

ARBORIST REPORT-
Tree Survey & Preliminary Construction Impact

41st & Soquel Drive

Soquel, CA 95073

7/27/2024

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Prepared for:

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SUMMARY

This report provides the following information:

1. A summary of the health, structural condition, and suitability for incorporation into a development project, of eleven trees.
 2. A preliminary evaluation of anticipated construction impacts to the trees.
 3. Recommendations for retention or removal of assessed trees based on their condition and/or anticipated construction impacts.
 4. A tree protection plan to reduce construction impacts to trees affected.
- A multi-unit housing development is planned for an undeveloped lot at the corner of 41st Avenue and Soquel Drive, Soquel.
 - Eleven trees, including four *significant trees* within or near the project limits were inventoried.
 - Two *significant trees* are in fair condition, will have moderate construction impacts, and can be incorporated into the project.
 - One *significant tree* will be highly impacted by the project and its removal will be necessary.
 - One *significant tree* is dead and it's removal will be necessary.
 - The *significant trees* retained will require mitigation methods to reduce construction impacts including tree protection fencing and other treatments.
 - An assessment of possible additional impacts to the *significant trees* may be necessary once the final plan set including civil plans is completed.
 - The *Tree Assessment Chart*, Appendix A is the condensed reference guide to inform all tree management decisions for the trees evaluated.

Data Summary

General	
Total Trees Inventoried	Count
Total	11
Species	7
Regulated Trees	
<i>Significant Trees</i>	
All trees > 20" trunk diameter	4
Street Tree, Right – of - Way	0
Tree Disposition Categories – All Trees	
R.I. – Remove due to construction impacts	2
R.C. – Remove due to condition (poor condition)	4
S.C. - Remove due to site constraints	0
R.T., I.M. - Retain tree. Preservable, low, or moderate impacts that can be mitigated	5

Background

Plans will be submitted to the County of Santa Cruz Planning Department for construction of a multi-unit housing development at the corner of 41st Avenue and Soquel Drive, Soquel. Linc Housing requested my services to assess the condition of eleven trees within or near the project limits, and the construction impacts that may affect them. Further, to provide a report with my findings and recommendations to meet County of Santa Cruz planning requirements.

Assignment

Provide an arborist report that includes an assessment of the trees within the project area. The assessment is to include the species, size (trunk diameter, height and canopy diameter spread), condition (health and structure), and suitability for preservation ratings.

To complete this assignment, the following services were performed:

- **Tree Resource Evaluation:** Inventory, evaluate and assign suitability for preservation ratings for subject trees.
- **Plan Review: Reviewed provided plans including** Sheet 1, *Tree Survey Site Plan*, dated 1/25/2024, by Bowman & Williams. Sheet A1.0, *Site Plan* & Sheet A1.1, *Podium Plan*, dated 7/8/2024, by AO Architects.
- **Construction Impact Assessment:** Combine tree resource data with anticipated construction impacts, to provide recommendations for removal or retention of trees.
- **Mapping:** Tree locations were plotted onto Sheet 1, *Tree Survey Site Plan*, dated 1/25/2024, by Bowman & Williams, and a Tree Location Map, Sheet T1, was created.

Limits of the Assignment

The information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection on 2/28/2024.

The inspection is limited to visual examination of accessible items without climbing, dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in question may not arise in the future.

Purpose and use of the report

The report is intended to identify all the trees within the plan area that could be affected by a project. The report is to be used by the developer, their agents, and the County of Santa Cruz as a reference for existing tree conditions and to help satisfy the County of Santa Cruz planning requirements.

Resources

All information within this report is based on site plans as of the date of this report.

Resources are as follows:

- Sheet 1, *Tree Survey Site Plan*, dated 1/25/2024, by Bowman & Williams. Sheet A1.0, *Site Plan* & Sheet A1.1, *Podium Plan*, dated 7/8/2024, by AO Architects.
- Site Visit, Tree Inventory & Condition Evaluation on 2/28/2024 at 41st Avenue and Soquel Drive, Soquel
- County of Santa Cruz Municipal Code – *Significant Tree Protection – Chapter 16.34*. (Applicable sections).

County of Santa Cruz –Significant Tree

16.34.030 Definitions.

All terms used in this chapter shall be as defined in the General Plan and Local Coastal Program Land Use Plan glossaries and as follows:

“Significant tree,” for the purposes of this chapter, shall include any tree, sprout clump, or group of trees, as follows:

- (A) Within the urban services line or rural services line, any tree which is equal to or greater than 20 inches d.b.h. (approximately five feet in circumference); any sprout clump of five or more stems each of which is greater than 12 inches d.b.h. (approximately three feet in circumference); any group consisting of five or more trees on one parcel, each of which is greater than 12 inches d.b.h. (approximately three feet in circumference)

OBSERVATIONS

The undeveloped property is located on a level corner lot in a commercial area. The property is bordered by Soquel Drive to the north and 41st Avenue to the east.

The west side of the lot borders San Lorenzo Lumber. The south side borders a car wash and a parking lot for several commercial businesses.

The proposed project consists of multiple parcels combined to create a multi-unit housing complex.

I surveyed eleven trees 6-inches in diameter or larger including four *significant trees*. Trunk diameters were measured with *Forestry Suppliers Inc.*, fabric diameter tape. In accordance with County of Santa Cruz ordinance, a *significant tree* includes any species 20 inches in diameter or larger, measured at 4.5 feet above grade.

Three coast redwood grow on the adjacent property at San Lorenzo Lumber, (Image #1).



Image #1 – Trees T6, T7 & T8, coast redwood, grow in the lumber yard and have canopies that overhang applicants property.

T6 is a young redwood with a trunk diameter below protected size. The trees limbs have been pruned on one side only, to allow access to stored wood for the lumberyard. A few limbs overhang the applicants property by about 10-feet.

Trees T7, a 24" diameter, semi-mature redwood, and T8, a 48" mature redwood both have canopies that overhang the applicants property.

Tree T7 has minor tip dieback, fair canopy density and is pushing new growth at the branch ends. The branch arrangement is somewhat irregular, and the tree may have received some indiscriminate pruning in the past. Overall, the tree is in fair condition.

Tree T8 is a mature redwood that grows near the northwest corner of the property but is on the lumber yard property. The tree has been topped at 50-feet above grade and has received additional indiscriminate pruning over the course of its lifetime. Because of this pruning the trees branching arrangement is irregular.

Grading has occurred near the trunk and the trees buttress roots, (roots at the trunk base that help support the tree), are exposed. Despite the exposed roots, the tree appears stable.

In association with the grading, it is likely that some root loss has occurred. As a result of the root loss, I observed extensive tip dieback over more than half of the trees canopy, (Image #2).



Image #2 – Tree T8, coast redwood. Note extensive tip dieback. Also note tree was topped.

Because of the past management of this tree, resulting in tip dieback, poor structure, and root loss, I rate the condition of the tree as poor.

Tree T1, a mature, 23" coast live oak grows towards the center of the property, (Image #3).



Image #3 – Tree T1, coast live oak grows near the center of the property.

The oak has two codominant trunks that form a union at 9-feet above grade. The canopy density is somewhat thin. Branches are well attached, and the tree appears stable.

I noted a horizontal seam at the tree trunk at 5-feet above grade. Sometime in the past a wire or rope was tied around the circumference of the tree and over time the trees trunk expansion has grown over the wire or rope. The tree does not currently show any ill effects from the girdling wire or rope, but it could cause problems for the tree in the future. Girdling, or restrictions to a trees trunk can cause destruction of the trees vascular system by inhibiting the flow of water and photosynthates.

Overall, the tree is in fair condition.

One 24" Monterey cypress grows towards the eastern side of the property. The tree showed no live canopy and is dead.

The remainder of the trees I surveyed have trunk diameters below protected size. The tree species included a Japanese loquat, Hankow willow, two Marina madrone and a coast live oak. These trees ranged in condition from fair to poor. I also surveyed a small pine tree that was dead.

DISCUSSION

Species List

Table 2 – Significant Trees

SIGNIFICANT TREES		
Common Name	Botanical Name	Count
coast redwood	(<i>Sequoia sempervirens</i>)	2
coast live oak	(<i>Quercus agrifolia</i>)	1
Monterey cypress	(<i>Hesperocyparis macrocarpa</i>)	1
Total Significant Tree Count		4

Table 3 – All Trees Inventoried

ALL TREES	
7 species – A complete list can be found in Appendix A – Tree Assessment Chart	
Total Tree Count	11

Tree Evaluation and Recording Methods

Site evaluations were made on 2/28/2024. *The inventory included all trees within the project limits.* The health and structural **condition** of each tree was assessed and recorded. Based on the trees' health and structural condition, each tree's **suitability for preservation** was rated and recorded. The recorded data is included in the *Tree Assessment Chart, Appendix A*, of this report. Detailed criteria for each assessment rating category are included in Appendix B – *Criteria for Tree Assessment Chart.*

Condition Rating – Significant Trees

A tree's condition is determined by an assessing both the **health** and **structure**, then combining the two factors to reach a *condition rating*. The tree's condition is rated as poor, fair or good. The quantity of trees assigned for each category (good, fair, or poor), is indicated below:

Tree Condition Rating

- Good - 0
- Fair - 2
- Poor - 2

Suitability for Preservation- Significant Trees

A tree's suitability for preservation is determined based on its health, structure, age, species characteristics and longevity using a scale of good, fair, or poor. The quantity of trees assigned to each category (good, fair, or poor), is listed below.

Suitability Rating

- Good - 0
- Fair – 2
- Poor - 2

Tree Protection Zone

The tree protection zone (TPZ) is a defined area (radius from trunk), within which certain activities are prohibited or restricted to minimize potential injury to designated trees during construction.

The size of the optimal TPZ can be determined by a formula based on 1) trunk diameter 2) species tolerance to construction impacts, and 3) tree age (Matheny, N. and Clark, J 1998). In some instances, tree drip line is used as the TPZ. Development constraints can also influence the final size of the tree protection zone.

Fencing is installed to delineate the (TPZ), and to protect tree roots, trunk, and scaffold branches from construction equipment. *The fenced protection area may be smaller than the optimal or designated TPZ area in some circumstances.* Tree protection may also involve the armoring of the tree trunk and/or scaffold limbs with barriers to prevent mechanical damage from construction equipment. *See Tree Protection Guidelines & Restrictions – Appendix E.*

Once the TPZ is delineated and fenced (prior to any site work, equipment and materials move in), construction activities are only to be permitted within the TPZ if allowed for and specified by the project arborist.

Where tree protection fencing cannot be used, or as an additional protection from heavy equipment, tree wrap may be used. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major scaffold limbs may require protection as determined by the City arborist or Project arborist. Straw wattle may also be used as a trunk wrap and secured with orange plastic fencing.

Data has been entered in the *Tree Assessment Chart – Appendix A*, which indicates the optimal Tree Protection Zone for each tree.

Additional general tree protection guidelines are included in *Tree Protection Guidelines & Restrictions – Appendix G*.

Critical Root Zone

The CRZ is the biological limit of a tree's capacity to recover from root loss. It is "the area of soil around a tree where the minimum number of roots that are biologically essential to the structural stability and health of the tree are located. There are no universally accepted methods to calculate the CRZ." (Clark, Metheny, Smiley, et al, *The Tree Protection Zone & the Critical Root Zone*, 12/2021). The methods utilized to determine the Critical Root Zone are varied and can be based on professional guidelines and/or industry standards. Criteria such as trunk diameter, tree age and vigor, species tolerance, tree architecture and existing site constraints are commonly used criteria.

Using this information, the arborist can find the distance from the trunk that should be protected per unit of trunk diameter. The CRZ does not always represent a radius around the tree. When necessary, the area can be offset or shaped in a manner that accepts tree canopy constraints or existing conditions.

Critical Root Zone, Continued:

For purposes of this report the CRZ is the minimum tolerable distance between the trunk, and excavation that requires root cutting. I have estimated it to be five times the trunk Diameter at Breast Height, (DBH is 4.5' above grade). For example, if a tree has a one-foot trunk diameter, the CRZ extends to five feet from the trunk.

If encroachment into the CRZ or TPZ is required to retain the tree during development, the arborist must provide alternative construction methods or preconstruction treatments to reduce impacts.

Root Disturbance Distance

No one can estimate and predict with absolute certainty what distance from a tree, a soil disturbance such as excavation for construction should be, to ensure it will not significantly affect tree stability or health. Or to what degree, (low, moderate, or high), a tree might be impacted. There are simply too many variables involved that we cannot see or anticipate. However, three times the D.B.H. (diameter at breast height), is a widely accepted minimum used in the industry for root disturbance, *on one side of the trunk*, and is supported by several research studies including (Smiley, Fraedich & Hendrickson 2002, Bartlett Tree Research Laboratories). This distance is often used during the design and planning phases of a project in order to estimate root loss due to construction activities. This distance is a guideline only and should be increased for trees with significant leans, decay or other structural problems.

The ISA, International Society of Arboriculture- Root Management (2017) publication recommends, "cutting roots at a distance greater than six times the trunk diameter (DBH) minimizes the likelihood of affecting both health and stability. This recommendation is given further direction by the companion publication, A.N.S.I. (*American National Standard*) A300 (Part 8)- 2013 Root Management, when roots are cut in a *non-selective* manner, i.e. in a straight line on one side of a tree. It says, if the cutting is "within six times the trunk diameter (DBH), mitigation shall be recommended". Further, A.N.S.I. recommends the "minimum distance from the trunk for root cutting should be adjusted according to trunk diameter, species tolerance to root loss, tree age, health and site condition".

In general, root cutting that occurs at a distance less than six times the diameter of a tree should be undertaken by hand digging and hand (or Sawzall), root pruning. These methods help mitigate root loss impacts.

Construction Impacts to Significant Trees

This report is a preliminary evaluation of construction impacts to trees. The final site plan and impacts to trees will depend on planning department review of the preliminary submittal, and if any modifications to the plan are required. Additionally, a civil plan set, that may contain elements affecting trees, was not available at the time of this report. Other construction elements that may impact protected trees and that will be indicated on a civil plan set include utilities (water, sewer and electrical), stormwater drainage lines, and bioswales. The installation of some of these elements may also affect trees and impacts to some trees may be revised upon assessment of the civil plan set.

The construction elements that will affect trees includes

- Foundation
- Driveways
- Hardscape Areas
- Drainage Elements
- Utilities (to be determined)

Three protected trees T1, coast live oak and T7 and T8, coast redwood will be affected by the project.

Tree T1, a 23" coast live oak, is within the building footprint and it's removal will be necessary.

There are two significant trees on an adjacent property, including trees T7, a 24" coast redwood, and T8, a 48" coast redwood, (Image #4). Tree T7 grows on the lumber yard property at the fence line and is 15-feet from the building foundation and basement, (Image #4). With 5 feet allowed for over excavation, soil disturbance will occur 10-feet from the tree. At 10-feet the excavation for the foundation will occur within the critical root zone of tree T7, $10' \times 12" \div 24"$ trunk diameter = 5 X the trunk diameter. With mitigation, impacts are within the trees root loss tolerance. The redwood will suffer some root loss which it can tolerate and needs tree protection treatments to reduce root loss impacts. Tree T7 will need minor clearance pruning to allow building construction.

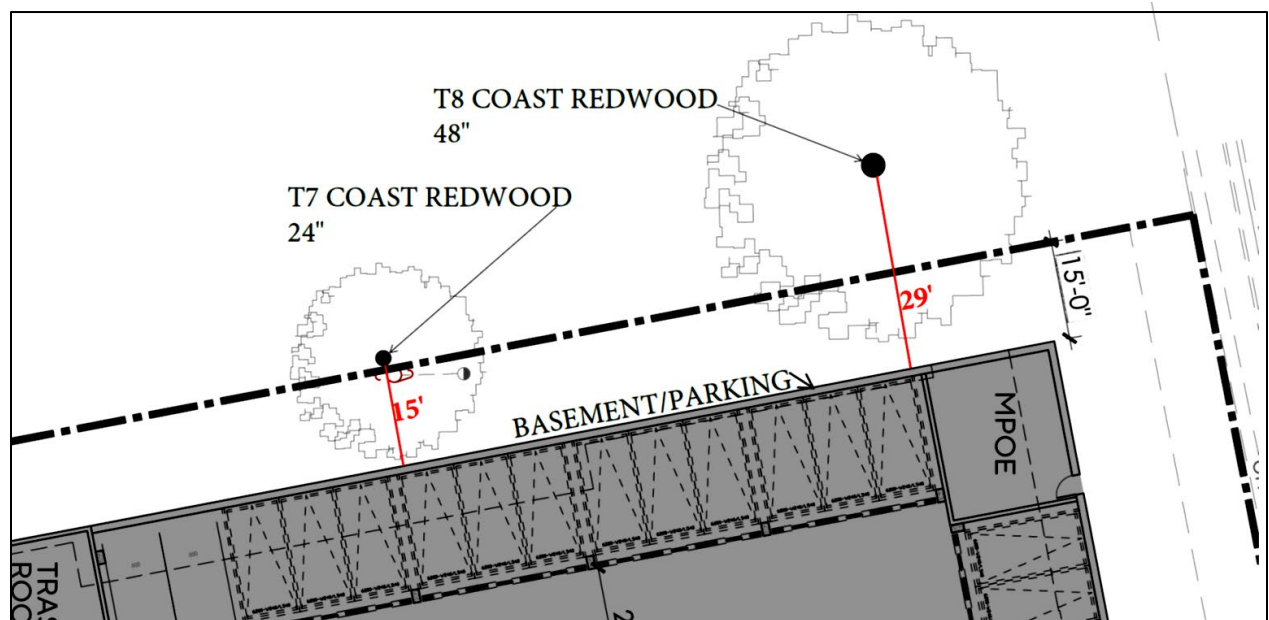


Image #4 – Trees T7 & T8 coast redwood, and distance to basement/ foundation.

Construction Impacts to Significant Trees, continued:

Tree T8 grows on the lumber yard property and is 14-feet from the fence line. It is approximately 29-feet from the building foundation and basement, (Image #4). With over excavation for the basement, the soil disturbance distance will be roughly 24-feet from the tree. This is 6X the trunk diameter and outside the critical root zone. With mitigation, impacts are within the trees root loss tolerance. The redwood will suffer moderate root loss which it can tolerate, and needs tree protection treatments to reduce root loss impacts. Tree T8, will need minor clearance pruning to allow room for building construction.

There are seven trees with trunk diameters below protected size that will be affected by the project. Three trees will have low or moderate impacts and can be retained. This includes trees T6, coast redwood, and T9 & T10, Marina madrone. All three trees grow on adjacent properties. One tree T3, Hankow willow, is within the new access road footprint, will be highly impacted, and its removal will be necessary. Three trees T2, Japanese loquat, T4, pine and T5, coast live oak is either dead, or are in poor condition, and should be removed.

Impact Level – Significant Trees

Impact level rates the degree a tree may be impacted by construction activity and is primarily determined by how close the construction procedures occur to the tree. Construction impacts are rated as low, moderate, and high. The quantity of trees assigned for each category (low, moderate, high), is indicated below:

Impact Rating – Significant Trees

- Low - 0
- Moderate – 2
- High - 1
- N/A (Dead) 1

Mitigation Measures for Retained Trees

The trees retained on this project will require some or all of the following methods to protect them from the impacts described above and to minimize root loss during the construction phases.

- Tree Protection Fencing
- Hand trenching or Ditch Witch with follow up re-prune roots with sawzall
- Supervised root pruning.

A tree protection plan sheet, including mitigation methods for retained trees will be necessary, and shall be included with the final plan set submittal.

Table 4 – Tree Disposition Categories – Significant Trees

Tree Disposition Categories – Significant Trees		
R.I. –	Remove due to construction impacts	1
R.C. –	Remove due to condition (poor condition)	1
S.C. -	Remove due to site constraints	0
R.T., I.M. -	Retain tree. Preservable, low, or moderate impacts that can be mitigated.	2

Certificate of Performance

I, Kurt Fouts, certify:

That I have personally inspected the tree(s) and/or the property referred to in this report and have stated my findings accurately to the best of my professional judgement.

- That I have no current interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.
- That the analysis, opinions and conclusions stated herein are my own, and were developed and prepared according to commonly accepted arboricultural practices.
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
- That my analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
- That no one provided significant professional assistance to the consultant, except as indicated within the report.

I further certify that I am an International Society of Arboriculture Certified Arborist and carry an International Society of Arboriculture Tree Risk Assessment Qualification. I have been involved in the practice of arboriculture and the care and study of trees for more than 20 years.

Signed: *Kurt Fouts*

Date: 7/26/2024

CONCLUSION

- A multi-unit housing development is planned for an undeveloped lot at the corner of 41st Avenue and Soquel Drive, Soquel.
- Eleven trees, including four *significant trees*, T1, coast live oak, T7 & T8, coast redwood and T11, Monterey cypress, within or near the project limits were inventoried.
- Two *significant trees*, T7 & T8 , coast redwood are in fair condition, will have moderate construction impacts, and can be incorporated into the project.
- One *significant tree*, T1, coast live oak, will be highly impacted by the project and its removal will be necessary.
- One *significant tree*, T11, Monterey cypress, is dead and it's removal will be necessary.
- The *significant trees* retained will require mitigation methods to reduce construction impacts including tree protection fencing and other treatments.
- An assessment of possible additional impacts to the *significant trees* may be necessary once the final plan set including civil plans is completed.
- A tree protection plan sheet, including mitigation methods for retained trees will be necessary, and shall be included with the final plan set submittal.
- The *Tree Assessment Chart*, Appendix A is the condensed reference guide to inform all tree management decisions for the trees evaluated.

RECOMMENDATIONS

1. Obtain all necessary permits prior to removing or significantly altering any trees on site.

Respectfully submitted,

Kurt Fouts

Kurt Fouts ISA Certified Arborist WE0681A
ISA Tree Risk Assessment Qualification (TRAQ)



41st Avenue & Soquel Drive, Soquel

Tree Assessment Chart - Appendix A

Suitability for Preservation Ratings:

Good: Trees in good health and structural condition with potential for longevity on the site

Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures

Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment

Tree Disposition Code:


RT: Retain Tree

RI: Remove Due to Construction Impacts

I.M. Impacts Can Be Mitigated With Pre-Construction Treatments


R.C. Remove Due to Condition

Significant Tree- County of Santa Cruz, Any tree 20 inches or greater in diameter measured at 4.5 feet above grade per Santa Cruz County, Chapter 16:34, also any group of 5 or more trees on one parcel, each greater than 12" DBH


Tree #	Species	Trunk Diameter @ 54 inches a.g.	Significant Tree	Crown Height & Spread (Diameter)	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Tree Disposition Code	Comments	
T1	coast live oak (<i>Quercus agrifolia</i>)	23"	Yes	55'x30'	Fair-Good	Fair	Fair	17'	High (Root loss)	R.I.	Codominant trunks at 9' above grade. Somewhat thin canopy density. Trunk bark is girdled by wire or rope at 5' above grade.	
T2	Japanese loquat (<i>Eriobotrya japonica</i>)	11"	No	20'X10'	Good	Poor	Poor	10'	High (Root loss)	R.C., R.I.	Significant trunk split with decay at 5' above grade.	
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41st Avenue & Soquel Drive, Soquel

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Significant Tree	Crown Height & Spread (Diameter)	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Tree Disposition Code	Comments
T3	Hankow willow (<i>Salix babylonica</i> 'Tortulosa')	17" (at 2' a.g.)	No	15'X15'	Fair	Fair	Fair	15'	High (Within access road footprint)	R.I.	Codominant trunks at 4' above grade. Two trunks 11" and 9". Deadwood and decay at two old limb tear outs along trunk at 2' and 4' above grade.
T4	pine (<i>Pinus spp.</i>)	7"	No	10'x10'	Poor	Poor	Poor	N/A	N/A	R.C.	Dead
T5	coast live oak	11"	No	6'X1'	Poor	Poor	Poor	N/A	High (Within access road turnaround)	R.C., R.I.	Nearly dead. Epicormic sprouting along trunk and on one 2" branch.
T6	coast redwood (<i>Sequoia sempervirens</i>)	13", 9"	No	20'x10'	Fair	Fair	Fair	15'	Low	R.T.	Few limbs overhang applicant property by 8' - 10'. On fence line. At fence line. Could be "boundary tree" with two owners.
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41st Avenue & Soquel Drive, Soquel
Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Significant Tree	Crown Height & Spread (Diameter)	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Tree Disposition Code	Comments
Trees on Adjacent Properties											
T7	coast redwood	24"	Yes	60'x20'	Fair	Fair	Fair	15'	Moderate (Root loss-excavation)	R.T, I.M.	Minor tip dieback. Few limbs overhang applicants property by 10'. At fence line.
T8	coast redwood	48"	Yes	55'x30'	Poor	Poor	Poor	20'	Moderate (Root loss-excavation)	R.T, I.M.	Topped at 50' above grade. Tip dieback over 50% of canopy, in limbs up to 3" in diameter. Grade has occurred near trunk, and buttress roots are exposed. Ivy grows up trunk. Two limbs grow over applicants property at 10' and 12' above grade.
T9	Marina madrone (<i>Arbutus 'Marina'</i>)	10"	No	15'x15'	Fair	Fair	Fair	13'	Moderate-(Root loss-excavation)	R.T, I.M.	4' from access road turnaround. Limbs 2' over fence into applicants property. Chlorotic leaves over 30% of canopy. Grows in landscape planter on adjacent property.
T10	Marina madrone	11"	No	15'x15'	Fair	Fair	Fair	13'	Low	R.T.	25' from access road turnaround. Limbs 2' over fence into applicants property. Chlorotic leaves over 30% of canopy. Grows in landscape planter on adjacent property.
T11	Monterey cypress (<i>Hesperocyparis macrocarpa</i>)	24"	Yes	20'x15'	Poor	Poor	Poor	N/A	N/A	R.I.	Dead
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APPENDIX B – CRITERIA FOR TREE ASSESSMENT CHART

Following is an explanation of the data used in the tree evaluations. The data is incorporated in the *Tree Assessment Chart, Appendix A*.

Trunk Diameter and Number of Trunks:

Trunk diameter as measured at 4.5 feet above grade. The number of trunks refers to a single or multiple trunked tree. Multiple trunks are measured at 4.5 feet above grade.

Health Ratings:

Good: A healthy, vigorous tree, reasonably free of signs and symptoms of disease

Fair: Moderate vigor, moderate twig and small branch dieback, crown may be thinning and leaf color may be poor

Poor: Tree in severe decline, dieback of scaffold branches and/or trunk, most of foliage from epicormics

Structure Ratings:

Good: No significant structural defects. Growth habit and form typical of the species

Fair: Moderate structural defects that might be mitigated with regular care

Poor: Extensive structural defects that cannot be abated.

Relative Age:

I estimated tree age as young, semi-mature, mature, or over-mature.

Suitability for Preservation Ratings:

Rating factors:

Tree Health: Healthy vigorous trees are more tolerant of construction impacts such as root loss, grading, and soil compaction, than are less vigorous specimens.

Structural integrity: Preserved trees should be structurally sound and absent of defects or have defects that can be effectively reduced, especially near structures or high use areas.

Tree Age: Over mature trees have a reduced ability to tolerate construction impacts, generate new tissue and adjust to an altered environment. Young to maturing specimens are better able to respond to change.

Species response: There is a wide variation in the tolerance of individual tree species to construction impacts.

Rating Scale:

Good: Trees in good health and structural condition with potential for longevity on the site

Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures.

Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment. Trees can be expected to decline or fail regardless of construction impacts or management . The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

Construction Impacts:

Rating Scale:

High: Development elements proposed that are located within the Tree Protection Zone that would severely impact the health and /or stability of the tree. The tree impacts cannot be mitigated without design changes. The tree may be located within the building footprint.

Moderate: Development elements proposed that are located within the Tree Protection Zone that will impact the health and/or stability of the tree and can be mitigated with tree protection treatments.







Low: Development elements proposed that are located within or near the Tree Protection Zone that will have a minor impact on the health of the tree and can be mitigated with tree protection treatments.

None: Development elements will have no impact on the health and stability of the Tree.

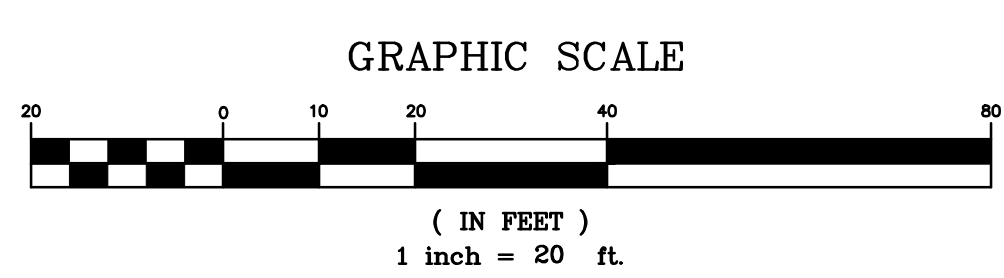
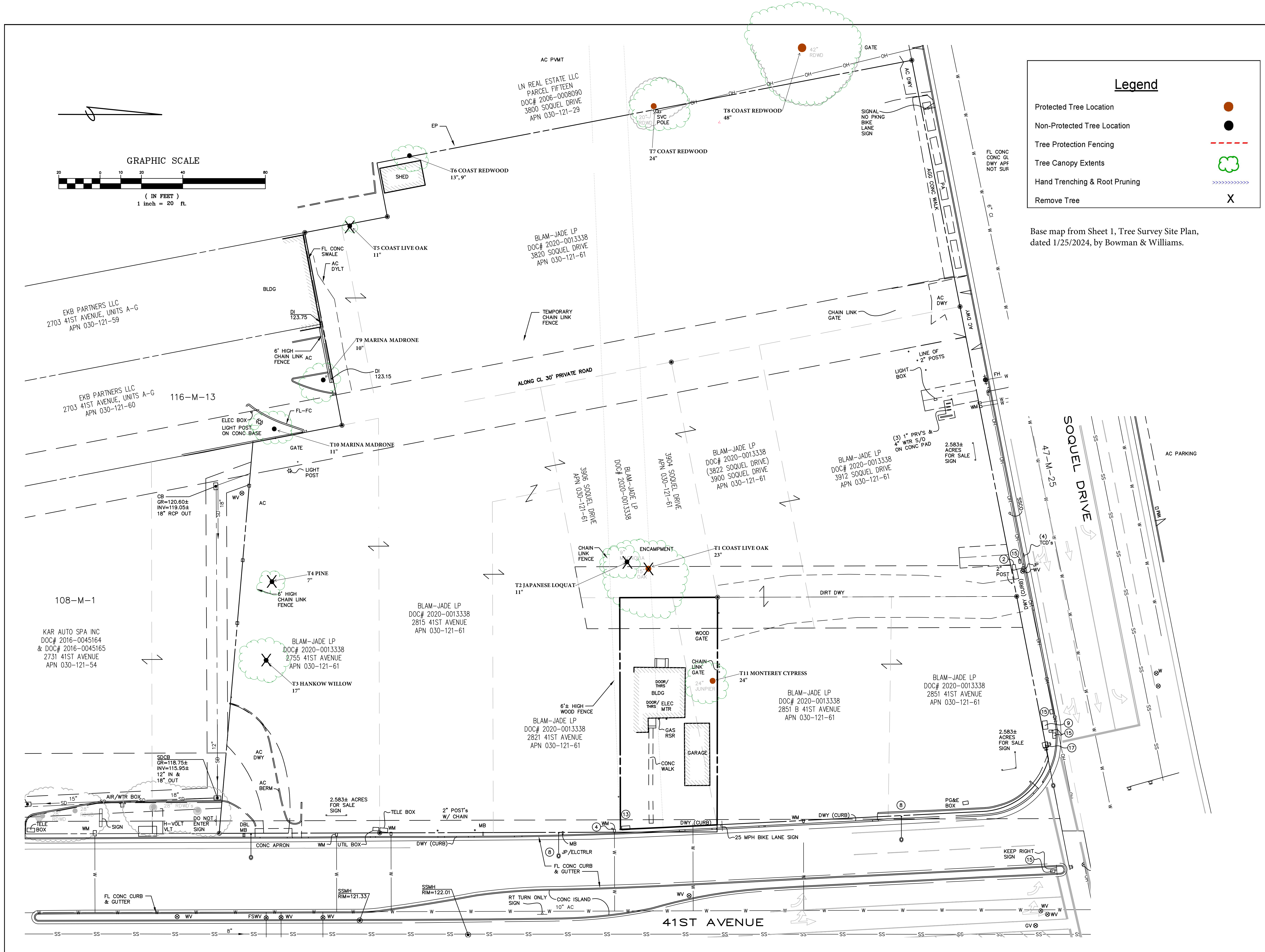
Tree Protection Zone (TPZ):

Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, particularly during construction or development.

Legend

- Protected Tree Location 
- Non-Protected Tree Location 
- Tree Protection Fencing 
- Tree Canopy Extents 
- Hand Trenching & Root Pruning 
- Remove Tree 

Base map from Sheet 1, Tree Survey Site Plan, dated 1/25/2024, by Bowman & Williams.

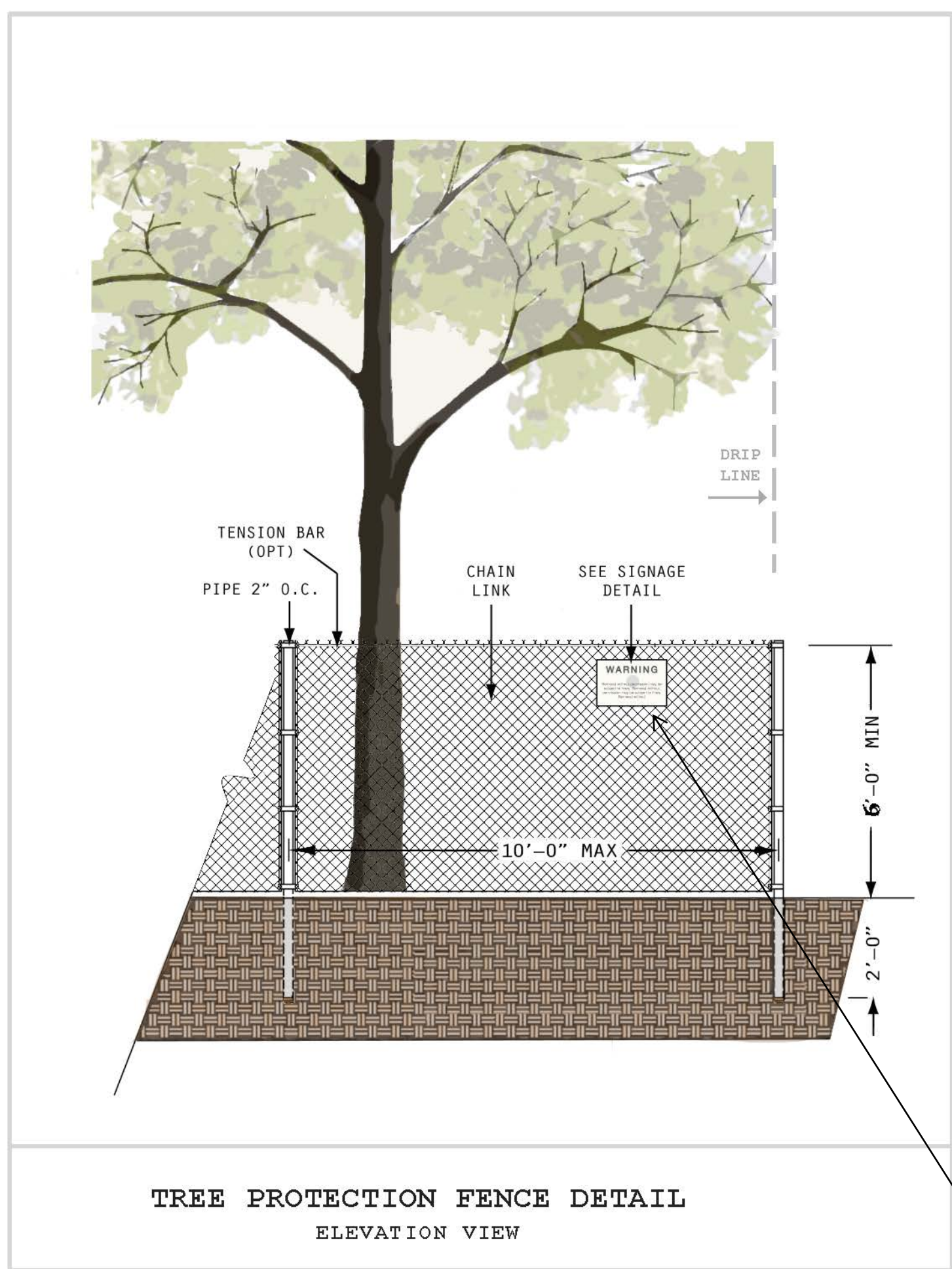


Legend

- Protected Tree Location ●
- Non-Protected Tree Location ●
- Tree Protection Fencing
- Tree Canopy Extents
- Hand Trenching & Root Pruning
- Remove Tree X

Base map from Sheet A1.0, Site Plan, dated 7/8/2024, by AO Architects.

Additional tree protection information can be found in Appendix G of arborist report dated 7/27/2024.



Warning
Tree Protection Zone
Keep Out

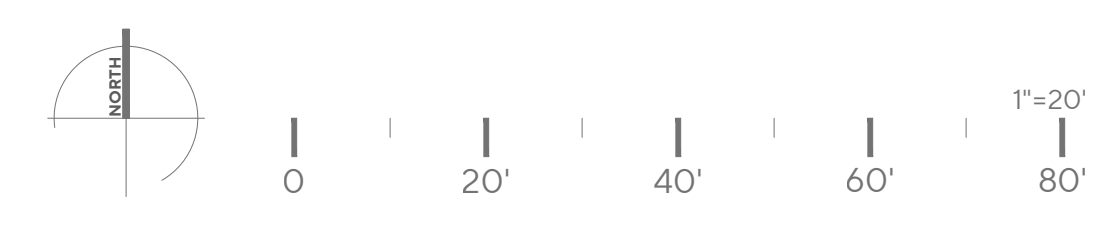
NOTICE: PROTECTIVE FENCING IS REQUIRED ON THIS JOB SITE. NO STORAGE OF MATERIALS OF ANY TYPE IS ALLOWED WITHIN THE FENCED AREA.

This sign must be prominently displayed. Fencing may not be moved or removed without permission of the Project Arborist. Failure to comply with all precautions may result in a STOP WORK order being issued by the regulating agency.

No Entry without Project Arborist Authorization
Kurt Fouts - Arborist Consultant - 831-359-3607



41ST AVENUE



K.F. 7/27/2024
APN: 030-121-61, 030-21-34

Sheet T2
of two sheets

Tree Protection Plan

41st & Soquel Drive, Soquel

826 Monterey Avenue
Capitola, CA 95010
831-359-3607
kurfouts@outlook.com

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Glossary of Terms

Basal rot: decay of the lower trunk, trunk flare, or buttress roots.

Canker: Localized diseased area on stems, roots and branches. Often sunken and discolored.

Critical Root Zone (CRZ): Area of soil around a tree where a minimum number of roots considered critical to the structural stability or health of the tree are located. CRZ determination is sometimes based on the drip line or a multiple of the DBH, but because root growth can be asymmetric due to site conditions, on-site investigation may be required.

Codominant branches/stems: Forked branches (or trunks), nearly the same size in diameter, arising from a common junction and lacking a normal branch union, may have included bark.

Crown: Upper part of a tree, measured from the lowest branch, including all branches and foliage.

Defect: An imperfection, weakness, or lack of something necessary. In trees defects are injuries, growth patterns, decay, or other conditions that reduce the tree's structural strength.

Diameter at breast height (DBH): Measurement of trunk diameter at 4.5 feet above grade.

Frass: Fecal material and/or wood shavings produced by insects.

Included Bark Attachments (crotches): Branch/limb or limb /trunk, or codominant trunks originating at acute angles from each other. Bark remains between such crotches, preventing the development of axillary wood. The inherent weakness of such attachments increases with time, through the pressure of opposing growth and increasing weight of wood and foliage, often resulting in failure.

Live Crown Ratio (LCR): Ratio of the the crown length (live foliage), to total tree height.

Scaffold branches: Permanent or structural branches that form the scaffold architecture or structure of a tree.

Suppressed: Trees that have been overtopped and occupy an understory position within a group or grove of trees. Suppressed trees often have poor structure.

Tree Protection Zones (TPZ): Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development.

Trunk flare: Transition zone from trunk to roots where the trunk expands into the buttress or structural roots.

This Glossary of Terms was adapted from the *Glossary of Arboricultural Terms* (ISA, 2015)

Appendix G- TREE PROTECTION GUIDELINES AND RESTRICTIONS

Protecting Trees During Construction:

- 1) Before the start of site work, equipment or materials move in, clearing, excavation, construction, or other work on the site, every tree to be retained shall be securely fenced- off as delineated in approved plans. Such fences shall remain continuously in place for the duration of the work undertaken in connection with the development.
- 2) If the proposed development, including any site work, will encroach upon the tree protection zone, special measures shall be utilized, as approved by the project arborist, to allow the roots to obtain necessary oxygen, water, and nutrients.
- 3) Underground trenching shall avoid the major support and absorbing tree roots of protected trees. If avoidance is impractical, hand excavation undertaken under the supervision of the project arborist may be required. Trenches shall be consolidated to service as many units as possible. Boring/tunneling under roots should be considered as an alternative to trenching.
- 4) Concrete or asphalt paving shall not be placed over the root zones of protected trees, unless otherwise permitted by the project arborist.
- 5) Artificial irrigation shall not occur within the root zone of native oaks, unless deemed appropriate on a temporary basis by the project arborist to improve tree vigor or mitigate root loss.
- 6) Compaction of the soil within the tree protection zone shall be avoided.
- 7) Any excavation, cutting, or filling of the existing ground surface within the tree protection zone shall be minimized and subject to such conditions as the project arborist may impose. Retaining walls shall likewise be designed, sited, and constructed to minimize their impact on protected trees.
- 8) Burning or use of equipment with an open flame near or within the tree protection zone shall be avoided. All brush, earth, and other debris shall be removed in a manner that prevents injury to the tree.
- 9) Oil, gas, chemicals, paints, cement, stucco or other substances that may be harmful to trees shall not be stored or dumped within the tree protection zone of any protected tree, or at any other location on the site from which such substances might enter the tree protection zone of a protected tree.
- 10) Construction materials shall not be stored within the tree protection zone of a protected tree.

Project Arborist Duties and Inspection Schedule:

The project arborist is the person(s) responsible for carrying out technical tree inspections, assessment of tree health, structure and risk, arborist report preparation, consultation with designers and municipal planners, specifying tree protection measures, monitoring, progress reports and final inspection.

The Project Arborist must provide monthly tree protection monitoring inspections. During these inspections the Project Arborist should monitor the condition of the trees, verify the tree protection measures are in compliance, provide recommendations for any necessary maintenance and impact mitigation, and prepare monthly reports for City Arborist Review.

A qualified project arborist (or firm) should be designated and assigned to facilitate and insure tree preservation practices. He/she/they should perform the following inspections:

Inspection of site: Prior to equipment and materials move in, site work, demolition, landscape construction and tree removal: The project arborist will meet with the general contractor, architect / engineer, and owner or their representative to review tree preservation measures, designate tree removals, delineate the location of tree protection fencing, specify equipment access routes and materials storage areas, review the existing condition of trees and provide any necessary recommendations.

Inspection of site: During excavation or any activities that could affect trees: Inspect site during any activity within the Tree Protection Zones of preserved trees and any recommendations implemented. Assess any changes in the health of trees since last inspection.

Final Inspection of Site: Inspection of site following completion of construction. Inspect for tree health and make any necessary recommendations.

Kurt Fouts shall be the Project Arborist for this project. All scheduled inspections shall include a brief Tree Monitoring report, documenting activities and provided to the City Arborist.

Tree Protection Fencing

- a. The tree protection shall be installed in compliance with the recommendations in the Arborist Report.
- b. Then the Project Arborist should visit the property, verify that the protection measures are in compliance, take photos, and then prepare a brief verification letter for City Arborist review.

Tree Protection fencing shall be installed prior to the arrival of construction equipment or materials. Fence shall be comprised of six-foot chain link fence mounted on eight-foot tall, 1 and 7/8-inch diameter galvanized posts, driven 24 inches into the ground and spaced on a minimum of 10-foot centers. Once established, the fence must remain undisturbed and be maintained throughout the construction process until final inspection.

A final inspection by the City Arborist at the end of the project will be required prior to removing any tree protection fencing.

Tree Protection Signs

All sections of fencing should be clearly marked with signs stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited.

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist or a qualified ISA Certified Arborist and should be documented.

The site should be evaluated by the project arborist or a qualified ISA Certified Arborist after construction is complete, and any necessary remedial work that needs to be performed should be noted.

Root Pruning

Root pruning shall be supervised by the project arborist. When roots over two inches in diameter are encountered they should be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. Roots should be cut beyond sinker roots or outside root branch junctions and be supervised by the project arborist. When completed, exposed roots should be kept moist with burlap or backfilled within one hour.

Tree Work Standards and Qualifications

All tree work, removal, pruning, planting, shall be performed using industry standards of workmanship as established in the Best Management Practices of the International Society of Arboriculture (ISA) and the American National Standards Institute series, *Safety Requirements in Arboriculture Operations* ANSI Z133-2017,

Contractor licensing and insurance coverage shall be verified.

During tree removal and clearance, sections of the Tree Protection Fencing may need to be temporarily dismantled to complete removal and pruning specifications. After each section is completed, the fencing is to be re-installed.

Trees to be removed shall be cut into smaller manageable pieces consistent with safe arboricultural practices, and carefully removed so as not to damage any surrounding trees or structures. The trees shall be cut down as close to grade as possible. Tree removal is to be performed by a qualified contractor with valid City Business/ State Licenses and General Liability and Workman's Compensation insurance.

Development Site Tree Health Care Measures

RECOMMENDED TO PROVIDE OPTIMUM GROWING CONDITIONS, PHYSIOLOGICAL INVIGORATION AND STAMINA, FOR PROTECTION AND RECOVERY FROM CONSTRUCTION IMPACT.

Establish and maintain TPZ fencing, trunk and scaffold limb barriers for protection from mechanical damage, and other tree protection requirements as specified in the arborist report.

Project arborist to specify site-specific soil surface coverings (wood chip mulch or other) for prevention of soil compaction and loss of root aeration capacity.

Soil, water and drainage management is to follow the ISA BMP for "Managing Trees During Construction" and the ANSI Standard A300(Part 2)- 2011 Soil Management (a. Modification, b. 'Fertilization, c. Drainage.)

Fertilizer / soil amendment product(s) amounts and method of application to be specified by certified arborist.

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided by the appraiser/consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as the quality of any title.
2. The appraiser/consultant can neither guarantee nor be responsible for accuracy of information provided by others.
3. The appraiser/consultant shall not be required to give testimony or to attend court by reason of this appraisal unless subsequent written arrangements are made, including payment of an additional fee for services.
4. Loss or removal of any part of this report invalidates the entire appraisal/evaluation.
5. 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(s) to whom it is addressed without written consent of this appraiser/consultant.
6. This report and the values expressed herein represent the opinion of the appraiser/consultant, and the appraiser/consultant's fee is in no way contingent upon the reporting of a specified value nor upon any finding to be reported.
7. Sketches. Diagrams. Graphs. Photos. Etc., in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys.
8. This report has been made in conformity with acceptable appraisal/evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.
9. When applying any pesticide, fungicide, or herbicide, always follow label instructions.
10. No tree described in this report was climbed, unless otherwise stated. We cannot take responsibility for any defects which could only have been discovered by climbing. A full root collar inspection, consisting of excavating around the tree to uncover the root collar and major buttress roots, was not performed, unless otherwise stated. We cannot take responsibility for any root defects which could only have been discovered by such an inspection.

CONSULTING ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce risk of living near trees, Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

