

APPENDIX K

Tree Report

June 2, 2017

Melanie Poe
16420 SE McGillivray Boulevard, #103-197
Vancouver, WA 98660

RE: Dawson's Ridge SUB Tree Protection Plan and Tree Report

Ms. Poe:

As requested, a site visit was performed on March 2, 2017 and May 8, 2017, to examine the trees on your approximately 37-acre site, Dawson's Ridge SUB, located in the City of Camas, Clark County, Washington. From my understanding, the proposed development will include the construction of streets and utilities for a 43-lot subdivision. The site is currently pasture and field for equestrian use with associated barns and arenas. The site is forested with a mix of conifer and hardwood species along the west and north slopes.

The on- and off-site trees shown on the plans were surveyed by Olson Engineering, Inc. (Olson) and reviewed in the field by a certified arborist during the site visit. Attached is a written Tree Report, Tree Inventory List, and Tree Preservation and Removal Plan.

I am a forester/arborist with a bachelor's degree in Forest Engineering from Oregon State University. I have worked in forestry and urban arboriculture for over eight years in the Pacific Northwest. I am also a Certified Arborist per the International Society of Arboriculture (ISA; Certification Number: PN-7554A) and Tree Risk Assessment Qualified per the ISA.

In summary, several trees on-site are recommended for removal due to site grading and risk hazard reduction from windthrow potential. Trees within the proposed open spaces are intended for preservation except for two trees recommended for removal due to stormwater conveyance pipe location and some grading activities. I hope you will find this information useful for your needs.

If you have any questions, please give me a call at (360) 882-0419. It was a pleasure working with you on this assignment.

Sincerely,
AKS ENGINEERING & FORESTRY, LLC



Bryce D. Hanson, PE, LSIT, Certified Arborist

Attachments

Dawson's Ridge Subdivision-SUB Tree Report
Detailed Tree Inventory Table
Tree Preservation and Removal Plan



BRYCE D. HANSON
CERTIFICATE NUMBER: PN 7554A
EXPIRATION DATE: 06/30/19

Dawson's Ridge Subdivision-SUB Tree Report

Date: June 2017

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Technical Appendices

Appendix A: Detailed Tree Inventory Table

Appendix B: Tree Preservation and Removal Plan

Tree Report

DAWSON'S RIDGE SUBDIVISION-SUB

CAMAS, WASHINGTON

Location

The project site is located on NW McIntosh Road within the City of Camas (City), Clark County, Washington. The site is located on Parcel Serial Numbers 127162-000, 127162-003, 127162-007, 127162-009, 127174-000, 127175-000, and 127144-000 and is approximately 37 acres in size.

General Site Notes

This report is for the approximate 37-acre site and is based on the proposed Density Transfer Subdivision (SUB) plan provided by other consultants. The existing site consists of five parcels of mostly pasture area with existing barns and riding arenas for equestrian use with forested slopes to the west and north. The proposed development will include the construction of streets and utilities for a 43-lot subdivision. Tree protection will be established at the beginning of development and be maintained through the entire length of the project. The site consists of dispersed conifer and hardwood trees along pasture boundaries and a stand of mixed hardwood and conifer trees within proposed open spaces. Oregon white oaks were not found on site during the site visits conducted on March 2, 2017 and May 8, 2017.

On-Site Tree Condition

The on-site trees were initially inventoried by the project surveying company and verified and/or modified by a Certified Arborist with AKS Engineering & Forestry, LLC (AKS), as detailed in Appendix A. Not all trees existing on site were located by the surveyors for their Existing Conditions Plan. It appears larger/prominent trees were only located. Surveyed trees appeared to be consistent with the City's definition for significant trees as defined in the City of Camas Municipal Code Chapter 18.03.050, Environmental Definitions. Any changes made to inventory data are summarized in the Detailed Tree Inventory Table and shown in the Tree Preservation and Removal Plan (Appendix B).

Most of the trees within the existing pasture area are expected to be removed except for trees along the western and northern boundaries which are reserved for open spaces. All on-site trees are in relatively good health and have fair to good structure, with some trees having significant defects affecting their structure due to high winds in the area. Tree removal is recommended mainly on location and from root impact caused by development activities.

Stormwater Conveyance Trenching and Adjacent Tree Protection

Proposed activities require that stormwater conveyance be routed downslope, adjacent to several trees, from a storm facility into an existing access easement in the northwest corner of the site. The conveyance piping will be within a 15-ft stormwater easement, which will be the assumed limits of disturbance for critical root area impacts on the adjacent trees. The stormwater conveyance will require trenching to unknown depths. Based on the Tree Preservation and Removal Plan, four trees are recommended for removal. The May 8th site visit determined that two of those trees have died since the original site survey while the remaining two trees recommended for removal will be within the trenching limits for the pipe and be unsafe to retain.

It is recommended that an arborist be on site during the trench excavation to determine if other adjacent trees will need to be removed based on the impacts to the critical root zone. Mitigation options may change due to what is observed during trench excavation for each tree adjacent to the trenching area. Excavators should be following guidelines outlined within this report on excavating within the critical root zone. If it is determined that a tree has been impacted to a level that will make the tree a hazard to its surroundings, then removal of that tree may be recommended.

Open Space Proposed Trail Extension

A trail exists along the north boundary through the proposed open space and terminates just north of the proposed storm facility. The proposed plan is to complete this trail and tie it into the northwest corner near an existing gate. Activities during the construction of the trail will consist of minor surface excavation and fill of trail surface material. Therefore, minimal impacts to adjacent trees is anticipated and no trees are proposed for removal due to the trail extension. Care should be taken around all trees during trail construction to ensure tree health is maintained.

Lot 39 Proposed Grading Impacts

Five trees are recommended for removal along the eastern boundary of lot 39 due to proposed grading activities. A retaining wall is proposed and will be creating too much fill above the roots of adjacent trees.

Site Entrance and Stormwater Facility Tree Protection

To the west of the site entrance there are two trees that will need to be protected from proposed development. The Tree Preservation and Removal Plan shows the limits of the critical root protection zone of both trees and the location of tree protection fencing that will need to be installed.

To the east of the site entrance, there are four trees shown on the existing conditions plan. Three of these trees have died since the original survey while there is one tree still standing. This single tree is recommended for removal based on its structure and apparent health.

Rear Yard Stormwater Conveyance Adjacent to Lots 31 & 32

One tree is recommended for removal along the western boundary of lots 31 and 32. There is a number of trees along the rear boundary of these lots but due to the proximity it is recommended that an arborist be on site during the grading and pipe conveyance trench excavation to determine if the adjacent trees will need to be removed based on the impacts to the critical root zone. Mitigation options may change due to what is observed during these activities for each tree. Excavators should be following guidelines outlined within this report on excavating within the critical root zone. If it is determined that a tree has been impacted to a level that will make the tree a hazard to its surroundings, then removal of that tree may be recommended.

Off-Site Trees

The proposed development parcels surround six existing parcels with existing residences and landscaping. Trees within these existing parcels will be protected based on the current proposed development boundary. If the proposed boundary must change, reassessment of trees adjacent to the development boundary should be performed to establish proper tree protection measures.

There is a single off-site Oregon white oak tree that is to the southeast of proposed development activities. It is expected that no impacts will occur to this tree. The oak tree is approximately 70 +/- feet off the proposed boundary line.

Designing for Tree Preservation

Designing for tree preservation indicates trees as a considerably important site feature. The goal of tree preservation is to have trees remain as safe assets to the site for years to come. Trees to be preserved must be carefully selected to ensure they will survive the construction impacts, adapt to the new environment, and perform well in the new landscape. A suitability assessment for preservation evaluates tree health, structure, age, and species factors. The consultant gathers information from the assessment on the individual trees and makes recommendations as to which trees are suitable for preservation and how much undisturbed space they will require. The consultant also provides specific guidelines regarding grading, drainage, trenching, protected areas, root pruning, etc.

Tree Characteristics and Their Suitability for Preservation

Trees vary in their suitability for preservation based on their inherent characteristics and future response to construction impacts. Trees that are structurally unstable, in poor health, or unlikely to survive construction impacts could be a dangerous liability to future neighborhoods. A good tree preservation plan will justify the pre-construction removal of trees likely to die or become a tree with a risk of failure higher than the acceptable threshold after construction. The factors to be evaluated include:

Tree Health

Healthy, vigorous trees are more adaptable than non-vigorous trees in regards to tolerating construction-related stresses such as root removal, changes in grade, changes in soil moisture, and soil compaction. These healthy trees are also better able to adapt to the changed site conditions occurring after development.

Tree Structure

Trees with defects such as decayed wood, poor crown structure from past manual “topping” or natural broken tops, and co-dominant trunks with poor attachments are not suitable for preservation in areas where people or property could be injured or damaged. Such defects cannot be treated and may lead to failure.

Species

Although trees require protection to avoid injury, species vary widely in their ability to withstand damage and changes in their environment.

Tree Age

As a tree ages, its capacity to overcome injury, adapt to changes in its environment, and resist pests declines. For these reasons, mature and over-mature trees are less adaptable to tolerate construction impacts and remain as assets than young and semi-mature trees. Young vigorous trees can generate new tissue and adapt to a new environment better than older trees.

Tree Size/Height

Larger, taller trees are capable of hitting targets a greater distance away from the tree and thus cause greater damage. Taller trees also provide a larger wind “sail,” catching more wind and being more prone

to blowing down in a large storm. Coupling this “sail” effect with the structural weakening of root removal/disturbance can lead to a higher than acceptable windthrow risk.

Tree Location

The best candidates for preservation are single trees developed as individual specimens, as they typically have uniform canopies and well-tapered trunks. Trees growing in groups do not function well as individuals because they often have tall, poorly-shaped trunks, irregularly-shaped crowns, and are prone to failure and decline when their neighbors are removed.

The arboricultural consultant weighs each of the above factors and makes recommendations as to which trees are likely to thrive and be a long-term asset to the new development, as well as recommendations to remove those trees likely to have an unacceptable risk of failure and become a liability in the new development.

Guidelines for the Area Required to Preserve a Tree

In order to preserve a tree, a designated area around the specimen must be protected to ensure the tree is not physically damaged and the roots are protected. A method to calculate this area uses the diameter at breast height (DBH), species, and age of the tree. The DBH is multiplied by a factor (based on the tree age and species tolerance for disturbance) ranging from a 0.5-foot radius to a 1.5-foot radius (often a 1-foot radius per inch DBH from the trunk is used for an average) and the resulting area is called the “Optimal Tree Protection Zone.” The general guidelines for preservation are that you do not want to disturb more than 1/3 of this area, but with healthy vigorous trees, up to 50% of the area could be disturbed. In addition to these percentages, excavation should not take place within 10 feet of the base of a tree to avoid the loss of structural roots.

How to Preserve Trees During Construction

The portion of the “Optimal Tree Protection Zone” being protected must be fenced off with a “substantial” fence. Within this area, no soil disturbance, including stripping, is permitted. The natural grade is to be maintained, and no storage or dumping of materials, parking, etc., will be allowed within this zone without the approval of the arboricultural consultant. This tree protection fence should remain in place throughout the construction of the dwellings.

Excavation Within the “Optimal Tree Protection Zone”

Where there is excavation proposed within an “Optimal Tree Protection Zone” (outside of the protected zone fenced off above), it will be important for the contractor to prune the roots along the excavation lines. These roots should be pruned in the following manner:

- Excavation in the top 24 inches of the soil in the critical root zone area should begin at the excavation line closest to the tree.
- The excavation should be done by hand/shovel or with a backhoe and a worker with a shovel, pruning shears, and pruning saw.
- If completed by hand, all roots 1 inch or larger should be pruned at the excavation line.
- If completed with a backhoe (the most likely scenario) then the operator needs to start the cut at the excavation line and carefully “feel” for roots/resistance. When there is resistance, the worker with the shovel hand shall dig around the roots and prune the roots larger than 1 inch in diameter.

-
- The backhoe is to always remain off the tree roots to be preserved.
 - The work will be completed under the supervision of the Project Consulting Arborist.

The above system works well and can be completed quickly. The key is to avoid pulling on roots larger than 1 inch in diameter, which would otherwise potentially result in damage to roots between the excavation line and tree.

How Trees Die

Natural tree death is frequently a slow and complex process, generally involving a gradual decline caused by several factors. Most trees die from one of three causes: structural failure, environmental degradation, or pest infestation. Generally, trees die from a combination of these factors and more. Trees weakened by changes in their environment (such as construction impacts) become more susceptible to infestation by disease and insects. Most individual trees survive for only a fraction of the potential lifespan of the species. Soil compaction, changes in grade, mechanical injury, changes in the environment around the tree, and changes in drainage may not kill the tree themselves, but they may weaken the tree to a point where death occurs by another cause. Prevention of stress and maintenance of health are the key elements of tree longevity.

What Is “Tree Topping” and How Does It Damage a Tree?

Tree topping is a pruning technique used to reduce the height by cutting the central leader. This method of pruning is very detrimental to trees and not considered a good practice. Trees are generally topped by unknowledgeable pruners in order to lower the height of the tree and minimize the chance of windthrow by reducing the tree’s wind profile. The large stub of a topped tree has a difficult time forming callus over the wound. The terminal location and diameter of these cuts prevent the tree’s chemically-based natural defense system from working correctly. The stubs are highly vulnerable to both insect invasion and the spores of decay fungi. If decay is already present, topping will speed up the spreading of the disease. The tree reacts to the topping cut by producing multiple shoots below the cut, which develop from buds near the surface of the topping cut. Unlike normal branches that develop in a socket of overlapping wood tissues, these new fast-growing shoots are anchored only in the outermost layers of the bole and are prone to breaking, especially in windy conditions. For all these reasons, topped trees pose a danger to life and safety and are recommended for removal.

Development Impacts Effecting Preserved Trees

Construction of the site improvements will generally consist of cut and fills (grading), construction of retaining walls, trenching for the wet and dry utilities, coring of roads, and placement of aggregate and pavement. During this work, adjacent soil areas outside of the grading area may be compacted by heavy equipment driving over it. The grading and placement of utility trenches (and subsequent pipe bedding), and retaining walls can also affect the local water table.

Construction of the buildings and landscaping will require foundation placement, pruning of trees near the buildings under construction, and installation of lawn irrigation systems. During this work, adjacent soil areas outside of the work area may be compacted by equipment driving over it.

Future Condition of Trees on the Site

The characteristics of the individual trees are a guide to how well the tree will respond to site disturbance. Larger trees have correspondingly larger root zones. Older trees are less resilient to disturbance. Unhealthy trees are less resilient to disturbance than healthy trees.

Development of this site will result in a large area of disturbance, with disturbance to on-site trees occurring during site grading. The trees planned for retention are relatively healthy, but proper protection methods should be followed per this document to provide the greatest opportunity for survival after development.

Windthrow Potential

The trees on the site have been evaluated for windthrow based on factors including, but not limited to, soil conditions, tree health, tree structure, prevailing wind direction, and past evidence of wind damage. The trees planned for retention generally have good taper and butt flare, so therefore the windthrow potential should remain the same for the site. The remaining wind loading on the trees is expected to be similar to existing conditions, considering the location of the proposed buildings and where the prevailing wind originates. See the Soils section for more information regarding the site's soils characteristics.

Soils

Soils on site comprise of Powell silt loam with slopes ranging from 0 to 8%, Powell silt loam with slopes ranging from 8 to 20%, Powell silt loam with slopes ranging from 20 to 30%, and Olympic clay loam with slopes ranging from 30 to 60%. Drainage class for all of the Powell silt loams are moderately well drained while the Olympic clay loam is classified as well drained per the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's Web Soil Survey.

Tree Protection Plan

See the Tree Preservation and Removal Plans found in Appendix B.

Planting Plan

A Planting Plan consistent with City code will be provided by the project landscape architect and therefore is not addressed within this report.

Conclusion

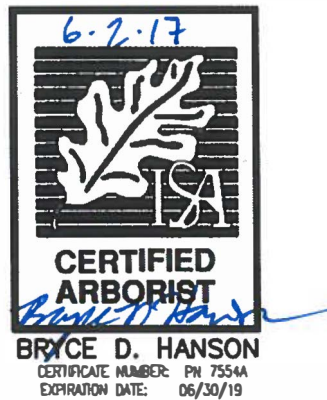
The development of the approximate 37-acre site proposes to remove on-site trees within the development area for site development. Trees will be retained within the proposed open spaces along the western and northern boundaries of the development. This Tree Report is only for the overall site development activities, and the tree protection measures outlined within the Tree Preservation and Removal Plan are for the protection of the existing trees adjacent to both proposed stormwater facilities, along lot exterior boundaries and the trail extension for the overall proposed development.

Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the health of trees, and attempt to reduce the risk of living near trees. The client and jurisdiction may choose to accept or disregard the recommendations of the arborist, or seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.



APPENDIX 'A'

(DETAILED TREE INVENTORY TABLE)

Detailed Tree Inventory and Impact Table for Dawson's Ridge

AKS JOB NO. 5873

Point #	Total DBH (in)	Tree Species common name (Scientific name)	Condition/Comments	Reason for Removal
1	16	Oregon ash (<i>Fraxinus latifolia</i>)		Development Activities
2	-	Oregon ash (<i>Fraxinus latifolia</i>)	Dead	Previously Removed
3	-	Oregon ash (<i>Fraxinus latifolia</i>)	Dead	Previously Removed
4	-	Bigleaf maple (<i>Acer macrophyllum</i>)	Dead	Previously Removed
5	20	Scarlet oak (<i>Quercus coccinea</i>)		Development Activities
6	12	Scarlet oak (<i>Quercus coccinea</i>)		Development Activities
7	12	Scarlet oak (<i>Quercus coccinea</i>)		Development Activities
8	12	Scarlet oak (<i>Quercus coccinea</i>)		Development Activities
9	16	Tulip Tree (<i>Liriodendron tulipifera</i>)		Retained
10	16	Ash sp. (<i>Fraxinus</i> sp.)		Retained
11	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
12	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
13	18	Black cottonwood (<i>Populus trichocarpa</i>)		Retained
14	18	Black cottonwood (<i>Populus trichocarpa</i>)		Retained
15	20	Black cottonwood (<i>Populus trichocarpa</i>)		Retained
16	20	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
17	24	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
18	12	Western redcedar (<i>Thuja plicata</i>)		Development Activities
19	24	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
20	18	Oregon ash (<i>Fraxinus latifolia</i>)	2 stems	Development Activities
21	30	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Development Activities
22	30	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Development Activities
23	24	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Development Activities
24	20	Unknown-Deciduous	Species not verified	Retained
25	34	Western redcedar (<i>Thuja plicata</i>)		Retained
26	30	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
27	14	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
28	10	Lodgepole pine (<i>Pinus contorta</i>)		Retained
29	8	Lodgepole pine (<i>Pinus contorta</i>)		Retained
30	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
31	14	Bigleaf maple (<i>Acer macrophyllum</i>)	4 stems	Retained
32	12 & 8	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
33	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
34	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
35	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
36	16	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
37	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
38	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
39	20	Oregon ash (<i>Fraxinus latifolia</i>)		Retained
40	28	Unknown-Deciduous		Retained
41	18	Unknown-Deciduous		Retained
42	20	Unknown-Deciduous		Retained
43	26	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
44	28	Unknown-Deciduous		Retained
45	28	Unknown-Deciduous		Retained
46	34	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
47	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
48	14	Oregon ash (<i>Fraxinus latifolia</i>)		Retained
49	36	Oregon ash (<i>Fraxinus latifolia</i>)		Retained
50	42	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
51	48	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
52	30	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
53	28	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
54	50	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
55	14	Unknown-Deciduous		Retained

Point #	Total DBH (in)	Tree Species common name (<i>Scientific name</i>)	Condition/Comments	Reason for Removal
56	14	Cherry (<i>Prunus sp.</i>)		Retained
57	20	Oregon ash (<i>Fraxinus latifolia</i>)		Retained
58	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
59	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
60	18	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
61	18	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
62	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
63	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
64	10	Western redcedar (<i>Thuja plicata</i>)		Retained
65	10	Lodgepole pine (<i>Pinus contorta</i>)		Retained
66	10	Western redcedar (<i>Thuja plicata</i>)		Retained
67	10	Western redcedar (<i>Thuja plicata</i>)		Retained
68	10	Western redcedar (<i>Thuja plicata</i>)		Retained
69	20	Bigleaf maple (<i>Acer macrophyllum</i>)	5 stems	Retained
70	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
71	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
72	48	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
73	12	Unknown-Deciduous		Retained
74	50	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
75	14	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
76	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
77	38	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
78	32	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
79	32	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
80	16	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
81	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
82	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
83	22	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
84	20	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
85	14	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
86	30	Unknown-Deciduous		Retained
87	16	Unknown-Deciduous		Retained
88	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
89	18	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
90	20	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
91	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
92	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
93	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
94	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
95	18	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
96	18	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
97	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
98	14	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
99	48	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
100	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
101	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
102	10	Western redcedar (<i>Thuja plicata</i>)		Retained
103	12	Western redcedar (<i>Thuja plicata</i>)		Retained
104	40	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
105	18	Bigleaf maple (<i>Acer macrophyllum</i>)	4 stems	Retained
106	14	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
107	20	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
108	38	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
109	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
110	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained

Point #	Total DBH (in)	Tree Species common name (<i>Scientific name</i>)	Condition/Comments	Reason for Removal
111	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
112	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
113	48	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
114	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
115	18	Red alder (<i>Alnus rubra</i>)		Retained
116	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
117	20	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
118	20	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
119	-	Douglas-fir (<i>Pseudotsuga menziesii</i>)	Dead	Hazard Abatement
120	40	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
121	14	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
122	38	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
123	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
124	-	Cherry (<i>Prunus sp.</i>)	Dead	Hazard Abatement
125	20	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Development Activities
126	34	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
127	20	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Development Activities
128	20	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
129	30	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
130	24	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
131	48	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
132	12	Bigleaf maple (<i>Acer macrophyllum</i>)	4 stems	Retained
133	16	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
134	14	Bigleaf maple (<i>Acer macrophyllum</i>)	4 stems	Retained
135	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
136	34	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
137	32	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
138	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
139	12	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
140	36	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
141	16	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
142	16	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
143	36	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
144	16 & 18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
145	24	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
146	12 & 20	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
147	12 & 20	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
148	16	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
149	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
150	30	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
151	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
152	30 & 18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
153	16	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
154	20	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
155	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
156	34	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
157	34	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
158	20	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
159	32	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
160	10 & 14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
161	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
162	34	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
163	12	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
164	8	Western redcedar (<i>Thuja plicata</i>)	2 stems	Retained

Point #	Total DBH (in)	Tree Species common name (Scientific name)	Condition/Comments	Reason for Removal
165	20	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
166	18 & 24	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
167	8	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
168	16	Bigleaf maple (<i>Acer macrophyllum</i>)	4 stems	Retained
169	14	Bigleaf maple (<i>Acer macrophyllum</i>)	4 stems	Retained
170	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
171	18	Bigleaf maple (<i>Acer macrophyllum</i>)	5 stems	Retained
172	14	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
173	10	Lodgepole pine (<i>Pinus contorta</i>)	2 stems	Development Activities
174	10	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
175	12	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
176	8	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
177	8	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
178	8	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
179	10	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
180	10	Lodgepole pine (<i>Pinus contorta</i>)		Development Activities
181	12	Bigleaf maple (<i>Acer macrophyllum</i>)	2 stems	Retained
182	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
183	10	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
184	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
185	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
186	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
187	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
188	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
189	10	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
190	10	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
191	8	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
192	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
193	8	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Development Activities
194	10	Douglas-fir (<i>Pseudotsuga menziesii</i>)		Retained
195	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
196	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
197	14	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
198	18	Bigleaf maple (<i>Acer macrophyllum</i>)		Retained
199	8, 10, & 12	Cherry (<i>Prunus spp.</i>)		Retained
Tree Line Cedar	-	Western redcedar (<i>Thuja plicata</i>)	Approximately 7 small cedars in a row	Development Activities
Tree Line Birch	-	Paper birch (<i>Betula papyrifera</i>)	Approximately 20+ birch trees in a row	Development Activities
OS-1	36	Oregon White Oak (<i>Quercus garryana</i>)	Off-site tree, no protection necessary. Off-site by approximately 70+/- ft.	Retained

NOTE: Onsite trees existed during the site visits performed on 03/02/2017 & 05/08/2017.

Tree Root Protection Zone: The tree root protection zone for each tree is a circle with a radius equal to 1 foot per 1 inch DBH.

Arborist Disclosure Statement:

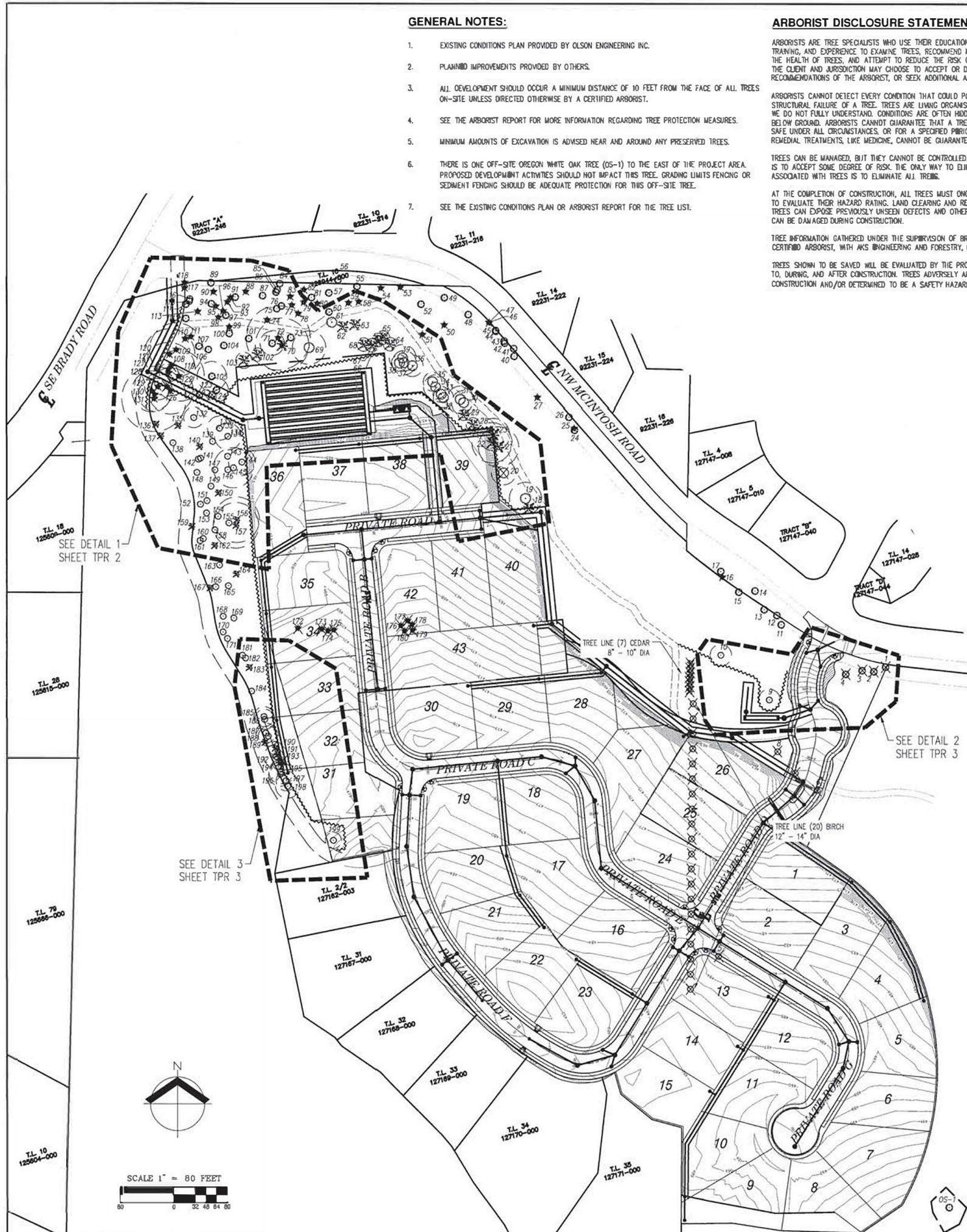
Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the health of the trees, and attempt to reduce the risk of living near trees. The Client and Jurisdiction may choose to accept or disregard the recommendations of the arborist, or seek additional advice. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

At the completion of construction, all trees must once again be reviewed to evaluate their hazard rating. Land clearing and removal of adjacent trees can expose previously unseen defects and otherwise healthy trees can be damaged during construction.

APPENDIX 'B'

(TREE PRESERVATION AND REMOVAL PLAN)

AKS DRAWING FILE: 5873 SUB ARBORIST EXHIBITING LAYOUT, LAYOUT



GENERAL NOTES:

- EXISTING CONDITIONS PLAN PROVIDED BY OLSON ENGINEERING INC.
- PLANNED IMPROVEMENTS PROVIDED BY OTHERS.
- ALL DEVELOPMENT SHOULD OCCUR A MINIMUM DISTANCE OF 10 FEET FROM THE FACE OF ALL TREES ON-SITE UNLESS DIRECTED OTHERWISE BY A CERTIFIED ARBORIST.
- SEE THE ARBORIST REPORT FOR MORE INFORMATION REGARDING TREE PROTECTION MEASURES.
- MINIMUM AMOUNTS OF EXCAVATION IS ADVISED NEAR AND AROUND ANY PRESERVED TREES.
- THERE IS ONE OFF-SITE OREGON WHITE OAK TREE (OS-1) TO THE EAST OF THE PROJECT AREA. PROPOSED DEVELOPMENT ACTIVITIES SHOULD NOT IMPACT THIS TREE. GRADING LIMITS FENCING OR SEDIMENT FENCING SHOULD BE ADEQUATE PROTECTION FOR THIS OFF-SITE TREE.
- SEE THE EXISTING CONDITIONS PLAN OR ARBORIST REPORT FOR THE TREE LIST.

ARBORIST DISCLOSURE STATEMENT

ARBORISTS ARE TREE SPECIALISTS WHO USE THEIR EDUCATION, KNOWLEDGE, TRAINING, AND EXPERIENCE TO EXAMINE TREES, RECOMMEND MEASURES TO ENHANCE THE HEALTH OF TREES, AND ATTEMPT TO REDUCE THE RISK OF LIVING NEAR TREES. THE CLIENT AND JURISDICTION MAY CHOOSE TO ACCEPT OR DISREGARD THE RECOMMENDATIONS OF THE ARBORIST, OR SEEK ADDITIONAL ADVICE.

ARBORISTS CANNOT DETECT EVERY CONDITION THAT COULD POSSIBLY LEAD TO THE STRUCTURAL FAILURE OF A TREE. TREES ARE LIVING ORGANISMS THAT FAIL IN WAYS WE DO NOT FULLY UNDERSTAND. CONDITIONS ARE OFTEN HIDDEN WITHIN TREES AND BELOW GROUND. ARBORISTS CANNOT GUARANTEE THAT A TREE WILL BE HEALTHY OR SAFE UNDER ALL CIRCUMSTANCES, OR FOR A SPECIFIED PERIOD OF TIME. LIKEWISE, REMEDIAL TREATMENTS, LIKE MEDICINE, CANNOT BE GUARANTEED.

TREES CAN BE MANAGED, BUT THEY CANNOT BE CONTROLLED. TO LIVE NEAR TREES IS TO ACCEPT SOME DEGREE OF RISK. THE ONLY WAY TO ELIMINATE ALL RISK ASSOCIATED WITH TREES IS TO ELIMINATE ALL TREES.

AT THE COMPLETION OF CONSTRUCTION, ALL TREES MUST ONCE AGAIN BE REVIEWED TO EVALUATE THEIR HAZARD RATING. LAND CLEARING AND REMOVAL OF ADJACENT TREES CAN EXPOSE PREVIOUSLY UNSEEN DEFECTS AND OTHERWISE HEALTHY TREES CAN BE DAMAGED DURING CONSTRUCTION.

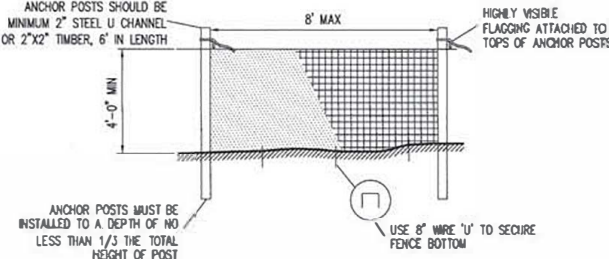
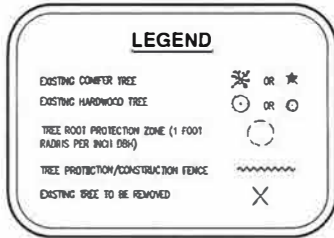
TREE INFORMATION GATHERED UNDER THE SUPERVISION OF BRYCE HANSON, CERTIFIED ARBORIST, WITH AKS ENGINEERING AND FORESTRY, LLC.

TREES SHOWN TO BE SAVED WILL BE EVALUATED BY THE PROJECT ARBORIST PRIOR TO, DURING, AND AFTER CONSTRUCTION. TREES ADVERSELY AFFECTED BY CONSTRUCTION AND/OR DETERMINED TO BE A SAFETY HAZARD WILL BE REMOVED.

TREE PROTECTION NOTES

- PLACING MATERIALS NEAR TREES - NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE PROTECTED AREA OF ANY TREE DESIGNATED TO REMAIN, INCLUDING, BUT NOT LIMITED TO, PARKING EQUIPMENT, PLACING SOLVENTS, STORING BUILDING MATERIALS AND SOIL, DEPOSITS, DUMPING CONCRETE WASHOUT, ETC.
- ATTACHMENTS TO TREES - DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY OBJECT TO ANY TREE DESIGNATED FOR PROTECTION.
- PROTECTIVE BARRIER - BEFORE DEVELOPMENT, LAND CLEARING, FILLING OR ANY LAND ALTERATION FOR WHICH A TREE REMOVAL PERMIT IS REQUIRED, THE CONTRACTOR:
 - SHALL EXIST AND MAINTAIN READILY VISIBLE PROTECTIVE TREE FENCING ALONG THE OUTER EDGE AND COMPLETELY SURROUNDING THE PROTECTED AREA OF ALL PROTECTED TREES OR GROUPS OF TREES. FENCES SHALL BE CONSTRUCTED PER THE DETAIL ON THIS SHEET.
 - MAY BE REQUIRED TO COVER WITH MULCH TO A DEPTH OF AT LEAST SIX (6) INCHES OR WITH PLYWOOD OR SIMILAR MATERIAL IN THE AREAS ADJOINING THE CRITICAL ROOT ZONE OF A TREE IN ORDER TO PROTECT ROOTS FROM DAMAGE CAUSED BY HEAVY EQUIPMENT.
 - SHALL PROHIBIT EXCAVATION OR COMPACTING OF EARTH OR OTHER POTENTIALLY DAMAGING ACTIVITIES WITHIN THE BARRIERS.
 - MAY BE REQUIRED TO MINIMIZE ROOT DAMAGE BY EXCAVATING A TWO (2) FOOT DEEP TRENCH, AT EDGE OF CRITICAL ROOT ZONE, TO CLEANLY SEVER THE ROOTS OF TREES TO BE RETAINED. ROOTS ONE (1) INCH DIAMETER OR GREATER SHALL BE CLEANLY CUT WITH A SAW OR PRUNERS.
 - MAY BE REQUIRED TO HAVE CONSECUTIVE PRUNING PERFORMED ON PROTECTED TREES IN ORDER TO AVOID DAMAGE FROM MACHINERY OR BUILDING ACTIVITY. MAY BE REQUIRED TO MAINTAIN TREES THROUGHOUT THE CONSTRUCTION PERIOD BY WATERING AND FERTILIZING.
 - SHALL MAINTAIN THE PROTECTIVE BARRIERS IN PLACE UNTIL THE PROJECT ARBORIST AUTHORIZES THEIR REMOVAL OR A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED, WHICHEVER OCCURS FIRST.
 - SHALL ENSURE THAT ANY LANDSCAPING DONE IN THE PROTECTED ZONE SUBSEQUENT TO THE REMOVAL OF THE BARRIERS SHALL BE ACCOMPLISHED WITH LIGHT MACHINERY OR HAND LABOR.
- GRADE
 - THE GRADE SHALL NOT BE ELEVATED OR REDUCED WITHIN THE CRITICAL ROOT ZONE OF TREES TO BE PRESERVED WITHOUT THE PROJECT ARBORIST'S AUTHORIZATION. THE PROJECT ARBORIST MAY ALLOW COVERAGE OF UP TO ONE HALF OF THE AREA OF THE TREE'S CRITICAL ROOT ZONE WITH LIGHT SOILS (NO CLAY) TO THE MINIMUM DEPTH NECESSARY TO CARRY OUT GRADING OR LANDSCAPING PLANS, IF IT WILL NOT IMPAIR THE SURVIVAL OF THE TREE. AERATION DEVICES MAY BE REQUIRED TO ENSURE THE TREE'S SURVIVAL.
 - IF THE GRADE ADJACENT TO A PRESERVED TREE IS RAISED SUCH THAT IT COULD SLOUGH OR ERODE INTO THE TREE'S CRITICAL ROOT ZONE, IT SHALL BE PERMANENTLY STABILIZED TO PREVENT SUBSIDENCE OF THE ROOTS.
 - THE APPLICANT SHALL NOT INSTALL AN IMPERVIOUS SURFACE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE TO BE RETAINED WITHOUT THE AUTHORIZATION OF THE PROJECT ARBORIST. THE PROJECT ARBORIST MAY REQUIRE SPECIFIC CONSTRUCTION METHODS AND/OR USE OF AERATION DEVICES TO ENSURE THE TREE'S SURVIVAL AND TO MINIMIZE THE POTENTIAL FOR ROOT INDUCED DAMAGE TO THE IMPERVIOUS SURFACE.
 - TO THE GREATEST EXTENT PRACTICAL, UTILITY TRENCHES SHALL BE LOCATED OUTSIDE OF THE CRITICAL ROOT ZONE OF TREES TO BE RETAINED. THE PROJECT ARBORIST MAY REQUIRE THAT UTILITIES BE TUNNELED UNDER THE ROOTS OF TREES TO BE RETAINED IF THE PROJECT ARBORIST DETERMINES THAT TRENCHING WOULD SIGNIFICANTLY REDUCE THE CHANCES OF THE TREE'S SURVIVAL.
 - TREE AND OTHER VEGETATION TO BE RETAINED SHALL BE PROTECTED FROM EROSION AND SLOPE/STABILIZATION. CLEARING OPERATIONS SHALL BE CONDUCTED SO AS TO EXPOSE THE SMALLEST PRACTICAL AREA OF SOIL. TO EROSION FOR THE LEAST POSSIBLE TIME. TO CONTROL EROSION, SHRUBS, GROUND COVER, AND STUMPS SHALL BE MAINTAINED ON THE INDIVIDUAL LOTS, WHERE FEASIBLE. WHERE NOT FEASIBLE, APPROPRIATE EROSION CONTROL PRACTICES SHALL BE IMPLEMENTED PURSUANT TO CMC CHAPTER 14.06.
- DIRECTIONAL FELLING OF TREES SHALL BE USED TO AVOID DAMAGE TO TREES DESIGNATED FOR RETENTION.
- ADDITIONAL REQUIREMENTS - THE PROJECT ARBORIST MAY REQUIRE ADDITIONAL TREE PROTECTION MEASURES WHICH ARE CONSISTENT WITH ACCEPTED URBAN FORESTRY PRACTICES.
- ENCROACHMENT INTO THE ROOT PROTECTION ZONE IS ALLOWED WITH PROJECT ARBORIST APPROVAL AS DESCRIBED IN THE FOLLOWING NOTES:
 - EXCAVATION IN THE TOP 24 INCHES OF THE SOIL IN THE CRITICAL ROOT ZONE AREA SHOULD BEGIN AT THE EXCAVATION LINE THAT IS CLOSEST TO THE TREE.
 - THE EXCAVATION SHOULD BE DONE BY HAND/SHOVEL OR WITH A BACKHOE AND A MAN WITH A SHOVEL, PRUNING SHEARS, AND A PRUNING SAW.
 - IF DONE BY HAND, ALL ROOTS 1 INCH OR LARGER SHOULD BE PRUNED AT THE EXCAVATION LINE.
 - IF DONE WITH BACKHOE (MOST LIKELY SCENARIO), THEN THE OPERATOR SHALL START THE CUT AT THE EXCAVATION LINE AND CAREFULLY "FEEL" FOR ROOT/RESISTANCE. WHEN THERE IS RESISTANCE, THE MAN WITH THE SHOVEL HAND DIGS AROUND THE ROOTS AND PRUNES THE ROOTS LARGER THAN 1 INCH DIAMETER. THE BACKHOE IS TO REMAIN OFF OF THE TREE ROOTS TO BE PRESERVED AT ALL TIMES.

- ALL ROOTS SHALL BE CUT CLEANLY WITH PRUNING SHEARS OR A PRUNING SAW. PROJECT ARBORIST MUST BE ON-SITE DURING ANY WORK WITHIN THE TREE ROOT PROTECTION ZONE.
- TREE PROTECTION ZONE IS DEFINED AS ALL AREAS BOUND AND PROTECTING THE OPTIMAL TREE PROTECTION ZONE.
- TIMEFRAME FOR CLEARING, GRADING, AND INSTALLATION OF TREE PROTECTION MEASURES: WORK WILL BEGIN IMMEDIATELY FOLLOWING FINAL APPROVAL BY THE CITY. TREE PROTECTION MEASURES WILL BE DONE DURING CLEARING AND ANY GRADING WILL FOLLOW.
- PRUNING/TREE REMOVAL NOTES: THE WORK TO BE COMPLETED UNDER THIS PROJECT SHALL CONSIST OF TREE REMOVAL AND TREE TRIMMING AS LIST:
 - THE CONTRACTOR SHALL PROVIDE ADEQUATE CREW OF MEN, EQUIPMENT AND MATERIALS TO SAFELY AND EFFICIENTLY COMPLETE THE ASSIGNED WORK. EACH SUCH CREW SHALL INCLUDE AN INDIVIDUAL WHO SHALL BE DESIGNATED AS THE CREW SUPERVISOR AND WHO SHALL BE RESPONSIBLE FOR THE CREW'S ACTIVITIES AND WHO SHALL RECEIVE INSTRUCTION FROM THE OWNER OR THE OWNER'S REPRESENTATIVE AND DIRECT THE CREW TO ACCOMPLISH SUCH WORK.
 - WHENEVER A TREE, WHICH IS NOT SCHEDULED TO BE REMOVED, MUST BE TRIMMED OR PRUNED, THE CONTRACTOR SHALL INSURE THAT SUCH TRIMMING AND PRUNING IS CARRIED OUT UNDER THE DIRECT SUPERVISION OF A LICENSED ARBORIST. ALL PRUNING AND TRIMMING SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF ANS 300 "STANDARD PRACTICES FOR TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE".
 - THE CONTRACTOR SHALL BE REQUIRED TO CUT TREES TO A HEIGHT OF APPROXIMATELY 12'. THE STUMPS AND ROOTS SHALL BE GROUND DOWN A MINIMUM OF TWELVE (12) INCHES BELOW NORMAL GROUND LEVEL.
 - THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST GOVERNMENTAL SAFETY REGULATIONS. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ANS 213.1 "PRUNING, TRIMMING, REPAIRING, MAINTAINING AND REMOVING TREES AND CUTTING BRUSH-SAFETY REQUIREMENTS" WITH SPECIAL EMPHASIS GIVEN TO THE REQUIREMENT THAT ONLY QUALIFIED LINE-CLEARANCE TREE TRIMMERS BE ASSIGNED TO WORK WHERE A POTENTIAL ELECTRICAL HAZARD EXISTS.
 - THE CONTRACTOR SHALL MAKE ALL THE NECESSARY ARRANGEMENTS WITH ANY UTILITY THAT MUST BE PROTECTED OR RELOCATED IN ORDER TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION OF THE OPERATING CONDITION OF ALL ACTIVE UTILITIES WITHIN THE AREA OF CONSTRUCTION AND HE SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UTILITIES.
 - ANY MATERIAL RESULTING FROM THE TRIMMING OR REMOVAL OF ANY TREES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR.
 - HAZARDOUS TREES-REPORTING - ANY PERSON ENGAGED IN TRIMMING OR PRUNING WHO BECOMES AWARE OF A TREE OF DOUBTFUL STRENGTH, THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY, SHALL REPORT SUCH TREE(S) TO THE OWNER OR THE OWNER'S REPRESENTATIVE. SUCH TREES SHALL INCLUDE THOSE THAT ARE OVER MATURE, DISEASED, OR SHOWING SIGNS OF DECAY OR OTHER STRUCTURAL WEAKNESS.
 - DAMAGES-ANY DAMAGE CAUSED BY THE CONTRACTOR, INCLUDING, BUT NOT LIMITED TO, BROKEN SIDEWALK, CURBS, PUTTING LAMN, BROKEN WATER SHUT-OFFS, WIRE DAMAGE, BUILDING DAMAGE, STREET DAMAGE, ETC., WILL BE REPAIRED OR REPLACED IN A TIMELY MANNER, TO THE OWNER'S SATISFACTION, AND ALL COSTS PAID BY THE CONTRACTOR.
 - ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION ZONE SHALL BE ACCOMPLISHED WITH HAND OPERATED EQUIPMENT.
 - TREES TO BE REMOVED SHALL BE FELLED SO AS TO FALL AWAY FROM TREE ROOT PROTECTION ZONES AND TO AVOID PULLING AND BREAKING OF ROOTS TO REMAIN.
 - ALL DOWNED BRUSH AND TREES SHALL BE REMOVED FROM THE TREE ROOT PROTECTION ZONE EITHER BY HAND OR WITH EQUIPMENT SITTING OUTSIDE THE TREE ROOT PROTECTION ZONE. EXTRACTION SHALL OCCUR BY LIFTING THE MATERIAL OUT, NOT BY SKIDDING IT ACROSS THE GROUND.
 - IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER THE ROOT AREA OF TREES TO BE RETAINED A ROADBED OF 8 INCHES OF MULCH OR GRAVEL SHALL BE CREATED TO PROTECT THE SOIL. THE ROADBED MATERIAL SHALL BE REPLISHED AS NECESSARY TO MAINTAIN A 6-INCH DEPTH.
 - PRUNING: TREES SHALL BE PRUNED PRIOR TO THE START OF CONSTRUCTION. TREES SHALL BE CROWN CLEANED TO REMOVE THE DEADWOOD 2 INCHES IN DIAMETER AND OVER. TREES SHALL BE CROWN THINNED BY 10-20% CROWNS MAY BE RAISED BY REMOVING BOTTOM BRANCHES AS NECESSARY UP TO 14 FEET HIGH TO GIVE CLEARANCE FOR ANY CONSTRUCTION TRAFFIC, ACTIVITIES, ETC. ALL WORK TO BE DONE IN ACCORDANCE WITH ANS A300 TRAFFIC STANDARDS. REMOVE ANY LIMBS OF DOUBTFUL STRENGTH THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY.



TREE PROTECTION NOTES:

- BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR TREE PROTECTION DEVICE. ONLY.
- BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED IN THE FIELD BY THE ARBORIST PRIOR TO CONSTRUCTION.
- BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED AND FLAGGED BY THE ARBORIST, OR UNDER THE SUPERVISION OF THE ARBORIST, PRIOR TO INSTALLING DEVICES.
- AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
- TREE PROTECTION TO BE INSTALLED PRIOR TO CONSTRUCTION AND REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

PLASTIC MESH TREE PROTECTION FENCE

NOT TO SCALE



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FORESTRY - PLANNING

DAWSON'S RIDGE SUB
SE 1/4 OF SEC. 8 & SW 1/4 OF SEC. 9, T1N, R3E, W1E
CAMAS

WASHINGTON

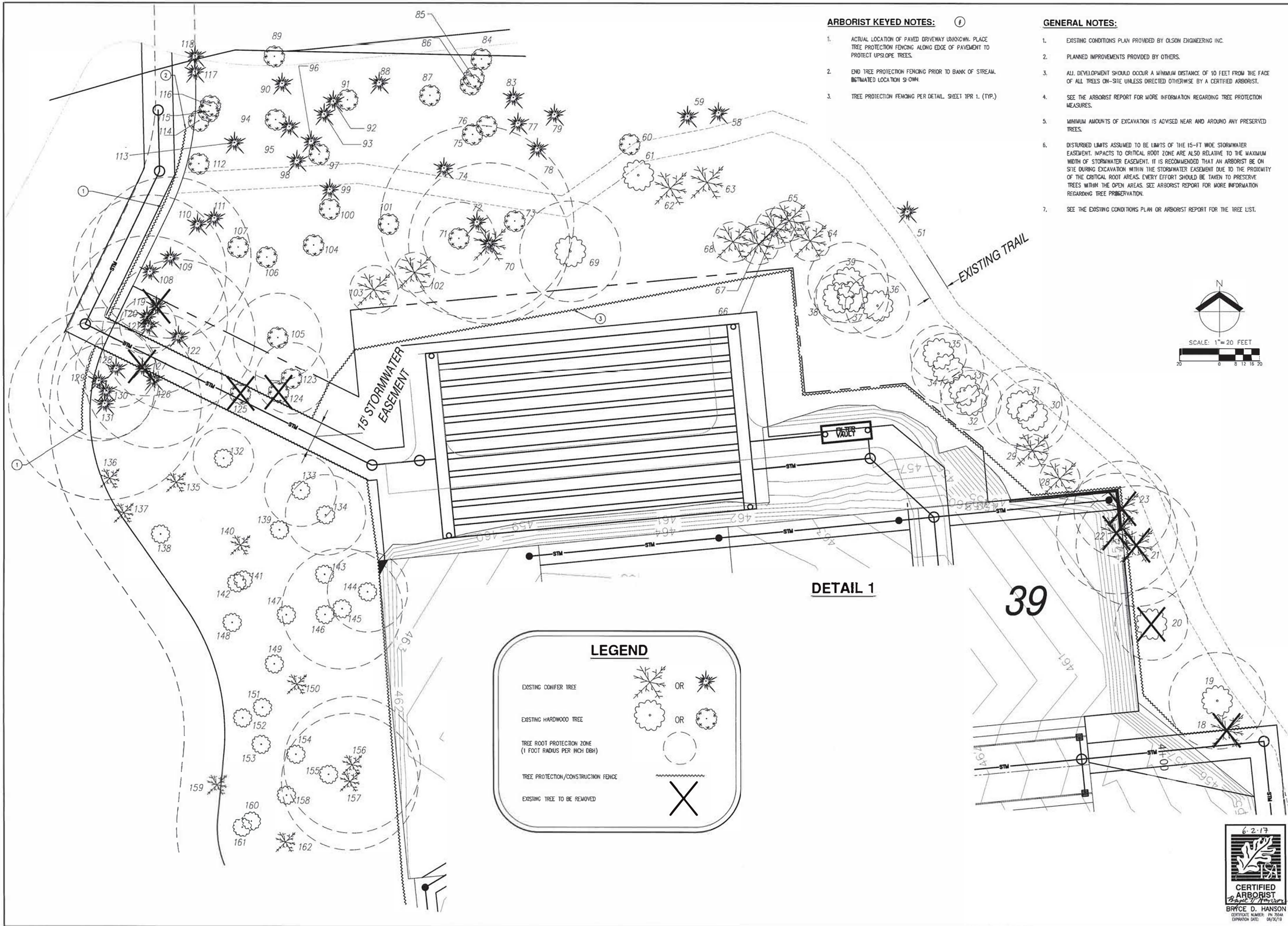
TREE PRESERVATION AND REMOVAL PLAN

DESIGNED BY: CJS
DRAWN BY: CJS
CHECKED BY: BOH
SCALE: AS NOTED
DATE:

REVISIONS:

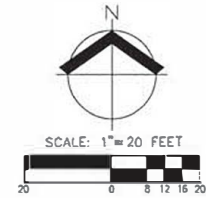
JOB NUMBER: 5873
SHEET: TPR 1

AKS DRAWING FILE: 5873 SUB ARBORIST EXHIBITING LAYOUT LAYOUT2










- ARBORIST KEYED NOTES:** ①
1. ACTUAL LOCATION OF PAVED DRIVEWAY UNKNOWN. PLACE TREE PROTECTION FENCING ALONG EDGE OF PAVEMENT TO PROTECT UPSLOPE TREES.
 2. END TREE PROTECTION FENCING PRIOR TO BANK OF STREAM. ESTIMATED LOCATION SHOWN.
 3. TREE PROTECTION FENCING PER DETAIL, SHEET TPR 1, (TYP.)

- GENERAL NOTES:**
1. EXISTING CONDITIONS PLAN PROVIDED BY OLSON ENGINEERING INC.
 2. PLANNED IMPROVEMENTS PROVIDED BY OTHERS.
 3. ALL DEVELOPMENT SHOULD OCCUR A MINIMUM DISTANCE OF 10 FEET FROM THE FACE OF ALL TREES ON-SITE UNLESS DIRECTED OTHERWISE BY A CERTIFIED ARBORIST.
 4. SEE THE ARBORIST REPORT FOR MORE INFORMATION REGARDING TREE PROTECTION MEASURES.
 5. MINIMUM AMOUNTS OF EXCAVATION IS ADVISED NEAR AND AROUND ANY PRESERVED TREES.
 6. DISTURBED LIMITS ASSUMED TO BE LIMITS OF THE 15-FT WIDE STORMWATER EASEMENT. IMPACTS TO CRITICAL ROOT ZONE ARE ALSO RELATIVE TO THE MAXIMUM WIDTH OF STORMWATER EASEMENT. IT IS RECOMMENDED THAT AN ARBORIST BE ON SITE DURING EXCAVATION WITHIN THE STORMWATER EASEMENT DUE TO THE PROXIMITY OF THE CRITICAL ROOT AREAS. EVERY EFFORT SHOULD BE TAKEN TO PRESERVE TREES WITHIN THE OPEN AREAS. SEE ARBORIST REPORT FOR MORE INFORMATION REGARDING TREE PRESERVATION.
 7. SEE THE EXISTING CONDITIONS PLAN OR ARBORIST REPORT FOR THE TREE LIST.



LEGEND

EXISTING CONIFER TREE		OR	
EXISTING HARDWOOD TREE		OR	
TREE ROOT PROTECTION ZONE (1 FOOT RADIUS PER INCH DBH)			
TREE PROTECTION/CONSTRUCTION FENCE			
EXISTING TREE TO BE REMOVED			



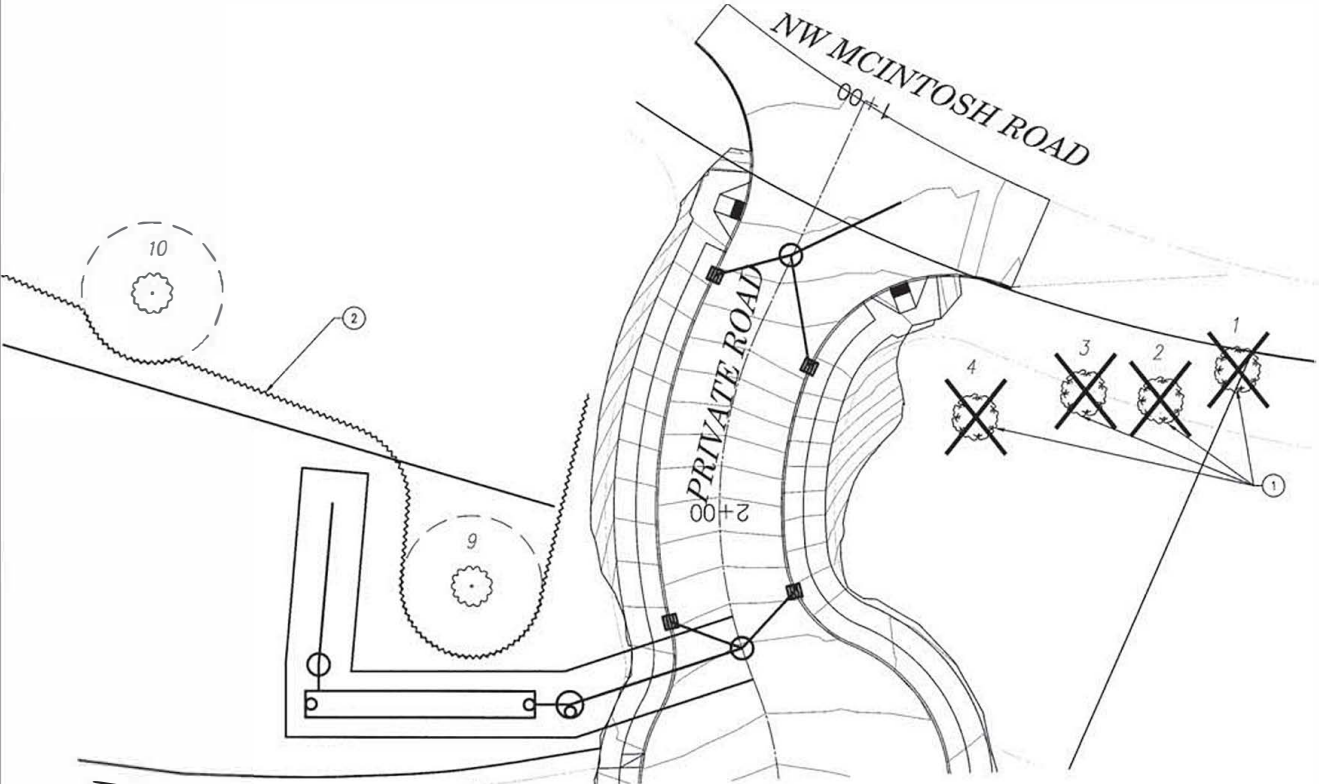
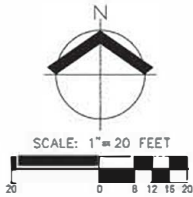
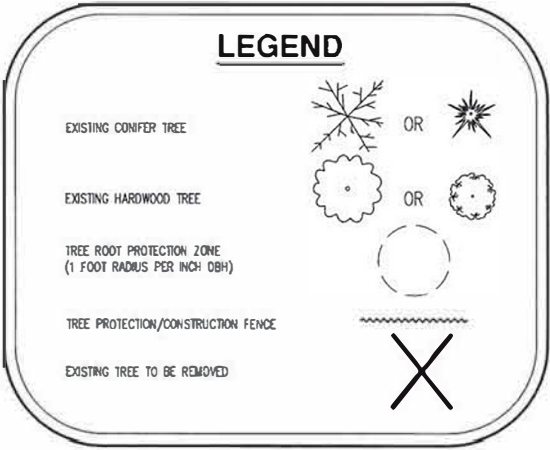
AKS AKS ENGINEERING & FORESTRY, LLC 9600 NE 126TH AVE. STE. 2520 VANCOUVER, WA 98682 P: 360.882.0419 F: 360.882.0426 aks-eng.com	DAWSON'S RIDGE SUB	WASHINGTON
	CAMAS	SE 1/4 OF SEC. 8 & SW 1/4 OF SEC. 9, T1N, R1E, W1E
TREE PRESERVATION AND REMOVAL PLAN		
DESIGNED BY:	C/S	
DRAWN BY:	C/S	
CHECKED BY:	BOH	
SCALE:	AS NOTED	
DATE:		
REVISIONS:		
JOB NUMBER	5873	
SHEET		
TPR 2		

ARBORIST KEYED NOTES:

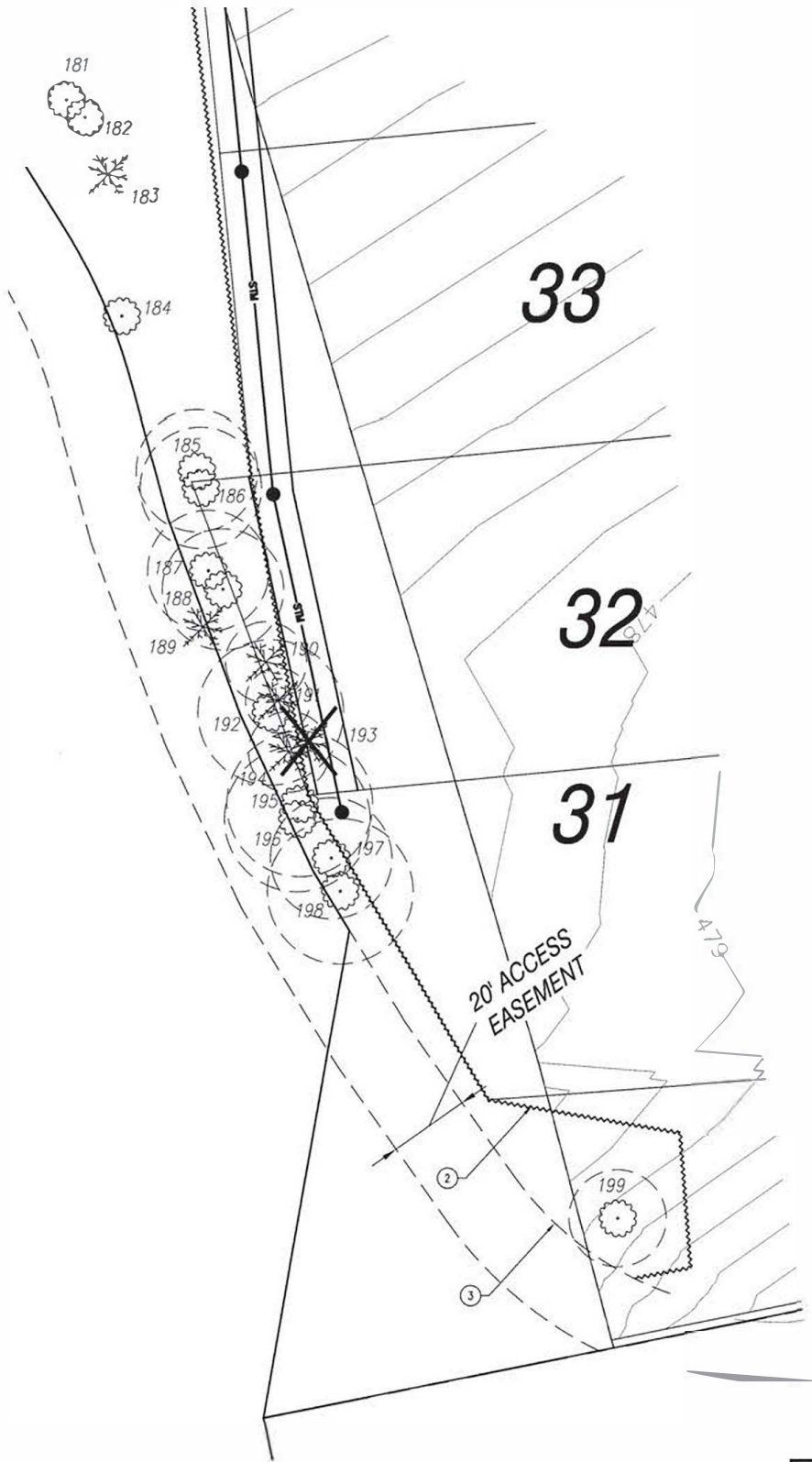
- 1. TREE 1 TO BE REMOVED. TREES 2, 3, & 4 DETERMINED TO BE DEAD SINCE ORIGINAL SURVEY WAS COMPLETED.
- 2. TREE PROTECTION FENCING PER DETAIL SHEET TPR 1. (TYP.)
- 3. ACTUAL LOCATION OF PAVED DRIVEWAY UNKNOWN. ASSUMED NO EXCAVATION ALONG EDGE OF PAVEMENT WITHIN ACCESS EASEMENT WIDTH.

GENERAL NOTES:

- 1. EXISTING CONDITIONS PLAN PROVIDED BY OLSON ENGINEERING INC.
- 2. PLANNED IMPROVEMENTS PROVIDED BY OTHERS.
- 3. ALL DEVELOPMENT SHOULD OCCUR A MINIMUM DISTANCE OF 10 FEET FROM THE FACE OF ALL TREES ON-SITE UNLESS DIRECTED OTHERWISE BY A CERTIFIED ARBORIST.
- 4. SEE THE ARBORIST REPORT FOR MORE INFORMATION REGARDING TREE PROTECTION MEASURES.
- 5. MINIMUM AMOUNTS OF EXCAVATION IS ADVISED NEAR AND AROUND ANY PRESERVED TREES.
- 6. DISTURBED LIMITS ASSUMED TO BE LIMITS OF THE STORMWATER EASEMENT WITHIN THE LOTS. IMPACTS TO CRITICAL ROOT ZONE ARE ALSO RELATIVE TO THE MAXIMUM WIDTH OF STORMWATER EASEMENT. IT IS RECOMMENDED THAT AN ARBORIST BE ON SITE DURING EXCAVATION WITHIN THE STORMWATER EASEMENT DUE TO THE PROXIMITY OF THE CRITICAL ROOT AREAS. EVERY EFFORT SHOULD BE TAKEN TO PRESERVE TREES WITHIN THE OPEN AREAS. SEE ARBORIST REPORT FOR MORE INFORMATION REGARDING TREE PRESERVATION.
- 7. SEE THE EXISTING CONDITIONS PLAN OR ARBORIST REPORT FOR THE TREE LIST.



DETAIL 2



DETAIL 3

