Todd Prager & Associates LLC

MEMORANDUM

DATE: March 8, 2024

TO: Tim Lawler (Greenlight Development)

FROM: Christine Johnson, ASCA Registered Consulting Arborist® #823

RE: Salem Apartments Tree Protection and Removal Plan

Summary

Salem Apartments is a proposed apartment complex at the intersection of Center Street NE and 23rd Street NE in Salem, Oregon. The tree inventory resulted in 86 trees at or near the development site, 60 of which are non-exempt trees 10-inches in diameter or greater, and 7 of which are significant trees. Sixteen (16) non-exempt trees are proposed for preservation, preserving 26.7 percent of non-exempt trees. All 7 significant trees are proposed for preservation. Retained trees will be protected with tree protection fencing, alternative construction techniques, and project arborist oversight during construction. Compliance with the provided tree protection plan and tree protection specifications should result in successful retention of 16 non-exempt trees over 10-inches in diameter, including all significant trees. Since over 30 percent of the critical root zones of the trees 2419, 2420, 2429, and 4098 will be disturbed during construction, a tree variance may be required.

Background

The site is located at 2561 Center Street NE (tax ID 527113 (4000)). The property is 9.85 acres and zoned Mixed Use I (MU-I). Trees over 10 inches in diameter (DBH) exist on the property, requiring compliance with Section 808 (Preservation of Trees and Vegetation) of the Salem Development Code. Heritage trees do not exist on the property. The property is in Marion County. There are no applicable insect pest quarantines or control area orders related to this project.[1]

This tree protection plan is for Phase I of the project, focusing on the east side of the property. The tree protection plan will be amended with Phase II.

[1] "Quarantines and Control Areas," Oregon Department of Agriculture, accessed January 19, 2023, https://www.oregon.gov/oda/programs/IPPM/Pages/Quarantines.aspx.

Assignment

The scope of work requested of our firm was:

1. Conduct one site visit to tag and inventory up to 90 trees at the Salem Apartments project site. Inventory to include the tree number, species, DBH, health and structural conditions of the trees, and pertinent comments.
2. Prepare a tree protection plan in accordance with Salem Code Chapter 808 – Preservation of Trees and Vegetation.

Tree Inventory

The tree inventory was completed on January 10, 2024. The following information was collected for each tree: tree number, common name, scientific name, DBH (diameter at breast height), single-stem DBH, approximate crown radius, health condition, structural condition, significant tree status, pertinent comments, whether the tree is exempt from Section 808 of the Salem Development Code and treatment (Attachment 1). The tree numbers in the inventory in Attachment 1 correspond to the tree numbers on the tree conservation plan in Attachment 2.

Protection Measures During Construction (808.046)

The tree protection plan is in Attachment 2. There are 16 non-exempt trees greater than 10-inches in diameter proposed for preservation. There are an additional two (2) trees less than 10-inches in diameter being preserved. All 7 significant trees are proposed for preservation. The critical root zones[2] for preserved trees in the Phase I area of the project are shown on the tree protection plan. Six (6) of the 16 trees proposed for preservation are addressed in Phase I. This section of the report provides an overview of the trees proposed for preservation in Phase I.

Building #1 Pin Oaks (#2419 and #2420)

Two (2), 21-inch DBH pin oaks (*Quercus palustris*) are proposed for preservation. These trees are in good health and have minor structural flaws such as wounds on the lower trunks and dead branches. Pin oaks have a moderate to good tolerance to construction impacts.[3] The project arborist should be onsite to guide excavation for foundations, paving, and grading within the critical root zones of trees 2419 and 2420. The following alternative construction methods may be required:

- Paving - Use of a modified pavement profile as shown in Figure 1.

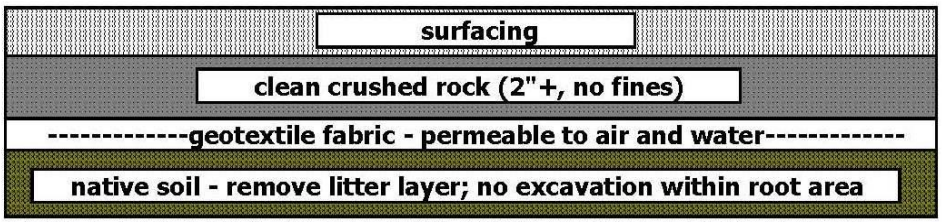

Figure 1 Sample profile for area within fenced tree protection zone. Depth of rock is dependent on grading.

[2] Section 808.005. "*Critical root zone* means the circular area beneath a tree established to protect the tree's trunk, roots, branches, and soil to ensure the health and stability of the tree. The critical root zone measures one-foot in radius for every one-inch of dbh of the tree or, as an alternative for non-significant trees, may be specifically determined by an arborist."

[3] Clark, JR, Matheny, N. Trees and Development: A Technical Guide to Preservation of Trees During Land Development. Champaign (IL): International Society of Arboriculture; 1998.

- Methods to minimize the depth of the modified pavement profile, such as the use of reinforced pavement, should be implemented. Also, methods to improve air and water exchange through the pavement such as the use of permeable paving materials or 4-inch diameter aeration holes at 10 feet on center should be used. Curbs constructed adjacent to the trees may need to be roll curbs or extruded curbs to minimize excavation where there are structural roots.
- Foundation Construction - To minimize root zone impacts, the foundation to the west of the trees may need to be bridged over any critical structural roots uncovered during excavation. Note that the elevation of the building shall be carefully planned so that root impacts are minimized and bridging of roots is possible.
- Compaction prevention - Prior to construction, a 12-inch layer of wood chips shall be placed over geotextile fabric to minimize compaction from heavy equipment within the critical root zones of the trees. The fabric and wood chips shall be removed when improvements within the critical root zones under project arborist supervision are complete, and compaction is no longer an issue. Approved alternatives to fabric and wood chips such as the use of steel plates may be used.

Since over 30 percent of the critical root zone of trees 2419 and 2420 will be disturbed during construction, a tree variance (Sec. 808.045) may be required.

Center Street NE Street trees (#6102, #6103, #6104, and #6105)
Four (4) street trees north of Center Street NE are proposed for retention. The sidewalk to the south of the trees is being retained and proposed grading stops approximately 10 feet north of the trees. These trees are young and healthy and should be able to withstand the small amount of encroachment into their root zones on the north side. Since less than 30 percent of the critical root zone of these trees will be disturbed during construction, a tree variance is not required.

Blue Atlas Cedar (#4098)
Tree 4098 is a mature, 23-inch multi-stem blue atlas cedar (*Cedrus atlantica* 'Glauca'). It is in good health. Atlas cedar have a medium tolerance to construction impacts.[4] The design team met to review the proposed pavement and grading around this tree. Proposed grading to the east is very similar to existing grade and excavation for the sidewalk should be minimal. The sidewalk may need to be suspended over the roots on the west side or constructed using a modified pavement profile as shown in Figure 1. Curbs constructed adjacent to the tree may need to be roll curbs or extruded curbs to minimize excavation where there are structural roots. The project arborist should be onsite to guide excavation for paving and grading within the critical root zone of tree 4098. Compaction prevention will also be required within the critical root zone of tree 4098 as described for 2419 and 2420.

Since over 30 percent of the critical root zone of tree 4098 will be disturbed during construction, a tree variance may be required.

[4] Matheny, N, Smiley, E.T., Gilpin, R., Hauer, R., Best Management Practices: Managing Tees During Site Development and Construction (3rd Ed.), Atlanta (GA): International Society of Arboriculture, 2023.

Hornbeam (#2429)

Tree 2429 is a mature, 23-inch hornbeam (*Carpinus sp.*). It is in good health. Hornbeam have a moderate tolerance to construction impacts and are considered a hardy urban species.[3] The design team met to review the proposed pavement and grading around this tree. The sidewalk may need to be suspended over the roots on the north side or constructed using a modified pavement profile as shown in Figure 1. The project arborist should be onsite to guide excavation for paving and grading within the critical root zone of tree 2429. Compaction prevention will also be required within the critical root zone of tree 2429 as described for 2419 and 2420.

Since over 30 percent of the critical root zone of tree 2429 will be disturbed during construction, a tree variance may be required.

The following tree protection measures are recommended:

1. **Tree protection fencing:**
    a. *For trees on private property:*
        i. *Height*: Provide a minimum 6-foot-high metal fence (chain-link or chain-link panels).
        ii. *Posts & Spacing:* Place concrete footers, steel footers, or metal t-posts no more than 10-feet apart.
        iii. *Existing Grade*: Install fencing flush with the initial undisturbed grade of the protection zone.
        iv. *Locations:* Install fencing as shown in Attachment 2.
2. **Tree protection signage:**
    a. Weatherproof tree protection signage shall be placed on tree protection fencing.
    b. Signage should be placed at intervals of every third fence panel/section.
    c. See Attachment 3 for an example tree protection sign.
3. **Prevent protection zone impacts:** The following activities are prohibited within a protection zone:
    a. Dumping of harmful chemicals and materials, such as paints, thinners, cleaning solutions, petroleum products, concrete or dry wall excess, construction debris, or run-off;
    b. Storage of materials such as building supplies, soil, rocks, or waste items;
    c. Placement of portable toilets, drop-boxes, or similar temporary items;
    d. Parking of vehicles or equipment; and,
    e. Excavation, trenching, grading, root pruning, or similar activities unless directed by an arborist present on site.
4. **Tree protection fencing maintenance and removal:**
    a. *Maintenance*: Maintain protection fencing in good effective condition at the approved and inspected location. Fencing that is damaged during site work shall be repaired and placed in the approved location prior to resuming work in the area. Failure to maintain tree protection fencing in the approved locations may result in a code violation.
    b. *Removal*: Fencing may be removed when all building demolition activity that could cause damage or harm to trees and other vegetation has been completed and is no longer occurring on site (i.e., no use of heavy equipment; no delivery trucks and contractor vehicles driving or parking off driveway; no utility trenching; etc.).

5. **Branch Pruning.** Trees proposed for preservation should be pruned prior to construction commencing. Dead, dying, and hanging branches should be pruned to reduce the likelihood of branch failure and increase site safety. Branches that may conflict with equipment may also be considered for removal. Branches that may be in conflict with required building, pedestrian, and road clearance should also be removed prior to construction. The following limitations apply to these pruning specifications:
    a. Climbing spurs shall not be used.
    b. All pruning cuts shall be made in a matter that is consistent with the ANSI A300 Part 1 pruning cuts section 7.
    c. Cuts should be 2 to 4-inches in diameter, not to exceed 4-inches.
    d. No more than one-fourth of the live crown of the tree shall be pruned in an annual growing season. If more than one-fourth of the live crown of the tree needs to be pruned to accomplish the pruning objectives, the additional pruning shall be delayed until the following annual growing season.
    e. Work practices shall be consistent with the current ANSI A300 Part 1 pruning practices section 8 and the ANSI Z133 standard.
6. **Root Pruning.** Excavation should be done slowly and methodically, several inches at a time to avoid root damage. Roots in conflict with proposed structures will either be cut or preserved, which may require site modifications. If roots are in direct conflict with proposed improvements, the arborist will guide the cutting of roots. A reciprocating saw with a clean, wood cutting blade should be used. The cut surface should then be covered with native soil. Cut roots will be documented for the property owner. Post-construction treatment, such as providing supplemental watering and fertilizer may be recommended.
7. **Compaction Prevention**. Prior to construction, a 12-inch layer of wood chips shall be placed over geotextile fabric to minimize compaction from heavy equipment within the critical root zones of trees 2419, 2420, 2429, and 4098. The fabric and wood chips shall be removed when improvements within the critical root zones under project arborist supervision are complete, and compaction is no longer an issue. Approved alternatives to fabric and wood chips such as the use of steel plates may be used.
8. **Paving within Critical Root Zones**- Suspend pavement over the root zone or use a modified pavement profile as shown in Figure 1. Methods to minimize the depth of the modified pavement profile such as the use of concrete, reinforced pavement should be implemented. Also, methods to improve air and water exchange through the pavement such as the use of permeable paving materials or 4-inch diameter aeration holes at 10 feet on center should be used. Curbs constructed adjacent to the trees may need to be roll curbs or extruded curbs to minimize excavation where there are structural roots.
9. **Foundation Construction Adjacent to Trees 2419 and 2420** - To minimize root zone impacts, the foundation to the west of trees 2419 and 2420 may need to be bridged over any critical structural roots uncovered during excavation. Note that the elevation of the building shall be carefully planned so that root impacts are minimized and bridging of roots is possible.
10. **Erosion control.** Straw wattles should be used as erosion control at the edge of the root protection zone if required by the City of Salem. Do not trench or use sediment fencing inside tree protection fencing.

11. **Project arborist oversight:**
    a. The project arborist will oversee the following work:
        i. Paving, foundation construction, excavation and grading within the critical root zones of trees 2419, 2420, 2429, and 4098.
    b. The project arborist will document findings for the owner.
12. **Report sharing**. Share this report in its entirety with the project team and construction staff.
13. **Additional tree protection measures**. Additional tree protection measures consistent with the City of Salem tree code and industry standards are in Attachment 5.

Conclusion

Phase I of the Salem Apartments project is compatible with tree protection measures outlined in Salem Code Chapter 808 – Preservation of Trees and Vegetation. Sixteen (16) trees are proposed for preservation, six of which are addressed in Phase I of the project. All significant trees are proposed for preservation. Tree protection fencing, alternative construction methods, and project arborist oversight during paving, foundation construction, excavation, and grading will protect preserved trees. Since over 30 percent of the critical root zone of the trees 2419, 2420, 2429, and 4098 will be disturbed during construction, a tree variance may be required.

Please contact me if you have any questions about the information outlined in this report.

Sincerely,

Christine Johnson

Christine Johnson
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ISA Certified Arborist®, PN-8730A
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Enclosures: Attachment 1 – Tree Inventory
Attachment 2 – Tree Protection Plan
Attachment 3 – Tree Protection Signage
Attachment 4 – Tree Protection Specifications
Attachment 5 – Assumptions and Limiting Conditions

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Attachment 1 - Tree Inventory
Salem Apartments - 2561 Center Street NE
January 10, 2024

No.	Common Name	Species Name	DBH[1] (in)	Single DBH (in)	C-Rad[2] (ft)	Health[3]	Structure[3]	Sig[4]	On property before	On property after	Comments	Exempt	Treatment
1193	hornbeam	*Carpinus* spp.	23	23	20	good	fair	no	yes	yes	Numerous upright leaders, inclusion, some branch decay, diameter measured at 1.5'	non-exempt	remove
1194	Norway maple	*Acer platanoides*	9	9	15	poor	poor	no	yes	yes	Invasive species, large and expansive surface roots with damage, one-sided crown to E, dead branches	exempt (<10-inch DBH)	n/a
1195	Norway maple	*Acer platanoides*	11	11	13	good	good	no	yes	yes	Invasive species, surface roots with damage	non-exempt	remove
1196	Norway maple	*Acer platanoides*	12	12	18	fair	good	no	yes	yes	Invasive species, large and expansive surface roots with damage	non-exempt	remove
1197	Norway maple	*Acer platanoides*	13	13	16	fair	fair	no	yes	yes	Invasive species, small dead branches, large and expansive surface roots with damage	non-exempt	remove
1198	Norway maple	*Acer platanoides*	13	13	15	fair	fair	no	yes	yes	Invasive species, small dead branches, large and expansive surface roots with damage, trunk cavity at 6'	non-exempt	remove
1199	saucer magnolia	*Magnolia × soulangeana*	6	6	5	poor	poor	no	yes	yes	lost top, small diameter dead, watersprouts	exempt (<10-inch DBH)	n/a
1340	Norway maple	*Acer platanoides*	10	10	10	fair	fair	no	yes	yes	Invasive species, moderate structure, surface roots with damage, small dead branches, diameter measured at 3.5'	non-exempt	remove
1341	Norway maple	*Acer platanoides*	11	11	9	fair	fair	no	yes	yes	Invasive species, basal decay with hollow, surface roots with damage, small dead and broken branches, poor past pruning, diameter measured at 4'	non-exempt	remove
1837	Norway maple	*Acer platanoides*	12	12	10	fair	fair	no	yes	yes	Invasive species, surface root damage, codominant stems, small dead branches, branch decay	non-exempt	remove
1839	Norway maple	*Acer platanoides*	16	16	15	fair	fair	no	yes	yes	Invasive species, large and expansive surface roots with damage, trunk wound	non-exempt	remove
1840	Norway maple	*Acer platanoides*	11	11	15	fair	fair	no	yes	yes	Invasive species, moderate structure, small dead branches, large and expansive surface roots with damage	non-exempt	remove
1841	Norway maple	*Acer platanoides*	11	11	10	fair	fair	no	yes	yes	Invasive species, small dead branches, large and expansive surface roots with damage, thin	non-exempt	remove
2419	**pin oak**	***Quercus palustris***	**21**	**21**	**16**	**good**	**fair**	**no**	**yes**	**yes**	**Moderate structure, codominant stems and multiple upright leaders, trunk wounds, some history of small branch failures, diameter measured at 3.5'**	**non-exempt**	**retain**
2420	**pin oak**	***Quercus palustris***	**21**	**21**	**28**	**good**	**fair**	**no**	**yes**	**yes**	**Moderate structure, some history of small branch failures, lower basal and trunk wounds all sides**	**non-exempt**	**retain**
2421	deodar cedar	*Cedrus deodara*	26	26	26	good	good	no	yes	yes	Trunk wound S face, codominant crown class with 2422	non-exempt	remove
2422	deodar cedar	*Cedrus deodara*	29	29	22	fair	fair	no	yes	yes	Self-correcting lean, trunk wound SE face, codominant crown class with 2421	non-exempt	remove
2423	ponderosa pine	*Pinus ponderosa*	26	26	22	fair	fair	no	yes	yes	Western gall rust infection, significant sequoia pitch moth infestation, trunk wounds	non-exempt	remove
2427	Norway maple	*Acer platanoides*	13	13	16	fair	fair	no	yes	yes	Invasive species, large and expansive surface roots with damage, small dead branches	non-exempt	remove
2428	Norway maple	*Acer platanoides*	14	14	12	fair	fair	no	yes	yes	Invasive species, large and expansive surface roots with damage, small dead branches	non-exempt	remove

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2429	**hornbeam**	***Carpinus* spp.**	**23**	**23**	**18**	**good**	**fair**	**no**	**yes**	**yes**	**Numerous upright leaders, surface and circling roots, diameter measured at 2'**	**non-exempt**	**retain**
3173	Norway maple	*Acer platanoides*	12	12	13	fair	fair	no	yes	yes	Invasive species, small dead branches, surface roots with damage, girdling roots	non-exempt	remove
3253	camelia	*Camelia spp.*	6,4,4,4,4	10	10	poor	poor	no	yes	yes	tree may no longer exist, there is a multi-stem camelia here.	non-exempt	remove
3254	Japanese maple	*Acer palmatum*	8,7,7	13	4	very poor	very poor	no	yes	yes	Poor structure, history of branch failure, trunk decay	non-exempt	remove
3502	sweetgum	*Liquidambar styraciflua*	17	17	15	good	good	no	yes	no	ivy	n/a	n/a
3543	sweetgum	*Liquidambar styraciflua*	18	18	16	good	fair	no	yes	yes	Expansive surface roots with damage, trunk wound, broken branches	non-exempt	remove
3602	**giant sequoia**	***Sequoiadendron giganteum***	**80**	**80**	**28**	**good**	**good**	**yes**	**yes**	**yes**	**diameter estimated, surface roots with mower damage, some ivy covering base**	**non-exempt**	**retain**
3618	Norway maple	*Acer platanoides*	14	14	14	fair	fair	no	yes	yes	Invasive species, surface roots with damage, dead and broken branches, crown decay	non-exempt	remove
4097	ponderosa pine	*Pinus ponderosa*	29	29	22	fair	fair	no	yes	yes	diameter estimated, multiple leaders, heavily infested with sequoia pitch moth	non-exempt	remove
4098	**blue Atlas cedar**	***Cedrus atlantica* 'Glauca'**	**23**	**23**	**22**	**good**	**fair**	**no**	**yes**	**yes**	**diameter estimated, multiple leaders**	**non-exempt**	**retain**
4147	Japanese maple	*Acer palmatum*	8	8	10	good	fair	no	yes	yes	Some branch decay at old branch failures	exempt (<10-inch DBH)	n/a
4156	European white birch	*Betula pendula*	17	17	18	poor	poor	no	yes	yes	Invasive species, dying from top down, codominant leaders, dead and broken branches, sapsuckers, suspect bronze birch borer	non-exempt	remove
4320	western redcedar	*Thuja plicata*	2x19	27	18	poor	fair	no	yes	yes	Codominant stems, thin crown, chlorotic	non-exempt	remove
4644	plum	*Prunus* spp.	18	18	14	poor	poor	no	no	no	multiple leaders, topped for utility lines and utility pole clearance, crown decay, numerous sprouts	n/a	n/a
4645	Japanese maple	*Acer palmatum*	8	8	12	good	fair	no	no	no	diameter measured at 3', crossing branches	n/a	n/a
4646	Japanese maple	*Acer palmatum*	8	8	12	good	fair	no	no	no	diameter measured at 3.5, poor scaffold branch structure	n/a	n/a
4647	Japanese maple	*Acer palmatum*	7	7	12	good	good	no	no	no	diameter measured at 4'	n/a	n/a
4648	Japanese maple	*Acer palmatum*	5	5	12	good	good	no	no	no	diameter measured at 3'	n/a	n/a
5103	Austrian pine	*Pinus nigra*	25	25	25	good	fair	no	no	no	Basal swelling in W face, some sequoia pitch moth, not on property	n/a	n/a
5190	flowering pear	*Pyrus calleryana*	9	9	8	good	good	no	no	no	Surface roots, not on property	n/a	n/a

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5235	flowering pear	*Pyrus calleryana*	10	10	10	good	fair	no	no	no	Some history of branch failure or poor past pruning, not on property	n/a	n/a
5267	hornbeam	*Carpinus* spp.	36	36	20	poor	poor	yes	no	no	Multiple stems, diameter approximated severely topped and pruned for utility line clearance, crown and trunk decay; not on property	n/a	n/a
5360	Japanese maple	*Acer palmatum*	5	5	5	fair	fair	no	no	no	Multiple stems, diameter measured at 1.5', poorly pruned, trunk damage W face, not on property	n/a	n/a
5409	Japanese maple	*Acer palmatum*	7,6	9	12	fair	fair	no	no	no	Diameter 8” below codominant stem juncture, pruned away from building, crown is reaching utility lines, not on property	n/a	n/a
5410	Japanese maple	*Acer palmatum*	7,7	10	12	good	poor	no	no	no	Diameter 8” below codominant stem juncture, trunk damage W face, pruned away from building, crown is reaching utility lines, not on property	n/a	n/a
5416	flowering pear	*Pyrus calleryana*	8	8	12	good	good	no	no	no	self-correcting lean, not on property	n/a	n/a
5451	plum	*Prunus* spp.	18	18	16	poor	poor	no	yes	yes	Very poor structure, dead and broken branches, numerous sprouts, cracked branches	non-exempt	remove
5506	katsura	*Cercidiphyllum spp.*	10	10	10	fair	fair	no	no	no	Multiple upright leaders, surface roots with damage, trunk damage 0-3' on SW face, inclusion, diameter measured at 3.5'	n/a	n/a
5508	katsura	*Cercidiphyllum spp.*	11	11	10	fair	fair	no	no	no	Multiple leaders, surface roots with damage, trunk damage SW face, cord compartmentalized in W leader; diameter measured at 3.5'	n/a	n/a
6101	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	tree does not exist (stump remains)	n/a	n/a
6102	red oak	*Quercus rubra*	9	9	12	good	good	no	yes	yes	girdling root north side	exempt (<10-inch DBH)	**retain**
6103	red oak	*Quercus rubra*	9	9	15	good	good	no	yes	yes	minor surface root damage, possible poor drainage	exempt (<10-inch DBH)	**retain**
6104	**Norway maple**	***Acer platanoides***	**20**	**20**	**18**	**fair**	**fair**	**no**	**yes**	**yes**	**Invasive species, dead and broken branches, surface roots with damage**	**non-exempt**	**retain**
6105	**red oak**	***Quercus rubra***	**10**	**10**	**14**	**good**	**good**	**no**	**yes**	**yes**		**non-exempt**	**retain**
6106	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	tree does not exist (stump remains)	n/a	n/a
6107	red maple	*Acer rubrum*	18	18	20	fair	fair	no	yes	yes	Moderate structure, some included bark, surface roots with damage, girdling roots	non-exempt	remove
6108	red maple	*Acer rubrum*	14	14	18	fair	fair	no	yes	yes	Multiple leaders, some included bark, hollow with some decay W trunk face, surface roots with damage	non-exempt	remove
6111	red maple	*Acer rubrum*	20	20	26	fair	fair	no	yes	yes	Multiple leaders, some included bark, surface and circling roots with damage	non-exempt	remove
6112	red maple	*Acer rubrum*	18	18	26	fair	fair	no	yes	yes	Codominant leaders with included bark and open seam, surface roots with damage, trunk wound	non-exempt	remove
6122	Austrian pine	*Pinus nigra*	25	25	20	fair	fair	no	yes	yes	Unidentified decrepit mushrooms ~2’ from trunk NE face, codominant leaders, self corrected lean	non-exempt	remove

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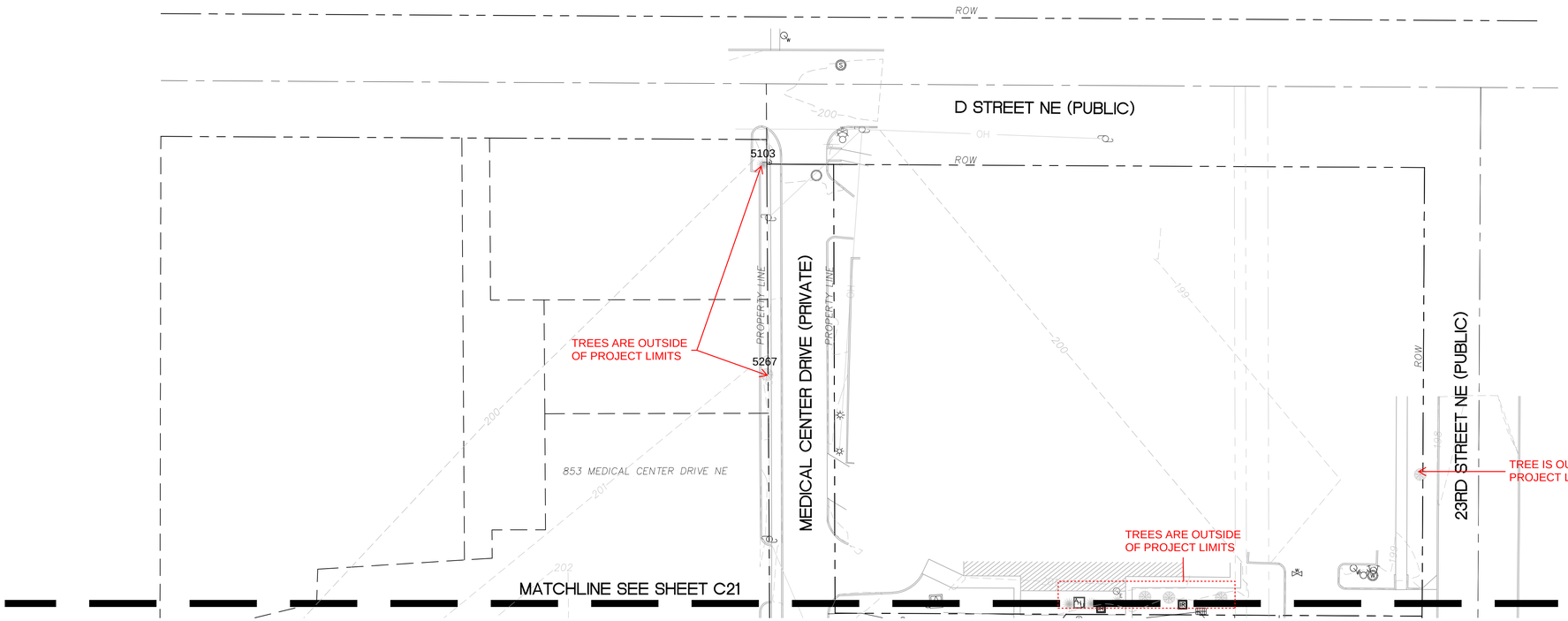
6183	Japanese maple	*Acer palmatum*	2x4	6	10	fair	fair	no	yes	yes	Codominant stems with included bark, surface roots with damage	exempt (<10-inch DBH)	n/a
6184	Japanese maple	*Acer palmatum*	3x5	9	14	very poor	very poor	no	yes	yes	Multiple stems, previous stem failure left large wound on remaining E stem, crown asymmetry	exempt (<10-inch DBH)	n/a
6185	Japanese maple	*Acer palmatum*	5,5	7	13	fair	fair	no	yes	yes	one-sided crown to south, girdling root	exempt (<10-inch DBH)	n/a
6186	Austrian pine	*Pinus nigra*	18	18	18	poor	poor	no	yes	yes	codominant stems with included bark, history of branch failure, sequoia pitch moth, lost top	non-exempt	remove
6187	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	tree no longer exists (stump remains)	n/a	n/a
6188	London planetree	*Platanus × acerifolia*	23	23	32	good	fair	no	yes	yes	Expansive surface roots with damage, trunk wounds N face	non-exempt	remove
6189	Norway maple	*Acer platanoides*	17	17	21	fair	fair	no	yes	yes	Invasive species, hollow with some decay W face lower trunk, thin	non-exempt	remove
6190	Norway maple	*Acer platanoides*	22	22	24	fair	poor	no	yes	yes	Invasive species, surface roots with damage, basal damage E face. Bacterial slim flux	non-exempt	remove
6191	Norway maple	*Acer platanoides*	22	22	22	good	good	no	yes	yes	Invasive species, few surface roots with damage	non-exempt	remove
6550	sweetgum	*Liquidambar styraciflua*	19	19	22	poor	poor	no	yes	yes	previous large leader failure, ivy, broken top, broken branched	non-exempt	remove
7005	sweetgum	*Liquidambar styraciflua*	8,12	14	12	fair	fair	no	yes	no	Codominant stems, extensive ivy	n/a	n/a
7006	sweet cherry	*Prunus avium*	16,20	26	25	fair	poor	no	yes	no	Invasive species, poor structure, codominant stems, history of branch failure, crown decay, ivy	n/a	n/a
7007	European white birch	*Betula pendula*	2x18	25	28	fair	poor	no	yes	yes	Invasive species, poor structure, dead and broken branches, ivy	non-exempt	remove
7008	European white birch	*Betula pendula*	28	28	26	fair	fair	no	yes	yes	Invasive species, moderate structure, small dead and broken branches	non-exempt	remove
7009	European white birch	*Betula pendula*	20	20	15	poor	poor	no	yes	yes	Invasive species, mostly dead, numerous branch failures, ivy covering lower trunk	non-exempt	remove
7010	European white birch	*Betula pendula*	22	22	24	poor	poor	no	yes	yes	Invasive species, dense row, poor structure, dead and broken branches, extensive ivy	non-exempt	remove
7011	European white birch	*Betula pendula*	19	19	32	fair	fair	no	yes	yes	Invasive species, dense row, moderate structure	non-exempt	remove
7012	European white birch	*Betula pendula*	18	18	24	fair	fair	no	yes	yes	Invasive species, dense row, moderate structure	non-exempt	remove
7013	European white birch	*Betula pendula*	16	16	20	poor	poor	no	yes	yes	Invasive species, dense row, poor structure, multiple leaders, dead and broken branches, ivy, not accessible during 2024 update	non-exempt	remove
7077	**western redcedar**	***Thuja plicata***	**3x16**	**28**	**20**	**fair**	**fair**	**no**	**yes**	**yes**	**Dense row, multiple stems, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**

Todd Prager & Associates LLC

Attachment 1 - Tree Inventory
Salem Apartments - 2561 Center Street NE
January 10, 2024

No.	Common Name	Species Name	DBH[1] (in)	Single DBH (in)	C-Rad[2] (ft)	Health[3]	Structure[3]	Sig[4]	On property before	On property after	Comments	Exempt	Treatment
7078	**western redcedar**	***Thuja plicata***	**2x20**	**28**	**20**	**fair**	**fair**	**no**	**yes**	**yes**	**Dense row, multiple stems, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7079	**western redcedar**	***Thuja plicata***	**30**	**30**	**20**	**fair**	**fair**	**yes**	**yes**	**yes**	**Dense row, codominant stems, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7080	**western redcedar**	***Thuja plicata***	**10,26**	**28**	**20**	**fair**	**fair**	**no**	**yes**	**yes**	**Dense row, multiple stems, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7081	**western redcedar**	***Thuja plicata***	**34**	**34**	**20**	**fair**	**fair**	**yes**	**yes**	**yes**	**Dense row, multiple stems, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7082	**western redcedar**	***Thuja plicata***	**30**	**30**	**20**	**fair**	**fair**	**yes**	**yes**	**yes**	**Dense row, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7083	**western redcedar**	***Thuja plicata***	**20,26**	**33**	**20**	**fair**	**fair**	**yes**	**yes**	**yes**	**Dense row, multiple stems, some ivy, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7084	**western redcedar**	***Thuja plicata***	**2x26**	**37**	**20**	**fair**	**fair**	**yes**	**yes**	**yes**	**Dense row, multiple stems, some ivy, 7077-7085 are most suitable for retention as intact group. not accessible during 2024 update**	**non-exempt**	**retain**
7085	**western redcedar**	***Thuja plicata***	**2x22**	**31**	**15**	**fair**	**fair**	**yes**	**yes**	**yes**	**Dense row, codominant stems, 7077-7085 are most suitable for retention as intact group, not accessible during 2024 update**	**non-exempt**	**retain**
7086	western redcedar	*Thuja plicata*	19	19	20	fair	fair	no	no	no	One-sided crown to SE, lower trunk damage S face, not accessible during 2024 update	n/a	n/a

[1]**DBH** is tree diameter measured at 4.5-feet above the ground level in inches, except as otherwise noted; multiple trunks splitting below
[2]**C-Rad** is crown radius measured in feet.
[3]**Health** and **Structure** are rated as good, fair, poor, very poor, to dead.
[4]**Sig** notes whether or not trees are "significant" per SRC Section 808.005.

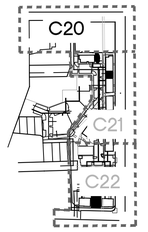


GRADING PLAN
SCALE: 1"=30'

SHEET LEGEND

— — 201 — —	EXISTING CONTOUR	
—— 201 ——	PROPOSED CONTOUR	
BS XXX.XX	GRADE AT BOTTOM OF STAIRS	
G XXX.XX	GRADE AT GUTTER	
TC XXX.XX	GRADE AT TOP OF CURB	
TP XXX.XX	GRADE AT TOP OF PAVEMENT	
TS XXX.XX	GRADE AT TOP OF STAIRS	
TF XXX.XX	GRADE AT TOP OF FOOTING	
FF XX.XX	FINISH FLOOR ELEVATION	
FG XXX.XX	FINISHED GRADE	
TW XXX.XX	GRADE AT TOP OF WALL	
EG XXX.XX	EXISTING GRADE	
(E)	EXISTING	
X.X%	SLOPE ARROW	
GB	GRADE BREAK	

KEY MAP



GRAPHIC SCALE
0 30 60
1 inch = 30 ft.

NOT FOR CONSTRUCTION

POLYPHON
ARCHITECTURE & DESIGN, LLC
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polyphon.com

REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
18684
PRELIMINARY
OREGON
DAVID J. HUMPHREYS
EXPIRES 6-30-25

SALEM APARTMENTS
891 23RD ST. NE SALEM, OR

CLIENT :
HOME FIRST DEVELOPMENT/ GREEN LIGHT DEVELOPMENT

ISSUE DATES:

JOB # : 2248
STATUS : LUR
PRINTED : 10/26/2023 12:19:05 PM

GRADING PLAN
ATTACHMENT 2 -
TREE PROTECTION PLAN
PHASE 1

C20

ORIGINAL SHEET SIZE : 22"x34"

MATCHLINE SEE SHEET C20

TREES ARE OUTSIDE OF PROJECT LIMITS

TREES ARE OUTSIDE OF PROJECT LIMITS

853 MEDICAL CENTER DRIVE NE

PROPERTY LINE

PROPOSED PROPERTY LINE

LIMITS OF WORK

PHASE 2

TO BE RETAINED AND PROTECTED DURING PHASE 2

9 WESTERN REDCEDARS TO BE RETAINED AND PROTECTED DURING PHASE 2

2104 D STREET NE

PROPOSED BUILDING
FF 201.00

PROPOSED BUILDING
FF 200.00

PROPOSED BUILDING
FF 202.75

PROPOSED BUILDING
FF 201.50

PROPOSED BUILDING
FF 202.33

PROPOSED BUILDING

STEM FTG

FG 197.00

FG 198.50

FG 199.00

20.00' PUBLIC WATER ESMT

15.00' PUBLIC STORM ESMT

10.00' PUBLIC GAS ESMT

6.17' NEW PUBLIC SW ESMT

20.00' PUBLIC STORM ESMT

23RD STREET NE (PUBLIC)

FRANZEN STREET NE (PRIVATE)

TP 201.00

TP 200.00

TP 200.30

TP 200.69

TP 201.11

TP 202.18

TP 187.99

UG

GEOTEXTILE FABRIC + 12 INCH LAYER OF WOOD CHIPS. APPLICATION TO SURROUND ALL EXISTING UNPAVED SURFACES.

NO GRADING OR GROUND DISTURBANCE BEYOND TREE PROTECTION FENCING.

PROJECT ARBORIST OVERSIGHT DURING EXCAVATION WITHIN 11' OF TREES #4098

PROJECT ARBORIST OVERSIGHT DURING EXCAVATION WITHIN 11' OF TREES #2429.

NO GRADING OR GROUND DISTURBANCE BEYOND TREE PROTECTION FENCING.

GEOTEXTILE FABRIC + 12 INCH LAYER OF WOOD CHIPS

PROJECT ARBORIST OVERSIGHT DURING EXCAVATION WITHIN 10' OF TREES #2419 AND #2420

NO GRADING OR GROUND DISTURBANCE BEYOND TREE PROTECTION FENCING.

TREES ARE OUTSIDE OF PROJECT LIMITS

MATCHLINE SEE SHEET C22

GRADING PLAN
SCALE: 1"=30'

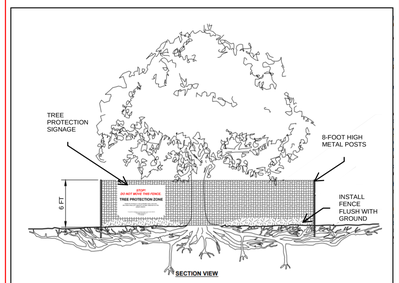
GRAPHIC SCALE
0 30 60
1 inch = 30 ft.

SHEET LEGEND

— — 201 — —	EXISTING CONTOUR
—— 201 ——	PROPOSED CONTOUR
BS XXX.XX	GRADE AT BOTTOM OF STAIRS
G XXX.XX	GRADE AT GUTTER
TC XXX.XX	GRADE AT TOP OF CURB
TP XXX.XX	GRADE AT TOP OF PAVEMENT
TS XXX.XX	GRADE AT TOP OF STAIRS
TF XXX.XX	GRADE AT TOP OF FOOTING
FF XX.XX	FINISH FLOOR ELEVATION
FG XXX.XX	FINISHED GRADE
TW XXX.XX	GRADE AT TOP OF WALL
EG XXX.XX	EXISTING GRADE
(E)	EXISTING
X.X%	SLOPE ARROW
GB	GRADE BREAK

TREE PROTECTION FENCING DETAIL

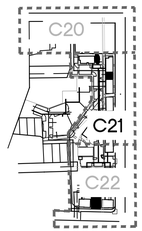
FULLY ENCLOSE TREES WITH 6 FT TALL METAL FENCING SECURED TO THE GROUND WITH CONCRETE BLOCKS, METAL FOOTERS, OR 8-FOOT TALL T-POSTS.



NOTES:

1. THE FENCE SHALL BE INSTALLED BEFORE ANY GROUND DISTURBING ACTIVITIES INCLUDING CLEARING AND GRADING, OR CONSTRUCTION STARTS; AND SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
2. FENCING SHALL BE 6 FT TALL METAL FENCING. FENCING SHALL BE SECURED WITH METAL POSTS SHALL BE ESTABLISHED AT THE EDGE OF THE ROOT PROTECTION ZONE AND PERMISSIBLE ENCROACHMENT AREA ON THE DEVELOPMENT SITE AS INDICATED ON THE TREE PROTECTION PLAN.
3. SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE AT A MINIMUM OF EVERY 30 FT OR EVERY THIRD FENCE PANEL.
4. THE FOLLOWING IS PROHIBITED WITHIN THE ROOT PROTECTION ZONE OF EACH TREE OR OUTSIDE THE LIMITS OF THE DEVELOPMENT IMPACT AREA: GROUND DISTURBANCE OR CONSTRUCTION ACTIVITY INCLUDING VEHICLE OR EQUIPMENT ACCESS (BUT EXCLUDING ACCESS ON EXISTING STREETS OR DRIVEWAYS), STORAGE OF EQUIPMENT OR MATERIALS INCLUDING SOIL, TEMPORARY OR PERMANENT STOCKPILING, PROPOSED BUILDINGS, IMPERVIOUS SURFACES, UNDERGROUND UTILITIES, EXCAVATION OR FILL, TRENCHING OR OTHER WORK ACTIVITIES.

KEY MAP



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REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT 18684 OREGON JANUARY 16, 2009 DAVID J. HUMPHREYS
PRELIMINARY
EXPIRES 6-30-25

SALEM APARTMENTS

891 23RD ST. NE SALEM, OR

CLIENT :
HOME FIRST DEVELOPMENT/ GREEN LIGHT DEVELOPMENT

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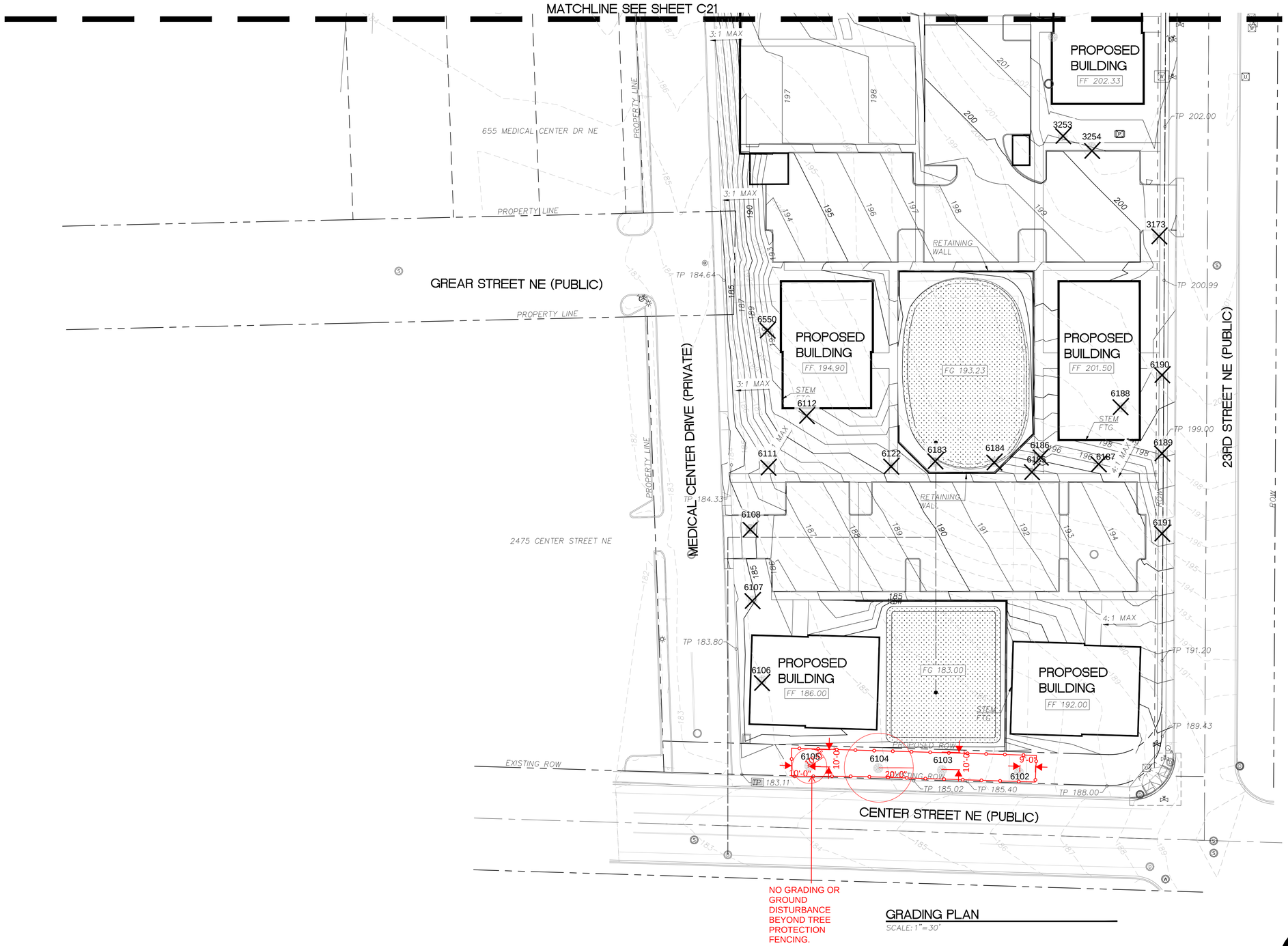
GRADING PLAN
ATTACHMENT 2 - TREE PROTECTION PLAN PHASE 1

C21

ORIGINAL SHEET SIZE : 22"x34"



GRADING PLAN
SCALE: 1"=30'

SHEET LEGEND

— — 201 — —	EXISTING CONTOUR
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BS XXX.XX	GRADE AT BOTTOM OF STAIRS
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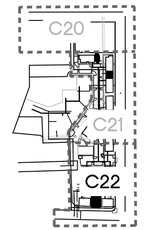
EG XXX.XX	EXISTING GRADE
(E)	EXISTING
X.X%	SLOPE ARROW
GB	GRADE BREAK

GRAPHIC SCALE
0 30 60
1 inch = 30 ft.

NOT FOR CONSTRUCTION

KEY MAP



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REGISTERED PROFESSIONAL ENGINEER
18684
OREGON
JANUARY 16, 1998
DAVID J. HUMPHREY
EXPIRES 6-30-25

PRELIMINARY

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GRADING PLAN
ATTACHMENT 2 - TREE PROTECTION PLAN PHASE 1

C22
ORIGINAL SHEET SIZE : 22"x34"

Attachment 3 - Tree Protection Sign

STOP!

DO NOT MOVE THIS FENCE.

TREE PROTECTION ZONE

Inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the project arborist.

For questions regarding tree protection please call the project arborist:
Todd Prager & Associates, LLC
todd@toddprager.com
971.295.4835

Attachment 4 - Tree Protection Recommendations

The following recommendations will help to ensure that the trees to be retained are adequately protected:

Before Construction Begins

1. **Notify all contractors of the 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 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 appraised value of the tree(s) within the violated tree protection zone per the current Trunk Formula Method as outlined in the current edition of the ***Guide for Plant Appraisal*** plus any resulting fines by government agencies.
    c. The penalty should be paid to the owner of the property.
2. **Fencing.**
    a. Establish fencing around each tree or group of trees to be retained.
    b. The fencing should be put in place before the ground is cleared 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 chain-link fencing secured to concrete footers, steel footers, or metal t-posts 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 be provided signage so that all contractors understand the purpose of the fencing.
    b. Signage should be placed on every other fence panel.
    c. Signage should be weathered and secured to fencing.
    d. Signage has been included in Attachment 3.

During Construction

1. **Protection Guidelines Within the Tree Protection Zones.**
    a. 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.
    b. 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.
    c. Construction trailers should not to be parked/placed within the tree protection zones.
    d. No vehicles should be allowed to park within the tree protection zones.
    e. No activity 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. No grade changes should be allowed within the tree protection zones.
5. Trees that have woody roots cut should be provided supplemental water during the summer months.
6. 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.
7. 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. **Irrigation**. 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. **Drainage**. 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. **Inspect landscape for pests and disease.** Provide for the ongoing inspection and treatment of insect and disease populations that can damage the retained trees and plants.
6. **Fertilization**. 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 construction information provided by Greenlight Development 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:
    a. Conduct one site visit to tag and inventory up to 90 trees at the Salem Apartments project site. Inventory to include the tree number, species, DBH, health and structural conditions of the trees, and pertinent comments.
    b. Prepare a tree protection plan in accordance with Salem Code Chapter 808 – Preservation of Trees and Vegetation.