUM TSUGA HETEROPHYLLA	18 6		G00D G00D	FAIR FAIR		ONE SIDED ONE SIDED, OVERTOPPED BY ADJACENT TREES
93 94	WESTERN HEMLOCK DOUGLAS-FIR	TSUGA HETEROPHYLLA PSEUDOTSUGA MENZIESII	23 37	20	G00D G00D	FAIR FAIR		ONE SIDED, PUSHING AGAINST ADJACENT TREE ONE SIDED, PUSHING AGAINST ADJACENT TREE
95 96	WESTERN HEMLOCK BIGLEAF MAPLE	TSUGA HETEROPHYLLA ACER MACROPHYLLUM	7	8	GOOD POOR	GOOD	NO	
7 8	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	25 43	18 25	GOOD GOOD	FAIR FAIR	YE	ONE SIDED S ONE SIDED
9	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	26	18	GOOD	FAIR	YE	40% LCR, MARGINAL TRUNK TAPER, CROWN EXTENSION SUPPRESSED BY ADJACENT TREES
20 21	WESTERN HEMLOCK WESTERN HEMLOCK	TSUGA HETEROPHYLLA TSUGA HETEROPHYLLA	13 31	25	VERY POOR	FAIR	YE	25' SNAG S ONE SIDED
)2)3	DOUGLAS-FIR WESTERN HEMLOCK	PSEUDOTSUGA MENZIESII TSUGA HETEROPHYLLA	33 6	0	GOOD VERY POOR		POOR NO	
04 05	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	25 27	15	FAIR GOOD	POOR FAIR		33% LCR, POOR TRUNK TAPER ONE SIDED, MARGINAL TRUNK TAPER
26 27	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	34 11	25 10	G00D G00D	FAIR FAIR		6 40% LCR 6 OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
)ප)9	BIGLEAF MAPLE DOUGLAS-FIR	ACER MACROPHYLLUM PSEUDOTSUGA MENZIESII	6 39	8 25	POOR GOOD	POOR FAIR		SUPPRESSED, SIGNIFICANT LEAN, TOP FAILED MODERATELY ONE SIDED
0	DOUGLAS-FIR WESTERN HEMLOCK	PSEUDOTSUGA MENZIESII TSUGA HETEROPHYLLA	11	0	VERY POOR		POOR NO	DEAD
2 3	WESTERN HEMLOCK	TSUGA HETEROPHYLLA PSEUDOTSUGA MENZIESII	10	8	POOR POOR	POOR	NO	
4	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	42	25	GOOD	FAIR	YE	ONE SIDED
5 6	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	25 29	20	FAIR GOOD	FAIR FAIR	YE	MODERATELY SUPPRESSED SOME SIDED OVERTORDED BY ADJACENT TREES, SUPPRESSED
7 8	BIGLEAF MAPLE BIGLEAF MAPLE	ACER MACROPHYLLUM ACER MACROPHYLLUM	12	8 15	POOR FAIR	POOR FAIR	NO NO	OVERTOPPED BY ADJACENT TREES, SUPPRESSED ONE SIDED, BRANCH DIEBACK
9 20	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	29 9	0	FAIR VERY POOR		POOR NO	
!1 !2	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	17 18	1.0	FAIR FAIR	POOR FAIR		ONE SIDED, POOR TRUNK TAPER, 25% LCR OVERTOPPED BY ADJACENT TREES, TWO DEAD LEADERS AT 12'
?3 ?4	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	34 26	15	GOOD FAIR	FAIR FAIR	YE	ONE SIDED, 40% LCR, MARGINAL TRUNK TAPER MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER, CROWN EXTENSION SUPPRESSED BY ADJACENT TREE
.5 .6	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	10	6	FAIR VERY POOR	FAIR	NO	
17 18	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	24 25		FAIR GOOD	FAIR FAIR	NO	MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER, CROWN EXTENSION SUPPRESSED BY ADJACENT TREE MARGINAL TRUNK TAPER, CROWN EXTENSION SUPPRESSED BY ADJACENT TREES
29	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	25	18	GOOD	FAIR	YE	MARGINAL TRUNK TAPER, CROWN EXTENSION SUPPRESSED BY ADJACENT TREES, 40% LCR
30 31	BIGLEAF MAPLE DOUGLAS-FIR	ACER MACROPHYLLUM PSEUDOTSUGA MENZIESII	13	8	POOR FAIR	POOR FAIR	NO	MODERATELY SUPPRESSED, TOP FAILED MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER
32 33	DOUGLAS-FIR WESTERN HEMLOCK	PSEUDOTSUGA MENZIESII TSUGA HETEROPHYLLA	29 10	8	GOOD POOR	FAIR		50% LCR, CROWN EXTENSION SUPPRESSED BY ADJACENT TREES SUPPRESSED, SIGNIFICANT DIEBACK
34 35	WESTERN HEMLOCK BIGLEAF MAPLE	TSUGA HETEROPHYLLA ACER MACROPHYLLUM	26 9		GOOD FAIR	FAIR FAIR		MODERATELY ONE SIDED MODERATELY SUPPRESSED
36 37	WESTERN HEMLOCK BIGLEAF MAPLE	TSUGA HETEROPHYLLA ACER MACROPHYLLUM	23 16	0	VERY POOR		POOR NO	DEAD SONE SIDED, 35% LCR
38 39	BIGLEAF MAPLE BIGLEAF MAPLE	ACER MACROPHYLLUM ACER MACROPHYLLUM	16	20	FAIR GOOD	FAIR FAIR	NO	STEM FAILURE AND DECAY ONE SIDED, MARGINAL TRUNK TAPER
10	BIGLEAF MAPLE	ACER MACROPHYLLUM	11	15	GOOD	FAIR	YE	ONE SIDED, MARGINAL TRUNK TAPER
41 42	BIGLEAF MAPLE BIGLEAF MAPLE	ACER MACROPHYLLUM ACER MACROPHYLLUM	10	10	FAIR FAIR	FAIR FAIR	NO	OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED, CODOMINANT AT 2' WITH INCLUDED BARK ONE SIDED, MODERATELY SUPPRESSED
\$3 \$4	BIGLEAF MAPLE BIGLEAF MAPLE	ACER MACROPHYLLUM ACER MACROPHYLLUM	9	8	FAIR FAIR	FAIR FAIR		ONE SIDED, MODERATELY SUPPRESSED ONE SIDED, MODERATELY SUPPRESSED
\$5 \$6	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	46 45		G00D G00D	FAIR FAIR		ONE SIDED ONE SIDED, 50% LCR
17 18	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	44	25 25	G00D G00D	FAIR FAIR		5 40% LCR 5 40% LCR
19 50	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	51 9	25	GOOD FAIR	FAIR FAIR	YE	MODERATELY ONE SIDED ONE SIDED, OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
51	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	23 14	13	GOOD GOOD	FAIR FAIR	YE	MARGINAL TRUNK TAPER ONE SIDED, MARGINAL TRUNK TAPER
53 54	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	23 15	15	GOOD GOOD	FAIR FAIR	YE	ONE SIDED, FIARCHINAL TRUNK ONE SIDED, KINKED LOWER TRUNK CROWN EXTENSION SUPPRESSED BY ADJACENT TREES, MARGINAL TRUNK TAPER
55	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	7	5	POOR	POOR	NO	OVERTOPPED BY ADJACENT TREES, SUPPRESSED
56 57	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	23 23		GOOD GOOD	FAIR FAIR	YE	MARGINAL TRUNK TAPER MARGINAL TRUNK TAPER
58 59	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	16 24		GOOD GOOD	FAIR FAIR	YE	MARGINAL TRUNK TAPER, 35% LCR MARGINAL TRUNK TAPER, 40% LCR
50 51	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	10	15	FAIR GOOD	FAIR FAIR	YE	ONE SIDED, LARGE SCAR AT LOWER TRUNK MODERATELY ONE SIDED, MARGINAL TRUNK TAPER
52 53	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	14 8	12 15	G00D G00D	FAIR FAIR		OVERTOPPED BY ADJACENT TREES
54 55	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	14 23	12 18	G00D G00D	FAIR FAIR		ONE SIDED, MARGINAL TRUNK TAPER ONE SIDED, MARGINAL TRUNK TAPER
56 57	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	22 14	18	GOOD GOOD	FAIR	YE	MODERATELY ONE SIDED, MARGINAL TRUNK TAPER ONE SIDED, MARGINAL TRUNK TAPER
58 59	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	29 19	20	GOOD GOOD	FAIR FAIR	YE	ONE SIDED, MARGINAL TRUNK TAPER ONE SIDED, MARGINAL TRUNK TAPER
10	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	17	18	FAIR	FAIR	NO	MARGINAL TRUNK TAPER, MODERATELY SUPPRESSED
11 12	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	24 26	18	GOOD FAIR	FAIR FAIR		ONE SIDED CODOMINANT AT 3' WITH INCLUDED BARK, MODERATELY SUPPRESSED
13 14	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	9	22	FAIR GOOD	FAIR FAIR	NO NO	
15 16	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	9 24	20	VERY POOR GOOD	FAIR		ONE SIDED, MARGINAL TRUNK TAPER
17 18	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	16		GOOD GOOD	FAIR FAIR	YE	50% LCR, MARGINAL TRUNK TAPER ONE SIDED, MARGINAL TRUNK TAPER
19 30	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	6 22	6	FAIR GOOD	FAIR FAIR	NO	MODERATELY SUPPRESSED, OVERTOPPED BY ADJACENT TREES CODOMINANT AT 2' WITH INCLUDED BARK, MODERATELY SUPPRESSED
31	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	19	15	GOOD FAIR	FAIR POOR	YE	5 40% LCR, MARGINAL TRUNK TAPER
31 32	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	15 15	14	FAIR	POOR	NO	33% LCR, POOR TRUNK TAPER "GREEN" HATCH INDICA "GREEN" HATCH INDICA "GREEN" HATCH INDICA "TOPES THAT IN IN IN IN INC.
32 33	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	19 17	15	GOOD GOOD	FAIR FAIR	YE	5 40% LCR, MARGINAL TAPER 5 40% LCR, MARGINAL TAPER, BOWED TRUNK PROTECTED.
34 35	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	23 19	15	G00D G00D	FAIR FAIR	YE	MODERATELY ONE SIDED MARGINAL TRUNK TAPER, 40% LCR, PREVIOUS LEADER FAILURE AT 20'
36 37	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	13 29	18	GOOD GOOD	FAIR FAIR	YE	ONE SIDED MODERATELY ONE SIDED
38 39	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	27 6	20	GOOD FAIR	FAIR FAIR	YE	MODERATELY ONE SIDED OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
90	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	37 24		GOOD GOOD	FAIR FAIR	YE	MODERATELY ONE SIDED SOURCE SIDED
92	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	9	5	POOR	POOR	NO	SUPPRESSED
93 94	DOUGLAS-FIR DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	26 22	16	GOOD GOOD	FAIR FAIR	YE	ONE SIDED ONE SIDED
95 96	RED ALDER DOUGLAS-FIR	PSEUDOTSUGA MENZIESII PSEUDOTSUGA MENZIESII	25 6	5	GOOD POOR	FAIR POOR	NO	ONE SIDED SUPPRESSED
7 98	RED ALDER DOUGLAS-FIR	ALNUS RUBRA PSEUDOTSUGA MENZIESII	14 17	0	VERY POOR GOOD	FAIR	POOR NO	
99	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	19	12	GOOD FAIR	FAIR FAIR	YE	ONE SIDED, MARGINAL TRUNK TAPER OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
01	DOUGLAS-FIR RED ALDER	PSEUDOTSUGA MENZIESII ALNUS RUBRA	28	22	GOOD FAIR	FAIR FAIR	YE	MODERATELY ONE SIDED SIGNIFICANT LEAN, THIN CROWN
)3	SCOULER'S WILLOW	SALIX SCOULERIANA	13	18	POOR	POOR	NO	SIGNIFICANT LEAN, SIGNIFICANT DECAY
)4)5	RED ALDER RED ALDER	ALNUS RUBRA ALNUS RUBRA	6		FAIR	FAIR FAIR		THIN CROWN
)6)7	RED ALDER WESTERN REDCEDAR		6 28	5 18	FAIR GOOD	FAIR GOOD	YE	THIN CROWN, CODOMINANT AT 6'
)8)9	WESTERN REDCEDAR DOUGLAS-FIR		7	7	GOOD POOR	GOOD	NO	
)) 	DOUGLAS-FIR BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII ACER MACROPHYLLUM	52 6	25 15	GOOD FAIR	GOOD FAIR	YE	
2	BIGLEAF MAPLE	ACER MACROPHYLLUM	11	12	GOOD	FAIR	YE	OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
3 4	WESTERN HEMLOCK DOUGLAS-FIR	TSUGA HETEROPHYLLA PSEUDOTSUGA MENZIESII	30 44	20	VERY POOR	FAIR		DEAD S 50% LCR ONE SIDED, OVERTOPPED BY ADJACENT TREES
5	BIGLEAF MAPLE	ACER MACROPHYLLUM	14	15	GOOD	FAIR		A CONTRACT OF A CONTRACT AND A CONTR

DEE NO							TREE	
	COMMON NAME	SCIENTIFIC NAME	DRII	7 .D.A1	CONDITION	STRUCTURF (ETENT	
718	BIGLEAF MAPLE	ACER MACROPHYLLUM	12		POOR	POOR		TOP FAILED, SUPPRESSED
•••	DOUGLAS-FIR		23	_	FAIR	FAIR	NO	ONE SIDED, MARGINAL TRUNK TAPER, KINKED TRUNK, MODERATELY SUPPRESSED
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	9		POOR	POOR		SUPPRESSED, EXTENSIVE PORODAEDALEA PINI CONKS
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	14		FAIR			ONE SIDED, MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER
	DOUGLAS-FIR		17		FAIR	FAIR		ONE SIDED, MODERATELT SUPPRESSED, MARGINAL TRUNK TAPER ONE SIDED, MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	32		FAIR	FAIR		ONE SIDED, MODERATELT SUPPRESSED, MARGINAL TRUNK TAPER ONE SIDED, MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER, KINKED TRUNK
	DOUGLAS-FIR		19			FAIR		
	BIGLEAF MAPLE	PSEUDOTSUGA MENZIESII		10 15	FAIR FAIR		NO	ONE SIDED, MODERATELY SUPPRESSED, MARGINAL TRUNK TAPER OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
		ACER MACROPHYLLUM		כו		FAIR		
	DOUGLAS-FIR		13	8	FAIR	POOR	NO	MODERATELY SUPPRESSED, POOR TRUNK TAPER
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	11	1	FAIR			MODERATELY SUPPRESSED, POOR TRUNK TAPER
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII			G00D	FAIR		ONE SIDED, 35% LCR, MARGINAL TRUNK TAPER
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	24	18	G00D	FAIR		ONE SIDED, 60% LCR, MARGINAL TRUNK TAPER
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII			G00D	FAIR		CROWN EXTENSION SUPPRESSED BY ADJACENT TREES, 50% LCR
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	35		G00D	FAIR		ONE SIDED
	WESTERN HEMLOCK	TSUGA HETEROPHYLLA	27		FAIR			ONE SIDED, DECAY POCKET AT ROOT CROWN
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	27		FAIR	FAIR		EXTREME KINK IN TRUNK
	BIGLEAF MAPLE	ACER MACROPHYLLUM	13		G00D	FAIR		MODERATELY ONE SIDED
	DOUGLAS-FIR				GOOD	FAIR		MODERATELY ONE SIDED
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	IΤ		GOOD	FAIR		ONE SIDED, 40% LCR
	DOUGLAS-FIR		15		G00D	FAIR		ONE SIDED, 50% LCR
	DOUGLAS-FIR		15	10	G00D	FAIR		35% LCR, MARGINAL TRUNK TAPER
	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	16		GOOD	FAIR		35% LCR, MARGINAL TRUNK TAPER
40	BIGLEAF MAPLE	ACER MACROPHYLLUM	12	8	FAIR			OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
41	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	7	٦	G00D	FAIR	NO	ONE SIDED, OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
142	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	7		POOR	POOR	NO	SUPPRESSED
143	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	41	20	GOOD	FAIR	YES	MODERATELY ONE SIDED
44	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	9	12	GOOD	FAIR	NO	ONE SIDED, OVERTOPPED BY ADJACENT TREES, MODERATELY SUPPRESSED
145	BIGLEAF MAPLE	ACER MACROPHYLLUM	12	0	VERY POOR	VERY POOR	NO	DEAD
146	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	30	18	GOOD	FAIR	YES	ONE SIDED
47	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	25	10	FAIR	POOR		ONE SIDED, SIGNIFICANT PORODAEDALEA PINI CONKS AT LOWER TRUNK
48	DOUGLAS-FIR	PSEUDOTSUGA MENZIESII	20		FAIR	POOR		ONE SIDED, SIGNIFICANT PORODAEDALEA PINI CONKS AT LOWER TRUNK
49	ENGLISH WALNUT	JUGLANS REGIA	14,14,14		FAIR	FAIR	NO	MULTIPLE LEADERS AT GROUND LEVEL, THIN CROWN, NEAR TREE 89, COULD BE THREE TREES,
								NOT TAGGED AND SIZE ESTIMATED BECAUSE OF EXTENSIVE BLACKBERRY GROWTH
				1				
				+				
			+					
							1	

TREE SURVEY COMPLETED BY: TERAGAN & ASSOCIATES, INC.

ATTENTION: TODD PRAGER, ASCA REGISTERED CONSULTING ARBORIST #597, ISA BOARD CERTIFIED MASTER ARBORIST, ISA TREE RISK ASSESSMENT QUALIFIED, AICP, AMERICAN PLANNING ASSOCIATION

- 1. DBH 15 THE TRUNK DIAMETER IN INCHES MEASURED IN ACCORDANCE WITH INTERNATIONAL SOCIETY OF ARBORICULTURE STANDARDS.
- 2. C-RAD IS THE APPROXIMATE CROWN RADIUS IN FEET.
- 3. CONDITION AND STRUCTURE RATINGS RANGE FROM YERY POOR, POOR, FAIR, TO GOOD.
- 4. TREE MEETS THE REQUIREMENTS TO BE A RETENTION TREE PER 17.102.50.A-3 TREES PROPOSED FOR RETENTION SHALL BE HEALTHY AND LIKELY TO GROW TO MATURITY.
 PER CITY OF SANDY, ONLY TREES IN GOOD HEALTH CONDITION ARE ELIGIBLE TO MEET THIS STANDARD.

TREE RETENTION ANALYSIS

TREES THAT MEET TREE RETENTION REQUIREMENT. SEE NOTE 4. (NUMBER OF TREES = 333)

TREES THAT DON'T MEET TREE RETENTION REQUIREMENT. SEE NOTE 4. (NUMBER OF TREES = 414)

TREES TO BE SAVED THAT MEET TREE RETENTION REQUIREMENT. = 38 TREES

TREES TO BE REMOVED. (NUMBER OF TREES = 709)

PER CODE SECTION 17.102.50 A-1 "AT LEAST THREE TREES 11 INCHES DBH OR GREATER ARE TO BE RETAINED FOR EVERY ONE-ACRE OF CONTIGUOUS OWNERSHIP". THERE IS 12.739 ACRES (12.739 X 3 = 38.21), SO A MINIMUM OF 38 TREES NEED TO BE RETAINED. AS DEMONSTRATED ABOVE, 38 TREES WILL BE RETAINED MEETING THIS CODE REQUIREMENT.



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Attachment 4 Additional Tree Protection Recommendations

The following recommendations meet or exceed City of Sandy Code requirements:

Before Construction Begins

- 1. Notify all contractors of tree protection procedures. For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection.
 - a. Hold a tree protection meeting with all contractors to explain the goals of tree protection.
 - b. Have all contractors sign memoranda of understanding regarding the goals of tree protection. The memoranda should include a penalty for violating the tree protection plan. The penalty should equal the resulting fines issued by the local jurisdiction plus the appraised value of the tree(s) within the violated tree protection zone per the current Trunk Formula Method as outline in the current edition of the *Guide for Plant Appraisal* by the Council of Tree & Landscape Appraisers. The penalty should be paid to the owner of the property.

2. Fencing

- a. Trees to remain in the grove should be protected by installation of tree protection fencing as shown in Attachments 1 and 2.
- b. The fencing should be put in place before the ground is cleared in order to protect the trees and the soil around the trees from disturbances.
- c. Fencing should be established by the project arborist based on the needs of the trees to be protected and to facilitate construction.
- d. Fencing should consist of 6-foot high steel fencing on concrete blocks or 6-foot metal fencing secured to the ground with 8-foot metal posts placed no farther than ten feet apart to prevent it from being moved by contractors, sagging, or falling down.
- e. Fencing should remain in the position that is established by the project arborist and not be moved without approval from the project arborist until final project approval.

3. Signage

a. All tree protection fencing should have signage as follows so that all contractors understand the purpose of the fencing:

TREE PROTECTION ZONE

<u>DO NOT REMOVE OR ADJUST THE APPROVED</u> LOCATION OF THIS TREE PROTECTION FENCING.

Please contact the project arborist if alterations to the approved location of the tree protection fencing are necessary.

Todd Prager, Project Arborist - 971-295-4835

b. Signage should be placed every 75-feet or less.

During Construction

- 1. Protection Guidelines Within the Tree Protection Zones:
 - a. No new buildings; grade change or cut and fill, during or after construction; new impervious surfaces; or utility or drainage field placement should be allowed within the tree protection zones.
 - b. No traffic should be allowed within the tree protection zones. This includes but is not limited to vehicle, heavy equipment, or even repeated foot traffic.
 - c. No storage of materials including but not limiting to soil, construction material, or waste from the site should be permitted within the tree protection zones. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
 - d. Construction trailers should not to be parked/placed within the tree protection zones.
 - e. No vehicles should be allowed to park within the tree protection zones.
 - f. No other activities should be allowed that will cause soil compaction within the tree protection zones.
- 2. The trees should be protected from any cutting, skinning or breaking of branches, trunks or woody roots.
- 3. The project arborist should be notified prior to the cutting of woody roots from trees that are to be retained to evaluate and oversee the proper cutting of roots with sharp cutting tools. Cut roots should be immediately covered with soil or mulch to prevent them from drying out.
- 4. Trees that have roots cut should be provided supplemental water during the summer months
- 5. Any necessary passage of utilities through the tree protection zones should be by means of tunneling under woody roots by hand digging or boring with oversight by the project arborist.
- 6. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

After Construction

- 1. Carefully landscape the areas within the tree protection zones. Do not allow trenching for irrigation or other utilities within the tree protection zones.
- 2. Carefully plant new plants within the tree protection zones. Avoid cutting the woody roots of trees that are retained.
- 3. Do not install permanent irrigation within the tree protection zones unless it is drip irrigation to support a specific planting or the irrigation is approved by the project arborist.
- 4. Provide adequate drainage within the tree protection zones and do not alter soil hydrology significantly from existing conditions for the trees to be retained.
- 5. Provide for the ongoing inspection and treatment of insect and disease populations that can damage the retained trees and plants.
- 6. The retained trees may need to be fertilized if recommended by the project arborist.
- 7. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

Attachment 5 Assumptions and Limiting Conditions

- 1. Any legal description provided to the consultant is assumed to be correct. The site plans and other information provided by Even Better Homes and their consultants was the basis of the information provided in this report.
- 2. It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
- 3. The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
- 4. Loss or alteration of any part of this delivered report invalidates the entire report.
- 5. Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
- 6. The consultant's role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
- 7. The purpose of this report is to:
 - Assess the trees within the development site;
 - Identify the trees to be removed and retained; and
 - Provide tree protection recommendations for the trees to be retained.