

ARBORIST REPORT-

Tree Inventory & Preliminary Impact Assessment
Atkinson Lane & Brewington Avenue, APN 048-221-09 & 091-236-01

Watsonville, CA

March 4, 2020

Prepared for:

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SUMMARY

This report provides the following information:

1. A summary of the health and structural condition of 32 protected 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 anticipated construction impacts.
- The *Tree Assessment Chart*, Appendix A is the condensed reference guide to inform all tree management decisions for the trees evaluated.
 - A new multi-unit housing development is proposed for two undeveloped parcels.
 - One parcel is located within the City of Watsonville, adjacent to Atkinson Lane. A second larger parcel is under County of Santa Cruz jurisdiction.
 - Thirty-two “protected” trees within or near the project limits were inventoried.
 - Twenty-five trees are in the County of Santa Cruz parcel and seven are in the City of Watsonville parcel.
 - Most of the trees are in good or fair condition.
 - Four trees in poor condition are not suitable for retention in the project.
 - The preliminary design will require removal of ten trees due to high construction impacts.
 - With four trees recommended for removal due to condition, a total of fourteen trees are recommended for removal.
 - If removals are permitted, replacement trees will be required.

Background

Plans will be submitted to the County of Santa Cruz and the City of Watsonville, to develop the two parcels into a multi-unit housing complex. Mid Pen Housing has requested my services, to assess the condition of trees on the applicant’s property and the construction impacts that may affect them. Further, to provide a report with my findings and recommendations to meet County of Santa Cruz and City of Watsonville 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 spread), condition (health and structure), and suitability for preservation ratings. Further, to review the preliminary development plans and assess the potential construction impacts.

To complete this assignment, the following services were performed:

- **Tree Resource Evaluation:** Tag with metal tags, inventory, evaluate and assign suitability for preservation ratings for subject trees.

Assignment continued:

- **Plan Review: Reviewed provided plans including:** Site Plan, by Thacher & Thompson, dated 11/4/2019.
- **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: Topographic Survey, by Whitson Engineers dated 8/14/2019, and a Tree Location Map 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 2/21/2020.

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 questions 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, the County of Santa Cruz and the City of Watsonville, as a reference for existing tree conditions and to help satisfy the County of Santa Cruz and the City of Watsonville planning requirements.

Resources

All information within this report is based on site plans as of the date of this report. Resources are as follows:

- Site Plan, by Thacher & Thompson, dated 11/4/2019.
- Topographic Survey Plan, dated, 4/8/2019
- Site Visit, Tree Inventory & Condition Evaluation at Atkinson Lane and Brewington Avenue, City of Watsonville and County of Santa Cruz
- County of Santa Cruz Municipal Code - Chapter 16.34 *Significant Trees Protection* and 16.34.030(A) *Definitions*, applicable sections *Chapters 1-4, Significant Tree Ordinance of San Mateo County*.
- City of Watsonville Municipal Code, Chapter 5 *Coastal Zone Implementation Plan*, applicable sections, and Chapter 7, Subdivision Improvements, Section 13-7.32 *Existing Trees*.

OBSERVATIONS

Most of the protected trees inventoried were in a grove, sited on a 20-25 degree west facing slope. The grove is composed of coast live oak trees (*Quercus agrifolia*). A few oaks were also located in a row near the property line, on the flat area above the slope. Three trees located adjacent to Atkinson Lane included, purple robe locust (*Robina* 'Purple Robe') and glossy privet (*Ligustrum lucidum*). Three coast live oaks on the western edge of the Atkinson Lane parcel were also inventoried, (Image #1).

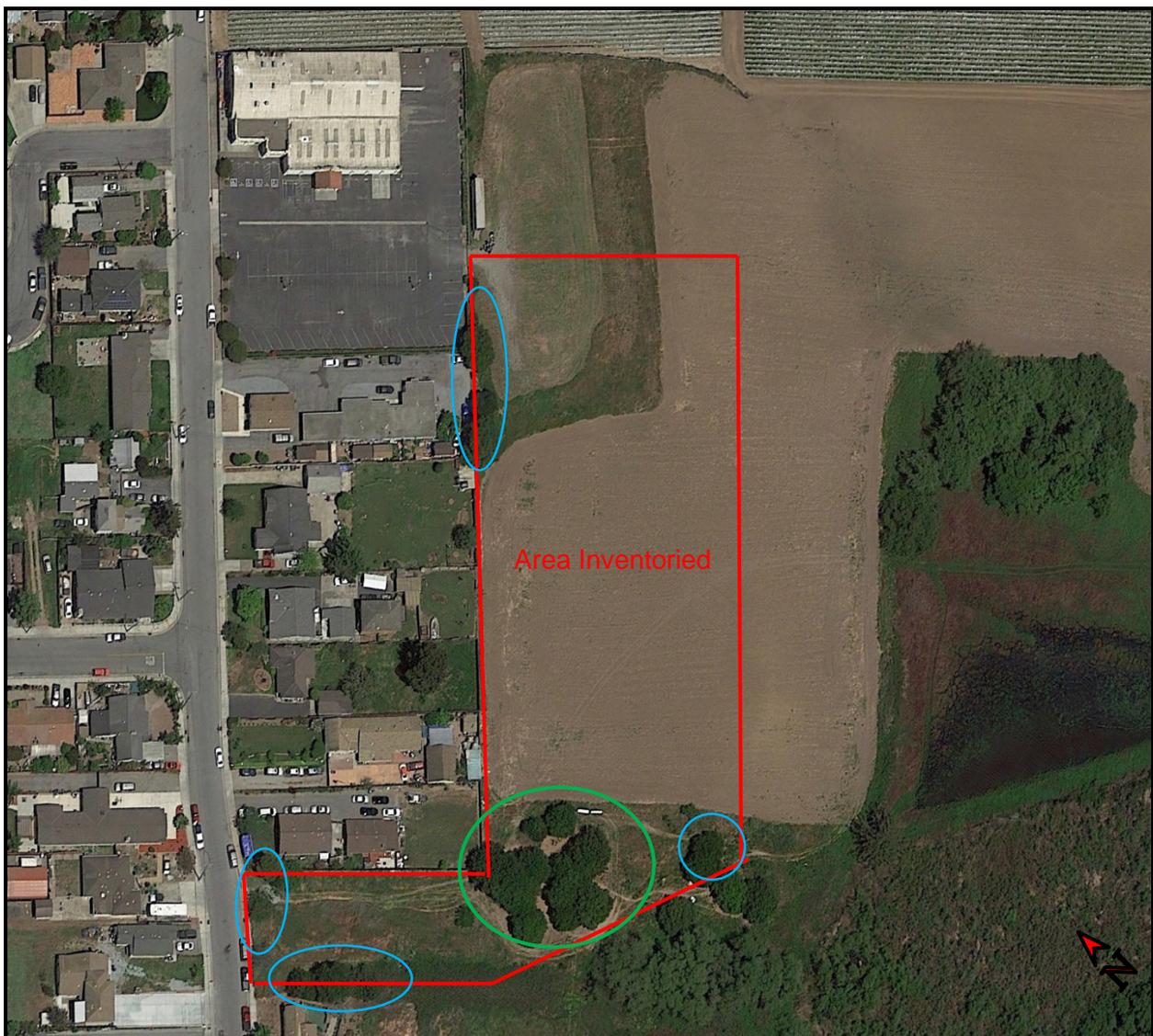


Image #1 – Most of the trees inventoried are in a grove of coast live oak (circled green). Other trees inventoried are shown (circled blue).

Most of the oaks in the grove are in fair condition, a few were in poor condition. Growing conditions for the oaks was good, with ample rooting area and a moderate amount of leaf litter for moisture retention. However, the trees are closely spaced within the grove and most had reduced foliar canopies since they receive less sunlight, resulting in a fair or poor condition rating for most trees, (Images #2 & #3).



Image #2 - The grove looking southwest. The grove forms a continuous canopy due to closely spaced trees.



Image #3 – Western edge of grove. Note tightly spaced trees.

A few of the oaks in the grove (three), have signs of wood decay fungi, as evidenced by bleeding areas in the lower trunks, (Image #4).



Image #4 - Tree T63, coast live oak with multiple areas of trunk bleeding.

Three coast live oaks, trees T76-T78, were in a level area above and east of the grove, (Image #5). These trees were in either good or fair condition.



Image #5 – Trees T76-T78, coast live oak, growing in a row along the property line.

The three trees located adjacent to Atkinson Lane, T50-T52, included one in good condition, one in fair condition and one dead tree which has fallen (Image #6).



Image #6 – Trees T50 & T51, glossy privet and purple robe locust. A second locust, T52 (dead), to right of T51 has fallen and is not visible.

The three coast live oaks, trees T80-T82, are located on the southwestern edge of the Atkinson Lane parcel and were in either fair or good condition (Image #7).



Image #7 – Trees T79-T81, coast live oak, at southwest edge of Atkinson Lane parcel. Two trees T79 and T81 are in good condition. Tree T80 is in fair condition as its growth is suppressed by the two larger adjacent trees.

DISCUSSION

Species List

TOTAL SUBJECT TREES: 32 Protected Trees

29	Coast Live Oak	(<i>Quercus agrifolia</i>)
2	Purple Robe Locust	(<i>Robinia 'Purple Robe'</i>)
1	Glossy Privet	(<i>Ligustrum lucidum</i>)

Tree Evaluation and Recording Methods

Site evaluations were made on 2/21/2020. *The inventory included trees on two parcels 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 trees **suitability for preservation** was rated and recorded.

The recorded data is included in the *Tree Assessment Chart, Appendix A*, of this report. Tree numbers were plotted on the attached *Tree Location Map sheet, T1*. **To correlate the data in the Tree Assessment Chart to the tree's location on the site, refer to the Tree Protection Plan sheet - Appendix C.**

Condition Rating

A trees condition is determined by an assessing both the **health** and **structure**, then combining the two factors to reach a *condition rating*. If the health rating and the structure rating differ, the lower rating becomes the default *condition rating*. Tree 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 - 6
- Fair - 19
- Poor - 7

Suitability for Preservation

A trees 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 - 13
- Fair - 15
- Poor - 4

Trees Recommended for Removal Due to Poor Condition

- Four Trees

1	T52 -	Purple Robe Locust	(<i>Robinia 'Purple Robe'</i>)
3	T56,T57,T59	Coast Live Oak	(<i>Quercus agrifolia</i>)

Trees Recommended for Removal Due to Anticipated Construction Impacts

- Ten Trees

1	T50	Glossy Privet	(<i>Ligustrum lucidum</i>)
9	T54,T55,T58,T71,T72,T73,T76-T78	Coast Live Oak	(<i>Quercus agrifolia</i>)

Tree Protection Zone

The tree protection zone (TPZ), is a defined area 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.

Critical Root Zone

Critical Root Zone (CRZ) is the area of soil around the trunk of a tree where roots are located that provide critical stability, uptake of water and nutrients required for a tree's survival. The CRZ is the minimum distance from the trunk that trenching that requires root cutting should occur and can be calculated as three to the five times the trunk Diameter at Breast Height (DBH). For example, if a tree is one foot in trunk diameter then the CRZ is three to five feet from the trunk location. We will often average this as four times the trunk diameter or 1ft. DBH = 4ft. CRZ (Smiley, E.T., Fraedrich, B. and Hendrickson, N. 2007).

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.

Discussion of Findings & Impacts to Subject Trees

Construction impact assessments are based on the preliminary site design by Thacher and Thompson, dated 10/4/2019.

Twenty nine of the thirty-two trees inventoried are coast live oak, with two locust and one privet also surveyed. More than half of the trees (18 trees), are suitable for incorporation into the project. Ten trees (9 coast live oak and a glossy privet), will require removal due to high construction impacts. Four trees are recommended for removal due to poor condition.

Three of the ten highly impacted trees include two coast live oak trees T54, T55, and one privet T50. They are located within the footprint of the E.V.A. road which originates at Atkinson Lane.

Seven trees, including coast live oak trees T58, T71, T72, T73, T76, T77 and T78 are located within the footprint of the parking lot serving the new housing complex, will be highly impacted and will require removal.

Four trees (3 coast live oak & 1 locust) should be removed due to poor condition. Oak tree T57 is nearly dead, oak T56 has minimal branching structure and live canopy, and oak T59 has minimal foliar canopy and is missing bark in the lower trunk. Tree T52 locust, is dead and has fallen.

Five coast live oaks are sited within 7-11 feet of the proposed parking area, or the E.V.A. road immediately adjacent to the parking area. These trees include T60, T68, T69, T70 and T74. Grades will be raised adjacent to these trees; fill soil will be added, and a retaining structure will be required. Depending on the final staked location of the retainer, the degree of soil excavation and compaction required, and the type of retainer footing, continuous or discontinuous, impacts to these trees will be moderate to high. To the degree these construction methods are used, the trees will be negatively impacted by root loss due to excavation, compaction and the reduced root systems that will result. Based on the current site plan, these trees are recommended for retention, and preconstruction mitigation methods will be required to reduce impacts.

The preliminary site plan by Thacher and Thompson does not show the location of the E.V.A. road in the City of Watsonville parcel. However, MidPen has indicated the road will continue into the Watsonville parcel with a 20-foot width and one edge against the adjacent parcel. If this is the case, only the trees noted above will be impacted by the road.

Of the seven trees on the Watsonville parcel, one requires removal due to impacts (E.V.A. road), and one is dead as indicated above. The five remaining trees are recommended for retention, however, impacts to these trees could not be assessed since no site plan for this parcel. If subsequent preliminary plans include elements that will impact the five trees, such as utilities, drainage systems, hardscape or landscaping, then the trees will require reevaluation. Three of the five, coast live oak trees T79, 80 & 81, are at edge of the parcel, and it is likely that these trees can be retained unless construction elements occur at the southwest edge of the property.

Discussion of Findings & Impacts to Subject Trees, continued:

Three coast live oak trees T55, T63 and T64 have bleeding in the lower trunk area. A fungal pathogen is suspected for causing the bleeding symptoms. Two of these trees are in fair to poor health due to minimal foliar canopies. It is not conclusive whether the thin canopy is due to overcrowding or fungal infection decline. Positive identification of the species would require sampling and laboratory testing as a first step to treatment and is not recommended since treatments have limited success in mature trees and infections are usually not spread from tree to tree.

One coast live oak tree, T59, recommended for removal due to poor condition, could be retained for habitat, as it does not pose a significant risk in the event tree failure occurred.

Tree Replacement

The preliminary design by Thacher and Thompson indicates locations for 37 replacement trees. If all fourteen trees recommended for removal are removed (11 due to construction impacts, 3 due to poor condition), the 37 trees shown on the plan would equal a 2.5 to 1 replacement ratio. One tree will require removal in the City of Watsonville parcel, and it is recommended that at least two trees are replanted in that parcel.

The County of Santa Cruz requires protected trees removed to be replaced at a two to one replacement ratio, for each permitted tree removed. The City of Watsonville Municipal Code (13-7.32 Existing trees), states the Community Development Director will determine the number, size and type of replacement trees required for permitted trees removed.

CONCLUSION

- The *Tree Risk Assessment & Risk Rating Chart*, Appendix A is the condensed reference guide to inform all tree management decisions for the trees evaluated.
- A new multi-unit housing development is proposed for two undeveloped parcels.
- One parcel is located within the City of Watsonville, adjacent to Atkinson Lane. A second larger parcel is under County of Santa Cruz jurisdiction.
- Thirty-two “protected” trees within or near the project limits were inventoried.
- Twenty-five trees are in the County of Santa Cruz parcel and seven are in the City of Watsonville parcel.
- Most of the trees are in good or fair condition.
- Ten trees including T50 privet and T54, T55, T58, T72, T73, T74, T76, T77 & T78 coast live oak, will require removal due to high construction impacts.
- Four trees, T52 locust, T56, T57 and T59 coast live oak, are in poor condition and are not suitable for retention in the project.
- The impacts to most of the trees in the Watsonville parcel were not assessed since no site plan was available.
- The preliminary design will allow the retention of eighteen of the thirty-two trees inventoried.
- If removals are permitted, replacement trees will be required.
- The preliminary site plan indicates locations for 37 replacement trees, a replacement ratio of 2.5 to one.

RECOMMENDATIONS

1. Obtain all necessary permits prior to removing or significantly altering any trees on site.
2. Remove trees recommended for removal.
3. Tree protection specifications will be required once final plan sets are completed.

Respectfully submitted,

Kurt Fouts

Kurt Fouts ISA Certified Arborist WE0681A



Pippin Phase 2, Atkinson Lane & Brewington Avenue

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

Retention or Removal 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

Protected Tree - City of Watsonville, Any tree 6 inches or greater in diameter measured at 4.5 feet above grade, per City of Watsonville, Sec. 13-7.32

Significant Tree- County of Santa Cruz, Any tree 20 inches or greater in diameter (in coastal zone), measured at 4.5 feet above grade per Santa Cruz County, Section 16.34.030. Other criteria may apply for regulated trees, if a discretionary permit review is required for a project.

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in City of Watsonville Parcel -APN: 019-236-01											
T50	glossy privet (<i>Ligustrum lucidum</i>)	8",7",7"	Yes	25'X15'	Fair	Fair	Fair	10'	High (within footprint on E.V.A. road)	R.I.	In footprint of E.V.A. road. Co-dominant trunks at 1' above grade. Minor deadwood and decay in lower trunk.
T51	purple robe locust (<i>Robinia</i> 'Purple Robe')	8"	Yes	25'X15'	Good	Good	Good	10'	No site plan. Impact assessment pending plan.	R.T.	Young tree. Possibly planted as street tree. Plans for this area not available. Impacts not verified.
T52	purple robe locust	8"	Yes	25'X15'	Poor	Poor	Poor	N/A	N/A	R.C.	Possibly planted as street tree. Fallen tree, dead.
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Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments	
Trees in City of Watsonville Parcel - APN: 019-236-01												
T53	coast live oak (<i>Quercus agrifolia</i>)	5",4",4",4"	Yes	10'X10'	Good	Fair	Good	8'	No site plan. Impact assessment pending plan.	R.T.	Plans for this area not available. Impacts not verified. Within 50- setback.	
Trees in County of Santa Cruz Parcel - APN - 048-221-09												
T54	coast live oak	28"	Yes	40'X40'	Fair	Fair	Fair	21'	High (within footprint on E.V.A. road)	R.I.	Within foot print of E.V.A. road. Co-dominant trunks at 8' above grade. 15 degree lean. Four primary scaffolds, two with included bark. One scaffold is girdled with rope.	
T55	coast live oak	11" (at 3' above grade)	Yes	35'X20'	Fair-Poor	Fair	Fair	10'	High (within footprint on E.V.A. road)	R.I.	Within footprint of E.V.A. road. Growth suppressed by larger adjacent trees. Minimal live canopy with weight bias to west. Minor bleeding in lower trunk due to possible fungal infection.	
T56	coast live oak	7"	Yes	35'X10'	Fair-Poor	Fair	Poor	8'	High (within footprint on E.V.A. road)	R.C./R.I.	Within footprint of E.V.A. road. Minimal branching structure and live canopy. Smaller secondary trunk is dead and decayed with fungal fruiting bodies present (<i>Annulohypoxylon thouarsianum</i>)	
T57	coast live oak	4",4",3"	Yes	10'X10'	Poor	Poor	Poor	8'	High (within footprint on E.V.A. road)	R.C./R.I.	Within footprint of E.V.A. road. Nearly dead. One live trunk with minimal (epicormic), leaf growth.	
T58	coast live oak	14",12"	35'X25'	35'X25'	Fair	Fair	Fair	15'	High (Within footprint of parking lot)	R.I.	Within footprint of parking lot. Co-dominant trunks at 3' above grade, with included bark and minor decay at seam.	
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Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T59	coast live oak (<i>Quercus agrifolia</i>)	11" (at 3' above grade)	Yes	15'X15'	Poor	Fair	Poor	10'	Moderate to High (Root loss-grade change)	R.C.	Within 8' of E.V.A. road. Growth suppressed by larger adjacent trees. Minimal foliar canopy. Missing bark in basal trunk area.
T60	coast live oak	14",10"	Yes	40'X15'	Fair	Fair	Fair	12'	Moderate to High (Root loss-grade change)	R.T.	Within 9' of E.V.A. road. Co-dominant trunks at 1' above grade. Unbalanced canopy to west.
T61	coast live oak	11"	Yes	20'X15'	Fair	Fair	Fair	10'	Moderate (Grade change)	R.T.	Within 15' of E.V.A. road. Growth suppressed by larger adjacent trees. Unbalanced canopy with weight bias to south. Deadwood and decay at old pruning scar in trunk basal area. Within 50-foot setback.
T62	coast live oak	12",10"	Yes	30'X30'	Good	Fair	Good	12'	Low	R.T.	Co-dominant trunks at 1' above grade with included bark. At edge of grove facing southwest. Siting has allowed good structural development and foliar canopy. Within 50-foot setback.
T63	coast live oak	10",8"	Yes	25'X25'	Fair	Fair	Fair	12'	Low	R.T.	Co-dominant trunks at 2' above grade. Unbalanced canopy to west. Bark separating and missing in trunk basal area. Probable fungal infection with moderate activity as evidenced by trunk bleeding in multiple locations. Within 50-foot setback.
T64	coast live oak	8",7"	Yes	20'X15'	Fair-Poor	Fair	Fair	10'	Low	R.T.	Co-dominant trunks at grade, with minor decay at union. Trunk bleeding in basal area, fungal pathogen suspected. Minimal live canopy. Within 50-foot setback.
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Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T65	coast live oak (<i>Quercus agrifolia</i>)	11",10"	Yes	35'X35'	Fair	Fair	Fair	15'	Low	R.T.	Co-dominant trunks at 3' above grade.
T66	coast live oak	22"	Yes	50'X40'	Fair	Good	Good	18'	Low	R.T.	Co-dominant trunks at 8' above grade. Within 50-foot setback.
T67	coast live oak	11"	Yes	20'X10'	Fair	Fair-Poor	Fair	10'	Low	R.T.	Growth suppressed by larger adjacent tree (T65). Unbalanced canopy with weight bias and trunk bow to south. Within 50-foot setback.
T68	coast live oak	10"	Yes	30'X15'	Fair-Poor	Fair	Fair	10'	Moderate to High (Root loss-grade change)	R.T.	7' from parking lot. Minimal live canopy. On edge of grove. Unbalanced canopy with weight bias and 15 degree trunk lean to west.
T69	coast live oak	12"	Yes	35'X25'	Fair	Good	Good	12'	Moderate to High (Root loss-grade change)	R.T.	11' from parking lot. Co-dominant trunks at 7' above grade. Located 2' west of tree T70.
T70	coast live oak	13"	Yes	35'X25'	Fair	Good	Good	13'	Moderate to High (Root loss-grade change)	R.T.	10' from parking lot. Located 2' south of tree T69.
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Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T71	coast live oak <i>(Quercus agrifolia)</i>	13",12"	Yes	35'X35'	Fair	Fair	Fair	20'	High (Within foot print of parking lot)	R.I.	Co-dominant trunks at 1' above grade, with included bark. At southeast edge of grove. Recommend cable between two trunks to improve stability in wind events.
T72	coast live oak	11",11", 10"	Yes	35'X30'	Good	Good	Good	20'	High (Within foot print of parking lot)	R.I.	Co-dominant trunks at 3' and 4' above grade. Stand alone tree, not part of 'grove'.
T73	coast live oak	10",6"	Yes	15'X15'	Good	Good	Good	12'	High (Within foot print of parking lot)	R.I.	Co-dominant trunks at 1' above grade. Poison oak grows up trunk. Stand alone tree, not part of 'grove'.
T74	coast live oak	8 stems, 5- 9"	Yes	30'X25'	Good	Fair	Good	15'	Moderate to High (Root loss-grade change)	R.T.	Within 9' of parking lot. Multiple trunks joined at grade. Within 50-foot setback.
T75	coast live oak	12",11", 9"	Yes	30'X20'	Fair	Fair	Fair	15'	Low	R.T.	Co-dominant trunks at 2' above grade. Adjacent to tree T74, south of 'grove'. Within 50-foot setback.
T76	coast live oak	20"	Yes	40'x40'	Fair	Good	Good	20'	High (Within foot print of parking lot)	R.I.	Boundary tree? Trunk flare extends across fence line. Canopy extends to ground.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 5 of 6		3/4/2020		

Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T77	coast live oak (<i>Quercus agrifolia</i>)	9",9"	Yes	20'X20'	Fair	Fair	Fair	10'	High (Within foot print of parking lot)	R.I.	Co-dominant trunks at grade. One trunk with significant lean. 8"X8" area of deadwood in trunk basal area from previous injury, but not significantly impacting health.
T78	coast live oak	20"	Yes	40'X40'	Good	Good	Good	20'	High (Within foot print of parking lot)	R.I.	Located 1' from fence line. Canopy extends to ground.
Trees in City of Watsonville Parcel -APN: 019-236-01											
T79 No tag	coast live oak	16" (estimated)	Yes	40'X25'	Good	Good	Good	15'	No site plan. Impact assessment pending plan.	R.T.	Site plan for this area not available. Limited access, partial assessment only. Within 50-foot wetland setback.
T80 No tag	coast live oak	10" (estimated)	Yes	10'X10'	Fair	Fair	Fair	10'	No site plan. Impact assessment pending plan.	R.T.	Site plan for this area not available. Limited access, partial assessment only. Growth is suppressed by larger adjacent tree, T80.
T81 No tag	coast live oak	16" (estimated)	Yes	30'X25'	Good	Good	Good	15'	No site plan. Impact assessment pending plan.	R.T.	Site plan for this area not available. Limited access, partial assessment only.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 6 of 6		3/4/2020		

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.

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, then 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.

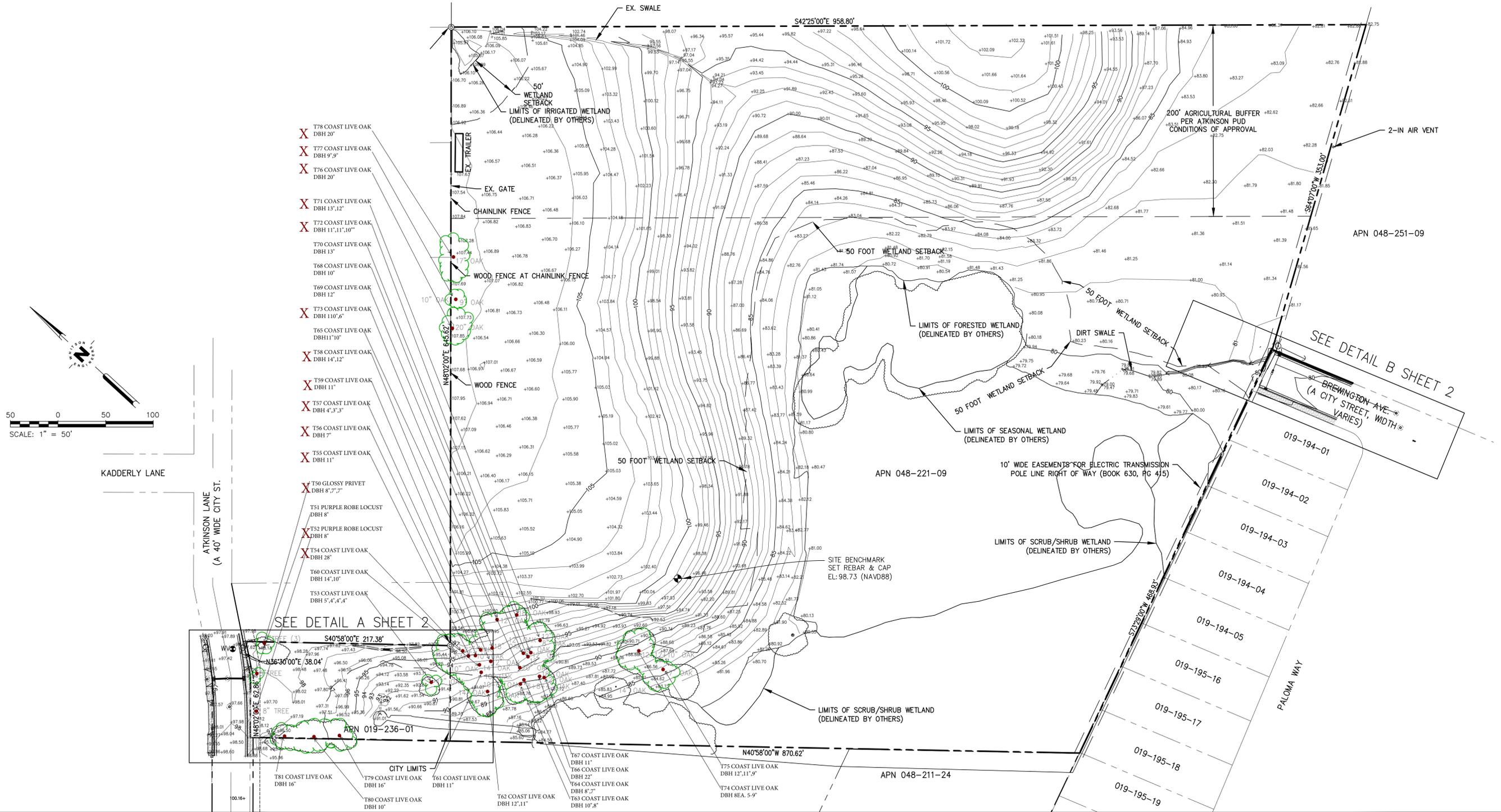
Tree Protection Zone (TPZ):

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

- Tree Location & Number ●
- Tree Protection Fencing - - - - -
- Tree Canopy Extents ⬢
- Hand Trenching & Root Pruning >>>>>>>>
- Remove Tree X

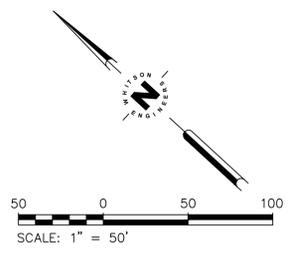
Base map provided by Whitson Engineers, Monterey, CA



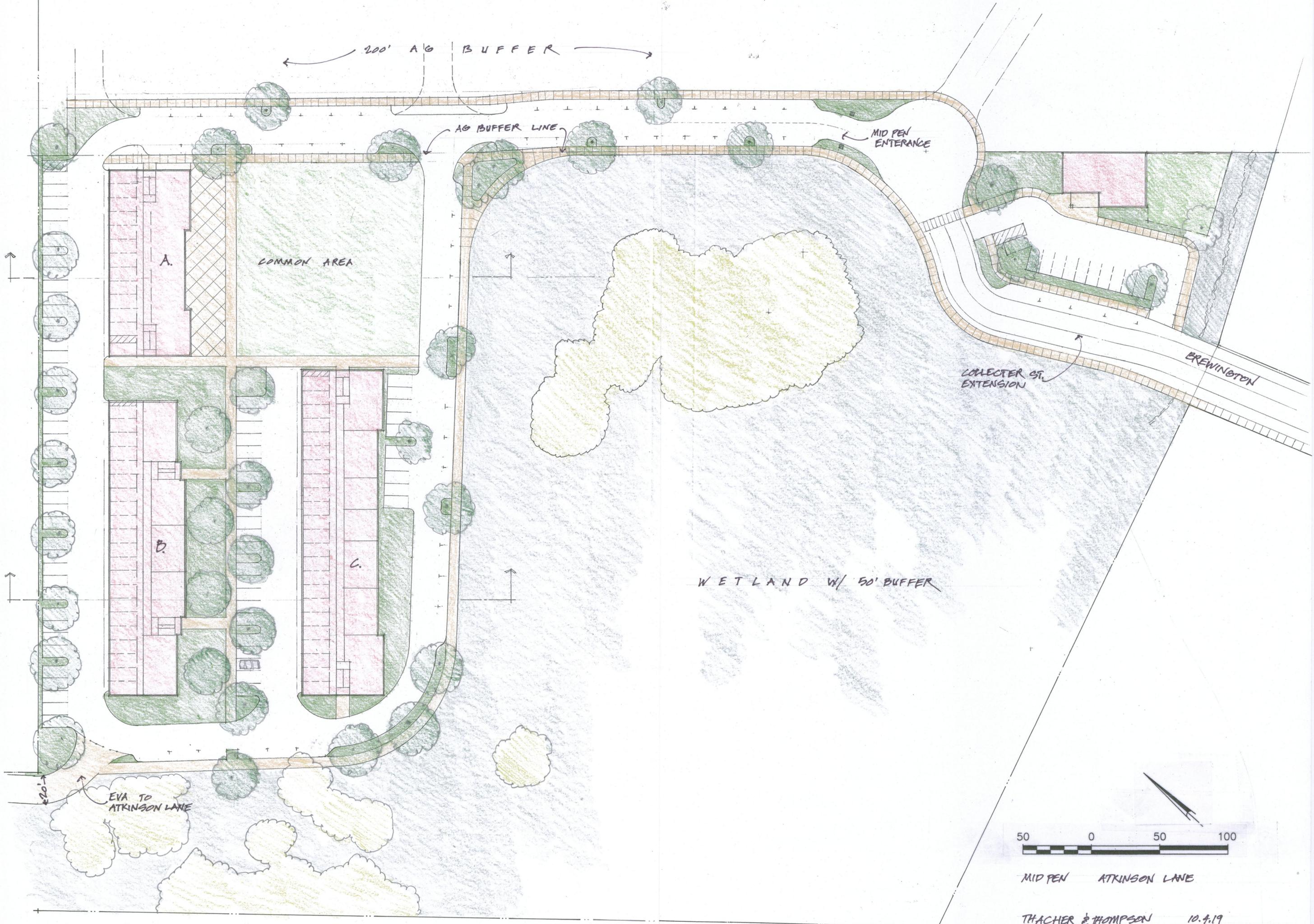
- X T78 COAST LIVE OAK
DBH 20"
- X T77 COAST LIVE OAK
DBH 9",9"
- X T76 COAST LIVE OAK
DBH 20"
- X T71 COAST LIVE OAK
DBH 13",12"
- X T72 COAST LIVE OAK
DBH 11",11",10"
- T70 COAST LIVE OAK
DBH 13"
- T68 COAST LIVE OAK
DBH 10"
- T69 COAST LIVE OAK
DBH 12"
- X T73 COAST LIVE OAK
DBH 110",6"
- T65 COAST LIVE OAK
DBH 11",10"
- X T58 COAST LIVE OAK
DBH 14",12"
- X T59 COAST LIVE OAK
DBH 11"
- X T57 COAST LIVE OAK
DBH 4",3",3"
- X T56 COAST LIVE OAK
DBH 7"
- X T55 COAST LIVE OAK
DBH 11"
- X T50 GLOSSY PRIVET
DBH 8",7",7"
- T51 PURPLE ROBE LOCUST
DBH 8"
- X T52 PURPLE ROBE LOCUST
DBH 8"
- X T54 COAST LIVE OAK
DBH 28"
- T60 COAST LIVE OAK
DBH 14",10"
- T55 COAST LIVE OAK
DBH 5",4",4",4"

SEE DETAIL A SHEET 2

SEE DETAIL B SHEET 2



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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 height of the crown containing live foliage to overall height of the tree.

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.

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

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.

City of Watsonville Municipal Code

Protected Trees

Chapter 7 SUBDIVISION IMPROVEMENTS

13-7.31 Street trees.

Trees shall be planted along all streets and public ways included within and bordering divisions of land pursuant to the master street tree plan for the City and to the approval of the director of parks and recreation. The said trees shall be maintained by the subdivider or subsequent owners of said lots to which they relate.

(§ 1, Ord. 1274-11 (CM), eff. February 24, 2011)

13-7.32 Existing trees.

To the maximum extent practical existing trees with trunk calipers of six (6") inches or greater shall be retained by the subdivision design and shall be shown on the tentative map as trees to be preserved. Measures to protect such trees, meeting with the approval of the Community Director, shall be implemented during construction. Any trees designated for preservation and subsequently damaged or removed shall be replaced with the number, type and size as determined by the Community Development Director

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:

“Coastal Zone” means that unincorporated area of the County of Santa Cruz as defined by the California Coastal Act of 1976, Division 20 of the California Public Resources Code. This area is identified on the General Plan and Local Coastal Program Land Use Plan maps.

“Diameter at breast height (d.b.h.)” means the average diameter of a tree outside the bark at a point four and one-half feet above the highest level ground.

“Person” means any individual, group, firm, organization, association, limited liability company, or other business association, corporation, including any utility, partnership, business, trust company, special district or public agency thereof, or other party, or as specified in Section [53090](#) of the California Government Code; or the State or a State agency or city when not engaged in a sovereign activity. Where a coastal development permit is required pursuant to Chapter [13.20](#) SCCC, State and Federal agencies may be required to comply with various provisions of this chapter as a condition of the coastal development permit.

“Planning Director” means the Director of the Planning Department or his or her authorized designee charged with the administration and enforcement of this chapter.

“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)

(B) Outside the urban services line or rural services line, where visible from a scenic road, any beach, or within a designated scenic resource area, any tree which is equal to or greater than 40 inches d.b.h. (approximately 10 feet in circumference); any sprout clump of five or more stems, each of which is greater than 20 inches d.b.h. (approximately five feet in circumference); or, any group consisting of 10 or more trees on one parcel, each greater than 20 inches d.b.h. (approximately five feet in circumference).

(C) Any tree located in a sensitive habitat as defined in Chapter 16.32 SCCC. Also see SCCC16.32.090 (C), exemption of projects with other permits.

“Significant tree removal permit” means a permit issued pursuant to the provisions of this chapter.

“Sprout clump” means individual stems arising from one root collar and sharing a common root system. [Ord. 5182 § 14, 2014; Ord. 4346 §§ 73, 74, 1994; Ord. 3443 § 1, 1983; Ord. 3341 § 1, 1982].

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.



ARBORIST REPORT-

Tree Protection Plan

Atkinson Lane & Brewington Avenue, APN 048-221-09 & 091-236-01

Watsonville, CA

May 23, 2021

Prepared for:

Mid Pen Housing
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Prepared by:



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831-359-3607
kurtfouts1@outlook.com

ISA Certified Arborist WE0681A
Tree Risk Assessment Qualification (TRAQ)

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Tree Replacement.....	5
CONCLUSION	6
RECOMMENDATIONS	6

Attachments: Appendix A - E

Appendix A – Tree Assessment Chart

Appendix B – Criteria for Tree Assessment Chart

Appendix C - Tree Protection Plan

Appendix D – Tree Protection Guidelines & Restrictions

- Protecting Trees During Construction
- Project Arborist Duties & Inspection Schedule
- Tree Protection Fencing
- Tree Protection Signs
- Monitoring
- Root Pruning
- Tree Work Standards & Qualifications

Appendix E - Assumptions & Limiting Conditions

SUMMARY

This is the second arborist report for this project. The purpose of this report is to provide tree protection measures for the retained trees during the construction phase of the project. The first report, Arborist Report - Tree Inventory & Preliminary Impact Assessment, dated 3/4/2020, aided in design planning related to tree preservation, and was based on a conceptual drawing for the project.

After the conceptual drawing, four design options were presented to me to evaluate, with the criteria being to retain as many existing trees as feasible, in conjunction with necessary design elements. The subsequent Preliminary Plan Set used one of the four options, and the design concept was refined.

This report reviews the Preliminary Plan Set to determine if the plans were in conformance with the recommendations of the preliminary arborist report and provides tree protection specifications for retained trees.

With minor differences the plan set is consistent with the preliminary arborist report. In the preliminary plan set the tree removal count is increased by one tree, when compared to the preliminary arborist report. In this report I recommend the retention of one additional coast live oak, T72. **This would result in a net- zero tree removal count.**

My reasons for these findings are discussed in more detail below.

Purpose and use of the report

To evaluate and advise if plans for the proposed project conform to the recommendations of the, Arborist Report - Tree Inventory & Preliminary Impact Assessment dated 3/4/2020, and to provide tree protection specifications for retained trees. The report includes all trees within the plan area that could be affected by a project. The report is to be used by the developer, their agents, the County of Santa Cruz and the City of Watsonville, as a reference for existing tree conditions, and to provide tree protection specifications to existing trees that will be retained for this project, thus helping to satisfy the County of Santa Cruz and the City of Watsonville planning requirements.

Resources

All information within this report is based on site plans as of the date of this report. Resources are as follows:

- Preliminary Grading & Drainage, Pippin II Housing, and Preliminary Improvement Plan – EVA, Pippin II Housing, both dated 5/13/2021.
- Site Visit, Tree Inventory & Condition Evaluation at Atkinson Lane and Brewington Avenue, City of Watsonville and County of Santa Cruz, on 2/2020.
- County of Santa Cruz Municipal Code - Chapter 16.34 *Significant Trees Protection* and 16.34.030(A) *Definitions*, applicable sections. City of Watsonville Municipal Code, Chapter 5 *Coastal Zone Implementation Plan*, applicable sections, and Chapter 7, *Subdivision Improvements*, Section 13-7.32 *Existing Trees*.

DISCUSSION

Species List

TOTAL SUBJECT TREES: 32 Protected Trees

29	Coast Live Oak	(<i>Quercus agrifolia</i>)
2	Purple Robe Locust	(<i>Robinia 'Purple Robe'</i>)
1	Glossy Privet	(<i>Ligustrum lucidum</i>)

Suitability for Preservation

Tree condition ratings and anticipated construction impacts were evaluated in the Arborist Report - Tree Inventory & Preliminary Impact Assessment dated 3/4/2020. The impacts were evaluated based on the original conceptual plans for the Pippin II project by Thacher & Thompson Architects and dated 11/4/2019.

- Since that time the design elements have been refined and engineering plans have been created. The Preliminary Grading & Drainage, Pippin II Housing, and Preliminary Improvement Plan – EVA, Pippin II Housing, both dated 5/13/2021, and the construction impacts to existing trees have been evaluated.

In most cases, the preliminary plans for the proposed project and tree removal or retention recommendations shown on the Conceptual Landscape Plan, sheet L-1, conform to the recommendations of the Arborist Report - Tree Inventory & Preliminary Impact Assessment, dated 3/4/2020.

The tree removal count shown on the Conceptual Landscape Plan, sheet L-1, is fifteen (15). The tree removal count on the first arborist report, (3/4/2020), is fourteen (14). Due to changes in the preliminary site plan from the conceptual plan, two trees recommended for removal in the first arborist report are shown to be retained, and three trees recommend for retention are indicated for removal. This is a net loss of one additional tree.

Changes in the trees recommended for removal occurred because refinements in the proposed plan have created **high** impacts (and the need for removal), of two trees whose impacts were anticipated to be **moderate** in the first arborist report. Conversely, changes to the proposed plan have reduced anticipated impacts from **high**, as rated in the first arborist report (and the need for removal), of two trees, to **moderate**, and they can be retained.

Table #1 below identifies the specific trees and the reasons for changes in the retention or removal recommendation.

Table #1

Tree #	Species	Diam.	Impact Rating Change	Conditions for Impact Rating Change	Retention or Removal
T50	Glossy Privet	8", 7", 7"	High to Moderate	EVA Road was angled away from tree.	Retain
T51	Locust 'Purple Robe'	8"	No impact rating in first arborist report. New impact rating is high .	Within footprint of EVA road.	Remove
T53	Coast Live Oak	5", 4", 4"	No impact rating in first arborist report. New impact rating is high .	Within footprint of Bio Facility.	Remove
T60	Coast Live Oak	14", 10"	Moderate to High	EVA road was moved closer to tree.	Remove
T71	Coast Live Oak	13", 12"	High to Moderate	Location of parking lot was moved.	Retain

One additional tree, (T72, coast live oak), recommended for removal in the first arborist report and in the Conceptual Landscape Plan, sheet L-1, can be retained. Tree protection specifications to mitigate impacts to this tree are specified in this report, and on the Tree Protection Plan, sheet T1.

Tree Protection Specifications & Recommended Sequence

(These specifications are included on the Tree Protection Plan, sheet T1)

Demolition Phase

1. Tree Removal - All tree work, removal or pruning, 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*. 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.
2. Tree Clearance Pruning – Prune tree T72, coast live oak, by selectively removing or reducing the length of limbs growing towards Building B, to achieve a minimum of 4-foot clearance from the building, to allow for construction.

Grading Phase:

1. Tree Protection Fencing - Install Tree Protection Fencing, in location indicated on Tree Protection Plan Sheet T1, prior to beginning of grading.
2. Grading - Grading within the tree canopy dripline of trees T61 and T72, coast live oak shall be by hand methods. Prior to grading in these areas, the Project Arborist shall be notified and a site meeting with the work crew shall occur. Hand grading and temporary tree protection fencing removal (if necessary), will be reviewed with the work crew. Once hand grading is completed, if the tree protection fencing was temporarily removed it shall be reinstalled.

Construction Phase:

1. Domestic Water Lateral -- Domestic Water Lateral - A “Ditchwitch” type trencher shall be used for installation of the water line for in the area within the tree canopy dripline (see Tree Protection Plan, sheet T1 for location). Any roots found 1” or greater in diameter shall be cleanly cut after use of the trencher is completed.
2. Building B Foundation - Stake for Building B foundation closest to tree T72, coast live oak.
 - A. Prior to work in this area, the Project Arborist shall be notified and a site meeting with the work crew shall occur. The crew will be directed regarding hand excavation and root pruning methods.
 - B. A linear trench shall be dug just outside the stake line for the foundation, between the foundation and tree T72. The depth of the trench shall equal the depth required for the foundation or 18 inches, whichever is less.
 - C. Any roots found 1” or greater in diameter shall be cleanly cut with loppers, a handsaw or Sawzall. Roots shall be pruned by methods indicated on Tree Protection Plan sheet T2, Pre-Construction Root Pruning.

Tree Replacement

Of the 32 trees inventoried 18 are suitable for incorporation into the proposed plan. Fourteen will require removal, 10 due to high construction impacts and 4 due to poor condition.

The Conceptual Landscape Plan, sheet L-1 has a proposed tree palette of 91 replacement trees. The replacement inventory includes 21 native coast live oak.

Fourteen trees are recommended for removal. The replacement ratio (91 trees), is 6 to 1. The native oak replacement ratio (21 trees), is 1.5 to 1.

Two trees will require removal in the City of Watsonville parcel, and it is recommended that at least four trees are replanted as replacement trees in that parcel. No replacement trees for the City of Watsonville are indicated on the Conceptual Landscape Plan.

The County of Santa Cruz requires protected trees removed to be replaced at a two to one replacement ratio, for each permitted tree removed. The City of Watsonville Municipal Code (13-7.32 Existing trees), indicates the Community Development Director will determine the number, size and type of replacement trees required for permitted trees removed.

CONCLUSION

Of the 32 trees inventoried 18 are suitable for incorporation into the proposed plan. Fourteen will require removal, with 10 due to high construction impacts, including trees T51, locust, T53, T54, T55, T58, T60, T73, T76, T77 & T78, coast live oak. Four trees will require removal due to poor condition including, T52, locust, T56, T57 & T59, coast live oak.

The conceptual landscape plan shows 91 replacement trees. The replacement ratio (91 trees), is 6 to 1. The native oak replacement ratio (21 trees), is 1.5 to 1.

Based on the design criteria, tree preservation considerations and project site constraints, I believe the current plan set is consistent with good tree preservation objectives and recommend its approval.

RECOMMENDATIONS

1. Obtain all necessary permits prior to removing or significantly altering any trees on site.
2. Remove trees recommended for removal.
3. Follow tree protection specifications as detailed in this report, and copied on Tree Protection Plan, sheet T1.

Respectfully submitted,

Kurt Fouts

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



Pippin Phase 2, Atkinson Lane & Brewington Avenue

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

Retention or Removal 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

Protected Tree - City of Watsonville, Any tree 6 inches or greater in diameter measured at 4.5 feet above grade, per City of Watsonville, Sec. 13-7.32

Significant Tree- County of Santa Cruz, Any tree 20 inches or greater in diameter (in coastal zone), measured at 4.5 feet above grade per Santa Cruz County, Section 16.34.030. Other criteria may apply for regulated trees, if a discretionary permit review is required for a project.

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in City of Watsonville Parcel -APN: 019-236-01											
T50	glossy privet (<i>Ligustrum lucidum</i>)	8",7",7"	Yes	25'X15'	Fair	Fair	Fair	10'	Moderate (root loss, excavation)	R.T.	9' from E.V.A. road. Co-dominant trunks at 1' above grade. Minor deadwood and decay in lower trunk.
T51	purple robe locust (<i>Robinia</i> 'Purple Robe')	8"	Yes	25'X15'	Good	Good	Good	10'	High (within footprint of E.V.A. road)	R.I.	Young tree. Possibly planted as street tree. Plans for this area not available. Impacts not verified.
T52	purple robe locust	8"	Yes	25'X15'	Poor	Poor	Poor	N/A	N/A	R.C.	Possibly planted as street tree. Fallen tree, dead.
 <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 1 of 6				5/23/2021

Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in City of Watsonville Parcel - APN: 019-236-01											
T53	coast live oak (<i>Quercus agrifolia</i>)	5",4",4",4"	Yes	10'X10'	Good	Fair	Good	8'	High (Within foot print of bio facility)	R.I.	Within 50- setback.
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T54	coast live oak	28"	Yes	40'X40'	Fair	Fair	Fair	21'	High (within footprint of E.V.A. road)	R.I.	Within foot print of E.V.A. road. Co-dominant trunks at 8' above grade. 15 degree lean. Four primary scaffolds, two with included bark. One scaffold is girdled with rope.
T55	coast live oak	11" (at 3' above grade)	Yes	35'X20'	Fair-Poor	Fair	Fair	10'	High (within footprint of E.V.A. road)	R.I.	Within footprint of E.V.A. road. Growth suppressed by larger adjacent trees. Minimal live canopy with weight bias to west. Minor bleeding in lower trunk due to possible fungal infection.
T56	coast live oak	7"	Yes	35'X10'	Fair-Poor	Fair	Poor	8'	High (within footprint of E.V.A. road)	R.C./R.I.	Within footprint of E.V.A. road. Minimal branching structure and live canopy. Smaller secondary trunk is dead and decayed with fungal fruiting bodies present (<i>Annulohypoxyylon thouarsianum</i>)
T57	coast live oak	4",4",3"	Yes	10'X10'	Poor	Poor	Poor	8'	High (within footprint of E.V.A. road)	R.C./R.I.	Within footprint of E.V.A. road. Nearly dead. One live trunk with minimal (epicormic), leaf growth.
T58	coast live oak	14",12"	35'X25'	35'X25'	Fair	Fair	Fair	15'	High (within footprint of E.V.A. road)	R.I.	Within footprint of EVA road. Co-dominant trunks at 3' above grade, with included bark and minor decay at seam.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 2 of 6			5/23/2021	

Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T59	coast live oak (<i>Quercus agrifolia</i>)	11" (at 3' above grade)	Yes	15'X15'	Poor	Fair	Poor	10'	Moderate (root loss, compaction)	R.C.	5' from E.V.A. road. Growth suppressed by larger adjacent trees. Minimal foliar canopy. Missing bark in basal trunk area.
T60	coast live oak	14",10"	Yes	40'X15'	Fair	Fair	Fair	12'	High (within footprint of E.V.A. road)	R.I.	Within footprint of E.V.A. road. Co-dominant trunks at 1' above grade. Unbalanced canopy to west.
T61	coast live oak	11"	Yes	20'X15'	Fair	Fair	Fair	10'	Moderate (Root loss, compaction)	R.T.	8' from E.V.A. road. Growth suppressed by larger adjacent trees. Unbalanced canopy with weight bias to south. Deadwood and decay at old pruning scar in trunk basal area. Within 50-foot setback.
T62	coast live oak	12",10"	Yes	30'X30'	Good	Fair	Good	12'	Low	R.T.	Co-dominant trunks at 1' above grade with included bark. At edge of grove facing southwest. Siting has allowed good structural development and foliar canopy. Within 50-foot setback.
T63	coast live oak	10",8"	Yes	25'X25'	Fair	Fair	Fair	12'	Low	R.T.	Co-dominant trunks at 2' above grade. Unbalanced canopy to west. Bark separating and missing in trunk basal area. Probable fungal infection with moderate activity as evidenced by trunk bleeding in multiple locations. Within 50-foot setback.
T64	coast live oak	8",7"	Yes	20'X15'	Fair-Poor	Fair	Fair	10'	Low	R.T.	Co-dominant trunks at grade, with minor decay at union. Trunk bleeding in basal area, fungal pathogen suspected. Minimal live canopy. Within 50-foot setback.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 3 of 6				5/23/2021

Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments	
Trees in County of Santa Cruz Parcel - APN - 048-221-09												
T65	coast live oak (<i>Quercus agrifolia</i>)	11",10"	Yes	35'X35'	Fair	Fair	Fair	15'	Low	R.T.	Co-dominant trunks at 3' above grade.	
T66	coast live oak	22"	Yes	50'X40'	Fair	Good	Good	18'	Low	R.T.	Co-dominant trunks at 8' above grade. Within 50-foot setback.	
T67	coast live oak	11"	Yes	20'X10'	Fair	Fair-Poor	Fair	10'	Low	R.T.	Growth suppressed by larger adjacent tree (T65). Unbalanced canopy with weight bias and trunk bow to south. Within 50-foot setback.	
T68	coast live oak	10"	Yes	30'X15'	Fair-Poor	Fair	Fair	10'	Low	R.T.	Minimal live canopy. On edge of grove. Unbalanced canopy with weight bias and 15 degree trunk lean to west.	
T69	coast live oak	12"	Yes	35'X25'	Fair	Good	Good	12'	Low	R.T.	Co-dominant trunks at 7' above grade. Located 2' west of tree T70.	
T70	coast live oak	13"	Yes	35'X25'	Fair	Good	Good	13'	Low	R.T.	Located 2' south of tree T69.	
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 4 of 6					5/23/2021

Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T71	coast live oak <i>(Quercus agrifolia)</i>	13",12"	Yes	35'X35'	Fair	Fair	Fair	20'	Low	R.T.	Co-dominant trunks at 1' above grade, with included bark. At southeast edge of grove. Recommend cable between two trunks to improve stability in wind events.
T72	coast live oak	11",11", 10"	Yes	35'X30'	Good	Good	Good	20'	Moderate-High (root loss, excavation)	R.T.	9' from Building B. 10' from water line. Co-dominant trunks at 3' and 4' above grade. Stand alone tree, not part of 'grove'.
T73	coast live oak	10",6"	Yes	15'X15'	Good	Good	Good	12'	High (< 1' from EVA road)	R.I.	< 1' from EVA road. Co-dominant trunks at 1' above grade. Poison oak grows up trunk. Stand alone tree, not part of 'grove'.
T74	coast live oak	8 stems, 5- 9"	Yes	30'X25'	Good	Fair	Good	15'	Low	R.T.	Multiple trunks joined at grade. Within 50-foot setback.
T75	coast live oak	12",11", 9"	Yes	30'X20'	Fair	Fair	Fair	15'	Low	R.T.	Co-dominant trunks at 2' above grade. Adjacent to tree T74, south of 'grove'. Within 50-foot setback.
T76	coast live oak	20"	Yes	40'x40'	Fair	Good	Good	20'	High (Within foot print of parking lot)	R.I.	Boundary tree? Trunk flare extends across fence line. Canopy extends to ground.
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Pippin Phase 2, Atkinson Lane & Brewington Avenue

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (radius from trunk)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
Trees in County of Santa Cruz Parcel - APN - 048-221-09											
T77	coast live oak (<i>Quercus agrifolia</i>)	9",9"	Yes	20'X20'	Fair	Fair	Fair	10'	High (Within foot print of parking lot)	R.I.	Co-dominant trunks at grade. One trunk with significant lean. 8"X8" area of deadwood in trunk basal area from previous injury, but not significantly impacting health.
T78	coast live oak	20"	Yes	40'X40'	Good	Good	Good	20'	High (Within foot print of parking lot)	R.I.	Located 1' from fence line. Canopy extends to ground.
Trees in City of Watsonville Parcel -APN: 019-236-01											
T79 No tag	coast live oak	16" (estimated)	Yes	40'X25'	Good	Good	Good	15'	No site plan. Impact assessment pending plan.	R.T.	Site plan for this area not available. Limited access, partial assessment only. Within 50-foot wetland setback.
T80 No tag	coast live oak	10" (estimated)	Yes	10'X10'	Fair	Fair	Fair	10'	No site plan. Impact assessment pending plan.	R.T.	Site plan for this area not available. Limited access, partial assessment only. Growth is suppressed by larger adjacent tree, T80.
T81 No tag	coast live oak	16" (estimated)	Yes	30'X25'	Good	Good	Good	15'	No site plan. Impact assessment pending plan.	R.T.	Site plan for this area not available. Limited access, partial assessment only.
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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.

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, then 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.

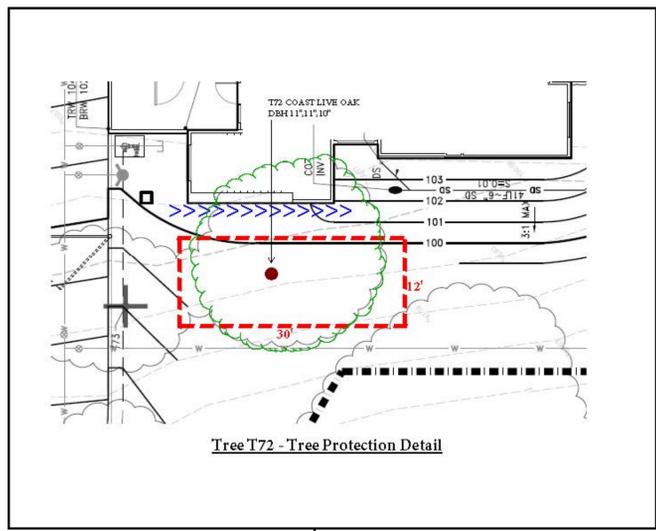
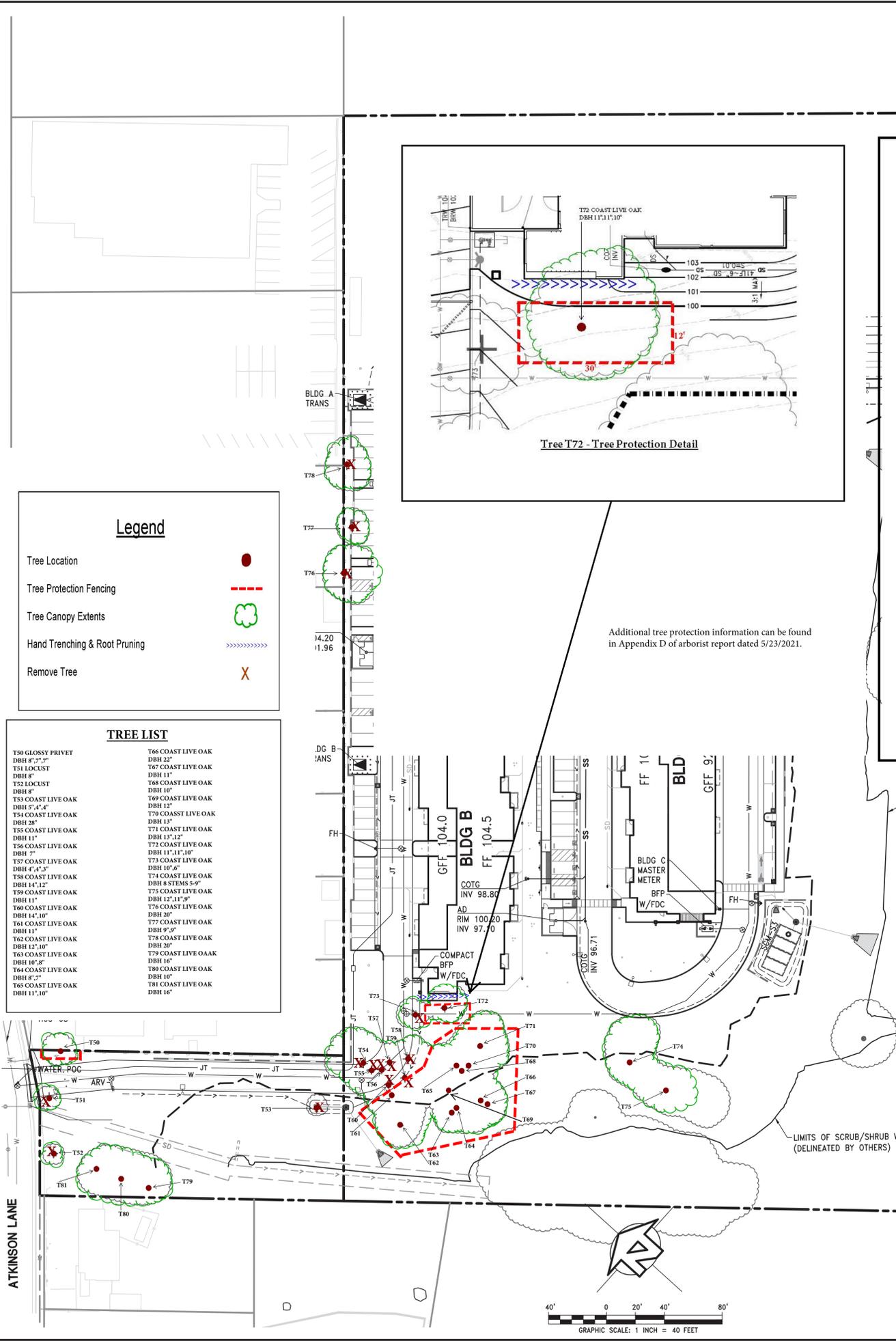
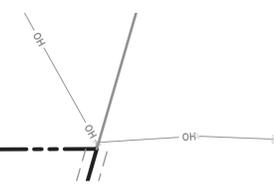
Moderate: Development elements proposed that are located within the Tree Protection Zone that will impact the health and/or stability of the tree and can be mitigated with tree protection treatments.

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.



Tree Protection Specifications & Recommended Sequence

- Demolition Phase:**
- Tree Removal** - All tree work, removal or pruning, 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. 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 Clearance Pruning** - Prune tree T72, coast live oak, by selectively removing or reducing the length of limbs growing towards Building B, to achieve a minimum of 4-foot clearance from the building, to allow for construction.

- Grading Phase:**
- Tree Protection Fencing** - Install Tree Protection Fencing, in location indicated on Tree Protection Plan Sheet T1, prior to beginning of grading.
 - Grading** - Grading within the tree canopy dripline of trees T61 and T72, coast live oak shall be by hand methods. Prior to grading in these areas, the Project Arborist shall be notified and a site meeting with the work crew shall occur. Hand grading and temporary tree protection fencing removal (if necessary), will be reviewed with the work crew. Once hand grading is completed, if the tree protection fencing was temporarily removed it shall be reinstalled.

- Construction Phase:**
- Domestic Water Lateral** - A "Ditchwitch" type trencher shall be used for installation of the water line for in the area within the tree canopy dripline (see Tree Protection Plan, sheet T1 for location). Any roots found 1" or greater in diameter shall be cleanly cut after use of the trencher is completed.
 - Building B Foundation** - Stake for Building B foundation closest to tree T72, coast live oak.
 - Prior to work in this area, the Project Arborist shall be notified and a site meeting with the work crew shall occur. The crew will be directed regarding hand excavation and root pruning methods.
 - A linear trench shall be dug just outside the stake line for the foundation, between the foundation and tree T72. The depth of the trench shall equal the depth required for the foundation or 18 inches, whichever is less.
 - Any roots found 1" or greater in diameter shall be cleanly cut with loppers, a handsaw or Sawzall. Roots shall be pruned by methods indicated on Tree Protection Plan sheet T2, *Pre-Construction Root Pruning*.

Additional tree protection information can be found in Appendix D of arborist report dated 5/23/2021.

LIMITS OF FORESTED WETLANDS (DELINEATED BY OTHERS)

LIMITS OF SCRUB/SHRUB WETLANDS (DELINEATED BY OTHERS)

Legend

- Tree Location ●
- Tree Protection Fencing - - -
- Tree Canopy Extents ○
- Hand Trenching & Root Pruning >>>>>>
- Remove Tree X

TREE LIST

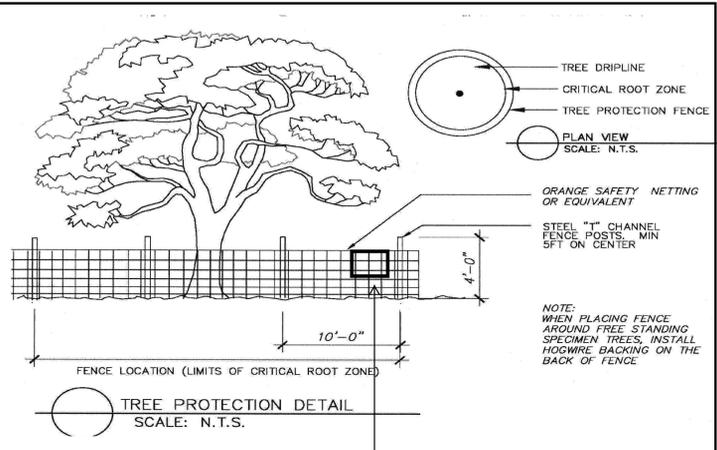
T50 GLOSSY PRIVET DBH 8", 7", 7"	T66 COAST LIVE OAK DBH 22"
T51 LOCUST DBH 8"	T67 COAST LIVE OAK DBH 11"
T52 LOCUST DBH 8"	T68 COAST LIVE OAK DBH 10"
T53 COAST LIVE OAK DBH 5", 4", 4"	T69 COAST LIVE OAK DBH 12"
T54 COAST LIVE OAK DBH 28"	T70 COAST LIVE OAK DBH 12"
T55 COAST LIVE OAK DBH 11"	T71 COAST LIVE OAK DBH 11", 11", 10"
T56 COAST LIVE OAK DBH 7"	T72 COAST LIVE OAK DBH 10", 9"
T57 COAST LIVE OAK DBH 4", 4", 3"	T73 COAST LIVE OAK DBH 12", 11", 9"
T58 COAST LIVE OAK DBH 14", 12"	T74 COAST LIVE OAK DBH 8 STEMS 5-9"
T59 COAST LIVE OAK DBH 11"	T75 COAST LIVE OAK DBH 17"
T60 COAST LIVE OAK DBH 14", 10"	T76 COAST LIVE OAK DBH 20"
T61 COAST LIVE OAK DBH 11"	T77 COAST LIVE OAK DBH 20"
T62 COAST LIVE OAK DBH 12", 10"	T78 COAST LIVE OAK DBH 9", 9"
T63 COAST LIVE OAK DBH 10", 8"	T79 COAST LIVE OAK DBH 16"
T64 COAST LIVE OAK DBH 8", 7"	T80 COAST LIVE OAK DBH 16"
T65 COAST LIVE OAK DBH 11", 10"	T81 COAST LIVE OAK DBH 16"

PRE-CONSTRUCTION ROOT PRUNING

Excavation shall only occur within the TPZ (Tree Protection Zone), of retained trees, when designated by the Project Arborist. Excavations within (or outside of the TPZ, as designated), the Tree Protection Zone, will be executed by hand, in order to preserve roots two (2") inches in diameter or greater during the excavation process. All root pruning will be conducted under supervision of the Project Arborist. These activities will be documented, and a monitoring report will be provided to the City Arborist. Under direction of the Project Arborist, it may be necessary to temporarily remove the Tree Protection Fencing to allow access for root pruning activities.

Trenches for root pruning will be hand dug according to locations of the Tree Protection Plan sheet:

- Trenches will be dug one foot behind staking on tree side of stakes.
- The depth of the trench will equal the depth required for installation of the adjacent element.
- Cleanly prune any roots encountered 2 inches in diameter or smaller. Use loppers, hand saw or Sawzall. A sharp spade may be used for palm roots. The pruned roots should be covered with burlap layers or carpeting and kept moist until the trench is backfilled.
- If roots are encountered 2" in diameter or greater, the Project Arborist shall be notified, and a determination shall be made to prune the root or retain the root depending on site specific conditions.
- Reinstall the Tree Protection Fencing to its original location.



Warning
Tree Protection Zone
Keep Out

NOTICE: PROTECTIVE FENCING IS REQUIRED ON THIS JOB SITE. REMOVAL OR DAMAGE OF THIS FENCING MAY RESULT IN A FINE

This sign must be prominently displayed. Fencing may not be moved or removed without permission of the Project Arborist. During demolition and construction, all reasonable steps necessary to prevent damage, or the destruction of protected trees is required. 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



Base map supplied by Ifland Engineers, Santa Cruz

Appendix D - 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.

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

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.

