



**CITY OF
TUMWATER
TREE BOARD
MEETING AGENDA**

**Online via Zoom and In Person at
Tumwater Fire Department
Headquarters, Training Room, 311 Israel
Rd. SW, Tumwater, WA 98501**

**Monday, August 12, 2024
7:00 PM**

1. Call to Order
2. Roll Call
3. Changes to Agenda
4. Approval of Minutes
5. Tree Board Member Reports
6. Coordinator's Report
7. Public Comment
 - [a.](#) Public Comment from Nancy Partlow
 - [b.](#) Public Comment from Nancy Partlow
- [3.](#) Case study of current Protection of Trees and Vegetation code (TMC 16.08) implementation
4. Next Meeting Date - 09/09/2024
5. Adjourn

Meeting Information

The public are welcome to attend in person, by telephone or online via Zoom.

Watch Online

https://us02web.zoom.us/webinar/register/WN_KiHt5AZhTAiBfhxC26FvgA

Listen by Telephone

Call (253) 215-8782, listen for the prompts and enter the Webinar ID 879 9186 7155 and Passcode 134693.

Public Comment

The public is invited to attend the hearing and offer comment. The public may register in advance for this webinar to provide comment:

https://us02web.zoom.us/webinar/register/WN_KiHt5AZhTAiBfhxC26FvgA

After registering, you will receive a confirmation email containing information about joining the webinar.

The public may also submit comments prior to the meeting by sending an email to:

AJonesWood@ci.tumwater.wa.us. Please send the comments by 1:00 p.m. on the date of the meeting.

Comments are submitted directly to the Commission/Board Members and will not be read individually into the record of the meeting.

If you have any questions, please contact Sustainability Coordinator Alyssa Jones Wood at (360) 754-4140 or AJonesWood@ci.tumwater.wa.us.

Post Meeting

Audio of the meeting will be recorded and later available by request, please email CityClerk@ci.tumwater.wa.us

Accommodations

The City of Tumwater takes pride in ensuring that people with disabilities are able to take part in, and benefit from, the range of public programs, services, and activities offered by the City. To request an accommodation or alternate format of communication, please contact the City Clerk by calling (360) 252-5488 or email CityClerk@ci.tumwater.wa.us. For vision or hearing impaired services, please contact the Washington State Relay Services at 7-1-1 or 1-(800)-833-6384. To contact the City's ADA Coordinator directly, call (360) 754-4129 or email ADACoordinator@ci.tumwater.wa.us.

What is the Tree Board?

The Tumwater Tree Board is a citizen advisory board that is appointed by and advisory to the City Council on urban forestry issues, including drafting and revising a comprehensive tree protection plan or ordinance, or any other tree matter. Actions by the Tree Board are not final decisions; they are Board recommendations to the City Council who must ultimately make the final decision. If you have any questions or suggestions on ways the Tree Board can serve you better, please contact the Community Development Department at (360) 754-4180.

Kestrel chicks in the Davis Meeker oak video

NANCY PARTLOW <nanpartlow@comcast.net>

Sat 7/13/2024 11:26 AM

To: Alyssa Jones Wood <AJonesWood@ci.tumwater.wa.us>

 1 attachments (5 MB)

Video.mov;

Alyssa,

I don't know whether you've seen this video of the fledging baby kestrels at the Davis Meeker oak. It is so cool! I just wish I could see what the parent kestrel fed the chick. It looks pretty large. There must be good prey for the kestrels at the airport since the chicks all look really healthy. They've got to be pretty tough to survive the heat that we've been having. Maybe it's cooler inside the tree.

I've been thinking more about heat islands as I've been listening to the paving taking place on Kingswood Drive. Asphalt and cement make everything soooo hot and whenever the earth is paved, the land's ability to participate in the earth's cooling carbon cycle is destroyed. The effects from these intense heat islands generate outward, putting a lot more stress on vegetation growing in nearby natural areas, especially during extended heat events like we're having now. You're new to this area, but week after week of 80 and 90 degree summer temperatures are not normal here, at least when I was growing up. Back then when we would have a summer heat event, more often than not, there would be a thunderstorm with a heavy dose of rain afterward. Now the earth gets so desiccated there's not enough moisture in the atmosphere to create a thunderstorm.

I know that policy is not your bailiwick, but I can't help but remember all the times that I've heard developers say a project wouldn't "pencil out" because of environmental constraints put on them. I hope your group's work on the climate section of the comprehensive plan includes a new "climate budget" for the city, where true climate costs are figured into the cost benefit analysis of how land is zoned and development occurs. For example, does the little bit of tax revenue the city will receive from the new fast food places on Kingswood Drive come anywhere near to offsetting the climate costs it will incur to the city and nearby neighborhoods?

Could you please forward the kestrel video to the Tree Board members?

Thank you!

Nancy

Let's work together to save the Davis Meeker oak and create something beautiful

NANCY PARTLOW <nanpartlow@comcast.net>

Tue 7/30/2024 10:47 AM

To: Alyssa Jones Wood <AJonesWood@ci.tumwater.wa.us>

Alyssa,

Below is a letter I sent yesterday to Mayor Sullivan and Council Members about the Davis Meeker oak. Could you please forward it to the Tree Board? I would really appreciate it.

Thanks!

Nancy

Dear Mayor Sullivan and Council Members,

I see that the city is in the process of hiring another arborist to assess the health and safety profile of the Davis Meeker oak. No matter what the results of that assessment show, I would like to ask that every effort be made to save this tree.

When I read the initial assessment of the Davis Meeker oak, I was very sad but resigned to the possibility of the tree being cut down. But as I have learned more about this tree's deep importance in Tumwater's tribal and pioneer history, and its integral role in the still extant Bush Prairie oak grassland ecosystem, it is my feeling that the city and Port should move heaven and earth to protect this tree.

Having been an environmental activist in Tumwater for many years, I've never seen so many people come together to protect anything, let alone a tree. Also, as a Pacific Northwest native and a lifetime birder, I can't tell you how excited I was to see American kestrels nesting in a hollow in the Davis Meeker oak, which they have undoubtedly been doing for decades. Not once have I seen birds of any species use the natural hollow in a Tumwater tree to nest, let alone such cool birds as falcons!

It's not difficult to understand why. These days, we almost never let trees get old enough to develop hollows in their trunks for wildlife. The Davis Meeker oak is a happy anomaly to that trend for the very reasons that Tumwater has protected and honored it as a Heritage Tree since 2001: its age and history. The importance of that heritage does not change just because the tree starts dropping branches.

Su Sikora posted an idea on the Save the Oak facebook page for shielding Old Hwy 99 from falling branches. I think is a good one. She proposed creating a protective steel structure like this over the roadway:



Such a structure could easily be turned into an art installation similar to Olympia's Gateways Public Art project:

https://www.olympiawa.gov/community/arts,_culture___heritage/public_art/gateways_public_art.php

What a city asset that would be!

Plus, if necessary, the framework could be partially camouflaged like the wonderful trees and sky that have been painted on the Tumwater Hill water tower at Overlook Park.

Creative ideas for such a structure could be solicited from local artists and residents. I'd love to see what kids could do with this idea. A temporary protective scaffold could be set up until the artwork was ready.

The healing underlying message of this sculpture would be, *"We came together to protect people and our heritage tree."*

So much money and angry energy has been expended on the conflict over the Davis Meeker oak. It's not good for our community.

Isn't it time we stop fighting, and work together to create a positive solution? It would not be a capitulation by anyone, but a collaboration for everyone, and I think a deep sigh of relief would be breathed by all.

Thanks for listening,

Nancy Partlow

*We do not fear this tree
We revere this tree.*



TO: Tree Board
FROM: Alyssa Jones Wood, Sustainability Coordinator
DATE: August 12, 2024
SUBJECT: Case study of current Protection of Trees and Vegetation code (TMC 16.08) implementation

1) Recommended Action:

Review and discuss two case studies of how TMC 16.08 is applied currently.

2) Background:

The Tree Board, Planning Commission, and City Staff have been involved with updating the TMC 16.08 since the fall of 2022. The project was put on hold in the spring of 2023 while the City worked to clarify the Washington Wildland Urban Interface Code on the state level. City staff endeavors to restart the code update process for TMC 16.08 in the fall of 2024. In the meantime, Board Member Brent Chapman suggested that the Tree Board review case studies of how the current code is applied.

3) Alternatives:

- ☐ Table the discussion of TMC 16.08 case studies to the September 9, 2024 Tree Board meeting.
-

4) Attachments:

- A. TMC 16.08
- B. Belmont Flats Tree Report
- C. Yorkshire Tree Protection Plan
- D. Kingswood Apartments Tree Protection Plan
- E. Kingswood Apartments Landscape Plan

SUF

SOUND URBAN FORESTRY

Appraisals, Planning, Urban Landscape Design and Management

Belmont Flats Mixed-Use Project

Tyee Drive

Tumwater, Washington 98501

Tree Protection Plan

Prepared for: Israel Investments, LLC

JSA Civil, Brandon Johnson

Prepared by: Kevin M. McFarland, SUF

Consulting Urban Forester/ISA Certified Arborist & Tree Risk Assessor Qualified

Date: 12/21/2022

This report has been developed as part of the proposed 15.18-acre Belmont Flats mixed-use project along Tyee Drive, in Tumwater, Washington. This plan will satisfy the requirements as specified by the City of Tumwater Protection of Trees and Vegetation Ordinance (TMC 16.08) and Development Guidelines and Standards.

SOUND URBAN FORESTRY, LLC ~ 360/870-2511 ~ P.O. Box 489, Tahuya, WA 98588

I. Overall Site & Vegetation Description

The site contains 3 distinct vegetation types. The northern half is dominated by western red cedar and Douglas fir with scattered red alder, shore pine and big leaf maple. The southern half is dominated by red alder with some shore pine and Douglas fir. Along the eastern edge are large Douglas firs with a few shore pine and big leaf maple. The trees are in overall fair to good conditions and with the exception of the alders, are even aged and well-spaced. Understory vegetation is typical of lowland forests and includes salal, mahonia, hazelnut, sword fern and snowberry. The property had been mowed in the last 5-10 years resulting in open areas and lack of regeneration.

II. Inventory of Trees

A 100% inventory of all trees measuring 6" and greater within the parcels was conducted in December 2022. This information is presented in the table below.

Table 1. Inventory of Trees within Property

Species	DBH	Number of Trees
Big Leaf Maple	6-46"	198
Western Red Cedar	6-36"	93
Douglas Fir	6-38"	184
Shore Pine	8-24"	63
Grand Fir	8-24"	3
Red Alder	8-26"	5
Bird Cherry	12-32"	6
Bitter Cherry	12-32"	1
Pacific Dogwood	8-16"	7
Western Hemlock	14"	1
		Total = 561

Landmark Trees

I found no trees within the site that would be considered specimen or 'Landmark' trees.

Off-Site & Edge Trees

No offsite trees were identified with the potential of impacts.

III. Tree Retention Calculations

Trees to be retained are located within the Tree Protection Open Space in the southeast corner of the project. A summary of those trees can be found within Table 2. Per the TMC, trees that measure 24" and greater count as two.

Table 2. Inventory of Trees to be Retained within Tree Protection Open Space

Species	DBH	Number of Trees	Count Toward Retention
Big Leaf Maple	6-24"	6	6
Big Leaf Maple	24"+	4	8
Western Red Cedar	36"	1	2
Douglas Fir	24"+	3	6
Red Alder	26"	1	2
Pacific Dogwood	8-16"	5	5
Bitter Cherry	12" & 32"	2	3
			Total = 32

Table 3. Summary of Tree Retention Calculations

Gross Acreage (15.18 – 1.12 Dedicated ROW)	14.06
Total Trees Within Site (Table 1)	561
20% Tree Retention	112 Trees
*12 Trees/ Acre Retention	169 Trees
Proposed Tree Retention	32 Trees
Shortfall on Required Retention	137 Trees
Required Replanting (3:1)	411 Trees

*This is the greater amount and therefore required by TMC

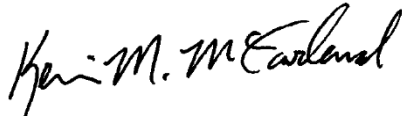
IV. Replanting

This project falls short of the minimum retention by 137 trees. Because it would be possible to meet that minimum, the applicant will be required to replant at a rate of 3:1 within the site. Per the standards outlined in TMC 16.08.070, priority must be given to replanting within the tree protection open space in order to obtain 80% coverage in 15 years. There is ample room within the open space for replanting. These requirements will be addressed with the submitted landscape plans.

IV. Tree Protection

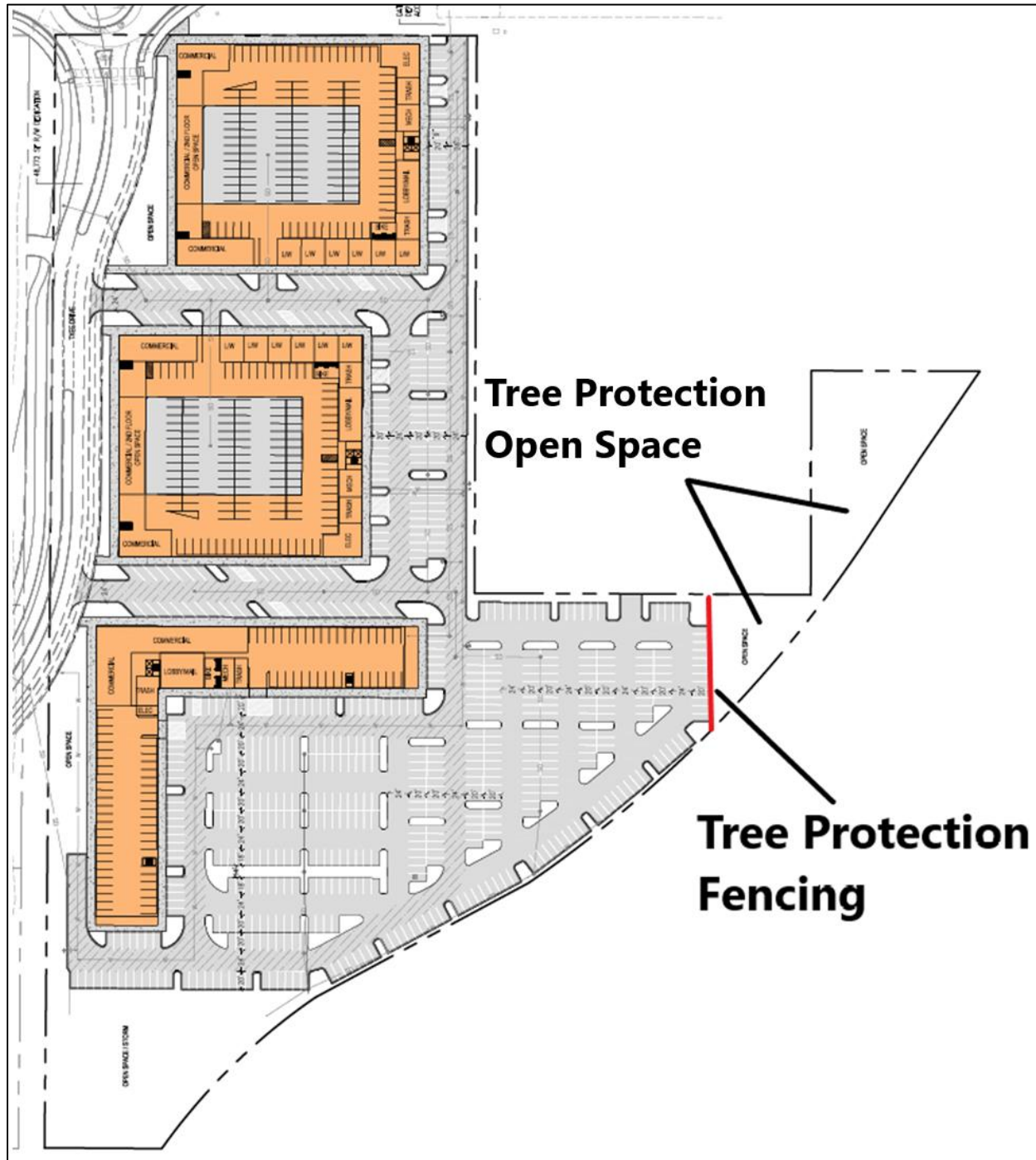
Due to the limited access of the Tree Protection Open Space, protection fencing will only be necessary along the western most perimeter, as shown on the attached site plan. Fencing will meet the City's standards and be installed prior to any site work.

Professionally Submitted,



Kevin M. McFarland, Principal
ISA Certified Arborist PN-0373 & ISA Tree Risk Assessment Qualified
Sound Urban Forestry, LLC

Location of Tree Protection Open Space and Recommended Tree Protection Fencing



Belmont Flats

WASHINGTON FORESTRY CONSULTANTS, INC.

FORESTRY AND VEGETATION MANAGEMENT SPECIALISTS



W F C I

O: 360/943-1723
C: 360/561-4407

9136 Yelm Hwy SE
Olympia, WA 98513

- Preliminary Tree Protection Plan-

YORKSHIRE PROJECT

Tumwater Blvd. SW
Tumwater, Washington

Prepared for: Glenn Wells Architects

Prepared by: Washington Forestry Consultants, Inc.

Date: December 1, 2022

The project proponent is proposing to construct a 1,150-unit multi-family complex on three parcels totaling 25.52 acres between Tumwater Blvd. SW and Israel Road SW in Tumwater, WA. Washington Forestry Consultants, Inc. was retained to examine the trees on these proposed new project parcels.

Scope of Work

The purpose of the evaluation was to:

1. Complete an inventory of existing trees, and
2. Make recommendations for retention and/or replacement as per Chapter 16.08.070, the Tumwater Tree Protection Ordinance.
3. Prepare a tree protection plan.

Methodology

WFCI has inventoried all trees 6-inches and larger diameter at breast height (DBH) in the proposed project area using standard forestry sampling methodology. Nineteen variable area plots were installed on a systematic grid across the site. The plot locations are marked in the field with pink and black striped flagging. Data from the counts of significant trees were entered into SuperAce®, a forest inventory software program that projected the total number of significant trees in the buildable area of the project. This plot data will be used to determine the tree retention requirement. Sampling was designed to, and achieved a 95% confidence level for the projection of the population of significant trees.

Yorkshire Project – Preliminary Tree Protection Plan

The tree evaluation phase used methodology developed by Matheny and Clark (1998)¹ and the International Society of Arboriculture.

Soils and Site Description

The project includes parcels: 12704431300 (8.43-acres), 12704440103 (16.18-acres), and 12704440100 (0.91-acres) located in Sec. 4, T17N, R2W, W.M., City of Tumwater, Thurston County, Washington.

The topography of the project site is flat to gently rolling. It is bordered by Israel Road SW and an undeveloped lot to the north, an undeveloped lot to the east, Tumwater Blvd. SW to the south, and an apartment complex, four undeveloped lots, and a veterinary clinic to the west. There are no improvements on the site.

According to the Natural Resource Conservation Service there are two soil types on the parcels; the Cagey loamy sand, and the Nisqually loamy fine sand.

The first soil type is the Cagey loamy sand, a very deep, moderately well drained soil found on terraces. It formed in sandy glacial drift. Permeability is rapid. Available water capacity is moderate. The effective rooting depth for trees is 60 inches or more. A seasonal high-water table is at a depth on 18 to 30 inches from November to April. Runoff is slow and the hazard of erosion is slight. Windthrow hazard is slight under normal conditions. This is the dominant soil type on the site.

The second soil type is the Nisqually loamy fine sand, a very deep, somewhat excessively drained soil found on terraces. It is formed in sandy glacial outwash. Permeability is moderately rapid in the surface layer and very rapid in the substratum. Available water capacity is moderate. The effective rooting depth for trees is 60 inches or more. The potential for windthrow of trees is slight under normal conditions. New trees require irrigation for establishment.

¹ Nelda Metheny and James R. Clark. Trees and Development: A Technical Guide to Preservation of Trees during Land Development. International Society of Arboriculture, Champaign, IL.

Yorkshire Project – Preliminary Tree Protection Plan

Figure 1: Yorkshire Project soil map.

20 – Cagey loamy sand
73 – Nisqually loamy fine sand

Existing Trees

There are four distinct forest cover types on the site.

Type I. – Type I (8.59-acres) is a well-stocked stand of bigleaf maple (*Acer macrophyllum*), black cottonwood (*Populus trichocarpa*), Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), red alder (*Alnus rubra*), western redcedar (*Thuja plicata*), and western hemlock (*Tsuga heterophylla*). The diameter of the trees in the stand range in size from 6 to 48 inches DBH. There were few trees in the small diameter classes, most trees were larger than 20 inches DBH. The stand was thinned in the early 2000's. A summary of tree species, diameter range, trees per acre, number of trees and the percent composition of each species are provided in Table 1. The condition of the trees ranges from 'Very Poor' to 'Good'. There are many quality trees in this type to retain.



Photo 1: Typical trees in Cover Type I.

Yorkshire Project – Preliminary Tree Protection Plan

Table 1. -- Inventory summary for forest cover Type I.

Species	DBH Range	Trees/Acre	# of Trees	% Composition
Bigleaf Maple	6 – 38	30	258	37%
Cottonwood	22 – 36	2	17	2%
Douglas-fir	21 – 40	12	103	15%
Grand Fir	25 – 32	2	17	2%
Red Alder	15 – 18	7	60	9%
Western Redcedar	13 – 48	27	232	33%
Western Hemlock	26	1	9	2%
Total	6 – 48	81	696	100%

The understory of this type includes salal (*Gaultheria shallon*), western hazel (*Corylus cornuta*), Oregon grape (*Mahonia nervosa*), sword fern (*Polystichum munitum*), other broadleaf weeds, and grasses.

Type II. – Type II (8.59-acres) is a very poorly stocked stand of bigleaf maple, Douglas-fir, western redcedar, and western hemlock. The area was previously cleared of most trees. The type was not replanted after it was harvested. A summary of tree species, diameter range, trees per acre, number of trees and the percent composition of each species are provided in Table 2. The condition of the trees ranges from ‘Very Poor’ to ‘Good’. Only the conifer trees in this type would be suitable for retention.



Photo 2: Typical appearance Cover Type II.

Yorkshire Project – Preliminary Tree Protection Plan

Table 2. -- Inventory summary for forest cover Type II.

Species	DBH Range	Trees/Acre	# of Trees	% Composition
Bigleaf Maple	28	1	9	10%
Douglas-fir	22 – 35	5	43	50%
Western Redcedar	25 – 40	2	17	20%
Western Hemlock	18	2	17	20%
Total	18 – 40	10	86	100%

The understory of the type includes salmon berry (*Rubus spectabilis*), bitter cherry (*Prunus emarginata*), western hazelnut, Scotch broom (*Cytisus scoparius*), trailing blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), broadleaf weeds and grasses.

Type III. – Type III (3.49-acres) is a moderately stocked stand of lodgepole pine (*Pinus contorta*), bigleaf maple, black cottonwood, noble fir (*Abies procera*), red alder, and western redcedar. The type was also thinned in the early 2000's. The main part of the stand is lodgepole pine with the secondary species growing on the perimeter. A summary of tree species, diameter range, trees per acre, number of trees and the percent composition of each species are provided in Table 3. The condition of the trees ranges was 'Very Poor to 'Good'. The conifer in this type would be suitable for retention.



Photo 3: Typical appearance of trees in Cover Type III.

Yorkshire Project – Preliminary Tree Protection Plan

Table 3. -- Inventory summary for forest cover Type I.

Species	DBH Range	Trees/Acre	# of Trees	% Composition
Bigleaf Maple	18	4	14	8%
Cottonwood	18 – 22	17	59	36%
Lodgepole Pine	15 – 22	21	73	44%
Noble Fir	32	1	3	2%
Red Alder	26	2	7	4%
Western Redcedar	34 – 52	3	10	6%
Total	18 - 52	48	166	100%

The understory of the type includes trailing blackberry, Himalayan blackberry, salmon berry, western hazelnut, broadleaf weeds and grasses.

Type IV. – Type IV (4.86-acres) is a moderately stocked stand of bigleaf maple, western redcedar and Douglas-fir. The diameters of trees in the stand range in size from 10 to 52 inches DBH. A summary of tree species, diameter range, trees per acre, number of trees and the percent composition of each species are provided in Table 4. The condition of the trees ranges from ‘Poor’ to ‘Good’. There are some quality trees in this type to retain.



Photo 4: Typical appearance of trees in Cover Type IV.

Yorkshire Project – Preliminary Tree Protection Plan

Table 4. -- Inventory summary for forest cover Type IV.

Species	DBH Range	Trees/Acre	# of Trees	% Composition
Bigleaf Maple	14 – 38	20	97	36%
Douglas-fir	24 – 34	4	19	7%
Western Redcedar	10 – 52	31	151	57%
Total	10 – 52	55	267	100%

The understory of the type includes salmon berry western hazelnut, Scotch broom (*Cytisus scoparius*), trailing blackberry, Himalayan blackberry, broadleaf weeds and grasses.

Historic Trees. -- No Historic Trees occur on the site.

Specimen Trees. – No trees were considered to be specimen trees.

Off-Site Trees. -- Tree removal on this parcel will increase wind exposure to off-site trees on the undeveloped parcels to the east of the site.

Tree Protection Areas

The City of Tumwater requires 5% of the total buildable area of the site to be set aside as tree protection area. The site plan provided, with a 5-lane option on Tyee Drive, shows tree protection in three 'Tree Tact Open Space' areas totaling 1.09 acres in the southwest and southeast corners of the site.

Minimum Stocking Calculation

The City of Tumwater Tree and Vegetation Protection Ordinance requires that 20% of the existing trees (or 12 trees per acre, whichever is larger) be saved on site.

The following is a summary of the proposed tree retention:

Total Project Acreage:	25.52 acres
Total # of trees on the Project	1,215 trees
Required Retention (12 Trees/acre) *	306 trees
Required Retention (20%): **	243 trees
Site Area	25.52 acres
Rights-of-way Dedication	3.82 acres
Buildable Area	21.70 acres
Required Tree Tract Acreage (5% of buildable area)	1.09 acres
Proposed Tree Tract Areas	1.09 acres

Yorkshire Project – Preliminary Tree Protection Plan

Planned Tree Retention in Tree Tracts: 91 trees

Shortfall of Required Retention (306 - 91) 215 trees

* Used for required tree retention calculation.

** Ordinance requires 20% or 12 trees/acre, whichever is greater – Sample calculation.

A Tree Replacement Plan is necessary since planned retention is short of the minimum stocking requirement by 215 trees. The Tumwater tree ordinance requires that 3 replacement trees be planted for every tree short of the required tree retention. This means that **645** trees will need to be replanted on the site in addition to the required landscaping.

Tree Species for Inter-planting

We recommend that the following conifer tree species be used to interplant any gaps in the tree protection areas:

- Western redcedar
- Douglas-fir
- Incense-cedar
- Austrian pine

The trees should be at least 6-7 foot tall balled and burlap trees with well-developed central leaders.

The landscape plan (prepared by others) should incorporate some deciduous accent and shade trees to provide a mix of color, texture, and size across the site. The street tree selection should correspond to the Tumwater Comprehensive Street Tree Plan recommendations. All tree species should be planted and mulched according to industry standards.

Tree Protection during Construction

The tree protection fence should be orange mesh plastic, and be erected after logging and clearing, but prior to grading. No trenches, cuts, fills, drainage modification, irrigation lines, storing of materials, equipment operation, or other activity should occur within the critical root zone of protected trees. The tree protection and silt fences should be installed at least 5 feet beyond the driplines of trees to be saved.

If there are to be encroachments on any trees due to any change in the site plan, each tree should be evaluated to determine the impacts on tree survival and safety prior to the impact.

Pruning

All trees to be retained near structures, streets, or other targets should be crown cleaned to remove dead, dying, diseased, structurally defective, or extra branches. Crown raising or side trimming may be necessary to provide building and ground clearances for sidewalks and parking lots. All pruning should conform to the ANSI A300² standards for proper pruning, and be completed by or supervised by an ISA Certified Arborist®.

Landscape Installation

Grading, rototilling, and installation of irrigation lines should not impact the critical root zones (CRZ) of the protected trees. Noxious vegetation such as blackberry and Scotch broom should be selectively removed from tree tract areas by hand.

If additional fill is required to achieve desired grades, no more than 20% of the protected trees root zone should be covered with fill depths over 2 inches. If impacts must exceed 20% of the CRZ, the tree should be further evaluated by a Washington Forestry Consultants, Inc. (WFCI) to determine if removal and replacement is more appropriate.

Monitoring

Tree protection fences should be inspected by WFCI after installation to insure that they are properly located and installed. The fences should be maintained until installation of the final landscaping.

² American National Standard ANSI A300 (Part 1). 2008. Pruning for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning). Tree Care Industry Association. Londonderry, NH. 13 pgs.

Sequence of Events for Tree Protection Activity

1. Stake the clearing limits.
2. Contact WFCI to inspect and re-inspect trees in the final tree protection areas to confirm that no hazardous trees are retained and that tree counts are correct.
3. Applicant can then complete necessary pruning and hazard tree removal from the tree protection areas if necessary.
4. Heavily mark the clearing limits adjacent to the tree tracts.
5. Complete logging and clearing.
6. Install tree protection fences prior to the start of grading as prescribed by WFCI.
7. If unforeseen changes will impact a tree(s), then WFCI should re-evaluate the tree(s) before construction, to design mitigation if necessary.
8. Complete construction.
9. Contact WFCI to inspect all large trees **after** construction is complete to ensure that protected trees were not damaged or made hazardous.
10. Conduct **annual** hazard tree evaluation to determine short- and long-term effects of site changes on protected trees.

Summary

The 5% tree protection requirement has been met by saving 1.09 acres of tree tract. It is projected that a total of 91 healthy trees can be protected on the site. This is below the minimum requirement of 12 trees per acre (306) by 215 trees.

A total of 645 trees, in addition to the required landscaping, will need to be replanted to meet the city of Tumwater minimum stocking requirement. We suggest that inter-planting the tree tracts with suitable tree species where gaps in the tree cover occur. Payment for the shortfall of planted trees can, with approval, be made to the Tumwater Tree Fund.

Please give us a call if you have any questions.

Respectfully submitted,

Washington Forestry Consultants

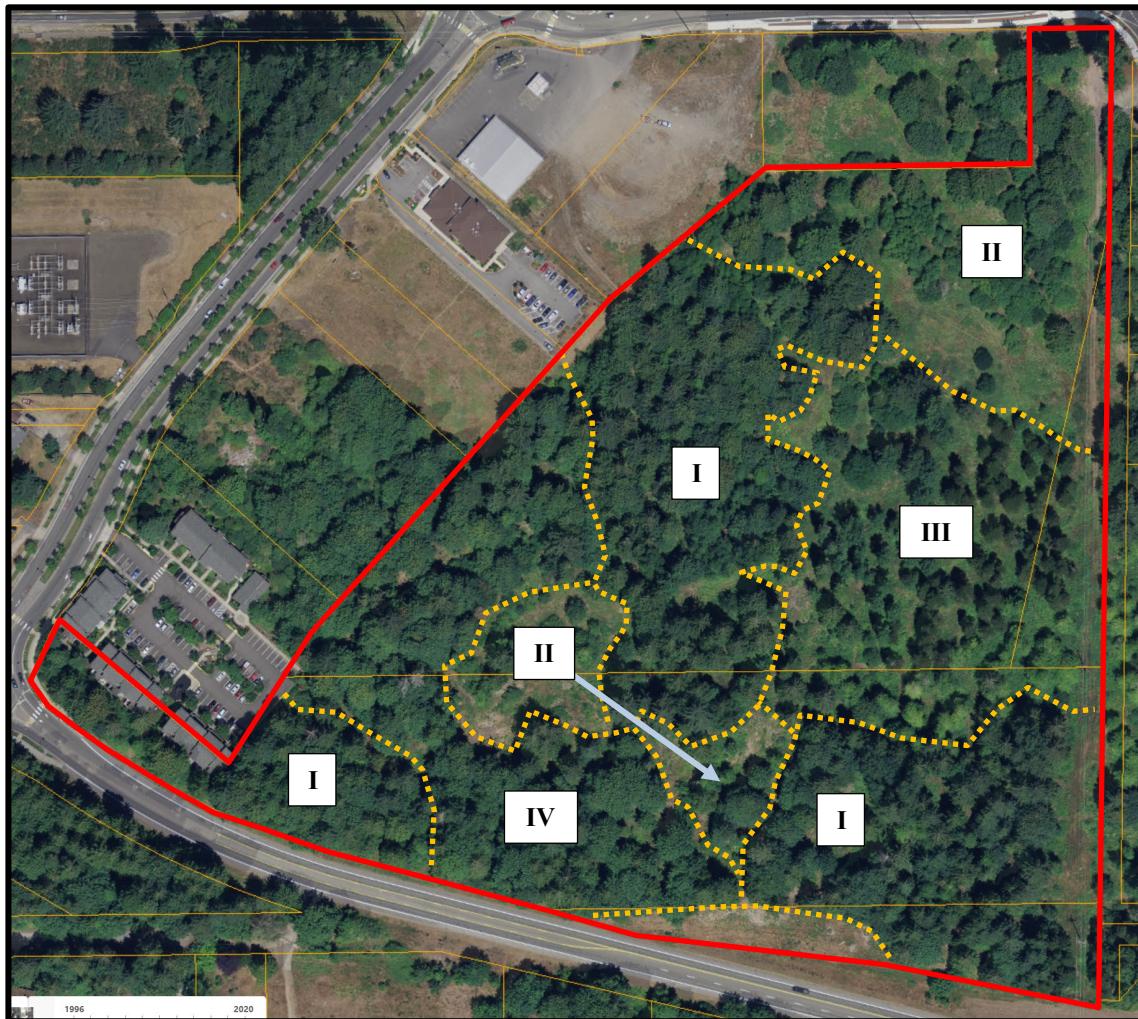


Galen M. Wright, ACF, ASCA
ISA Bd. Certified Master Arborist PN-129BU
Certified Forester No. 44
ISA Tree Risk Assessor Qualified



Joshua Sharpes
Professional Forester
ISA Certified Arborist
Municipal Specialist, PN-5939AM
ISA Tree Risk Assessor Qualified

APPENDIX I - Yorkshire Project Site Aerial Photo with Forest Cover Types (Thurston County Geodata 2018)



— Project Boundaries
 Forest Cover Type Lines

Type I: BM, cw, df, gf, ra, rc, wh – 6 – 48 DBH – 81 Trees/acre

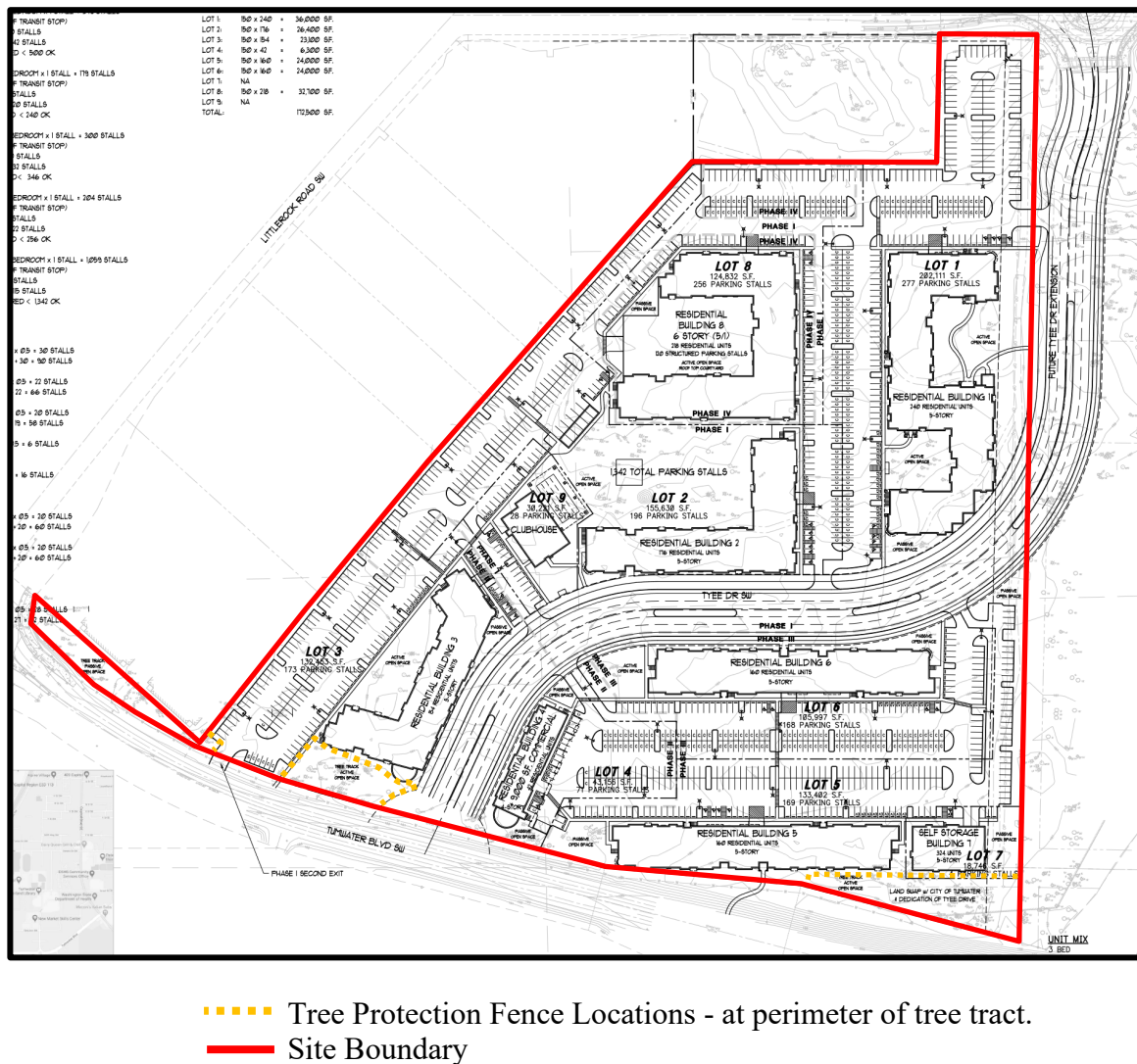
Type II: DF, bm, rc, wh – 18 – 40" DBH – 10 Trees/acre

Type III: LP, bm, cw, nf, ra, rc – 15 – 52" DBH – 48 Trees/acre

Type IV: RC, bm, df – 10 – 52" DBH – 55 Trees/acre

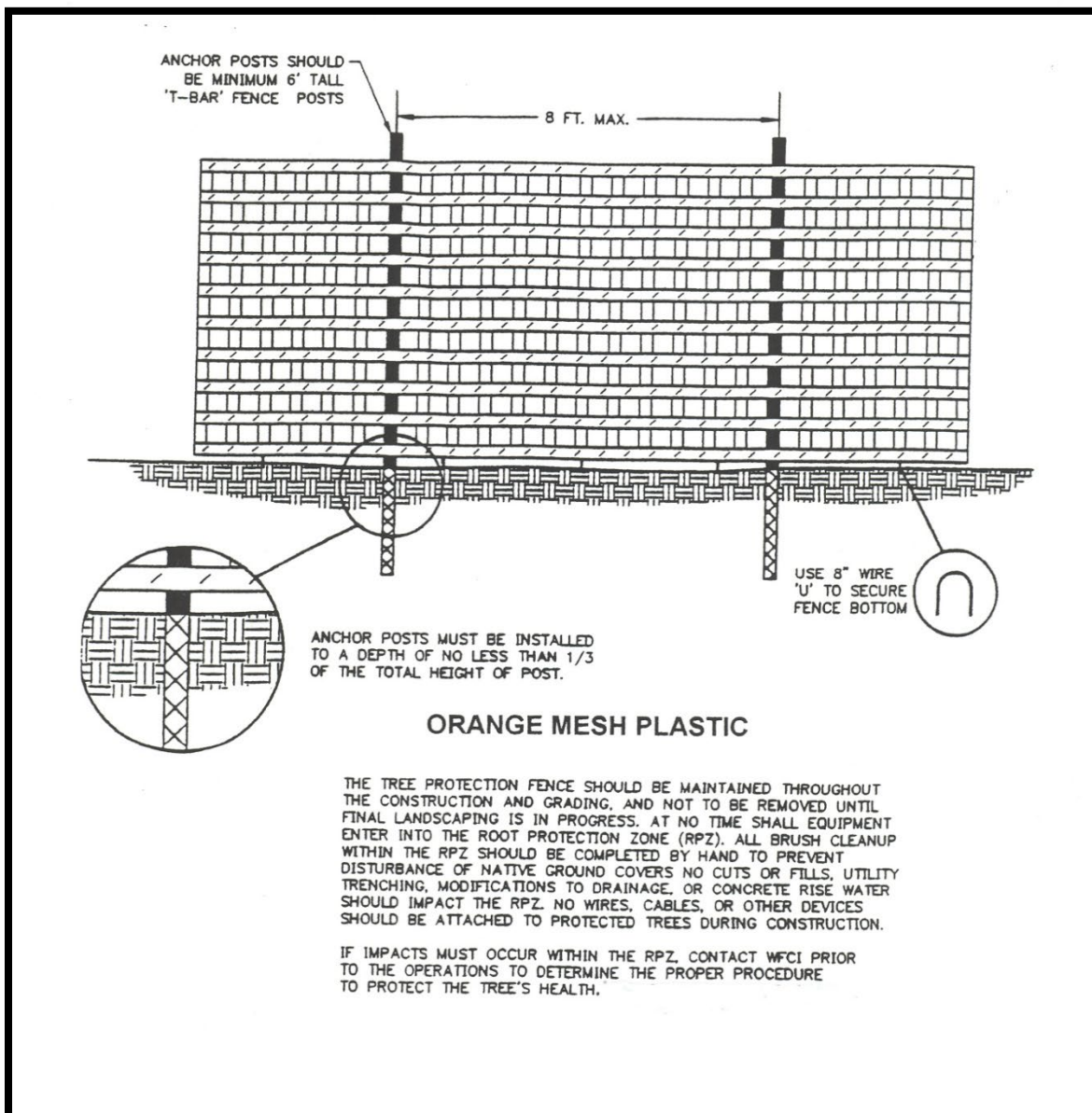
APPENDIX II

Yorkshire Project Site Plan



APPENDIX III

Tree Protection Fence Detail



APPENDIX IV

Assumptions and Limiting Conditions

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- 5) Loss or alteration of any part of this report invalidated the entire report.
- 6) Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc.
- 7) Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc. -- particularly as to value conclusions, identity of Washington Forestry Consultants, Inc., or any reference to any professional society or to any initialed designation conferred upon Washington Forestry Consultants, Inc. as stated in its qualifications.
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Note: Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by man's actions.

WASHINGTON FORESTRY CONSULTANTS, INC.

FORESTRY AND VEGETATION MANAGEMENT SPECIALISTS



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Olympia, WA 98513

- Tree Protection Plan-

KINGSWOOD APARTMENTS

Kingswood Drive SW
Tumwater, Washington

Prepared for: Glenn Wells Architects

Prepared by: Washington Forestry Consultants, Inc.

Date: July 6, 2022

The project proponent is proposing to build a 180-unit multi-family apartment complex on 3.1-acres at Kingswood Drive SW in Tumwater, WA. Washington Forestry Consultants, Inc. was retained to examine the trees on the proposed project parcel.

Scope of Work

The purpose of the evaluation was to:

1. Complete an inventory of existing trees, and
2. Make recommendations for retention and/or replacement as per Chapter 16.08.070, the Tumwater Tree Protection Ordinance.
3. Prepare a new tree protection plan.

Methodology

WFCI has evaluated all trees 6 inches and larger diameter at breast height (DBH) in the proposed project area, and assessed their potential to be incorporated into the new project. The parcel was located and identified on plans provided to WFCI. The tree evaluation phase used methodology developed by Matheny and Clark (1998)¹ and the International Society of Arboriculture.

¹ Nelda Metheny and James R. Clark. Trees and Development: A Technical Guide to Preservation of Trees during Land Development. International Society of Arboriculture, Champaign, IL.

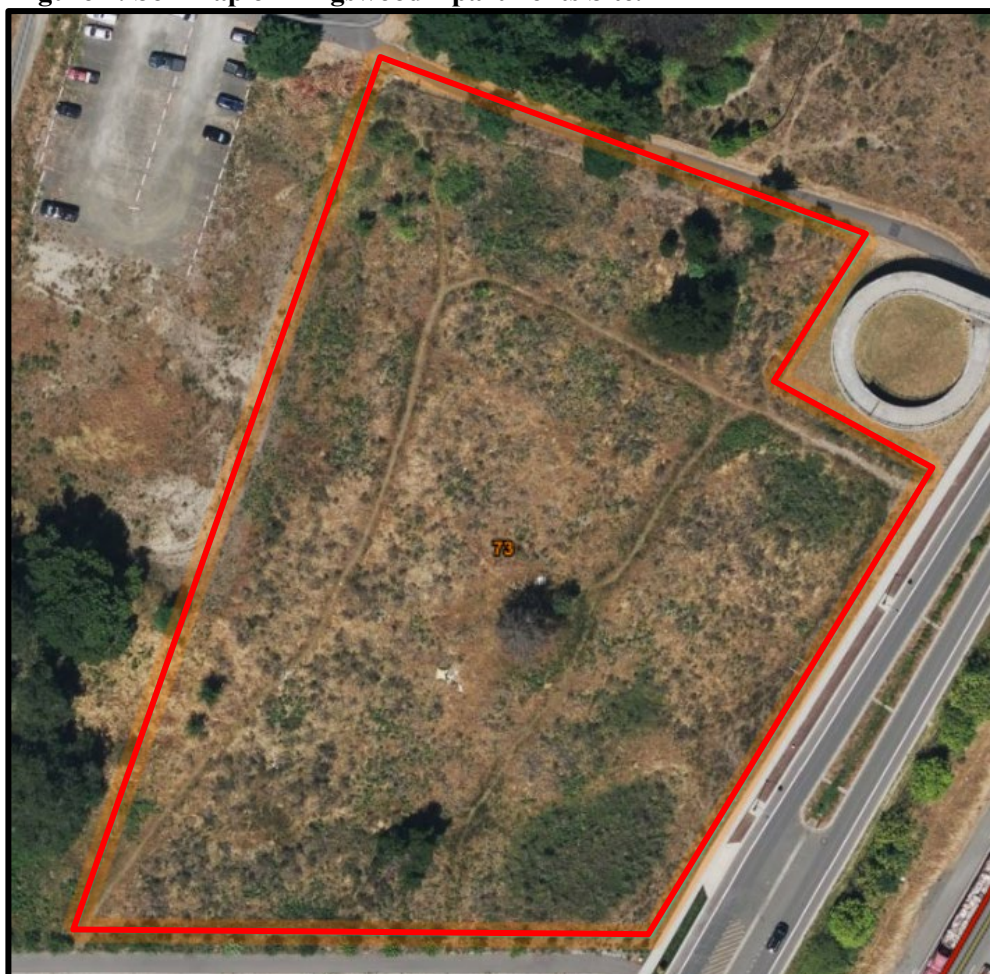
Soils and Site Description

The project includes parcel number: 12703240100 located in Sec. 03, T17N, R2W, W.M., City of Tumwater, Thurston County, Washington.

The topography of the project site is flat. It is bordered by Kingswood Drive SW to the north, Tyee Drive SE to the east, a Toyota dealership to the south, and a new multi-family development to the west. The parcel is sparsely stocked with scattered open grown trees. The ages of the trees are approximately 10 to 40 years old. There are no improvements on the site.

According to the Thurston County Soil Survey, the one soil type located on the site is the Nisqually loamy fine sand, a very deep, somewhat excessively drained soil found on terraces. It formed in sandy glacial outwash. Permeability is moderately rapid in the surface layer and very rapid in the substratum. Available water capacity is moderate and effective rooting is over 60 inches. Windthrow hazard is slight under normal conditions. Droughtiness during the summer months may cause seedling mortality.

Figure 1: Soil map of Kingswood Apartments Site.



73 - Nisqually loamy fine sand

Existing Trees

There is one forest type on the 3.1-acre project area.

Type I: This type contains all trees in the project area. There are three black locust (*Robinia pseudoacacia*) and 10 shore pine (*Pinus contorta*) trees growing in the type. The trees range from 5 to 20 inches DBH. The condition of the trees ranges from ‘Dead’ to ‘Fair’. Black locust however, is considered to be an invasive species and not recommended for retention on new projects. The following Table 1 is a list of all trees on the site.

Table 1. Inventory of trees on Kingswood Drive Apartments Site.

#	Species	DBH (in.)	Condition	Savable Based on Tree Condition Only? Yes or No	Minimum Root Protection Zone (ft.) if Saved	Project Plan Save or Remove	Notes
1	Shore Pine	8 – 12	Poor	No		Remove	Poor form, broken tops
2	Shore Pine	9 – 12	Dead	No		Remove	
3	Shore Pine	9	Fair	Yes	6	Remove	
4	Shore Pine	8	Fair	Yes	6	Remove	
5	Shore Pine	12	Fair	Yes	8	Remove	
6	Shore Pine	10 – 20	Fair	Yes	17	Remove	3 stems
7	Shore Pine	6	Fair	Yes	6	Remove	
8	Shore Pine	9	Fair	Yes	6	Remove	
9	Shore Pine	7	Fair	Yes	6	Remove	
10	Shore Pine	6	Fair	Yes	6	Remove	
11	Black Locust	7,8	Poor, invasive;	No		Remove	Poor form, growing in fence
12	Black Locust	6 – 7	Poor, invasive;	No		Remove	Poor form, growing in fence
13	Black Locust	5,6	Poor, invasive;	No		Remove	Poor form, growing in fence

The understory of the type is grass, Scotch broom (*Cytisus scoparius*), and Himalayan black berry (*Rubus armeniacus*).



Photo 1. View of cover type I and trees 1 & 2 on Kingswood Apartments Site.

Historic Trees. -- No Historic Trees occur on the site.

Specimen Trees. – No trees were considered to be specimen trees.

Off-Site Trees. – No offsite trees will be adversely affected by this project.

Tree Protection Areas

Due to poor tree quality, the invasive nature of black locust, and the tree locations being under the footprint of improvements, no trees are planned to be retained.

Minimum Stocking Calculation

The City of Tumwater Tree and Vegetation Protection Ordinance requires that 20% of the existing trees (or 12 trees per acre, whichever is larger) be saved on site.

The following is a summary of the proposed tree retention:

Total Project Acreage:	3.1 acres
Total # of Healthy Trees on the Project	8 trees
Required Retention (12 Trees/acre) *	37 trees
Required Retention (20%): **	2 trees
Planned Tree Retention:	0 trees
Planned Tree Removal	13 trees
Shortage of Required Retention (37 - 0)	37 trees

* Used for required tree retention calculation.

** Ordinance requires 20% or 12 trees/acre, whichever is greater – Sample calculation.

According to TMC 16.08.070.R.4: “In situations where a parcel of land to be developed does not meet the retention standards above in an undeveloped state, the applicant shall be required to reforest the site to meet the applicable standard outlined above at a 1:1 ratio as a condition of project approval.” A Tree Replacement Plan is necessary since planned retention is short of the minimum stocking requirement by 37 trees. The Tumwater tree ordinance requires that 37 trees be replanted to meet the 1:1 replacement standard. This plan is providing 80 replacement trees in the landscaping plan.

Tree Protection during Construction

If trees were saved, the tree protection fence should be orange mesh plastic, and be erected after logging and clearing, but prior to grading. No trenches, cuts, fills, drainage modification, irrigation lines, storing of materials, equipment operation, or other activity should occur within the critical root zone of protected trees. The tree protection and silt fences should be installed at least 5 feet beyond the driplines of trees to be saved.

If there are to be encroachments on any large diameter trees due to any change in the site plan, each tree should be evaluated to determine the impacts on tree survival and safety prior to the impact.

Pruning

If trees were retained, then all trees to be retained near structures, streets, or other targets should be crown cleaned to remove dead, dying, diseased, structurally defective, or extra branches. Crown raising or side trimming may be necessary to provide building and ground clearances for sidewalks and parking lots. All pruning should conform to the ANSI A300² standards for proper pruning, and be completed by or supervised by an ISA Certified Arborist®.

Landscape Installation

Grading, rototilling, and installation of irrigation lines should not impact the critical root zones (CRZ) if trees are saved. Noxious vegetation such as blackberry and Scotch broom should be selectively removed from tree tract areas by hand.

If additional fill is required to achieve desired grades, no more than 20% of the protected trees root zone should be covered with fill depths over 2 inches. If impacts must exceed 20% of the CRZ, the tree should be further evaluated by a Washington Forestry Consultants, Inc. (WFCI) to determine if removal and replacement is more appropriate.

Sequence of Events for Tree Protection Activity

1. Stake the clearing limits.
2. Complete logging.
3. Complete construction.
4. Plant replacement trees.

Tree Species for Inter-planting

We recommend that the following conifer tree species be used to interplant any gaps in the tree protection areas:

- Western redcedar
- Douglas-fir
- Incense-cedar
- Austrian pine

The trees should be at least 6-7 foot tall balled and burlap trees with well-developed central leaders.

The landscape plan (prepared by others) should incorporate some deciduous accent and shade trees to provide a mix of color, texture, and size across the site. The street tree

² American National Standard ANSI A300 (Part 1). 2008. Pruning for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning). Tree Care Industry Association. Londonderry, NH. 13 pgs.

selection should correspond to the Tumwater Comprehensive Street Tree Plan recommendations. All tree species should be planted and mulched according to industry standards.

Summary

We propose that **no trees be retained** on the site due to poor tree condition or the invasive nature of the species. Other trees are located under the footprint of improvements and are not particularly significant. A landscape plan using quality tree species will provide high quality trees in 10 years - Versus dying retained trees that are not quality today.

A total of 37 trees are required to be planted to reforest the site to meet the TMC requirement. A total of 80 trees are being planted on the site.

We have suggested some suitable tree species for tree replacement. Payment for the shortfall of planted trees can, with approval, be made to the Tumwater Tree Fund.

Please give us a call if you have any questions.

Respectfully submitted,

Washington Forestry Consultants, Inc.



Galen M. Wright, ACF, ASCA
ISA Bd. Certified Master Arborist PN-129BU
Certified Forester No. 44
ISA Tree Risk Assessor Qualified
ASCA Tree and Plant Appraisal Qualified

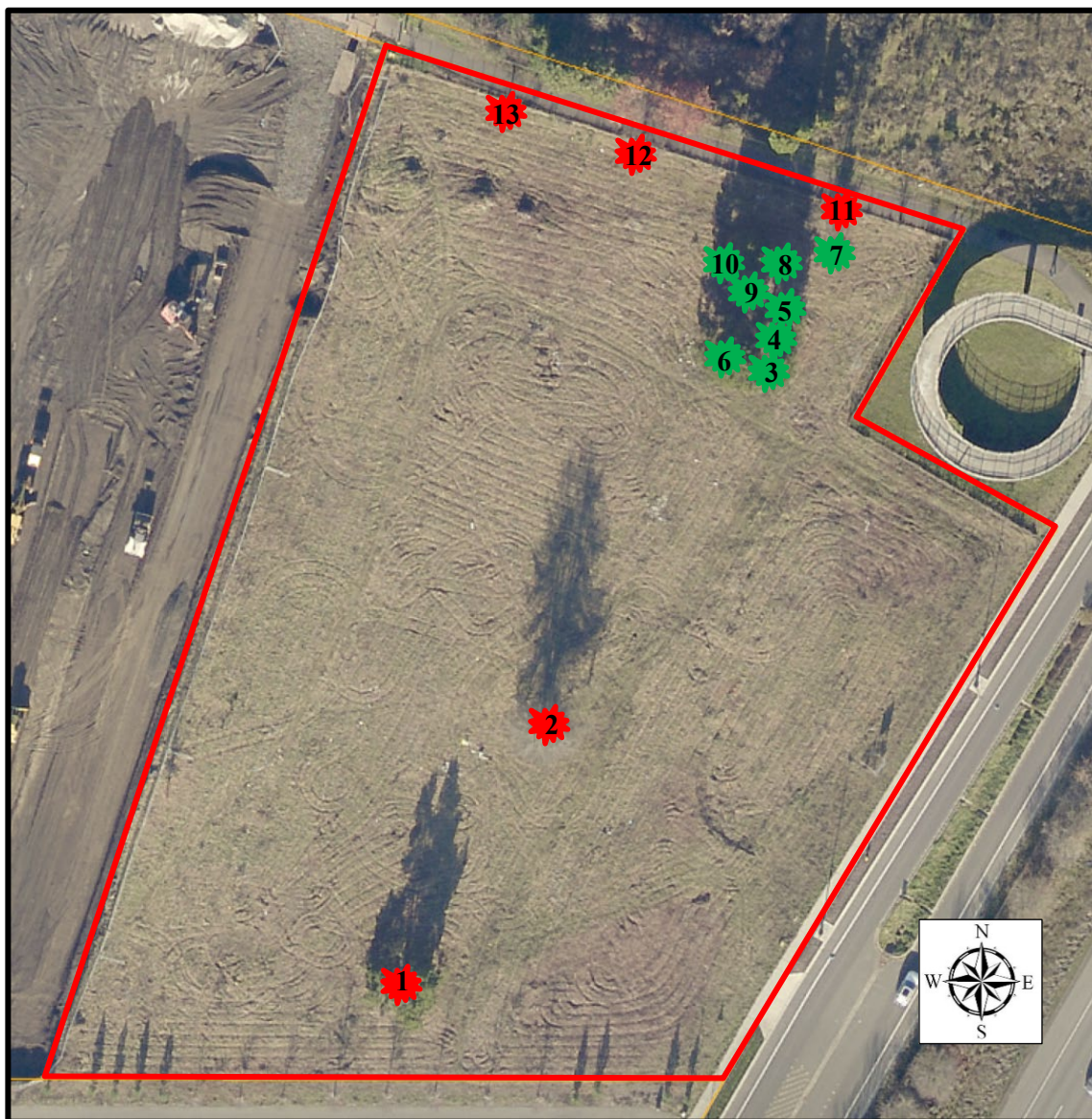


Joshua Sharpes
Professional Forester
ISA Certified Arborist®,
Municipal Specialist, PN- 5939AM
ISA Tree Risk Assessor Qualified

APPENDIX I

Kingswood Drive Apartments Site Tree Locations

(Thurston County Geodata 2020)



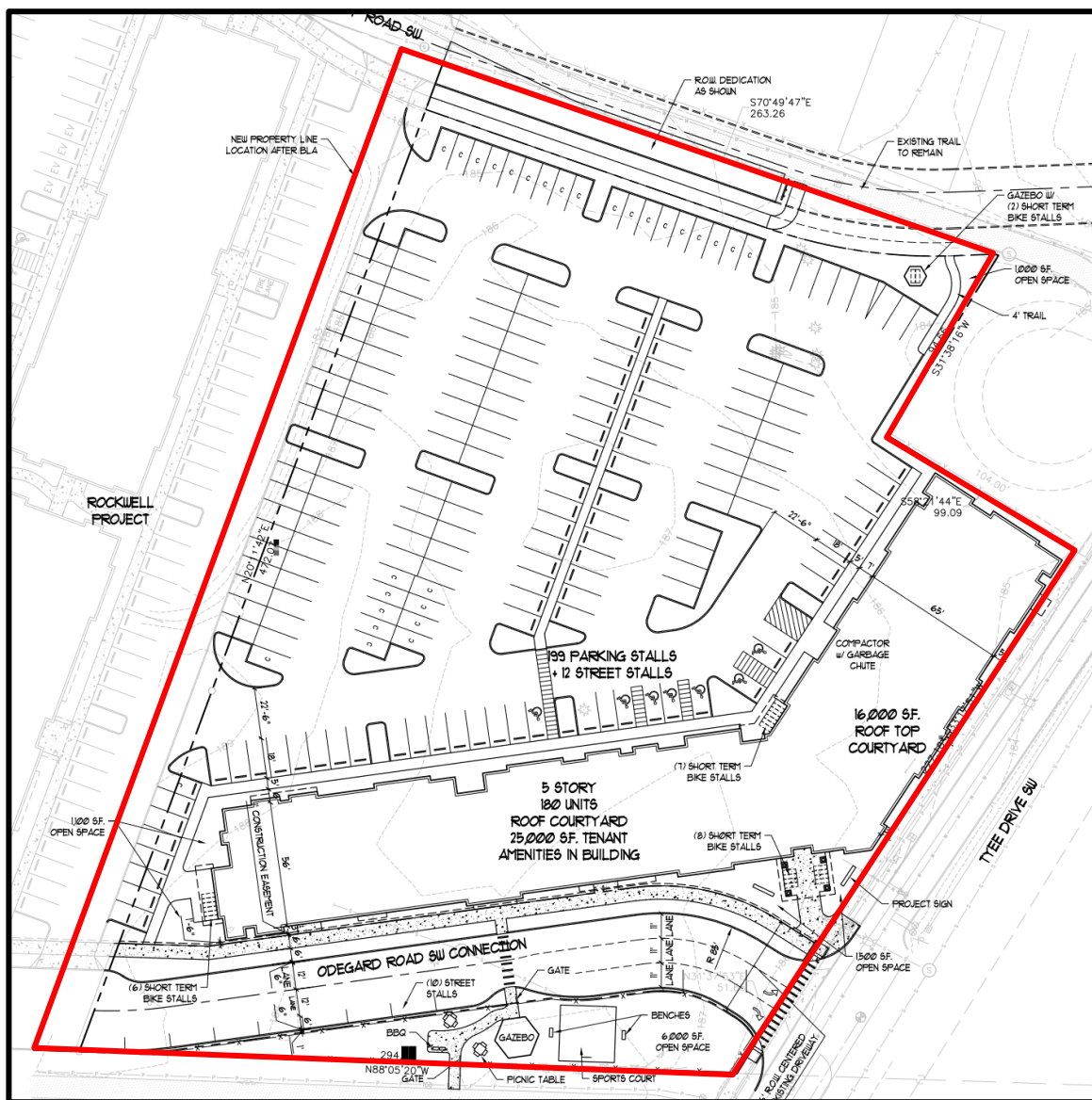
— Project and Cover Type Boundary

★ Healthy Tree

★ Unhealthy Tree

APPENDIX II

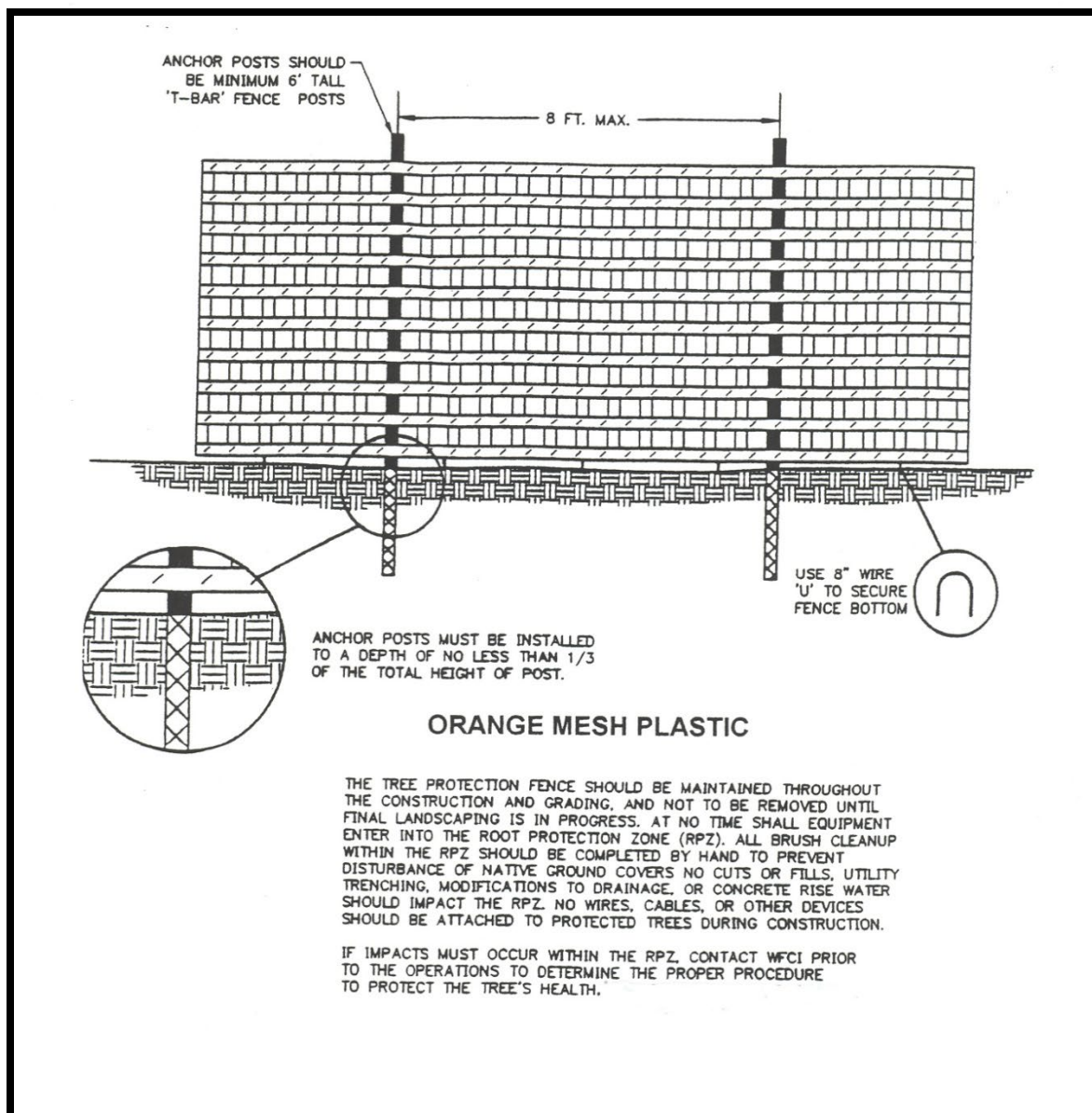
Kingswood Drive Apartments Site Plan



— Project Boundary

APPENDIX III

Tree Protection Fence Detail



APPENDIX IV

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PLANT LIST								
SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	INSTALLED SIZE	MATURE HEIGHT	MATURE DIA.		TYPE OF PLANT
TREES								
	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY	2	2 1/2" CALIPER	20'	20'	NN	D
	CHAMAECYPARIS NOOTKATENSIS 'JUBILEE'	ALASKAN CEDAR	14	6" TALL	20'	5'	DT NN	EG
	PICEA OMORIKA 'BURNS'	BRUNS SERBIAN SPRUCE	13	6" TALL	30'	10'	DT NN	EG
	SANGO KAKU MAPLE	CORAL BARK MAPLE	3	2 1/2" CALIPER	15'	15'	DT NN	D
	PYRUS CALLERYANA 'CAPITAL'	CAPITAL PEAR	12	2 1/2" CALIPER	25'	25'	DT NN	D
	MALUS 'JFS-KWS' ROYAL RAINDROPS	ROYAL RAINDROPS CRABAPPLE	30	2 1/2" CALIPER	20'	15'	DT NN	D
	ACER PALMATUM	JAPANESE MAPLE	12	2 1/2" CALIPER	15'	15'	DT NN	D
	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	4	2 1/2" CALIPER	35'	25'	DT NN	D
SHRUBS								
	NANDINA DOMESTICA 'FIRE POWER'	HEAVENLY BAMBOO	244	2 GALLON	2'	2'	DT NN	EG
	NANDINA DOMESTICA	HEAVENLY BAMBOO	8	5 GALLON	6'	4'	DT NN	EG
	PIERIS VARIEGATA	VARIEGATED PIERIS	33	5 GALLON	4'	4'	DT NN	EG
	RHODODENDRON IMPEDITUM	DWARF PURPLE RHODODENDRON	156	5 GALLON	1'	2'	DT NN	EG
	THUJA OCCIDENTALIS 'SMARAGO'	EMERALD GREEN ARBORVITAE	7	5' TALL	12'	4'	DT NN	EG
GROUND COVER								
	ARCTOSTAPHYLOS UVA-URSI 'MASSACHUSETTS'	KINNINNICK (SPACED @ 3'-0" O.C.)	-	1 GALLON	-	-	-	-

DT NN
DT N
EG
C
D

DROUGHT TOLERANT NON NATIVE
DROUGHT TOLERANT NATIVE
EVERGREEN
CONIFEROUS
DECIDUOUS

NOTE:
PLANTS ARE DROUGHT-TOLERANT ONCE ESTABLISHED AND WILL REQUIRE SUPPLEMENTAL WATER THROUGHOUT THE FIRST TWO SUMMERS AT MINIMUM.

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Minimum Stocking Calculation

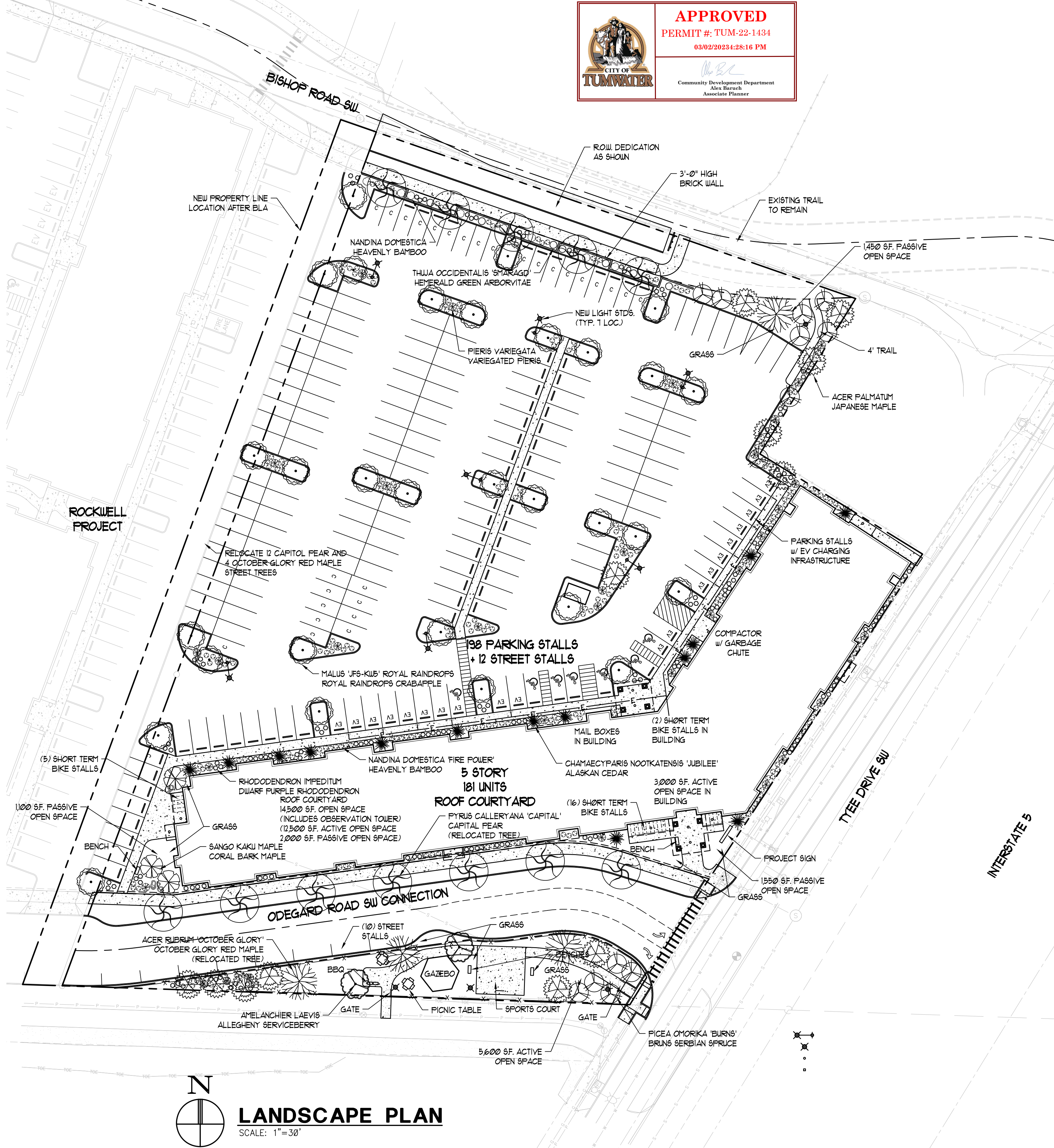
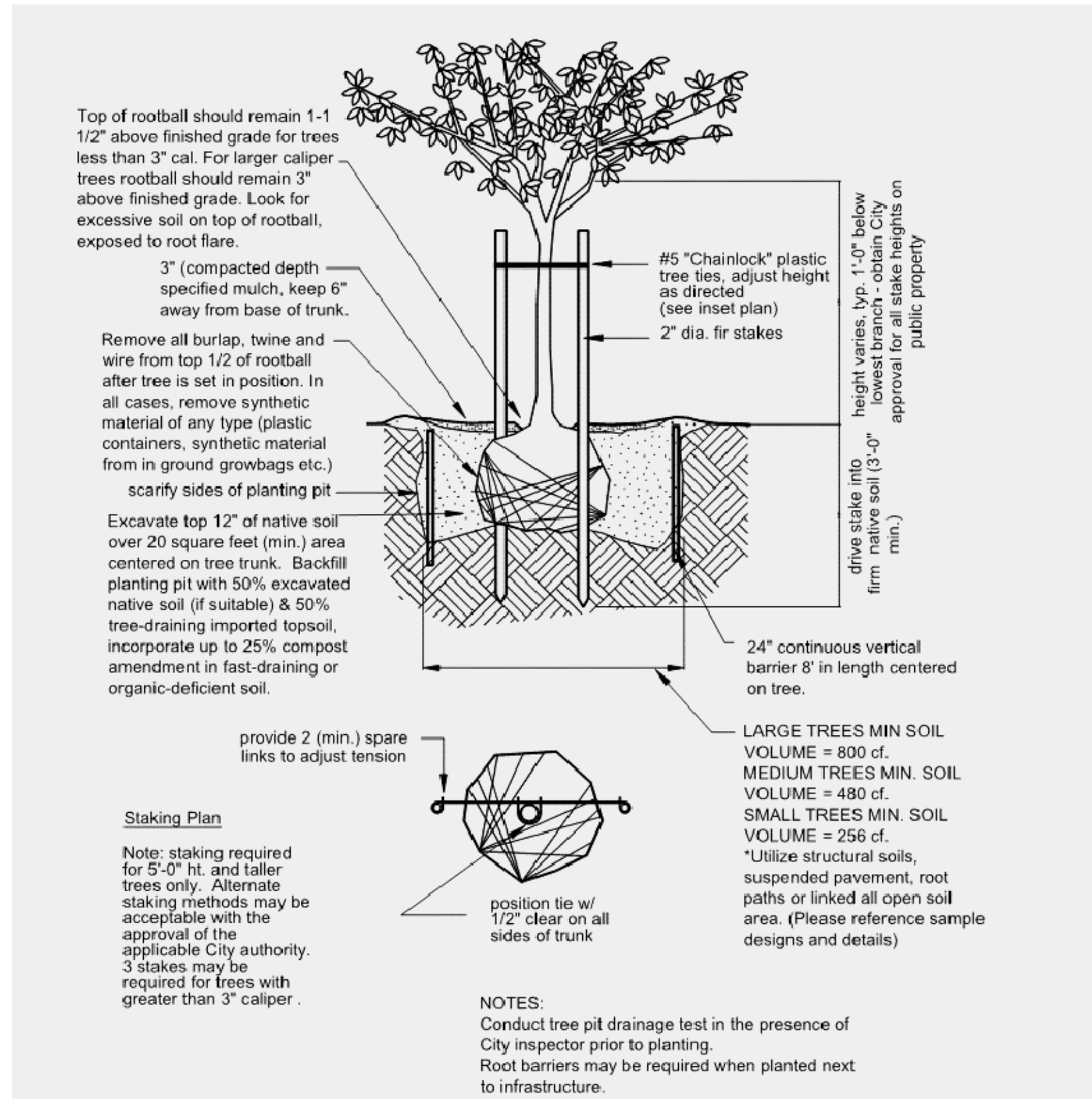
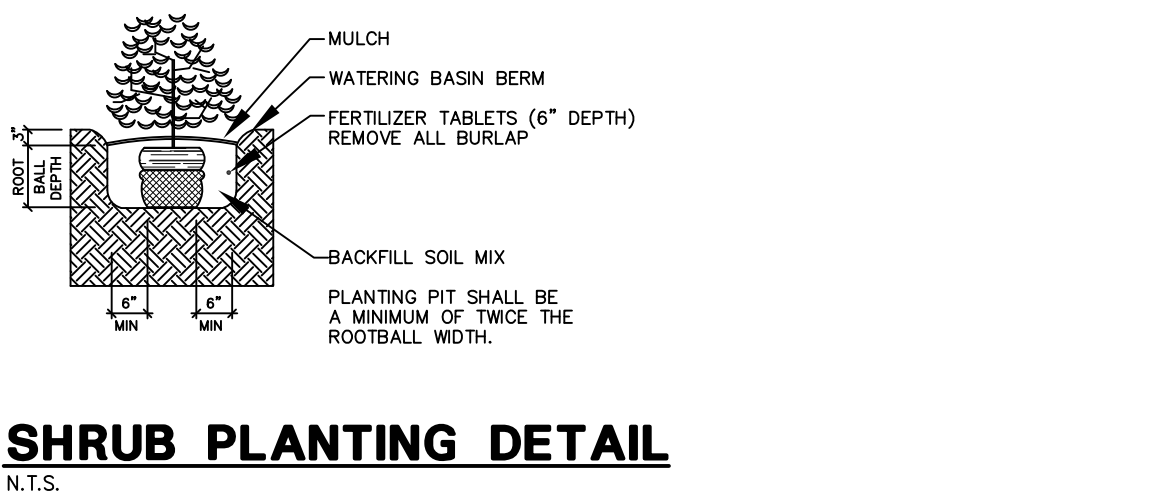
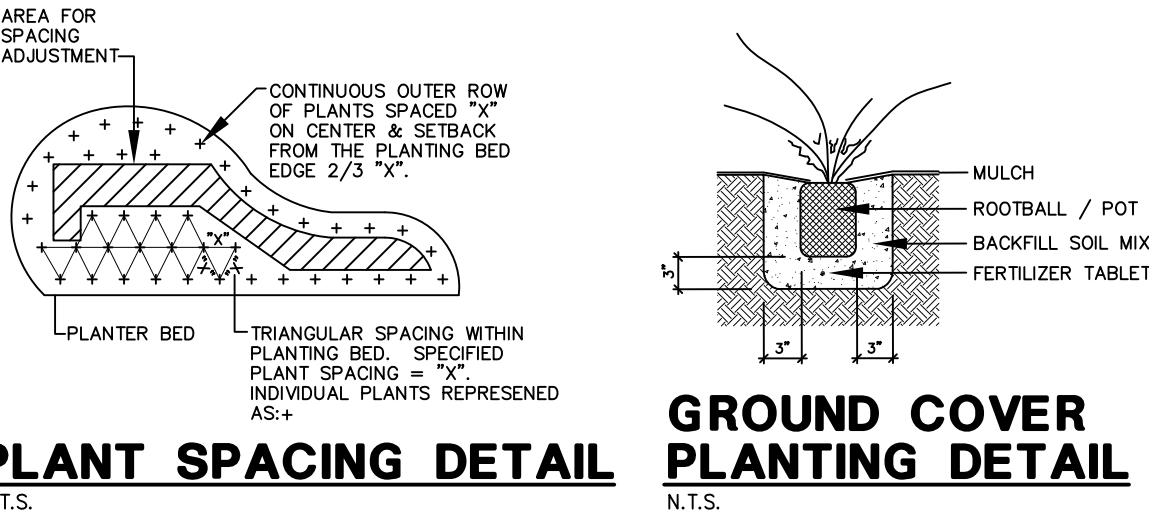
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checked: .

city issue: .

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09-09-22
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KINGSWOOD APARTMENTS
XX00 TYEE DRIVE
TUMWATER, WASHINGTON

sheet no. L1.0