

**Teragan
& Associates, Inc.**
Arboricultural Consultants

MEMORANDUM

DATE: January 7, 2016

TO: Jesse Nemec (J.T. Smith Companies)

FROM: Todd Prager, AICP, ISA Board Certified Master Arborist

RE: Addendum to the Trillium Woods Apartments Tree Plan for the Protection of Offsite Trees near the Southern Property Line

Summary

This is an addendum to the November 19, 2015 tree plan for the Trillium Woods Apartments addressing the protection offsite trees near the southern property line of the project site.

Background

Teragan & Associates, Inc. prepared a tree plan for the Trillium Woods Apartments project dated November 19, 2015 that describes the existing trees located on the site, as well as recommendations for tree removal, preservation, mitigation, and protection during construction. While the protection of offsite trees was addressed in the report, City of Beaverton staff met with the project team on December 22, 2015 and requested additional protection measures for the offsite trees located near the southern property line where parking and buildings are proposed.

The purpose of this report addendum is to:

1. Provide an inventory and assessment of the offsite trees located near the southern property line of the project site where parking and buildings are proposed.
2. Provide additional protection recommendations for the offsite trees.

Tree Assessment

On December 22 and 29, 2015 and January 6, 2016, our firm visited the project site to assess the offsite trees located near the southern property line. A total of 13 trees were assessed and their locations are shown on the updated existing conditions map in Attachment 1.

A complete description of the trees is provided in the tree inventory in Attachment 2. The data collected for each tree includes the tree species (common and scientific names), trunk diameter (DBH), crown radius, health condition, structural condition, and pertinent comments.

Note that while most of the trees are in fair or better health and structural condition, trees 3796, 3797, 3799, 3802, and 3804 are in poor or very poor health and/or structural condition. Therefore, these five trees are recommended for removal if approved by the adjacent property owner.

Tree Protection Recommendations

In our November 19, 2015 report, we recommended tree protection zones that encompass a radius around each tree to be retained that is six times (6x) the tree diameter. For example, a tree with a 12-inch trunk diameter would have a minimum protection radius of 72 inches (6 feet). No grading, construction, paving, or other development impacts are permitted inside the tree protection area without prior approval of the project arborist.

The revised site plan in Attachment 3 and grading plan in Attachment 4 include changes to achieve tree protection setbacks that are at least 6x the offsite tree diameters or at least 10 feet from the offsite trees, whichever is greater. The tree protection fencing shown in red in Attachments 2 and 3 delineate the edge of the recommended tree protection zones for the offsite trees.

However, there are minor encroachments at the edge of the 6x tree protection zone of trees 3793 and 3800. The encroachment into the tree protection zone of tree 3793 is limited to an 18 square foot building bump out to the south of a suspended patio. The encroachment into the tree protection zone of tree 3800 is limited to one square foot and we expect the amount of significant roots in the impact area to be limited by the root systems of trees 2568, 2570, 2571, 2572, and 2573 which are to be removed.

The following site specific recommendations will help to minimize construction impacts for trees 3793 and 3800, as well as the other offsite trees to be retained along the southern property line:

Tree/Stump Removal:

- Any trees to be removed should be fallen away from the trees to be retained so they do no contact, or otherwise damage the trees to be retained.
- The stumps of the trees to be removed that are within the tree protection fencing shown in Attachment 3 should either be stump ground, or have their structural roots cut before pulling with an excavator to protect the root systems of the trees to be retained¹.

¹ Trees that should be stump ground to protect offsite trees include trees 2567, 2568, 2570, 2571, 2572, 2573, 2586, 2590, 2591, 2592, 2601, and 2743.

Modify grading

- There is grading shown in the tree protection zone adjacent to trees 2734, 3792, and 3805. The grading should be modified so it is outside the tree protection fencing.

Construction Access in Tree Protection Zones:

- In many cases, the tree protection fencing/zone is immediately adjacent to construction of buildings, retaining wall, etc. Therefore, it is likely that construction access will be necessary within the tree protection zones for work such as siding installation, painting, etc.

In these cases, a six inch layer of wood chips overlaid with geotextile fabric should be placed in the work area to prevent soil compaction. The fabric and woods chips should be immediately removed after construction.

Foundation Excavation:

- Ensure the project arborist is onsite during excavation for the building foundation adjacent to trees 3792 through 3794.
- Carefully excavate adjacent to the trees by pulling shallow layers of soil away from the trees with the project arborist probing the soil in between layer removal to identify roots greater than 2-inches in diameter. The excavator should be positioned outside the 6x tree protection zone during excavation.
- If roots greater than 2-inches in diameter are encountered during excavation, they should be hand excavated and retained in place until the full extent of structural roots can be determined.
- If the project arborist determines that certain roots are not critical to tree health and/or stability, they may be approved for removal with sharp pruning equipment.
- If the roots are critical to tree health and/or stability, the foundation may be bridged over the critical roots if approved by the project engineer.
- Although not likely to occur, if adequately protecting significant structural roots is not possible, the trees may be recommended for removal by the project arborist.

Retaining Wall Construction:

- Ensure the project arborist is onsite during construction of the retaining wall adjacent to trees 3797 through 3800.
- Carefully excavate for the wall footing by pulling shallow layers of soil away from the trees with the project arborist probing the soil in between layer removal to identify roots greater than 2-inches in diameter. The excavator should be positioned outside the tree protection zone during excavation.
- If roots greater than 2-inches in diameter are encountered during excavation, they should be hand excavated and retained in place until the full extent of structural roots can be determined.

- If the project arborist determines that certain roots are not critical to tree health and/or stability, they may be approved for removal with sharp pruning equipment.
- Although not likely to occur, if adequately protecting significant structural roots is not possible, the trees may be recommended for removal by the project arborist.

Pruning:

- It may be necessary or desirable to clearance prune offsite trees that extend into the project site. All pruning should be completed by a qualified tree service with an ISA Certified Arborist on site. All pruning should be in accordance with ANSI A300 pruning standards and Z133.1 safety standards. No more than 25 percent of the live foliage of a tree should be removed in any one growing season and the live crown should comprise at least the top 50 percent of the total tree height after clearance pruning is complete.

The following additional tree protection recommendations from our November 19, 2016 report meet and/or exceed Beaverton Development Code requirements:

Before Construction Begins

1. Notify all contractors of tree protection procedures. For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection.
 - a. Hold a tree protection meeting with all contractors to explain the goals of tree protection.
 - c. Have all contractors sign memoranda of understanding regarding the goals of tree protection. The memoranda should include a penalty for violating the tree protection plan. The penalty should equal the resulting fines issued by the local jurisdiction or the appraised value of the tree(s) within the violated tree protection zone per the current Trunk Formula Method as outline in the current edition of the *Guide for Plant Appraisal* by the Council of Tree & Landscape Appraisers, whichever is greater. The penalty should be paid to the owner of the property.
2. Fencing
 - a. Trees to remain on site will be protected by installation of tree protection fencing at the edge of the protected root zone, which is defined by the City of Beaverton as the tree dripline plus 5-feet. Alternatively, tree protection fencing may be set as shown in Attachments 3 and 4.
 - b. Fencing and protected root zones are required to be shown on the site plan for a Tree Plan application.
 - c. The fencing should be put in place before the ground is cleared in order to protect the trees and the soil around the trees from disturbances.
 - d. Fencing should be established by the project arborist based on the needs of the trees to be protected and to facilitate construction.
 - e. Fencing should consist of 6-foot high steel fencing on concrete blocks or 6-foot metal fencing secured to the ground with 8-foot metal posts to prevent it from being moved by contractors, sagging, or falling down.

- f. Fencing should remain in the position that is established by the project arborist and not be moved without approval from the project arborist until final project approval.
3. Signage
 - a. All tree protection fencing should have signage as follows so that all contractors understand the purpose of the fencing:

TREE PROTECTION ZONE

**DO NOT REMOVE OR ADJUST THE APPROVED
LOCATION OF THIS TREE PROTECTION FENCING.**

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

Todd Prager, Project Arborist - 971-295-4835

- b. Signage should be placed every 75-feet or less.
- c. Colored tree flagging indicating that this area is a tree protection zone is to be placed every five (5) linear feet on the fence to alert construction crews of the sensitive nature of the area.

During Construction

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

5. Any necessary passage of utilities through the tree protection zones should be by means of tunneling under woody roots by hand digging or boring with oversight by the project arborist.
6. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

After Construction

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

Conclusion

This addendum to the November 19, 2015 tree plan adequately addresses the protection of 13 offsite trees near the southern property line of the Trillium Woods Apartments project site.

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

Sincerely,



Todd Prager

*ISA Board Certified Master Arborist, WE-6723B
ISA Qualified Tree Risk Assessor
AICP, American Planning Association*

- Attachments:
- Attachment 1 - Updated Existing Conditions Map with Offsite Trees
 - Attachment 2 - Offsite Tree Inventory
 - Attachment 3 - Revised Site Plan with Tree Protection Fencing for Offsite Trees
 - Attachment 4 - Revised Grading Plan with Tree Protection Fencing for Offsite Trees

Notes:

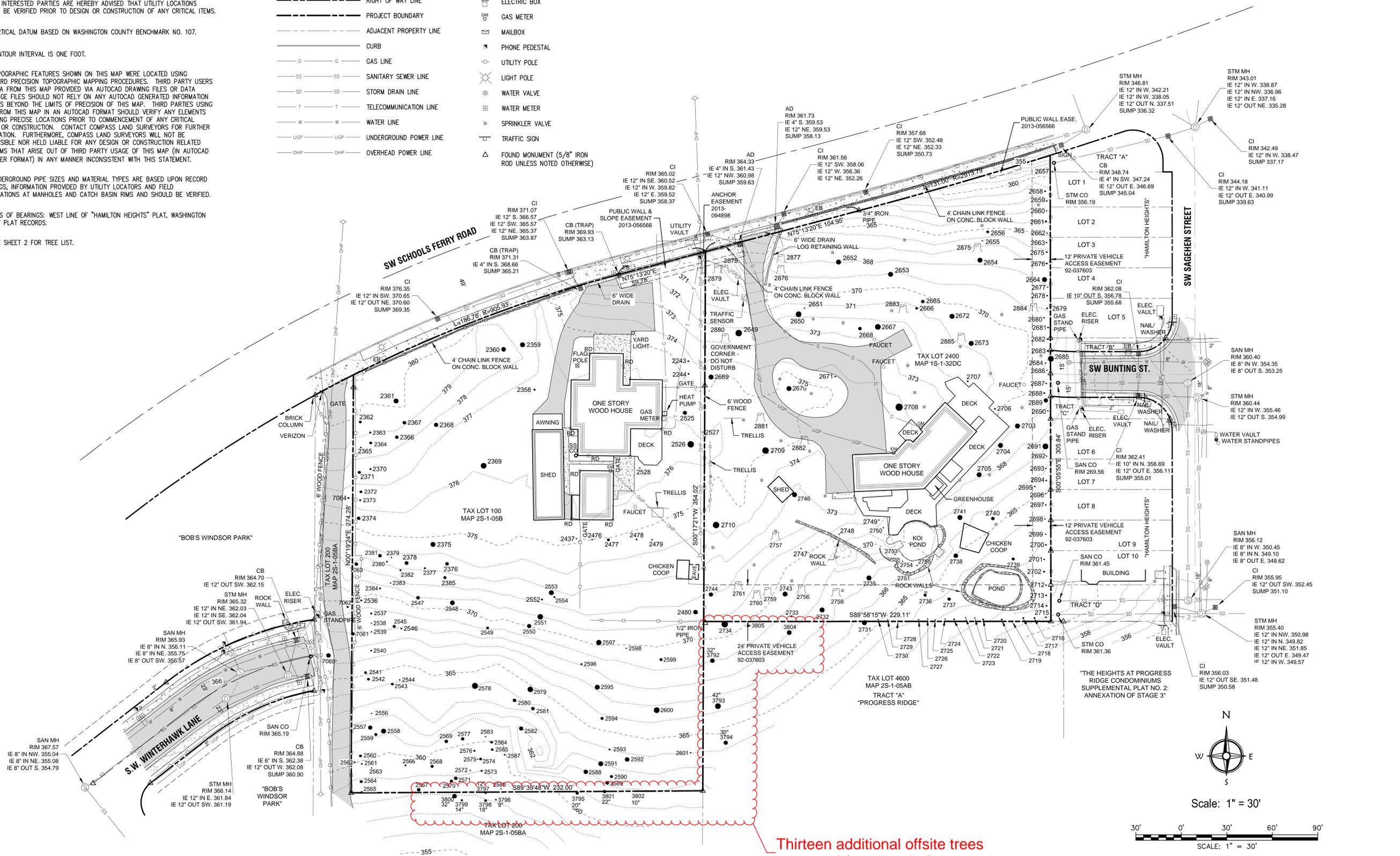
- UTILITY INFORMATION SHOWN ON THIS MAP IS BASED UPON OBSERVED FEATURES, RECORD DATA AND TONE MARKS PROVIDED BY PUBLIC UTILITY LOCATION SERVICES. NO WARRANTIES ARE MADE REGARDING THE ACCURACY OR COMPLETENESS OF THE UTILITY INFORMATION SHOWN. ADDITIONAL UTILITIES MAY EXIST. INTERESTED PARTIES ARE HEREBY ADVISED THAT UTILITY LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN OR CONSTRUCTION OF ANY CRITICAL ITEMS.
- VERTICAL DATUM BASED ON WASHINGTON COUNTY BENCHMARK NO. 107.
- CONTOUR INTERVAL IS ONE FOOT.
- TOPOGRAPHIC FEATURES SHOWN ON THIS MAP WERE LOCATED USING STANDARD PRECISION TOPOGRAPHIC MAPPING PROCEDURES. THIRD PARTY USERS OF DATA FROM THIS MAP PROVIDED VIA AUTOCAD DRAWING FILES OR DATA EXCHANGE FILES SHOULD NOT RELY ON ANY AUTOCAD GENERATED INFORMATION WHICH IS BEYOND THE LIMITS OF PRECISION OF THIS MAP. THIRD PARTIES USING DATA FROM THIS MAP IN AN AUTOCAD FORMAT SHOULD VERIFY ANY ELEMENTS REQUIRING PRECISE LOCATIONS PRIOR TO COMMENCEMENT OF ANY CRITICAL DESIGN OR CONSTRUCTION. CONTACT COMPASS LAND SURVEYORS FOR FURTHER INFORMATION. FURTHERMORE, COMPASS LAND SURVEYORS WILL NOT BE RESPONSIBLE NOR HELD LIABLE FOR ANY DESIGN OR CONSTRUCTION RELATED PROBLEMS THAT ARISE OUT OF THIRD PARTY USAGE OF THIS MAP (IN AUTOCAD OR OTHER FORMAT) IN ANY MANNER INCONSISTENT WITH THIS STATEMENT.
- UNDERGROUND PIPE SIZES AND MATERIAL TYPES ARE BASED UPON RECORD DRAWINGS, INFORMATION PROVIDED BY UTILITY LOCATORS AND FIELD OBSERVATIONS AT MANHOLES AND CATCH BASIN RIMS AND SHOULD BE VERIFIED.
- BASIS OF BEARINGS: WEST LINE OF "HAMILTON HEIGHTS" PLAT, WASHINGTON COUNTY PLAT RECORDS.
- SEE SHEET 2 FOR TREE LIST.

Legend:

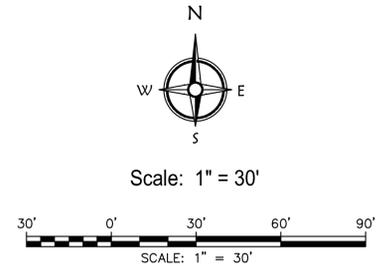
- | | | | | | |
|--|------------------------|--|---|--|----------|
| | EDGE OF PAVEMENT | | DL DRIP LINE (RADIUS) | | CONCRETE |
| | OVERHEAD POWER LINE | | ELECTRIC METER | | ASPHALT |
| | RIGHT OF WAY LINE | | ELECTRIC BOX | | |
| | PROJECT BOUNDARY | | GAS METER | | |
| | ADJACENT PROPERTY LINE | | MAILBOX | | |
| | CURB | | PHONE PEDESTAL | | |
| | GAS LINE | | UTILITY POLE | | |
| | SANITARY SEWER LINE | | LIGHT POLE | | |
| | STORM DRAIN LINE | | WATER VALVE | | |
| | TELECOMMUNICATION LINE | | WATER METER | | |
| | WATER LINE | | SPRINKLER VALVE | | |
| | UNDERGROUND POWER LINE | | TRAFFIC SIGN | | |
| | OVERHEAD POWER LINE | | FOUND MONUMENT (5/8" IRON ROD UNLESS NOTED OTHERWISE) | | |

Attachment 1

1
2



Thirteen additional offsite trees assessed (3000 series).



TRILLIUM WOODS EXISTING CONDITIONS MAP
 SW 1/4 AND SE 1/4 SECTION 32, T-1S, R-1W, W.M., AND
 NW 1/4 AND NE 1/4 SECTION 5, T-2S, R-1W, W.M.
 CITY OF BEAVERTON, WASHINGTON COUNTY, OREGON

COMPASS Land Surveyors
 4107 SE International Way, Suite 705
 Milwaukie, Oregon 97222 503-653-9093



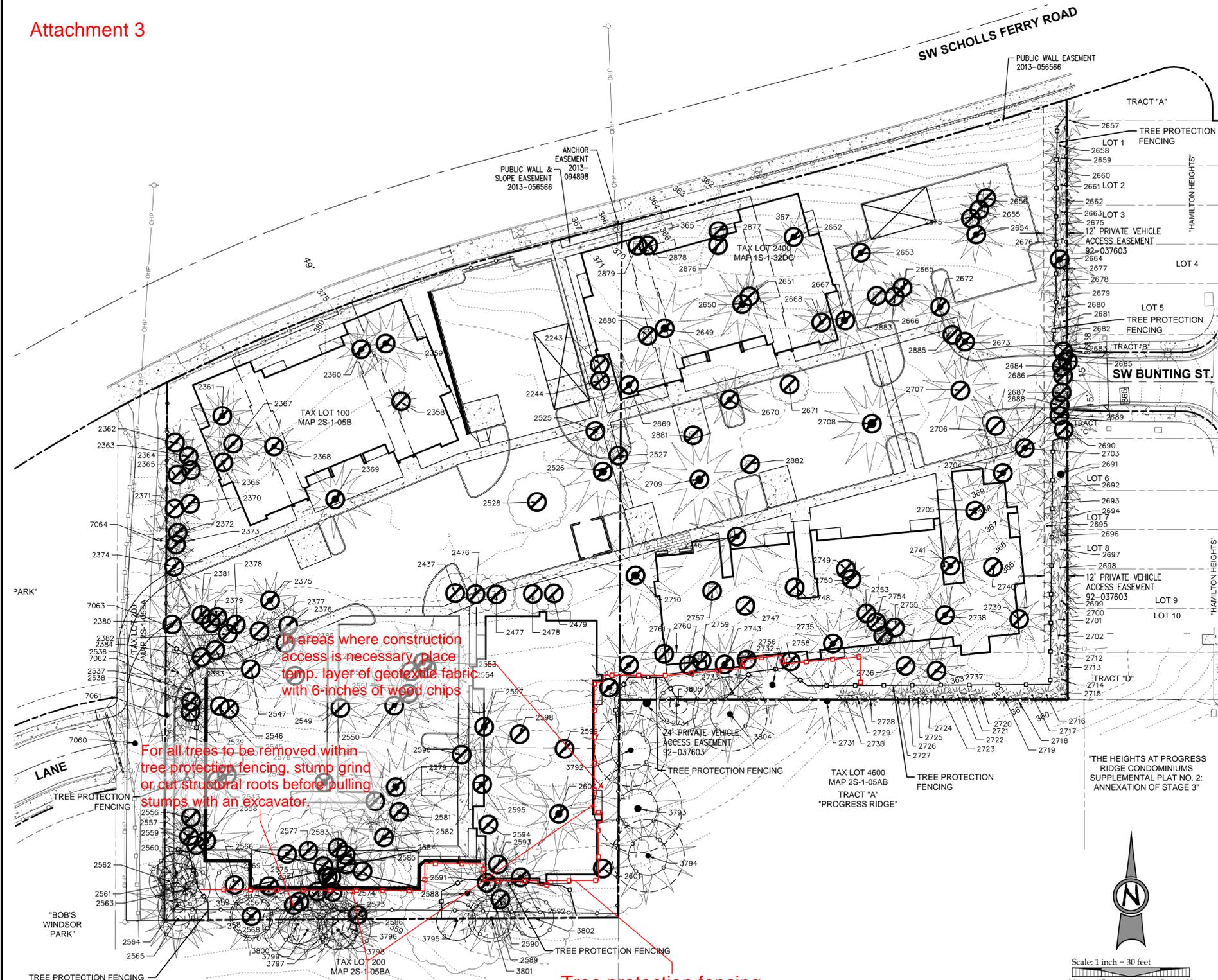
DRAWN	MM/M	CHECK	DD
JAN, 2016			
DATE	SCALE	DATE	REVISION
	1" = 30'	MAY, 2015	
			7522 Topo.dwg
			PLAN
			NO.

Attachment 2

Survey #	Common Name	Scientific Name	DBH ¹	C-RAD ²	Condition ³	Structure	Comments
3792	Douglas-fir	<i>Pseudotsuga menziesii</i>	37	25	good	fair	one sided to west, 903
3793	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	25	good	fair	one sided to west, poison oak, 963
3794	Douglas-fir	<i>Pseudotsuga menziesii</i>	37	25	good	fair	one sided to west, leans west
3795	bigleaf maple	<i>Acer macrophyllum</i>	20	27	fair	fair	SW of 2588, high crown
3796	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	15	very poor	very poor	very poor Live Crown Ratio, suppressed
3797	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	15	poor	fair	low Live Crown Ratio
3798	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	20	fair	fair	fair Live Crown Ratio
3799	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	15	very poor	poor	suppressed, lost top, very thin, almost dead
3800	black cottonwood	<i>Populus trichocarpa</i>	36	28	good	fair	high crown, multi leader from ground point
3801	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	20	fair	fair	just SW of 2589, 40 % LCR
3802	madrone	<i>Arbutus menziesii</i>	11	10	very poor	very poor	cavity in lower and upper portion of trunk on east side
3804	Douglas-fir	<i>Pseudotsuga menziesii</i>	38	25	poor	fair	Phellinus pini, hazardous
3805	bigleaf maple	<i>Acer macrophyllum</i>	9	15	good	good	young tree
¹ DBH is the trunk diameter in inches measured at 4.5 feet above mean ground level or below the point of trunk divergence if the trunk splits above ground but below 4.5 feet.							
² C-RAD is the crown radius in feet.							
³ Condition and Structure ratings range from very poor, poor, fair, to good.							

NOT FOR CONSTRUCTION

Attachment 3



TREE PRESERVATION AND PROTECTION NOTES:

THE FOLLOWING INFORMATION CAN BE FOUND IN THE ARBORIST REPORT SATISFYING THE TREE RELATED REQUIREMENTS IN THE CITY OF BEAVERTON DEVELOPMENT CODE CHAPTERS 40.90 AND 60.60 PROVIDED TO MIKE WELLS (STPI, LLC) BY TODD PRAGER (TERAGAN & ASSOCIATES, INC.), ISA BOARD CERTIFIED MASTER ARBORIST, DATED OCTOBER 12, 2015.

- DETAILED TREE INVENTORY
- RECOMMENDATIONS FOR:
 - TREE REMOVAL
 - TREE PRESERVATION
 - TREE MITIGATION
 - TREE PROTECTION BEFORE, DURING AND AFTER CONSTRUCTION
- TREE PLAN TWO STANDARDS AND FINDINGS
- ASSUMPTIONS AND LIMITING CONDITIONS

TREE INVENTORY:

	OFF-SITE (ADJACENT PROPERTY)		ON-SITE (PROJECT BOUNDARY)		TOTAL
			SIG. GROVE	EXEMPT *	
TREE INVENTORY:	6	132	74	212	
TREES RETAINED:	6	29	30	59	
TREES REMOVED:	0	103	44	147	
CALIPER %:	100%	15.8%	38.2%	22.1%	

* EXEMPT TREES INCLUDE HEMLOCK, MADRONE, AND BIGLEAF MAPLES LESS THAN 6-INCH DBH, ANY OTHER SPECIES LESS THAN 10-INCH DBH, TREES LISTED A NUISANCE SPECIES ON THE METRO NATIVE PLANT LIST (ORD. NO. 98-730C), TREES PRODUCING EDIBLE FRUITS, AND UNHEALTHY TREES (TREES WITH A CONDITION RATING OF VERY POOR OR POOR).

TREE LIST:

TREE NO.	COMMON NAME	DBH*	C-RAD*	TREE NO.	COMMON NAME	DBH*	C-RAD*	TREE NO.	COMMON NAME	DBH*	C-RAD*
2243	ENGLISH HOLLY	11	12	2572	WESTERN RED CEDAR	5	6	2697	LEYLAND CYPRESS	6	6
2244	ENGLISH HOLLY	13	12	2573	DOUGLAS-FIR	11	7	2698	LEYLAND CYPRESS	6	9
2358	SITKA SPRUCE	12	8	2574	DOUGLAS-FIR	14	7	2699	LEYLAND CYPRESS	5	7
2359	DOUGLAS-FIR	31	22	2575	BIGLEAF MAPLE	7	11	2700	LEYLAND CYPRESS	11	9
2360	DOUGLAS-FIR	28	22	2576	BIGLEAF MAPLE	12	18	2701	LEYLAND CYPRESS	12	8
2361	DOUGLAS-FIR	35	18	2577	BLACK COTTONWOOD	22	10	2702	LEYLAND CYPRESS	13	10
2362	DOUGLAS-FIR	17	15	2578	DOUGLAS-FIR	37	17	2703	DOUGLAS-FIR	32	26
2363	PONDEROSA PINE	11	6	2579	DOUGLAS-FIR	34	22	2704	DOUGLAS-FIR	31	14
2364	DOUGLAS-FIR	18	13	2580	DOUGLAS-FIR	23	16	2705	DOUGLAS-FIR	35	22
2365	BIGLEAF MAPLE	10	4	2581	DOUGLAS-FIR	20	14	2706	ORCHARD CHERRY	11	17
2366	DOUGLAS-FIR	23	18	2582	DOUGLAS-FIR	25	15	2707	ORCHARD CHERRY	14	18
2367	WESTERN RED CEDAR	22	16	2583	HAWTHORN	5	4	2708	DOUGLAS-FIR	48	26
2368	WESTERN RED CEDAR	27	22	2584	DOUGLAS-FIR	16	13	2709	DOUGLAS-FIR	37	26
2369	DOUGLAS-FIR	38	24	2585	BIGLEAF MAPLE	15	17	2710	DOUGLAS-FIR	43	31
2370	PONDEROSA PINE	10	18	2586	DOUGLAS-FIR	4	2	2712	LEYLAND CYPRESS	13	7
2371	PONDEROSA PINE	19	13	2587	BIGLEAF MAPLE	9	16	2713	LEYLAND CYPRESS	11	7
2372	PONDEROSA PINE	17	14	2588	DOUGLAS-FIR	30	19	2714	LEYLAND CYPRESS	10	8
2373	DOUGLAS-FIR	9	16	2589	DOUGLAS-FIR	22	11	2715	LEYLAND CYPRESS	11	7
2374	DOUGLAS-FIR	22	20	2590	DOUGLAS-FIR	16	12	2716	LEYLAND CYPRESS	9	7
2375	DOUGLAS-FIR	32	25	2591	DOUGLAS-FIR	36	18	2717	LEYLAND CYPRESS	10	10
2376	DOUGLAS-FIR	21	20	2592	DOUGLAS-FIR	25	15	2718	LEYLAND CYPRESS	8	7
2377	DOUGLAS-FIR	13	10	2593	DOUGLAS-FIR	8	12	2719	LEYLAND CYPRESS	9	10
2378	BLACK COTTONWOOD	38	34	2594	BIGLEAF MAPLE	18	18	2720	LEYLAND CYPRESS	8	9
2379	DOUGLAS-FIR	6	10	2595	DOUGLAS-FIR	30	17	2721	LEYLAND CYPRESS	6	7
2380	DOUGLAS-FIR	9	14	2596	DOUGLAS-FIR	16	14	2722	LEYLAND CYPRESS	5	7
2381	DOUGLAS-FIR	24	21	2597	DOUGLAS-FIR	38	20	2723	LEYLAND CYPRESS	10	8
2382	DOUGLAS-FIR	11	12	2598	BIGLEAF MAPLE	5	9	2724	LEYLAND CYPRESS	6	8
2383	DOUGLAS-FIR	7	11	2599	BIGLEAF MAPLE	20	30	2725	LEYLAND CYPRESS	7	6
2384	DOUGLAS-FIR	12	15	2600	WESTERN RED CEDAR	33	15	2726	LEYLAND CYPRESS	6	7
2385	DOUGLAS-FIR	20	20	2601	MADRONE	7	8	2727	LEYLAND CYPRESS	8	8
2431	N/A	N/A	N/A	2649	DOUGLAS-FIR	41	30	2728	LEYLAND CYPRESS	8	7
2432	N/A	N/A	N/A	2650	DOUGLAS-FIR	40	24	2729	LEYLAND CYPRESS	6	9
2437	FRUIT TREE	7	7	2651	MADRONE	4	4	2730	LEYLAND CYPRESS	6	9
2476	FRUIT TREE	9	6	2652	DOUGLAS-FIR	32	27	2731	DOUGLAS-FIR	34	26
2477	ORCHARD CHERRY	18	5	2653	DOUGLAS-FIR	31	19	2732	DOUGLAS-FIR	31	23
2478	ORCHARD APPLE	10	8	2654	DOUGLAS-FIR	37	21	2733	BIGLEAF MAPLE	12	21
2479	ORCHARD APPLE	7	5	2655	WESTERN RED CEDAR	8	11	2734	DOUGLAS-FIR	36	27
2480	WESTERN RED CEDAR	38	21	2656	WESTERN RED CEDAR	15	15	2735	DOUGLAS-FIR	36	24
2525	WESTERN RED CEDAR	34	22	2657	AUSTRIAN PINE	7	5	2736	WESTERN RED CEDAR	18	12
2526	DOUGLAS-FIR	45	26	2658	LEYLAND CYPRESS	11	11	2737	DOUGLAS-FIR	22	16
2527	BIRD CHERRY	7	10	2659	LEYLAND CYPRESS	6	9	2738	DOUGLAS-FIR	27	12
2528	JAPANESE MAPLE	7	13	2660	LEYLAND CYPRESS	5	9	2739	DOUGLAS-FIR	27	21
2536	DOUGLAS-FIR	12	14	2661	LEYLAND CYPRESS	12	11	2740	DOUGLAS-FIR	23	16
2537	DOUGLAS-FIR	12	10	2662	LEYLAND CYPRESS	6	9	2741	DOUGLAS-FIR	36	26
2538	PONDEROSA PINE	6	6	2663	LEYLAND CYPRESS	7	11	2743	DOUGLAS-FIR	36	27
2539	DOUGLAS-FIR	6	9	2664	DOUGLAS-FIR	36	22	2744	DOUGLAS-FIR	28	26
2540	DOUGLAS-FIR	10	16	2665	WESTERN RED CEDAR	20	20	2745	DOUGLAS-FIR	28	16
2541	DOUGLAS-FIR	20	11	2666	WESTERN RED CEDAR	15	15	2747	GOLDENCHAIN TREE	8	10
2542	DOUGLAS-FIR	20	10	2667	DOUGLAS-FIR	37	27	2748	ORCHARD PLUM	8	10
2543	DOUGLAS-FIR	20	16	2668	WESTERN RED CEDAR	23	17	2749	ORCHARD APPLE	5	7
2544	DOUGLAS-FIR	8	14	2669	DOUGLAS-FIR	34	17	2750	PINE	7	5
2545	DOUGLAS-FIR	17	16	2670	WESTERN RED CEDAR	41	20	2751	NOOTKA CYPRESS	7	5
2546	BIGLEAF MAPLE	9	18	2671	PURPLE LEAF PLUM	8	11	2753	PINE	7	9
2547	DOUGLAS-FIR	26	18	2672	WESTERN RED CEDAR	33	15	2754	PINE	6	5
2548	DOUGLAS-FIR	31	25	2673	DOUGLAS-FIR	42	27	2755	PINE	7	7
2549	DOUGLAS-FIR	18	13	2675	LEYLAND CYPRESS	8	12	2756	STUMP	N/A	N/A
2550	DOUGLAS-FIR	32	22	2676	LEYLAND CYPRESS	8	11	2757	STUMP	N/A	N/A
2551	DOUGLAS-FIR	37	22	2677	LEYLAND CYPRESS	6	7	2758	STUMP	N/A	N/A
2552	BIGLEAF MAPLE	11	10	2678	LEYLAND CYPRESS	11	7	2759	STUMP	N/A	N/A
2553	DOUGLAS-FIR	35	24	2679	LEYLAND CYPRESS	9	10	2760	STUMP	N/A	N/A
2554	BIGLEAF MAPLE	9	15	2680	LEYLAND CYPRESS	7	6	2761	STUMP	N/A	N/A
2556	PONDEROSA PINE	7	7	2681	LEYLAND CYPRESS	10	7	2765	STUMP	N/A	N/A
2557	DOUGLAS-FIR	26	15	2682	LEYLAND CYPRESS	10	6	2766	STUMP	N/A	N/A
2558	WESTERN RED CEDAR	35	16	2683	LEYLAND CYPRESS	11	8	2777	STUMP	N/A	N/A
2559	WESTERN RED CEDAR	20	12	2684	LEYLAND CYPRESS	5	5	2787	STUMP	N/A	N/A
2560	PONDEROSA PINE	19	11	2685	DOUGLAS-FIR	37	26	2789	STUMP	N/A	N/A
2561	DOUGLAS-FIR	8	5	2686	LEYLAND CYPRESS	7	7	2800	STUMP	N/A	N/A
2562	DOUGLAS-FIR	9	5	2687	LEYLAND CYPRESS	8	6	2801	STUMP	N/A	N/A
2563	PONDEROSA PINE	7	2	2688	LEYLAND CYPRESS	9	5	2802	STUMP	N/A	N/A
2564	DOUGLAS-FIR	19	16	2689	DOUGLAS-FIR	29	13	2803	STUMP	N/A	N/A
2565	PONDEROSA PINE	12	13	2690	LEYLAND CYPRESS	7	8	2804	STUMP	N/A	N/A
2566	BIGLEAF MAPLE	4	5	2691	DOUGLAS-FIR	36	14	2805	STUMP	N/A	N/A
2567	PONDEROSA PINE	22	16	2692	LEYLAND CYPRESS	6	9	2806	DOUGLAS-FIR	32	19
2568	DOUGLAS-FIR	20	11	2693	LEYLAND CYPRESS	5	9	2807	DOUGLAS-FIR	26	19
2569	BIGLEAF MAPLE	19	20	2694	LEYLAND CYPRESS	7	7	2808	DOUGLAS-FIR	14	11
2570	DOUGLAS-FIR	17	12	2695	DOUGLAS-FIR	30	22	2809	DOUGLAS-FIR	24	13
2571	DOUGLAS-FIR	21	17	2696	LEYLAND CYPRESS	5	6	2810	DOUGLAS-FIR	12	10

* DBH = TRUNK DIAMETER IN INCHES
 * C-RAD = APPROXIMATE CANOPY RADIUS IN FEET

Ensure project arborist is onsite for construction of retaining wall and buildings adjacent to offsite trees.

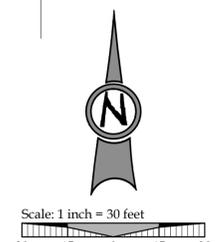
Tree protection fencing for offsite trees.

In areas where construction access is necessary, place temp. layer of geotextile fabric with 6-inches of wood chips

For all trees to be removed within tree protection fencing, stump grind or cut structural roots before pulling stumps with an excavator.

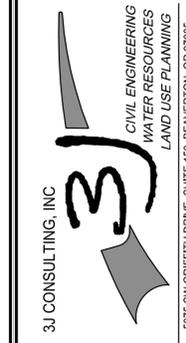
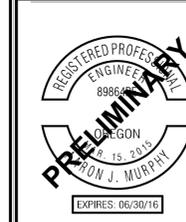
LEGEND

	PROJECT BOUNDARY		EXISTING MAJOR CONTOUR		EXISTING CONIFEROUS TREE
	RIGHT-OF-WAY LINE		EXISTING MINOR CONTOUR		EXISTING DECIDUOUS TREE
	RIGHT-OF-WAY CENTERLINE		PROPOSED CONCRETE		EXISTING UTILITY POLE
	EASEMENT LINE		PROPOSED BUILDING LINE		EXISTING POWER METER
	EXISTING ADJACENT PROPERTY LINE		PROPOSED FENCE		EXISTING ELECTRIC RISER
	EXISTING CONCRETE		EXISTING MAJOR CONTOUR		EXISTING LUMINAIRE
	EXISTING ASPHALT		EXISTING MINOR CONTOUR		MIN. ROOT PROTECTION ZONE: 0.5' x DBH (INCHES) = X' OFFSET
	EXISTING CURB		EXISTING MAJOR CONTOUR		10.0' TREE TRUNK OFFSET
	EXISTING FENCE LINE		EXISTING MINOR CONTOUR		
	EXISTING TELECOM. LINE		PROPOSED CURB FACE		
	EXISTING OVERHEAD POWER		PROPOSED CURB BACK		
	EXISTING VEGETATION LIMITS LINE		PROPOSED RETAINING WALL		
			PROPOSED COVERED PARKING		



LAND USE	NOVEMBER 20, 2015
REVISION SUMMARY	BY
	DATE

TREE PROTECTION & REMOVAL PLAN
TRILLIUM WOODS APARTMENTS
 LAND USE DOCUMENTS
 JT SMITH COMPANIES
 BEAVERTON, OREGON



3J JOB ID # | 15263
 LAND USE # | PA 2015-0050
 TAX LOT # | 100,2400
 DESIGNED BY | TNO/CWK
 CHECKED BY | EIM

SHEET TITLE
TREE PLAN
 SHEET NUMBER
C120

NOT FOR CONSTRUCTION

EROSION CONTROL KEY NOTES

- 1 CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
- 2 INSTALL INLET PROTECTION.
- 3 PLACE SILT FENCING AT LIMITS OF GRADING AND CONSTRUCTION WHERE SHOWN.
- 4 INSTALL STRAW WATTLE.
- 5 INSTALL CONCRETE WASH OUT.
- 6 SOIL STOCKPILE AREA.
- 7 INSTALL TREE PROTECTION FENCING AT LIMITS SHOWN.

GRADING KEY NOTES

- 1 PROVIDE ADA COMPLIANT LANDING GRADE (2.0% MAX).

Attachment 4



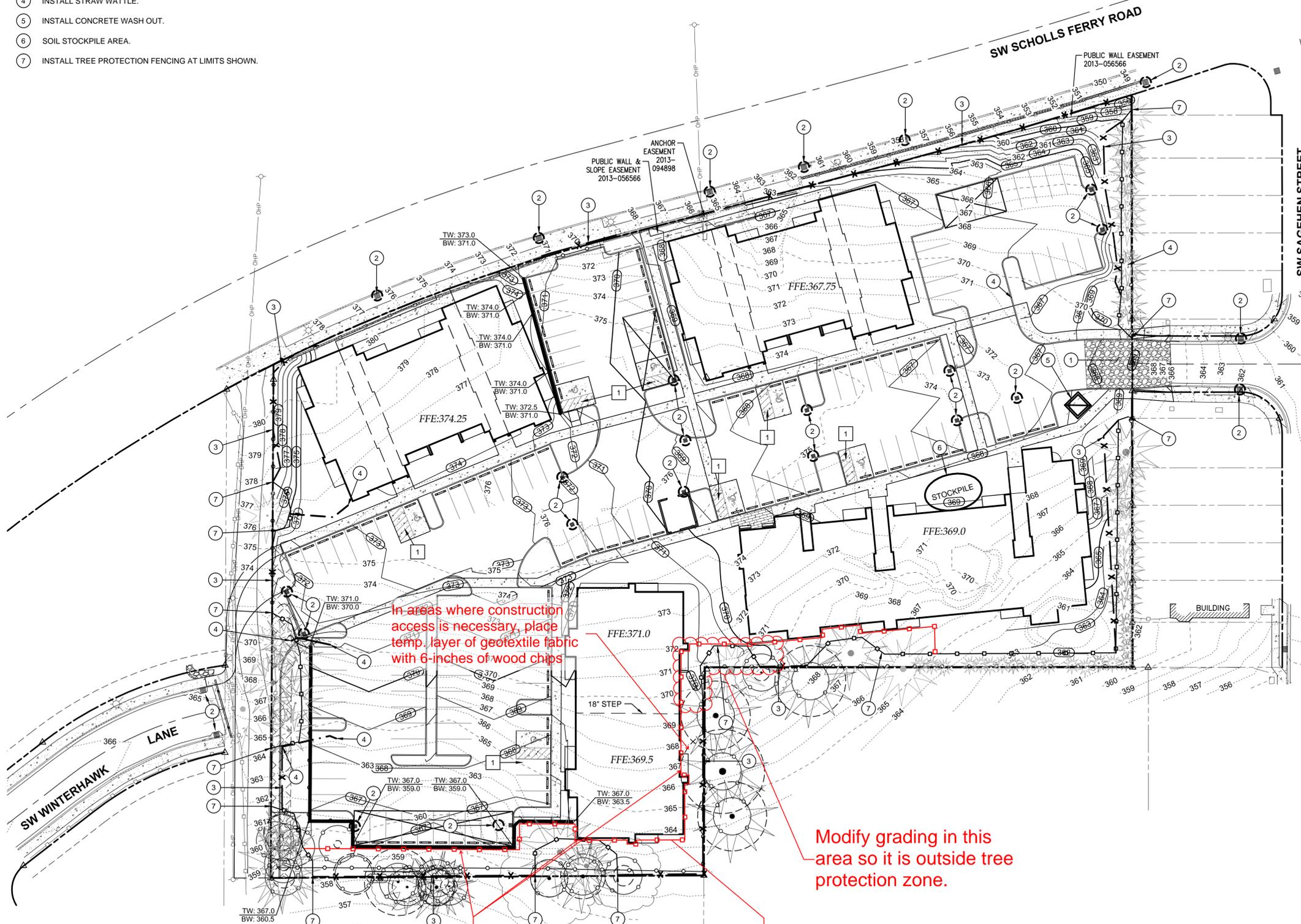
Scale: 1 inch = 30 feet
 30 15 0 15 30

LEGEND

- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- EASEMENT LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING BUILDING
- EXISTING CONCRETE
- EXISTING ROCK WALL
- EXISTING BLOCK RETAINING WALL
- EXISTING CURB
- EXISTING FENCE LINE
- EXISTING OVERHEAD POWER
- EXISTING VEGETATION LIMITS LINE
- EXISTING CONIFEROUS TREE
- EXISTING UTILITY POLE
- EXISTING STORM INLET
- EXISTING POWER METER
- EXISTING ELECTRIC RISER
- EXISTING LUMINAIRE
- FOUND SURVEY MONUMENT
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED CONCRETE
- PROPOSED BUILDING LINE
- PROPOSED FENCE
- DRAINAGE INLET SYMBOLS
- PROPOSED STRAW WATTLE
- PROPOSED SILT FENCING
- PROPOSED TREE PROTECTING FENCING
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED INLET PROTECTION
- PROPOSED CONCRETE WASHOUT
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- SPOT GRADE, X TYPE AS NOTED

ABBREVIATIONS

- BW BOTTOM OF WALL
- FFE FIRST FLOOR ELEVATION
- TW TOP OF WALL



In areas where construction access is necessary, place temp. layer of geotextile fabric with 6-inches of wood chips

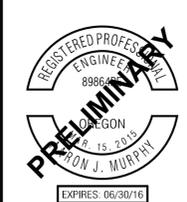
Modify grading in this area so it is outside tree protection zone.

Tree protection fencing for offsite trees.

Ensure project arborist is onsite for construction of retaining wall and buildings adjacent to offsite trees.

LAND USE	NOVEMBER 20, 2015	DATE
REVISION SUMMARY		BY

GRADING PLAN
TRILLIUM WOODS APARTMENTS
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 JT SMITH COMPANIES
 BEAVERTON, OREGON



3J CONSULTING, INC

 CIVIL ENGINEERING
 WATER RESOURCES
 LAND USE PLANNING
 5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
 PHONE & FAX: (503) 946-8385

3J JOB ID #	15263
LAND USE #	PA 2015-0050
TAX LOT #	100, 2400
DESIGNED BY	TNO/CKW
CHECKED BY	EIM

SHEET TITLE
GRADING PLAN
 SHEET NUMBER

C250

