

SHOFFNER CONSULTING

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July 12, 2019

Revised: December 5, 2019

Kayla Clark Nichols
Select Homes, Inc.
16531 13th Ave. W.
Suite A107
Lynnwood, WA
98037



REVISION

RE: Revised Tree Inventory and Retention Plan - 19023 37th Ave. NE. Lake Forest Park, WA.

SITE COPY

**THIS PLAN IS TO REMAIN
ON SITE AND IS TO BE
KEPT INTACT.**

Kayla:

This revised report is provided to address the requirements of the City of Lake Forest Park for tree inventories and retention on developing properties. The requirements for this study and report are specified in LFPMC 16.14.040.C.2.b and c. This revised report also addresses the comments issued in the comment letter dated September 26, 2019. See Section 4 for the comments and the responses.

During the inventory, I gathered information on the following:

- Tree species
- Tree diameter at 54"
- Crown spread diameter
- Tree condition
- Site conditions

Please see the Tree Evaluation Data spreadsheet and the Tree Inventory Map and Tree Replacement Plan for reference to this report.

1.0 Site Conditions and Tree Inventory

I conducted level 2, basic visual evaluations of all the trees shown on the survey provided me according to ISA standards and based upon many years conducting such evaluations on trees in the Pacific Northwest. I observed trees up close to inspect conditions of the trunk and from afar to inspect conditions in the crowns. All assessments were conducted according to the methods specified in the ISA Tree Risk Assessment Manual and on nearly 20 years experience conducting such evaluations.

The investigations involved the gathering of the following information:

- Tree species
- Trunk diameter
- Crown spread diameter

- Location factors
- Health and condition notes (general level of vigor, defects, disease or pest problems)

The property is undeveloped. There are 26 trees on the lot and two just off-site with driplines that extend onto the property and an additional four just off-site of the southeast corner in the area of an access easement. There are no trees on the site that meet the threshold diameter to be classified as exceptional.

The information on the on site trees and those within the access easement is provided in the accompanying tree evaluation data spreadsheet. In general, all of the trees are in good condition and health, some older than others and therefore less vigorous, but I didn't note any symptoms of elevated stress levels or decline, nor did I identify any significant defects of concern. Therefore, no trees pose any risk beyond a low level.

The total canopy coverage square footage provided by the existing trees is 22,438 s.f.

2.0 Proposed Development

The proposed development of the property is to develop it with a single family residence and install an access driveway in the southeast corner of the property. This action will require the removal of 17 trees on the property due to impacts related to developing the lot and building the house and the five within the access easement.

3.0 Tree Retention and Protection

Out of the 26 trees on the lot, 9 are being retained. These trees are identified as retained on the tree evaluation data spreadsheet. The combined canopy coverage square footage of these trees is 5,656 s.f. representing a loss in canopy coverage of 16,782 s.f. This coverage loss is to be provided with tree replacement with species that, upon maturity, will equal the existing tree canopy coverage square feet.

Without tree replacement, the proposed short plat provides a net decrease in tree canopy area retained on the property.

The accompanying tree inventory map show all of the trees. Those to be removed have been identified with an "X" to indicate removal.

At this point, no development activity is shown on the site plan so impact assessments are not possible. Once the development proposal is ironed, out the assessments can be conducted. The following tree protection measures are to be instituted for the retained trees:

1. Prior to beginning any construction activities, protection fencing of the type required by the City is to be installed as from the retained trees on lots 2 and 3 as possible, but at a minimum, a distance of 5 feet beyond the drip lines. Fencing is to remain throughout construction and only removed upon approval of the City.
2. Tree protection signage stating the following tree protection language is to be affixed to the tree protection fencing:

TREE PROTECTION AREA
NO IMPACTS, NO DUMPING,
NO STORAGE AND NO ACCESS

4.0 Comments and Responses

Trees

1. Tree #12:

- a. The City Arborist measured this tree to be 47" diameter at breast height (DBH), however it is covered with large stems of English ivy so it was not possible to get an accurate DBH measurement. Please remove all ivy from Tree #12 at 4.5 ft. above ground level and provide an updated DBH measurement. If the tree is 42" DBH or larger then it is an exceptional tree, is not allowed to be removed, and LFPMC Chapter 16.14.070(D)(7) and (8) will apply.

The ivy was removed. The tree measures 43" dbh. It is proposed to be retained and protected per LFPMC Chapter 16.14.070(D)(7) and (8) will apply.

2. Tree Inventory Table:

- a. There are several significant trees on the property as well as off-site trees that will be impacted by the development that are not included in the tree inventory. Please update inventory table to include these trees.

Two trees located off-site to the east, north and west have been added to the table. I did not see any other trees that will be impacted by the proposed development.

- b. Many of the DBH measurements shown on the table/in the report are inaccurate. Please update with accurate measurements.

Each tree has been remeasured and the diameters updated.

- c. Please include the critical root zone (CRZ) and interior critical root zone (ICRZ) for all trees.

The CRZ and ICRZ for each tree has been added to the table.

3. Arborist Report:

- a. Please update report to include information about impacts assessments to trees based on the proposed development, including any utility and stormwater infrastructure. Please ensure that the arborist has addressed LFPMC Chapter 16.14.070(D)(7) and (8) when providing the assessment information. Also ensure that additional trees that were not included in the original report and inventory are assessed.

The following impacts are proposed near the retained trees. I have included my assessment of these impacts by affected tree:

<u>Tree #</u>	<u>Impact Assessment</u>
9	Very light, minor grading adjustments within the outer CRZ. Impacts are insignificant, tree will not be affected.
10	No impacts
11	No impacts
12	Minor grading adjustments within the outer CRZ. House is proposed to be approximately 10 additional feet from the outer half of the drip line, approximately 30 feet from the tree. The minor grading adjustments will not affect the tree and the excavation for the foundation is a considerable distance from the eliminating any loss of large structural roots and limiting damage to small roots to negligible. A driveway will also be located in side the outer half of the drip line. No significant grading is proposed for this and the amount of permeable proposed is also minor compared to the open area retained to the north, west and northeast of this tree. A SS line is proposed to run through the outer half of the drip line, approximately 23 feet from the tree. This distance is outside the tree's root plate, thus, structural roots will not be damaged. At this distance, the amount of fine roots damaged will be minor.
27	No impacts
28	No impacts
29	No impacts
30	No impacts
OS6	The access driveway for this development will be well within the dripline of this tree introducing a minor amount of impervious. Provided there is no ground preparation other than just removal of the surface soil, no root impacts should result therefore this is not a significant impact to this tree.
OS7	Minor grading adjustments just outside the inner CRZ will not impact the roots. The foundation excavation will be at least 16 feet from the tree eliminating any impacts to the main structural roots and minor damage to smaller roots. This is not a significant impact.
OS8	Minor grading adjustments just outside the inner CRZ will not impact the roots. The foundation excavation will be at least 20 feet from the tree eliminating any impacts to the main structural roots and minor damage to smaller roots. This is not a significant impact.

- OS9 No impacts.
- OS10 A portion of the driveway will encroach into the outer CRZ not constituting a significant impact.
- OS11 A portion of the driveway will encroach into the outer CRZ not constituting a significant impact.

- b. Please update report to ensure all requirements listed in LFPMC 16.14.040(C)(1) and (2) are met. Specifically, please determine estimated canopy after proposed removals and whether or not replacement trees will need to be planted in order to meet the lot's 39% canopy coverage goal.

Total canopy coverage at present is 26,145 s.f. At 39%, a total of 10,196 s.f. is required to be retained. The retained trees provide a total of 7,596 s.f. (29%) requiring replacement with 2,600 s.f. of canopy coverage.

- c. If replacement trees will be needed to meet the lot's 39% canopy coverage goal, please provide a replanting plan with the species of trees to be planted and location. See LFPMC 16.14.090 for more details on replacement tree plans.

Per the recommended replacement trees, two Douglas fir and one western red cedar, at maturity, the proposed replacement trees will provide a minimum of 962 square feet of canopy area each for a total canopy area coverage of 2,886 and a total canopy coverage of retained and replaced trees of 10,482 s.f., satisfying the required 39% coverage.

4. Clearing, Grading, and TESC Plan (Sheet 2 of 2):

- Show all significant trees on the property and any offsite significant tree with a CRZ that extends onto the property.

Response: Significant trees with CRZs have been added to sheet 2 of 2.

- Show the critical root zone (CRZ) and interior critical root zone (ICRZ) for all trees as circles measured from the tree trunk.

Response: Updated (measured from the trunk) CRZs and ICRZs have been added to all trees to remain on sheet 2 of 2.

- Show tree protection fencing location for trees to be retained.

Response: Clearing limits and protective fencing outside of the CRZs/ICRZs are have been updated/added on sheet 2 of 2.

5.0 Use of This Report

This report is provided to Select Homes, Inc. as a means of addressing the existing trees on the property of the proposed SFR in Lake Forest Park. Trees are dynamic and

are affected by environmental changes and impacts. Therefore, this report is not a guarantee that the trees' health and longevity will not be affected by the proposed impacts. As trees can be damaged by severe weather, Tony Shoffner and Shoffner Consulting cannot be held liable for damage caused by the failure of one of these trees or their parts.

Please call if you have any additional questions.

Cordially,

A handwritten signature in black ink, appearing to read "Tony Shoffner". The signature is written in a cursive style with a large, stylized initial "T".

Tony Shoffner
ISA Certified Arborist #PN-0909A
TRAQ

Tree Evaluation Data

Select Homes, Inc. 19023 37th Ave. NE Lake Forest Park

Tree #	Species	DBH	Crown	Canopy Area (s.f)	CRZ (radius)	ICRZ (radius)	Rating	Condition Notes	Status	Proposed	Retained C.A.
1	Bittercherry (<i>Prunus emarginata</i>)	20	42	1,385	20	10	1	Generally good condition and health. Larger and older. Minor deadwood in crown.	Significant	Remove	0
2	Western red cedar (<i>Thuja plicata</i>)	14	28	616	14	7	1	Good condition and health. Young and vigorous.	Significant	Remove	0
3	Western red cedar (<i>Thuja plicata</i>)	14	26	531	14	7	1	Good condition and health. Young and vigorous.	Significant	Remove	0
4	Western red cedar (<i>Thuja plicata</i>)	8	10	79	8	4	1	Good condition and health. Young and vigorous.	Significant	Remove	0
5	Western red cedar (<i>Thuja plicata</i>)	26	36	1,018	26	13	2	Generally good condition and health. Larger and older.	Landmark	Remove	0
6	Douglas fir (<i>Pseudotsuga menziesii</i>)	38	42	1,385	38	19	2	Generally good condition and health. Larger and older.	Landmark	Remove	0
7	Douglas fir (<i>Pseudotsuga menziesii</i>)	22	36	1,018	22	11	2	Good condition and health. Young and vigorous.	Significant	Remove	0
8	Douglas fir (<i>Pseudotsuga menziesii</i>)	38	42	1,385	38	19	2	Generally good condition and health. Larger and older.	Landmark	Remove	0
9	Douglas fir (<i>Pseudotsuga menziesii</i>)	28	40	1,257	28	14	3	Fair condition and health. Considerable amount of deadwood.	Landmark	Retain	1,257
10	Douglas fir (<i>Pseudotsuga menziesii</i>)	20	38	1,134	20	10	1	Good condition and health. Young and vigorous.	Significant	Retain	1,134
11	Western red cedar (<i>Thuja plicata</i>)	6	12	113	6	3	1	Good condition and health. Young and vigorous.	Significant	Retain	113
12	Douglas fir (<i>Pseudotsuga menziesii</i>)	34	42	1,385	34	17	2	Generally good condition and health. Larger and older.	Exceptional	Retain	1,385
13	Western red cedar (<i>Thuja plicata</i>)	10	18	254	10	5	1	Good condition and health. Young and vigorous.	Significant	Remove	0
14	Western red cedar (<i>Thuja plicata</i>)	10	20	314	10	5	1	Good condition and health. Young and vigorous.	Significant	Remove	0
15	Pacific yew (<i>Taxus brevifolia</i>)	22	32	804	22	11	1	Good condition and health. Young and vigorous.	Significant	Remove	0
16	Western red cedar (<i>Thuja plicata</i>)	18	34	908	18	9	1	Good condition and health. Young and vigorous.	Significant	Remove	0
17	Western red cedar (<i>Thuja plicata</i>)	16	30	707	16	8	1	Good condition and health. Young and vigorous.	Significant	Remove	0
18	Western red cedar (<i>Thuja plicata</i>)	14	22	380	14	7	1	Good condition and health. Young and vigorous.	Significant	Remove	0
19	Douglas fir (<i>Pseudotsuga menziesii</i>)	12	26	531	12	6	1	Good condition and health. Young and vigorous.	Significant	Remove	0
20	Western red cedar (<i>Thuja plicata</i>)	27	38	1,134	27	13.5	2	Generally good condition and health. Larger and older.	Landmark	Remove	0
21	Lombardy poplar (<i>Populus nigra 'italica'</i>)	34	36	1,018	34	17	2	Generally good condition and health. Larger and older.	Landmark	Remove	0
22	English holly (<i>Ilex aquifolium</i>)	12	18	254	12	6	2	Good condition and health. Young and vigorous.	Significant	Remove	0
23	Oregon ash (<i>Fraxinus latifolia</i>)	10	26	531	10	5	1	Good condition and health. Young and vigorous.	Significant	Remove	0
24	Red alder (<i>Alnus rubra</i>)	16	40	1,257	16	8	1	Generally good condition and health.	Significant	Remove	0
25	Red alder (<i>Alnus rubra</i>)	18	44	1,520	18	9	1	Generally good condition and health.	Significant	Remove	0
26	Red alder (<i>Alnus rubra</i>)	16	44	1,520	16	8	1	Generally good condition and health.	Significant	Remove	0
27	Red alder (<i>Alnus rubra</i>)	12	34	908	12	6	1	Generally good condition and health.	Significant	Retain	908
28	Red alder (<i>Alnus rubra</i>)	8	26	531	8	4	1	Generally good condition and health.	Significant	Retain	531
29	Red alder (<i>Alnus rubra</i>)	20	38	1,134	20	10	2	Generally good condition and health.	Significant	Retain	1,134
30	Red alder (<i>Alnus rubra</i>)	18	38	1,134	18	9	1	Generally good condition and health.	Significant	Retain	1,134

26145

7596 (29%)

Off Site Trees in Vicinity of Access Road

OS1	Western red cedar (<i>Thuja plicata</i>)	16	22	N/A	16	8	1	Good condition and health. Young and vigorous.	Significant	Remove	N/A
OS2	Western red cedar (<i>Thuja plicata</i>)	10	18	N/A	10	5	1	Good condition and health. Young and vigorous.	Significant	Remove	N/A
OS3	Western red cedar (<i>Thuja plicata</i>)	16	22	N/A	16	8	1	Good condition and health. Young and vigorous.	Significant	Remove	N/A
OS4	Western red cedar (<i>Thuja plicata</i>)	16	24	N/A	16	8	1	Good condition and health. Young and vigorous.	Significant	Remove	N/A
OS5	Western red cedar (<i>Thuja plicata</i>)	10	20	N/A	10	5	1	Good condition and health. Young and vigorous.	Significant	Remove	N/A
OS6	Douglas fir (<i>Pseudotsuga menziesii</i>)	33	42	N/A	33	17	3	Fair condition and health. Considerable amount of deadwood.	Significant	Retain	N/A
OS7	Western red cedar (<i>Thuja plicata</i>)	29	34	N/A	29	15	2	Generally good condition and health.	Significant	Retain	N/A
OS8	Douglas fir (<i>Pseudotsuga menziesii</i>)	36	40	N/A	36	18	2	Generally good condition and health.	Significant	Retain	N/A
OS9	Western red cedar (<i>Thuja plicata</i>)	32	36	N/A	32	16	2	Generally good condition and health.	Significant	Retain	N/A
OS10	Black cottonwood (<i>Populus trichocarpa</i>)	46	56	N/A	46	23	2	Generally good condition and health.	Significant	Retain	N/A
OS11	Black cottonwood (<i>Populus trichocarpa</i>)	40	54	N/A	40	20	2	Generally good condition and health.	Significant	Retain	N/A

Tree # Number assigned to tree on survey
 Species
 Dbh Inches in diameter at 4.5' above ground surface
 Crown Maximum diameter of crown spread in feet

Canopy Area (s.f)
 Canopy area in square feet based upon maximum canopy diameter in feet
 Rating Condition rating (1=Excellent condition and health; 2=Good condition and health;
 3=fair condition and health, minor defects or stress; 4=Poor condition and/or health)
 Condition Notes General notes about health, condition and vigor
 Status Significant or Landmark based upon trunk size
 Propose Retain or Removed based upon site plan

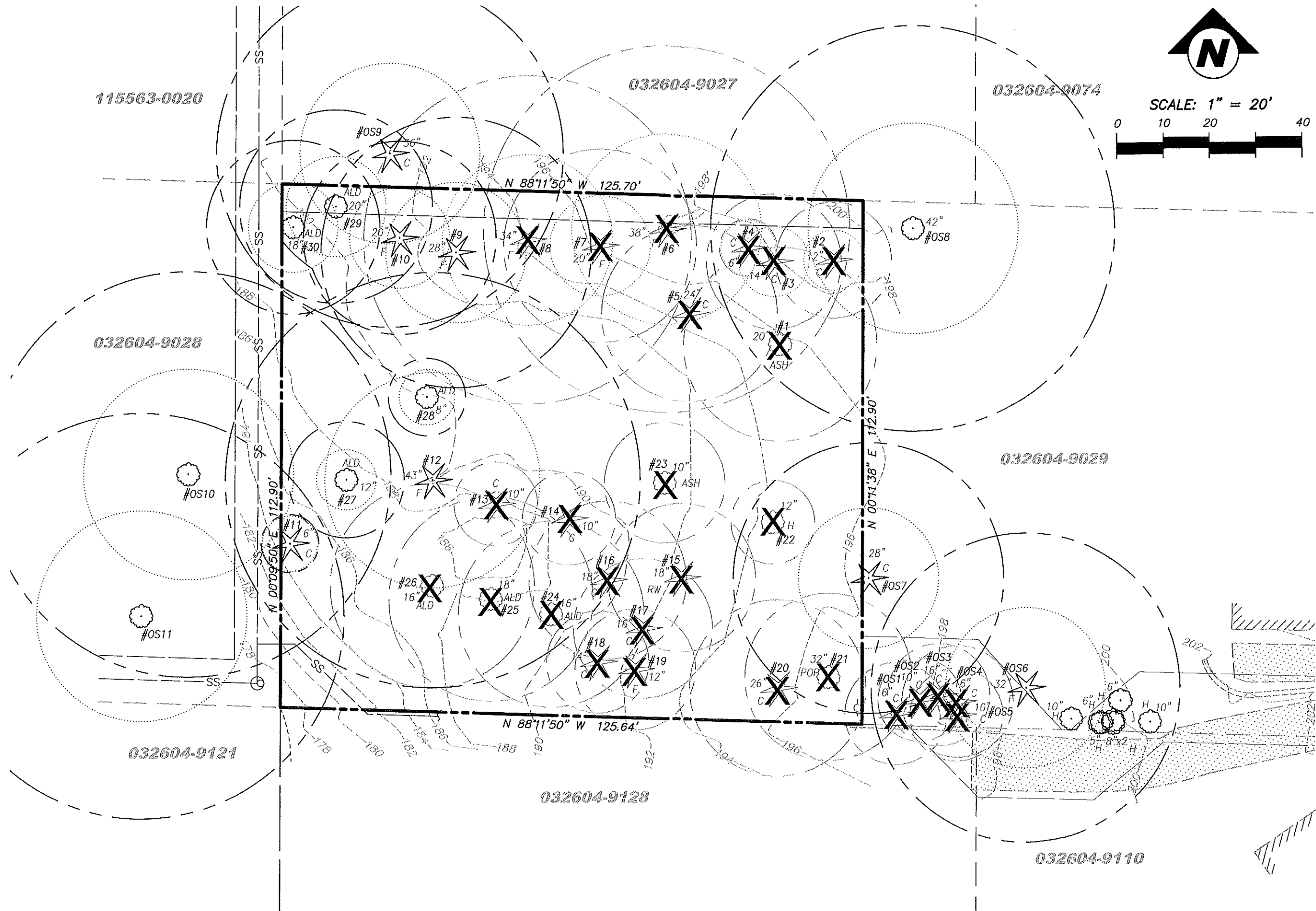
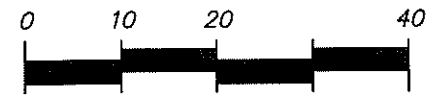
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032604-9027

032604-9074



SCALE: 1" = 20'



NO	DATE	REVISION	BY

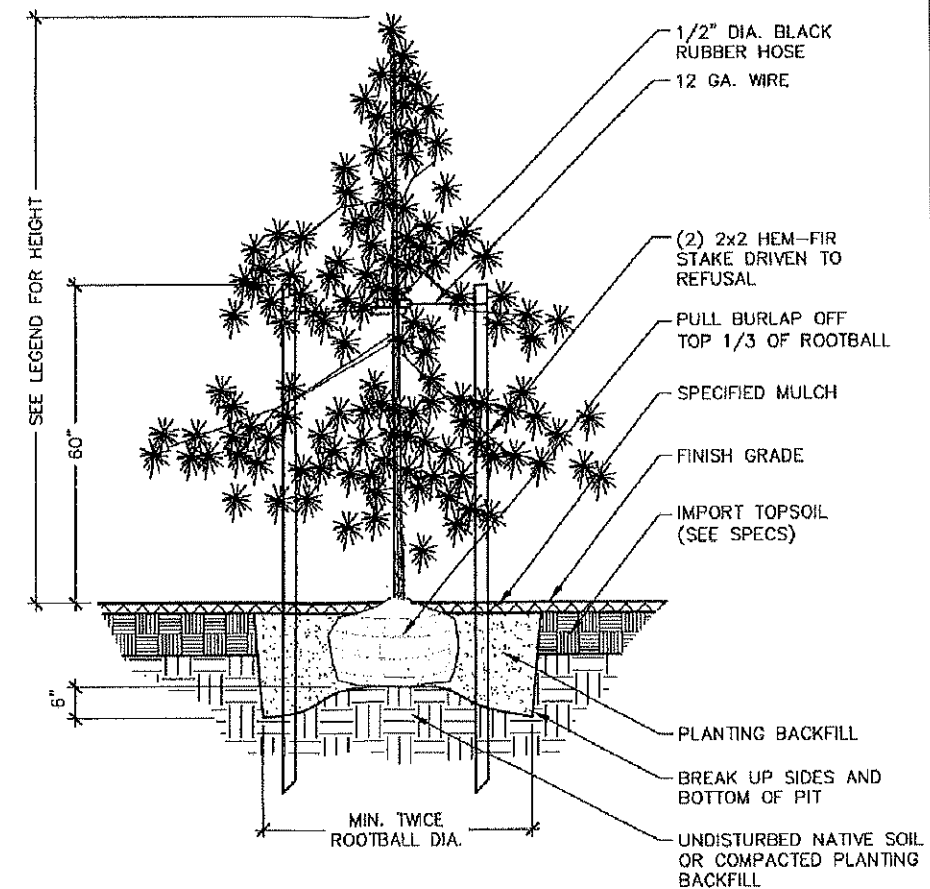
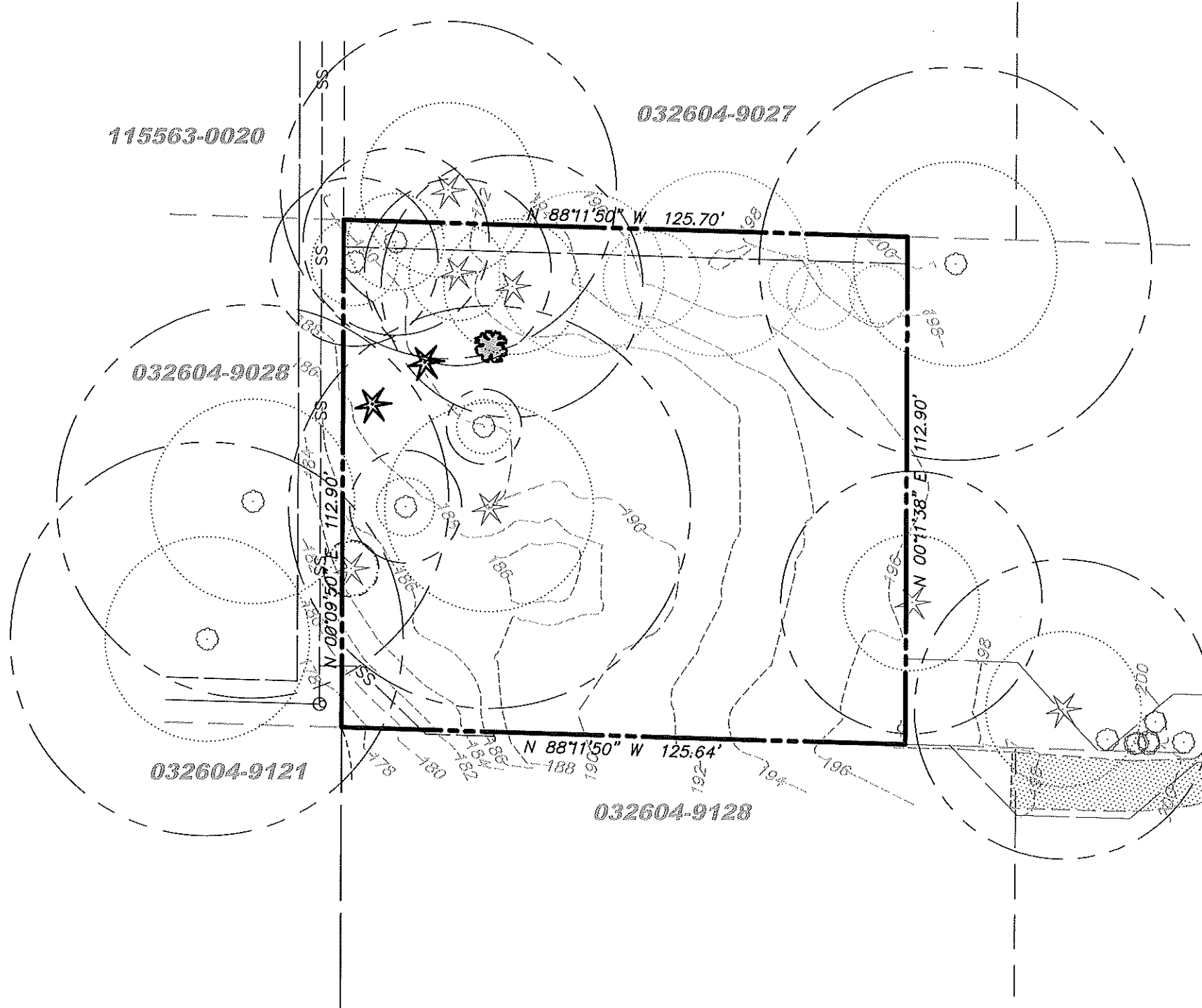
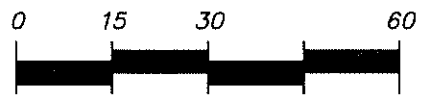
TREE INVENTORY MAP
19013 37TH AVE NE
SELECT HOMES

JOB NO:
2019-87

SHEET:
1 OF 1



SCALE: 1" = 30'



CONIFEROUS TREE PLANTING

TREE REPLACEMENT CALCULATIONS:

EXISTING TREE CANOPY COVERAGE =	26,145 SF
CANOPY COVERAGE GOAL =	39%
MIN. CANOPY COVERAGE REQUIRED =	10,197 SF
RETAINED EXISTING TREE CANOPY COVERAGE =	7,596 SF
REQUIRED REPLACEMENT TREE CANOPY =	2,601 SF

PROPOSED REPLACEMENT TREES:

2~ DOUGLAS FIR (PSEUDOTSUGA MENZIESII) @ 962 SF EA. =	1,924 SF
1~ WESTERN RED CEDAR (THUJA PLICATA) @ 962 SF EA. =	962 SF
TOTAL PROPOSED REPLACEMENT TREE CANOPY =	2,886 SF

- 2 ~ DOUGLAS FIR (PSEUDOTSUGA MENZIESII), 6 FT HEIGHT, 15' O.C.
- 1 ~ WESTERN RED CEDAR (THUJA PLICATA), 6 FT HEIGHT, 15' O.C.

NOTES:

1. REPLACEMENT TREES SHALL BE IN ACCORDANCE WITH LFPMC 16.14.090 TREE REPLACEMENT.
2. ALL APPLICANTS OR THEIR SUCCESSORS IN INTEREST ARE REQUIRED TO MAINTAIN REPLACEMENT TREES UNTIL THEY ARE INDEPENDENTLY VIABLE. REPLACEMENT TREES THAT DIE PRIOR TO MEETING THE DEFINITION OF SIGNIFICANT TREE MUST BE REPLACED BY A TREE THAT MEETS THE CRITERIA OF THIS SECTION AND ANY CANOPY COVERAGE REQUIREMENTS THAT THE EXPIRED TREE WAS INTENDED TO PROVIDE. CHANGES TO THE APPROVED TREE REPLACEMENT PLAN MAY ONLY BE MADE WITH APPROVAL OF BOTH THE ADMINISTRATOR AND THE CITY'S QUALIFIED ARBORIST.
3. ALL REPLACEMENT TREES SHALL MEET THE MINIMUM STANDARDS FOR SIZE AND QUALITY ACCORDING TO THE CURRENT EDITION OF THE ANSI Z60.1 STANDARD FOR NURSERY STOCK.

NO	DATE	REVISION	BY

TREE REPLACEMENT PLAN
19013 37TH AVE NE
SELECT HOMES

JOB NO:
2019-87

SHEET:
1 OF 1