



Portland Tree Consultancy

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TREE PRESERVATION & ASSESSMENT REPORT **(Tualatin Development Code 33.110)**

For: Moore Project Site, Tualatin, Oregon

DATE April 5th, 2021

PROPERTY ADDRESS: 20865 SW 105th Ave., Tualatin, OR 97062

CLIENT REFERENCE: Willamette Manufacturing, Anna Wantz

PROJECT DESCRIPTION: Tree survey and Tree Preservation assessment as required by City Code.

Introduction

Development is proposed on a tax lot of around 0.47 acres in size. A Tree Removal Permit and Tree Preservation standards are required under the Tualatin Development Code. The lot is a former residential home-site and the building structure was removed around 15 years ago with no further development apparent up to the present.

In general, the site can be considered 'ruderal' and does not contain any areas of natural or semi-natural vegetation cover; no native ground cover was observed. The site has some large specimen evergreen trees at its southeast corner and within the northwest section; these trees will be preserved and will require care to preserve properly. Some of the trees show stem scarring consistent with heavy vehicle or machinery activity on the property. A utility line running north of the site within the public right-of-way will affect a number of offsite trees. There do not appear to be any other off-site trees adjacent to the property line that will be affected by the proposed development.

Non-native invasive plants are evident, but not pervasive throughout the lot. There are multiple stems of Sweet cherry on the southwest corner of the site and English ivy is prevalent along the south edge of the property and growing up the trunks of many of the trees.

A tree inventory, site inspection and tree preservation/ assessment, was completed on June 18, 2019 and again on December 18th, 2020. All trees at, above, or just below, 8-inches DBH were tagged with metal discs as required by the Tualatin Development Code. TABLE 1 & FIGURE 1 show the result of this inventory.

Tree Preservation Discussion

The following trees 23 are proposed to be removed (see Figure 2): Trees 3711, 3710, 3708, 3706, 3709, 3707, 3705 (all to be removed due to their location within or adjacent to the public right-of-way. Trees 3735, 3704, 3703, 3723, 3724 are all along the west property line and are either too near excavation or fill for parking lot curbs, stormwater structures. These trees are generally in poor condition (see Table 1). Trees 3701, 3717 and 3727 are within the footprint of the proposed building. It is also recommended that the following non-native invasive trees are removed: Trees 3718, 3719, 3734, 3732, 3731, 3728 and 3729. A crabapple (T3733) in poor condition with shared root space within this grouping of invasive trees will not likely survive and is also recommended for removal.

There are two groups of high value evergreens that are proposed for preservation:

- a) Trees 3720, 3721, and 3722 are very large trees in good to fair condition. The trees have shared root space and have some large surface roots to a radius of 12-ft or so. Fill will be placed within a significant portion of their expected root zone. Keeping fill to 15-ft min. distance will provide sufficient rooting space for the trees to maintain their condition. Tree Protection Fence locations as per Figure 2 will allow this separation. Trees 3725 and 3726 will also be protected by the proposed fence locations. (see Tree Protection Standards 2 & 6)
- b) Five large trees (3712 through 3716) are being preserved at the southeast corner of the property. No excavation of the existing surface will take place adjacent to the trees, but fill will be placed to support the parking area location. It will be important to maintain at least five feet of the existing grade adjacent to the base of the trees in order for the inner root systems of these trees to be aerated. Figure 2 shows the minimum distances for placing the Tree Protection Fence. This fencing will be moved after construction of the parking lot sidewalk to allow placement of large diameter rock over permeable geotextile fabric to allow for an appropriate slope angle. A retaining structure may be constructed in place of the rock fill. (see Tree Protection Standard 6)
- c) Excavation for placement of the utility line running north of the site will affect a number of adjacent trees. It is assumed that the line can be moved slightly from the location shown within the easement to reduce impacts to the adjacent trees. These impacts are discussed in the next section of this report.
- d) Great care will be needed when removing Tree 3711. It has a large, mounded root system and the root zone area between this tree and Tree 3712 must be protected to prevent serious damage to the latter tree. Stump grinding and careful removal of 3711 must take place with a qualified arborist present to oversee this activity (see Tree Protection Standard 1).
- e) A Project Arborist, being a currently qualified ISA Certified Arborist will be on-site to ensure correct placement of the Tree Protection Fencing and at key moments where construction will impact the preserved trees (see Tree Protection Standard 6).

Tree Preservation Discussion (Utility Easement)

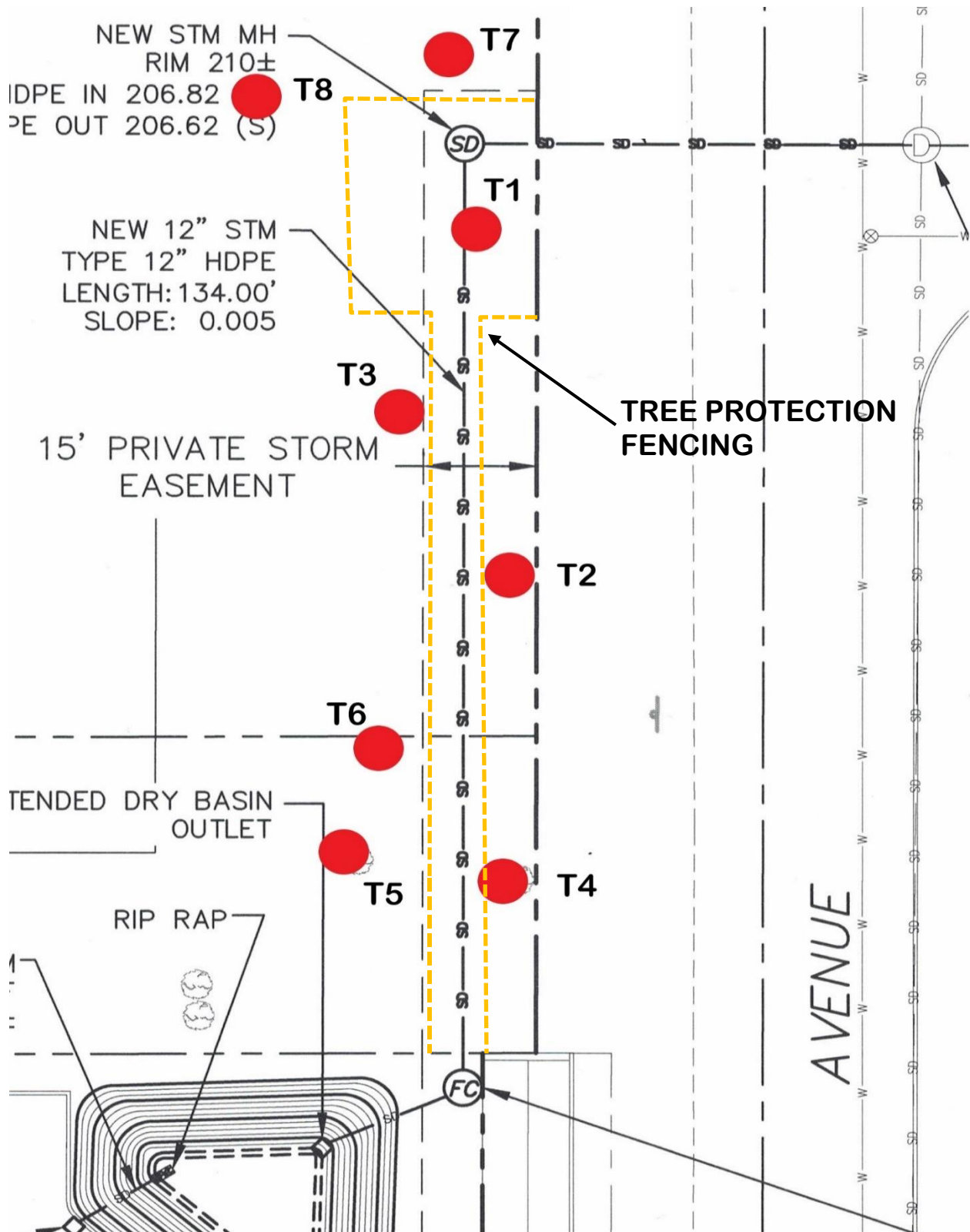
All the trees adjacent to the proposed line are in good condition and can survive a significant amount of root loss. The trees are semi-mature at present and not significant as landmark trees. Figure 3 shows the location of the trees. The second column of Table 2 shows the distance of each tree from the center-line of the stormwater line which was field marked at time of inspection.

1. Further information is needed on the width of the trench required and the size of the equipment needed to complete the work. This will inform decisions on which trees to remove and which to retain and the exact location of the Tree Protection Fencing.
2. Assuming a 3-ft wide trenching centered on the proposed alignment show below and full open trench excavation, then Trees 1, 2, and 4 should be removed and the other trees can be protected with fencing.
3. If the alignment can be moved 3.5-ft west then it may be possible to save all of the trees if a tracked mini-excavator can be specified for the work. Tree 1 would still remain a possibility for removal. An arborist should be on-site during the initial stages of the excavation to make a final determination on tree removal and retention.
4. It is assumed that subsurface directional drilling will not be possible because of the size of the stormwater line. If drilling is a practical option it is likely that all of the trees can be preserved without any significant root severance.
5. Because these trees are very low branched it is recommended that Tree Protection Fencing is orange safety web fencing is used secured in the ground by heavy duty T-posts. General fence locations are shown in Figure 3 but will be adjusted dependent on the size of the excavation equipment and the exact alignment of the utility pipe.

Table 2

Tree ID	Distance OC from Line	Tree Size	Condition	Tree Species	Tree Notes
T1	0.0-ft	14"	Good	Western red cedar	Single stem. Slight crown thinning
T2	2.5-ft	19"	Good	Western red cedar	Four stems from ground level
T3	8.5-ft	18"	Good/Fair	Western red cedar	Twin stems from 7-ft. Small crown
T4	2.0-ft	22"	Good	Western red cedar	Four stems from 2-ft. Large surface roots
T5	15.0-ft	14"	Good	Western red cedar	Multi-stems. Bending stem from 1-ft
T6	13.0-ft	20"	Good	Western red cedar	Multi-stem tree. Strong low crown
T7	14.0-ft	22"	Good	Western red cedar	Three stems. Wide broad crown
T8	15.0-ft	17"	Good/Fair	American sweetgum	Narrow fork at 4-ft. Near full maturity

FIGURE 3. Inventory of Utility Easement Trees, Locations are approximate & not surveyed (Refer to Table 2)



Tree Protection Plan Standards

The following **Tree Protection Standards** will condition all project demolition construction and staging activity at the site. The relevant Tree Protection Standards will be noted on the site construction plans:

1. The removal of all trees noted on the Tree Plan must be completed using best arboricultural practice under supervision of a qualified arborist, being a *currently qualified ISA Certified Arborist*. The stump of Tree 3711 must be ground out under the supervision of a qualified arborist with equipment specially designed for that purpose and the depth of grinding minimized.
2. The placement of all Tree Protection Fencing (TPF) as shown and located on the Tree Protection Plan must occur before any demolition, construction, excavation or storage of materials or equipment takes place at the site. Sufficient erosion control must be placed at the TPF to ensure that no spoil enters the protected areas.
3. The Tree Protection Fencing must be chain link fencing a minimum of 6-ft high and secured firmly in the ground with metal poles or stakes.
4. No excavation, construction activity, including vehicle access, or any storage of spoil, liquids, materials or equipment will occur within the areas protected by Tree Protection Fencing.
5. The TPF locations as detailed on the construction plans will not be altered or breached at any time without the explicit approval of City of Tualatin Inspectors.
6. A qualified arborist must approve the location of the Tree Protection Fencing before any construction or construction staging is initiated. The qualified arborist must also be on-site during any excavation or construction work within 15-ft of any preserved tree (Trees 3712 through 3716)
7. Any damage to preserved trees protected by Tree Protection Fencing, including damage to roots 2-inches diameter and over, must be reported to City of Tualatin Inspectors within 24-hrs.
8. Any severed or badly damaged roots of any size from a preserved tree must be cut cleanly using hand-held tools (e.g. hand saw, reciprocating saw, circular saw, angle grinder or other as approved by a qualified arborist).

TABLE 1. Inventory of Site Trees, completed 6-18-19 & 12-18-20

ID	Tree Species	DBH	Condition	Tree Notes	Tree Protection Notes
3701	Ponderosa pine <i>Pinus ponderosa</i>	36	Good/Fair	Complete open grown CR. DW in lower CR. Metal chain girdling base. No visible defects	To be removed
3702	Big leaf maple <i>Acer macrophyllum</i>	25	Removed	Semi-mature 3 stems (18,15,10"). Stem damage from machinery strikes	Tree removed due to storm damage since initial survey
3703	Port Orford cedar <i>Chamaecyparis laws.</i>	12	Fair/Poor	Bark inclusion at main fork. Strong dieback upper CR. Suppressed by adj trees	3-ft from fence line
3704	Sweet cherry <i>Prunus avium</i>	22	Fair	Semi-mature, group of 7 stems. Narrow CR strong growth	2-ft from fence line
3705	Blue spruce <i>Picea pungens</i>	20	Fair	Good vigor upper CR. DW lower CR. Multiple stem wounds. Large surface RT to N	To be removed
3706	Big leaf maple <i>Acer macrophyllum</i>	9	Fair/Good	Young to semi mature. Stem lean away from hedge	To be removed
3707	Sweet cherry <i>Prunus avium</i>	14	Fair	Semi-mature, vigorous growth. Lower stem lean from hedge	To be removed
3708	Spanish chestnut <i>Castanea sativa</i>	15	Good/Fair	Semi-mature, good vigor, strong growth and full upper CR.	To be removed
3709	Eastern arborvitae hedge (24 stems) <i>Thuja occidentalis</i>	8	Poor/Fair	Line of 24 stems, topped at 10-ft, damaged & suppressed. Stems range from dead to fair, generally poor. Max stem diameter 8-inches	To be removed. Only 1 stem only tagged # 3709.
3710	Big leaf maple <i>Acer macrophyllum</i>	9	Poor/Fair	Semi-mature, heavy upper CR dieback, suppressed under true cedars	To be removed
3711	Deodar cedar <i>Cedrus deodara</i>	56	Good	Fully mature, canopy dominant. Two large stems (42 & 28) with clean union. Basal area under 3-ft grass clippings. No defects noted	
3712	Deodar cedar <i>Cedrus deodara</i>	29	Fair/Good	Narrow CR, shouldered by adj cedars. CR has codominance. No sig defects noted	5-6-ft from fence line
3713	Deodar cedar <i>Cedrus deodara</i>	36	Good/Fair	Canopy dominant, twin stems with bark inclusion. Defects not sig at this time	5-6-ft from fence line
3714	Deodar cedar <i>Cedrus deodara</i>	18	Fair	Very narrow CR, shouldered L and R. Upper CR small but complete	5-6-ft from fence line
3715	Deodar cedar <i>Cedrus deodara</i>	43	Fair	Low branch/leaf density on strong upright stem. Perhaps adj paving has caused some decline. Otherwise no defects noted	5-ft from fence line
3716	Port Orford cedar <i>Chamaecyparis laws.</i>	28	Fair/Good	Two strong stems (20 & 15"), union at 3-ft is clean. Heavy ivy growth in lower CR	5-ft from fence line
3717	Douglas fir <i>Pseudotsuga menziessi</i>	60	Fair	Very large tree with fair vigor in upper CR. Many branch breakouts in mid CR. Ivy growth to 60-ft on stem	

ID	Tree Species	DBH	Condition	Tree Notes	Tree Protection Notes
3718	Sweet cherry <i>Prunus avium</i>	13	Dying	Twin stems (9 & 7") from ground level. 10% expected leaf area. No CR structure remains	At fence line
3719	Sweet cherry <i>Prunus avium</i>	12	Dying	Upper CR has died. As with #3718 it may be that adjacent paving has caused decline	At fence line
3720	Ponderosa pine <i>Pinus ponderosa</i>	46	Good	Strong CR growth and good LCR. Shared C space with adj firs. Dense branch structure. RT visible W to edge of asphalt	
3721	Douglas fir <i>Pseudotsuga menz.</i>	46	Fair	Shared CR space w/3720, 3722. Some insect activity on stem. Large RT visible E to 10-ft	
3722	Douglas fir <i>Pseudotsuga menz.</i>	42	Fair	Shared CR space w/3721. DW lower CR. Surface RT large 10-ft E.	
3723	Big leaf maple <i>Acer macrophyllum</i>	14	Dying	Upper-mid CR dead. Sig stem damage from ground to branches	At fence line, bulging fence
3724	Big leaf maple <i>Acer macrophyllum</i>	18	Fair/Poor	Semi-mature. Large stem wound ground to 8' CR dieback likely associated with wounding	At fence line, bulging fence
3725	Big leaf maple <i>Acer macrophyllum</i>	14	Fair/Poor	Semi-mature. Weak upper crown, with some dieback	At fence line
3726	Big leaf maple <i>Acer macrophyllum</i>	17	Fair	Twin stems (11 & 11") from 2-ft, weak stem union. Strong CR growth.	1-ft from fence line
3727	Big leaf maple <i>Acer macrophyllum</i>	36	Fair	Two twisted part-fused stems, secure. Dense CR. Damaged surface RT to 7ft E. No dieback	
3728	Sweet cherry <i>Prunus avium</i>	18	Fair	Slight dieback in upper CR	
3729	Sweet cherry <i>Prunus avium</i>	14	Fair	Twin stems (10, 8"). Some stem wounding	5-ft from fence line
3730	Sweet cherry <i>Prunus avium</i>	18	Fair/Poor	Large stem w/ weak upper CR	2-ft from fence line
3731	Sweet cherry <i>Prunus avium</i>	13	Fair/Poor	Twin stem (9,9"). Thin, shouldered CR with weak union	
3732	Sweet cherry <i>Prunus avium</i>	12	Fair	Heavily shouldered narrow CR form	
3733	Crabapple <i>Malus sylvestris</i>	9	Fair/Poor	Twin stems, poor CR form, weak and partially suppressed	
3734	Sweet cherry <i>Prunus avium</i>	12	Dying	Dead mid-upper CR. Small CR height no hazard	2-ft from fence line
3735	Big leaf maple <i>Acer macrophyllum</i>	33	Fair/Good	Six large scaffold limbs from 4-ft. Large crown. Large limb break out at main crotch	

FIGURE 1. Inventory of Site Trees (Site layout has been superseded)

Moore Project Tree Survey - all trees over 8-inches DBH (Survey completed 6-18-19)

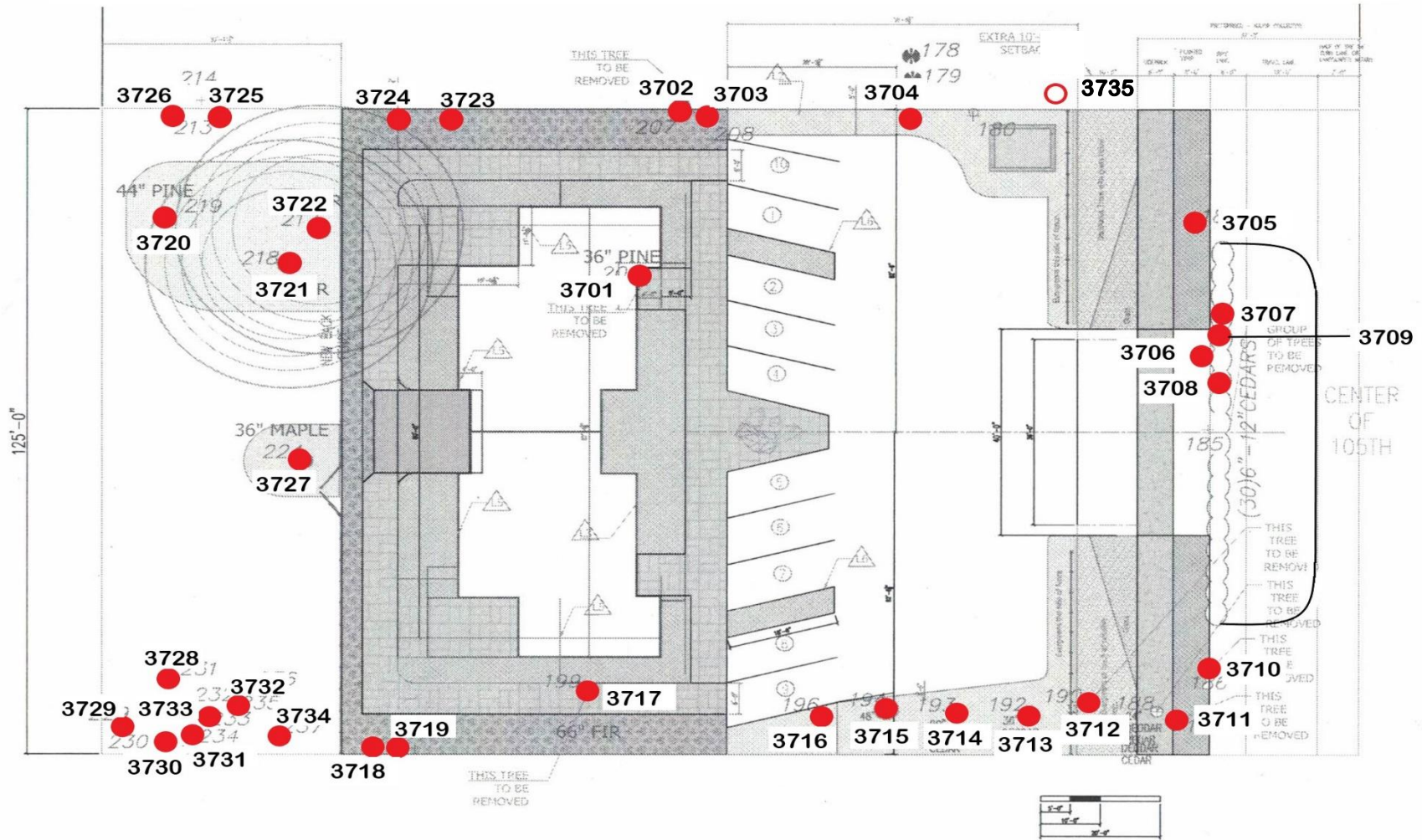
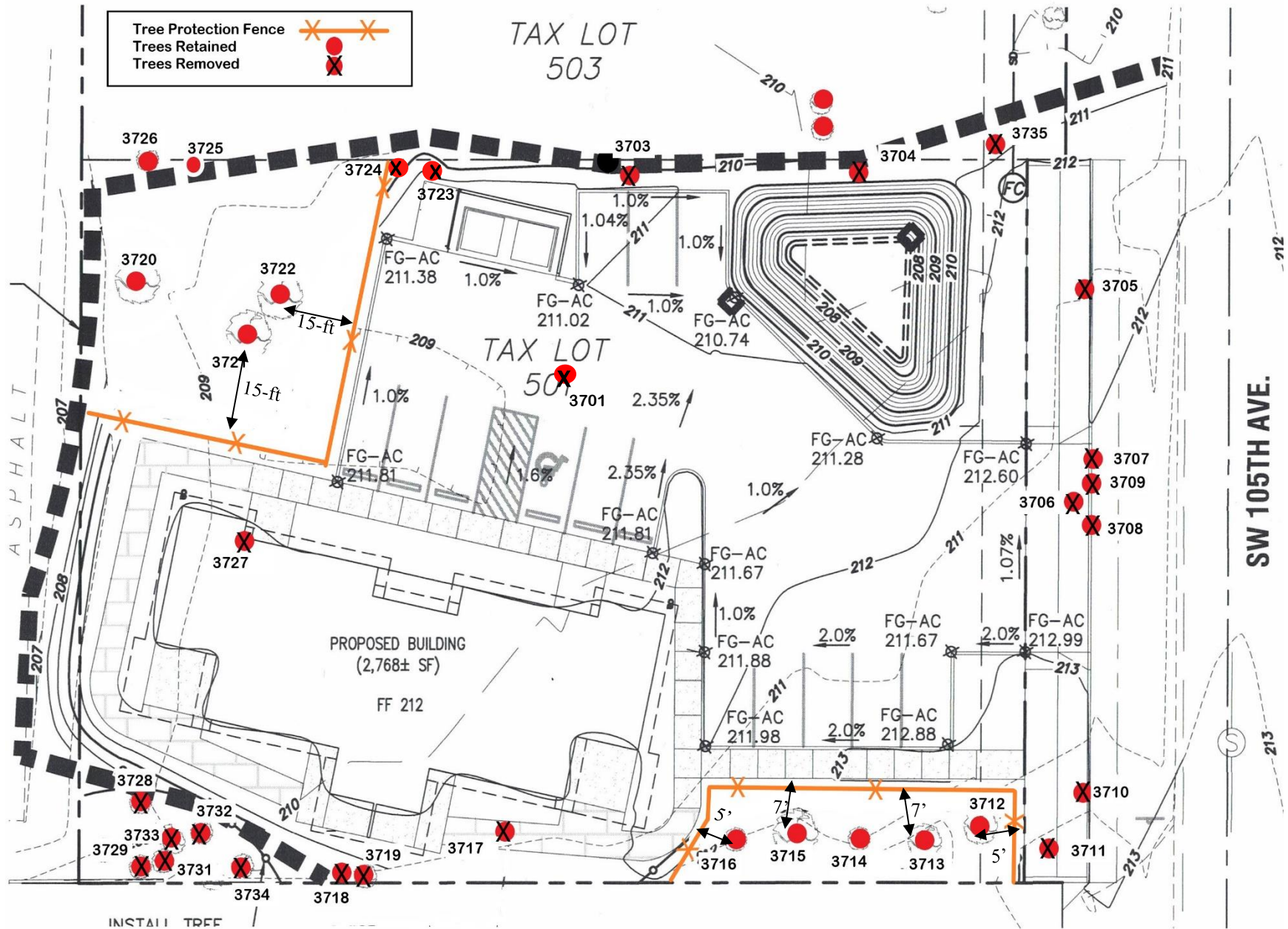


FIGURE 2. Tree Plan & Tree Protection Plan (Site)





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MOORE PROJECT: Notes on Stormwater Easement

All the trees adjacent to the proposed line are in good condition and can survive a significant amount of root loss. The trees are medium size at present and not significant landmark trees. The second column of Table 1 shows the distance of each tree from the field marked center-line of the stormwater line.

1. Further information is needed on the width of the trench required and the size of the equipment needed to complete the work.
2. Assuming a 3-ft wide trenching on the proposed alignment and full mechanical trench excavation, then Trees 1, 2, and 4 should be removed and the other trees can be protected with fencing. If possible the trench should be moved 2-ft to the east for further protection of the remaining trees.
3. If the alignment can be moved 3.5-ft west then it may be possible to save all of the trees if a tracked mini-excavator can be specified for the work. An arborist should probably be on-site during this excavation to prune roots and oversee the work.
4. Assume subsurface directional drilling will not be possible because of the size of the stormwater line.

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