Michael L. Bench
Consulting Arborist
ISA – WC 1897A

ARBORIST REPORT
AND
TREE PRESERVATION PLAN
190 WEST CLIFF DRIVE
SANTA CRUZ, CALIFORNIA

PREPARED AT THE REQUEST OF
JONI L. JANECKI AND ASSOCIATES
515 SWIFT STREET
SANTA CRUZ, CALIFORNIA 95060

PREPARED FOR
ENSEMBLE INVESTMENTS

PREPARED BY
MICHAEL L. BENCH
CONSULTING ARBORIST

IN COLLABORATION WITH
BARRIE D. COATE, HORTICULTURAL CONSULTANT

SITE OBSERVATIONS:
MAY 8, 2018

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Arborist Report
190 West Cliff Drive
Santa Cruz, California

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Arborist Report
190 West Cliff Drive
Santa Cruz, California

Assignment

I was asked by Joni L. Janecki, Landscape Architect, to prepare an Arborist Report concerning the existing trees at 190 West Cliff Drive, Santa Cruz, California. This report includes a visual assessment of each of the trees on the site and a Tree Protection Plan for the preservation of those trees planned to be preserved during construction.

The Plans provided for this review were: (1) Topographic Map and Boundary Survey, TP-1, 4-28-18, by Bowman & Williams, Civil Engineers; (2) Preliminary Grading Plan, C2.0, 2-2-18, by Bowman & Williams; (3)Preliminary Drainage Plan, C3.0, 2-2-18, by Bowman & Williams; (4) Preliminary Utility Plan, C5.0, 2-2-18; and (5) Landscape Site Plan, 3, Dated 2-27-18, by Joni L. Janecki & Associates.

Methods

I measured the trunks of the trees using a Diameter Tape at 4 ½ feet above soil grade (referred as DBH or Diameter at Breast Height), except those specimens whose form would not allow for a representative measurement at this height. The measurement for multi-stem specimens was taken below the lowest fork on the trunk when possible in accordance with the International Society of Arboriculture standards. The canopy height and spread (approximate diameter) were estimated using visual references only.

Observations

I inspected the trees at this site on May 8, 2018. The site is currently a parking lot. The existing trees are located in planter beds around the perimeter of the site and in parking islands.

This report updates an Inventory prepared by Barrie D. Coate, dated August 26, 2017. The numbering of the trees was originally done by Maureen Hamb, Certified Arborist. Mr. Coate used the same numbering sequence in his report. I have continued the same numbering sequence in this review. The locations of the trees are shown on the Tree Map, which is included in the Attachments to this report.

The report by Barrie D. Coate included 54 trees. I have added 4 trees, all relatively small to this inventory, for a total of 58 trees. The added specimens are Trees # 55-58. However, 3 Canary Island Date Palms (*Phoenix canariensis*) have been removed since Mr. Coate's inventory. These 3 removed palms are Trees # 44, 45 and 54. Thus, there are a total of 55 trees currently on the property. I included only existing trees on the Tree Map, and for that reason, the previous locations of Trees # 44, 45, and 54 are not included on this exhibit.

There are 55 trees on this property, which are included in this report.

The trees are listed by number on the attached Tree List, which follows this text. This list is a spreadsheet format, which provides the basic information about each tree, including the species, the trunk diameter(s), height, spread, health, an estimate of structural integrity, and whether or not it is a heritage tree. The health and structural integrity are rated separately, both on a scale of 1-5: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Extremely Poor. The purpose for this separation (health and structural integrity) is because it is possible for a tree to be in excellent health but have a poor or even a hazardous structure.

Comments about Specific Trees

The Yarwood sycamore (*Platanus acerifolia* 'Yarwood') trees are examples of good health, but poor structural integrity. All of these trees have been "Topped" since the Coate report, August 26, 2017. Coate had also reported that these trees had been topped.

This photo is Tree # 22. It is representative of all of the Yarwood sycamore trees at this site. They currently have no leaves or side branches. There is no canopy at this point. Each one has been "topped" at 8-10 feet. I expect that, by mid-summer, their canopies will be approximately 15 feet wide, possibly wider. However, most of these are not irrigated. How much they will grow after a 5-year drought, no current irrigation, and having been topped, is uncertain.

The Tree List lists the canopy spread as 15 feet for the Yarwood sycamores, because that is my estimate of leaf and watersprout branching production by mid-summer.

Almost all of the trees on site show symptoms of drought stress. According to the maintenance crew of K & D Landscape, which were on site when I took photos, the only planter beds that are irrigated are at the entrance to this parking lot. That would explain why the Yarwood sycamore trees adjacent to the entry are starting to push leaf and stem production, whereas there is no sign of similar growth among the other trees.

The surface soil is raked clean by the landscape maintenance crew and there is no organic material on the surface; if mulch were present, it would hold moisture for a longer period. This is seen in the following photo. It appears that this sandy soil dries quickly.

The reason I include these observations is to point out why the majority of the trees are suffering from significant drought stress. The severe pruning, particularly of the Yarwood sycamores and the Australian willow (*Geijera parvifolia*) trees, has augmented the stress.

The following photo of Australian Willow Tree # 34 shows a moderately sparse canopy. This is fairly typical of all of the Australian willow trees on site at this time. The reduced canopies are primarily a result of drought stress.

Since Mr. Coate's report, the tops of these trees have been reduced by 10 -15 feet.

This photo shows the trunk of Australian Willow Tree # 34. This tree has a long vertical seam between the two primary leaders, referred to as Co-Dominant Leaders with Imbedded Bark. This often results in the tree splitting apart. In this case, the actual attachment is about 18-24 inches above grade.

Several of the Pissardi Plum (*Prunus ceracifera* 'Pissardi') trees on site have this structural weakness, but the plum specimens typically are less likely to split apart.

The photo at right shows Trees # 5, 6, 7 (right to left) in the foreground with Tree # 32 (center) at a distance. A portion of Tree # 4 is seen in the lower right corner.

Tree # 5 is reasonably dense.

Tree # 6 is healthy, but only has canopy in the top 20% of its structure. This structure is more prone to wind throw failure, especially if Tree # 7 were to die or be removed. Tree # 7 appears to buffer the wind force somewhat.

The canopy of Tree # 7 is sparse except for the top of the canopy.

However, Tree # 7 is under attack by the red turpentine beetle (*Dendroctonus valens*). The photo on the left shows 2 exit holes. I counted 16 of these exit holes on the northeast side of the trunk. This insect attacks conifers that are suffering from drought stress. The larvae bore a gallery of tunnels in the vascular tissue, where eggs are hatched.

The gallery created by each individual red turpentine beetle cuts off a portion of the vascular system of the tree. The damage can typically be stopped by irrigating the tree. Because of the number of exit holes observed, I predict this tree will be dead in a year if no irrigation is provided or if the irrigation is insufficient.

The photo on the right shows Coast Redwood Tree # 4 (*Sequoia sempervirens*). The top 20-30 feet of the canopy is sparse. This is commonly caused by a lack of irrigation.

Tree # 32 (*Sequoia sempervirens*) is shown in the photo on the left. This specimen has a dense canopy to the top and appears to be faring better than many of the other trees on site.

Tree # 51 (*Sequoia sempervirens*) is seen on the left side of this photo on the right. Tree # 51 has a dense canopy that is only slightly less dense at the top, which would recover with irrigation. Overall this tree is in good condition.

The Mexican fan palm (*Washingtonia robusta*) Tree # 1 and the Canary Island date palm (*Phoenix canariensis*) Tree # 36 have not changed since August 2017. They both continue to be in excellent condition.

Risks to Trees By Proposed Construction

The plans propose to construct underground parking, parking on structure, a perimeter driveway on the west and north sides, retail shops, restaurants, hotel office, market hall, a residential lobby, and a central courtyard. The existing sidewalk will be replaced.

Tree # 1 is planned to be transplanted from its existing location to the central courtyard. Palms, as a general rule, have a high probability of successful transplant. Palms have a much higher chance of success when they are transplanted in hot weather, for example, mid summer, which is the opposite for transplanting broad leaf species.

Trees # 3, 4, and 5, located in planter beds along Bay Avenue, are planned to be retained in place. The existing wooden retaining walls adjacent to the sidewalk are planned to be removed and replaced. The details of the proposed new retaining walls are not available at this time. However, it will be essential that the new retaining walls be constructed with minimal change in the planter bed soil area, because there are likely roots from Trees # 3, 4, and 5 growing up to the existing retaining walls. It is likely that a dry stacked wall may be feasible. The project arborist must be on site at the time of demolition of the existing wood wall and provide recommendations for the construction of the new wall.

Tree # 36, located adjacent to West Cliff Drive, is planned to be retained in place. A retaining wall is planned to be constructed a few feet from the trunk of this tree. Because palms have fibrous roots, they can tolerate construction, including trenching, within a few feet of their trunks. If the soil cut for the footing of the retaining wall nearest this tree could be kept to a distance of 4 feet from the trunk, Tree # 36 would certainly survive in good condition.

The trunk of Tree #36 must not be injured during construction. Palms have no defense to fight trunk wounds, which in time become decayed.

All of the other trees are planned to be removed. The majority of these are in fair to poor condition. In my opinion, it would be futile to attempt to transplant Trees # 32 and # 51. I have consulted concerning the transplant of many large trees. Over time, I have come to the realization that the attempt to transplant trees over approximately 20 inches in diameter is a futile endeavor. In most cases, larger specimens, approximately 25 inches in diameter or larger, usually live for only a short time following transplant. The length of time in which the root ball must be kept thoroughly moist is much longer for large trees, which makes them more susceptible to root collar disease. The chances of successfully transplanting a very large tree appear to be better by the methods used approximately a century ago. In those times, roots of large trees were cut in stages over a year or more in order to force new absorbing roots to grow closer to the trunk. The standard method today is to cut the root ball, to box, and to transplant a tree in a few days, sometimes on the same day. The equipment available today makes this process

more immediate. In my opinion, the fast method used today has a much lower long-term success rate for larger trees.

No underground electrical lines or vaults are shown to be proposed near Trees # 3, 4, 5, or 36. The engineering firm confirmed this observation.

A Storm Drain Junction Box is shown on the east side of Tree # 3 outside the dripline. This appears feasible without mitigation.

The Sanitary Sewer line is shown to be installed between Trees # 4 and # 5. The existing area is a paved entry to the existing parking lot. Because there is no heaving of the paving in this area, it is unlikely that this service would pose a significant problem for either Tree # 4 or # 5.

A water service main line and backflow assembly is shown to be installed on the west side of Tree # 5 near the dripline. There must be no trenching or excavation for this service inside the dripline of Tree # 5, without the on-site presence of the Project Arborist to provide mitigation recommendations.

The existing sidewalk is planned to be removed and replaced. The Project Arborist must be on site at the time of demolition of the existing sidewalk to provide assessment of risk to Trees # 3, 4, 5, and 36, and to provide recommendations for mitigation if required.

The width of the existing planter beds, in which Trees # 3, 4, and 5 exist, is not planned to be reduced. By this I mean the existing soil area width. A deck is proposed to cover a portion of the soil within these planter beds, but a deck constructed by pier and above grade beam design can be done without significant damage to the trees. The digging of piers would pose a risk of root damage, which must be avoided. To achieve this, the first 24-36 inches in depth must be dug by hand or using an Air-Spade. If any roots are encountered, the Project Arborist must assess the potential damage and provide recommendations. Often it requires that the pier be relocated a few inches. In some cases, an extra pier or more may be required to meet the structural requirements.

Trenching for the irrigation main line may be done up to the driplines of Trees # 3, 4, 5 and within 4 feet of Tree # 36. The lateral lines inside the driplines must be installed on the soil surface.

Tree Protection Plan

1. Tree Protection Zones (TPZ)

I recommend to protect the critical root zones of the existing trees by protecting the areas inside the driplines of Trees # 3, 4, and 5; this translates to 20-foot, 18-foot, and 20-foot radii, respectively. For Tree # 36, a 4-foot soil radius around the trunk would be sufficient for protection. In areas where this level of protection cannot be achieved for construction, it would be essential to require a Project Arborist to consult, plan, and supervise high risk procedures.

2. Tree Protection Fencing

I recommend that Tree Protection Fencing be located at the driplines of Trees # 3, 4, and 5. For Tree # 1 and Tree # 36, I recommend locating Tree Protective Fencing a radius distance of 4 feet from the trunk or at the edge of the sidewalk along W. Cliff Drive. Any changes must be approved by the Project Arborist. Fencing must:

- Consist of chain link fencing and having a minimum height of 6 feet.
- Be mounted on steel posts driven approximately 18 inches into the soil.
- Have fencing posts located a maximum of 10 feet on center.
- Be installed prior to the arrival of materials, vehicles, or equipment.
- Not be moved, even temporarily, and must remain in place until all construction is completed, unless approved by the Project Arborist.

Any other exception or requests to relocate the protective fencing, even temporarily, must be approved by the Project Arborist.

The provision of Tree Protective Fencing for Tree # 1 would depend on whether or not this tree would be boxed and stored on or off site.

3. Fencing Warning Signs

Plastic coated warning signs must be posted prominently on each fence. The signs must be a minimum of 8.5 x 11 inches and clearly state: **Warning – Tree Protective Zone - This fence shall not be removed and their removal is subject to a penalty.**

4. Trunk Wrap Protection

The trunk of Tree # 36 must be protected due to its height. It must not be struck or damaged by tall equipment (e.g. a crane, loader, or other tall equipment). This same protection would be required for the palm Tree #1, depending on the timing of boxing and location of storage, if stored on or off site. The following trunk wrap protection must be installed in addition to tree protective fencing:

a. Wrap the trunk with straw waddle (commonly used for erosion control). Coil around the trunk to a height of 8 feet above grade. Secure the straw waddle without damaging the trunk of the tree.
b. Wrap the straw waddle with a double layer of orange plastic barrier fencing. Secure the plastic material to prevent uncoiling.
c. No nails or other materials may be used to affix the wattle and/or netting to the trunk. Trunk injuries are permanently damaging to palms.

5. Tree Pruning

In the event that any of the protected Trees # 3, 4, 5, or 36 would require pruning to provide access for construction vehicles, for structural clearance, or for any other purpose, the following requirements must be satisfied:

a. The proposed pruning must be approved by the Project Arborist prior to any pruning. Pruning may require additional mitigation procedures, which would be mandatory in accordance with the Project Arborist's instructions.
b. The removal of 25% or greater of the canopy (i.e., the functioning leaf and vascular system) must be approved by the City Arborist.
c. Any pruning must be done only by an ISA-certified arborist or an ISA-certified tree worker under the supervision of the Project Arborist.
d. Any pruning must be done by an arborist certified by the ISA (International Society of Arboriculture) and the pruning must be done according to ISA ANSI A300 standards (2008) and according to Western Chapter Standards, 1998.

6. Reporting of Damage to Trees

Damage is defined as any injury to a protected tree. Some examples include bruising, scarring, tearing of the bark or the trunk; breaking, tearing, bruising of branches or roots; excessive pruning; herbicide poisoning; or any action in which permanent decline or death could occur. Any damage must be reported to the Project Arborist during the same day. The Project Arborist must prepare written documentation of the damage and recommend remediation, which must be provide to the Project Manager and to the City Arborist or designated City Official.

7. Demolition

The demolition of the infrastructure inside the driplines of Trees # 3, 4, or 5 must be done with the supervision of and in the presence of the Project Arborist. The scheduling of demolition inside the dripline must be done well in advance so that the Project Arborist would be able to be present.

8. Demolition of Paving or Sidewalk

Demolition of paving or of sidewalk inside the driplines of Trees # 3, 4, or 5 requires that the loader or backhoe tractor be located on and remain on the undisturbed pavement at all times. That is, the loader or tractor **must not** be driven over the bare soil inside the driplines of these protected trees. The pavement or concrete must be broken into manageable pieces and be loaded by hand. The Project Arborist must be scheduled to be on site at least at the initiation of this demolition.

9. Irrigation

Temporary irrigation must be provided to Trees # 1, 3, 4, 5 and 36 during the entire construction process. The soil must be irrigated to moisten the soil to a depth of 24 inches every 2 weeks during the construction period. During construction, trees must be irrigated on schedule regardless of rainfall.

10. Permanent Irrigation
Permanent irrigation must be installed to all of the Trees # 1, 3, 4, 5, and 36, but these must not be on the same schedule as the different species have different requirements. After establishment, the palm Trees # 1, # 36 and the Deodar Cedar # 3 must be irrigated monthly. The Coast Redwood Trees # 4 and 5 must be irrigated every 2 weeks post construction, if they are expected to stay healthy.

11. Mulching
At the onset of construction, an initial layer of wood chips shall be applied by hand to a depth of six inches in all areas of the root zones of Trees # 3, 4, and 5 inside the driplines. This layer should settle to about four inches, which is the thickness to be maintained for the entire construction project. The thickness of this mulching shall be documented by the Project Arborist in writing.

12. Soil Compaction
In the event that soil compaction should occur inside the driplines of Trees # 3, 4, or 5, a mitigation plan may be required after inspection by the Project Arborist. Preparation of the mitigation plan would be done by the Project Arborist, if required.

13. Root Protection
Roots 2 inches in diameter or larger must not be severed. To assure this, trenching or excavation inside the TPZ of any tree must be done by one of the following methods:

a. an air spade
b. a water excavation spade
c. boring technology

The use of a backhoe, an excavator, or conventional trencher is prohibited, unless supervised by the Project Arborist.

Trenching or boring (tunneling) must be supervised by the Project Arborist.

14. Root Buffer
At the time of the construction of the new buildings along Bay Avenue, it may be necessary to relocate the Tree Protective Fencing to provide access for the work. In this case, the area of the soil between the relocated Tree Protective Fencing and the footings of the buildings may require a root buffer, depending on the work and equipment required. If necessary, the root buffer may be required by the Project Arborist. A root buffer consists of a base of 6 inches of wood chips, topped by a layer of filter fabric, covered by ¾ inch clean quarry gravel, and capped by 1-inch plywood (full sheets) tied together. The installation of a root buffer must be supervised by the Project Arborist.

15. Root Injury
In the event that a 2-inch diameter or larger root becomes inadvertently severed or torn, it must not dry out or it may die back to the trunk. To prevent desiccation, the end of the root must be cut cleanly back to undisturbed wood and the exposed wound must be sealed immediately either with a plastic bag, which must be secured, or sealed with latex paint. The Project Arborist must be notified within the same working day of injury.

16. Branch or Bark Injury
In the event of a bark wound, a broken or torn branch, or heat scorched leaves from equipment exhaust, the repair work must be done by an ISA-Certified Arborist. The Project Arborist must be notified within the same working day of injury.

17. Grading
The use of grading equipment or grade changes must not be done inside the driplines of Trees # 3, 4, and 5, except as shown on the plan to excavate for the underground garage. Exceptions must be approved and supervised by the Project Arborist.

18. Transplanting
A plan for the transplant of Tree # 1 shall be prepared by the Project Arborist, prior to transplant. The preparation for transplanting, digging, boxing, transporting, and replanting must be done by a qualified tree mover. Aftercare standards and procedures must be prepared by the Project Arborist at the time of transplant.

19. Project Arborist
It shall be the responsibility of the owner or appropriate parties to retain a Project Arborist for the purpose of providing consultation and on-site supervision to assure that the existing Trees # 1, 3, 4, 5 and 36 survive at least in their present condition.

20. Inspections and Documentation
The City may require inspections to be done by the Project Arborist. The frequency of inspections, if required, shall be determined by the City management. All recommendations by the Project Arborist, including inspections, must be documented in writing and forwarded to the Designated City Official.

21. Tree Protection Plans

The Arborist's Report and Tree Protection Plan must be printed and available for review at the construction site at all times. The on-site Project Supervisor shall be responsible for communicating the contents of the Tree Protection Plan with contractors and sub-contractors. The Project Supervisor must communicate to the Project Arborist with sufficient advance notice the timing of construction events at which the Project Arborist's attendance would be required.

Respectfully submitted,

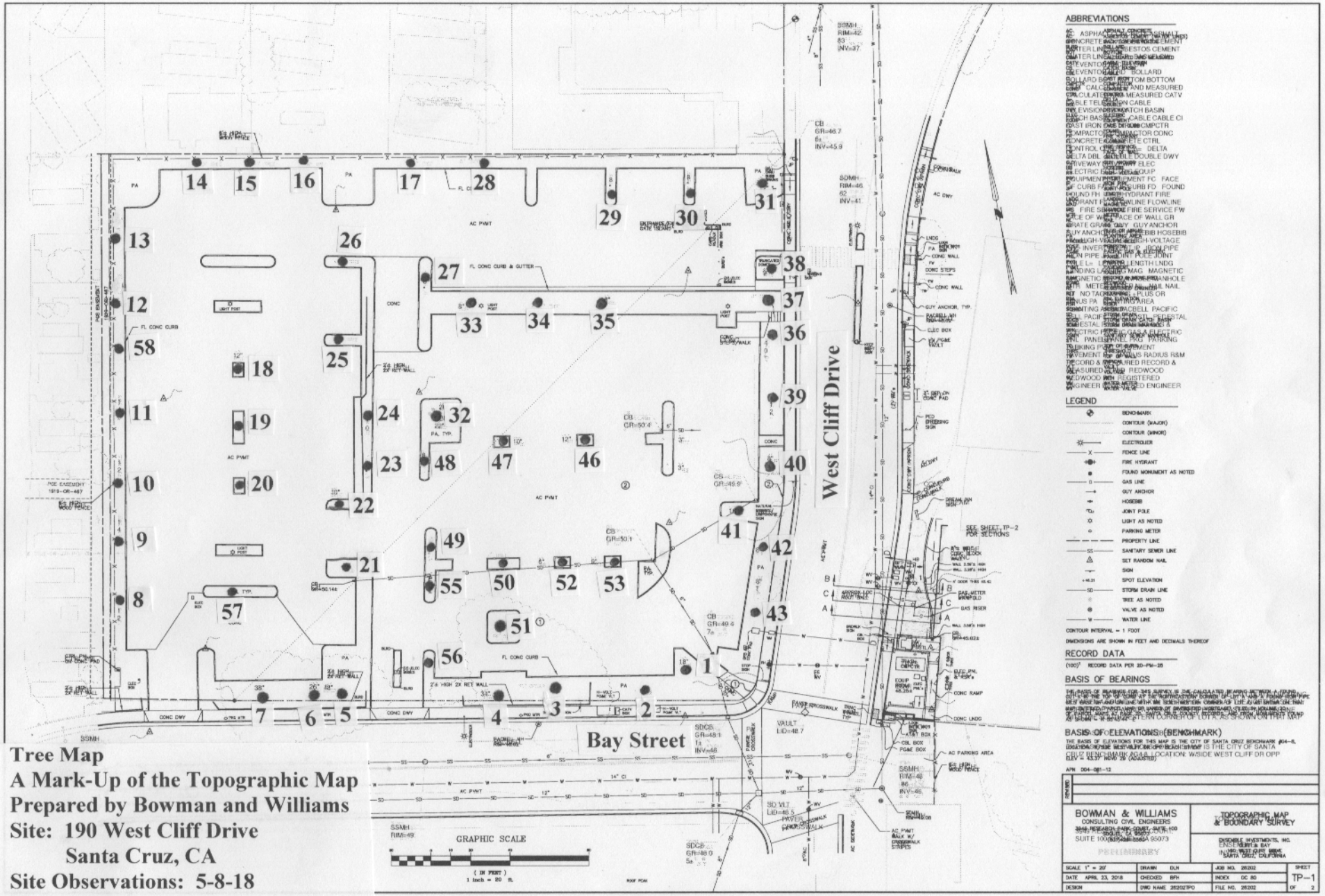
Michael L. Bench, Consulting Arborist
International Society of Arboriculture Certification # WE 1897A
American Society of Consulting Arborists Member

In Collaboration With:
Barrie D. Coate, Horticulture Consultant

Attachments: Tree List (2 Pages)
Tree Map
Photos of Trees Added to the Inventory
Assumptions and Limiting Conditions Declaration

	Field Data Sheet	Trunk DBH	Heritage Tree Per City Of Santa Cruz	Canopy Size (Feet) Approx.	Condition Rating: 1 - 5 1=Excellent 2=Good 3=Fair 4=Poor 5=Very Poor	Verbal Desc: Combined Health & Structural Integrity	DBH = Diameter at 54 inches (EG) = Estimated Growth This Year CD w/ IB = Co-Dominant Leaders with Imbedded Bark, a Structural Weakness (BF) = Below Lowest Fork
Tree #	**Tree Name**	**DBH (Inches)**	**Yes / No**	**Height / Spread**	**Health / Structure**	**Overall Condition**	**Notes**
1	Mexican Fan Palm (Washingtonia robusta)	15.4	Yes	50 / 15	1 / 1	Excellent	
2	Australian Willow (Geijera parvifolia)	8.9	No	10 / 12	2 / 4	Fair	Topped Crown
3	Deodar Cedar (Cedrus deodara)	51.4	Yes	100 / 50	1 / 3	Good	
4	Coast Redwood (Sequoia sempervirens)	36.3	Yes	75 / 30	3 / 3	Fair	Top 30' of Canopy Sparse and Branch Dieback
5	Coast Redwood	50.3	Yes	85 / 30	1 / 2	Good	Slightly Less Dense at Top
6	Canary Island Pine (Pinus canariensis)	29.4	Yes	90 / 45	1 / 2	Good	Lion's Tail Structure - 80% Canopy in Top 20% of Structure
7	Canary Island Pine	44.6	Yes	110 / 50	3 / 2	Fair	Red Turpentine Beetle - 16 Exit Holes
8	Yarwood Sycamore (Platanus acerifolia 'Yarwood')	15.5	Yes	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
9	Yarwood Sycamore	16.8	Yes	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
10	Yarwood Sycamore	14.5	Yes	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
11	Australian Willow	17.2 (BF)	Yes	15 / 20	1 / 3	Good	
12	Australian Willow	12.4 (BF)	No	15 / 20	1 / 3	Good	
13	Yarwood Sycamore	13.4	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
14	Pissardi Plum (Prunus cerasifera 'Pissardi')	13.2 (BF)	No	10 / 10	1 / 3	Good	Topped Crown
15	Pissardi Plum	12.0 (BF)	No	10 / 10	4 / 4	Poor	Major Sunscald Damage on Trunk; Canopy Die-Back; Trunk Decay
16	Pissardi Plum	10.8 (BF)	No	10 / 10	3 / 4	Fair	Sparse Canopy
17	Pissardi Plum	11.0 (BF)	No	10 / 15	2 / 2	Fair	Moderately Sparse Canopy
18	Yarwood Sycamore	13.8	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
19	Yarwood Sycamore	13.7	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
20	Yarwood Sycamore	13.6	No	10 / 15 (E)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
21	Yarwood Sycamore	8.7	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
22	Yarwood Sycamore	11.9	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
23	Yarwood Sycamore	10.6	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
24	Yarwood Sycamore	12.1	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
25	Yarwood Sycamore	12.8	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
26	Yarwood Sycamore	14.3	Yes	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
27	Canadian Redbud (Cercis canadensis)	8.7	No	10 / 15	3 / 1	Fair	Canopy Die-Back
28	Pissardi Plum	8.3	No	10 / 12	2 / 2	Fair	Moderately Sparse Canopy
29	Australian Willow	9.9	No	15 / 15	2 / 2	Fair	Canopy Die-Back
30	Australian Willow	8.0	No	10 / 15	2 / 2	Fair	Canopy Die-Back

	Field Data Sheet	Trunk DBH	Heritage Tree Per City Of Santa Cruz	Canopy Size (Feet) Approx.	Condition Rating: 1 - 5 1=Excellent 2=Good 3=Fair 4=Poor 5=Very Poor	Verbal Desc: Combined Health & Structural Integrity	DBH = Diameter at 54 inches (EG) = Estimated Growth This Year CD w/ IB = Co-Dominant Leaders with Imbedded Bark, a Structural Weakness (BF) = Below Lowest Fork
Tree #	**Tree Name**	**DBH (Inches)**	**Yes / No**	**Height / Spread**	**Health / Structure**	**Overall Condition**	**Notes**
31	Yarwood Sycamore (Platanus acerifolia 'Yarwood'	13.3	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
32	Coast Redwood (Sequoia sempervirens)	34.4 / 24.5 /	Yes	65 / 25	1 / 4	Fair	
33	Australian Willow (Geijera parvifolia)	9.9	No	15 / 20	2 / 3	Fair	
34	Australian Willow	15.1	Yes	15 / 25	2 / 4	Fair-Poor	Sparse Canopy; CD w/ IB of Primary Leaders
35	Australian Willow	10.7	No	15 / 20	2 / 3	Fair	
36	Canary Island Date Palm (Phoenix canariensis)	31.0	Yes	40 / 35	1 / 1	Excellent	
37	Yarwood Sycamore	6.6	No	8 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
38	Yarwood Sycamore	10.6	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
39	Australian Willow	14.6	Yes	15 / 25	2 / 4	Fair	
40	Australian Willow	9.6	No	15 / 20	2 / 3	Fair	
41	Yarwood Sycamore	10.9	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
42	Australian Willow	9.9	No	10 / 20	2 / 3	Fair	
43	Australian Willow	9.4	No	15 / 20	2 / 3	Fair	
44	Canary Island Date Palm (Phoenix canariensis)	-------	-------	-------	-------	-------	Previously Removed
45	Canary Island Date Palm	-------	-------	-------	-------	-------	Previously Removed
46	Yarwood Sycamore	14.8	Yes	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
47	Yarwood Sycamore	11.6	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
48	Canadian Redbud (Cercis canadensis)	6.8	No	10 / 15	5 / 3	Poor	Cracks on Trunk at Base; Sparse Canopy; Canopy Die-Back
49	Canadian Redbud	7.0	No	10 / 10	3 / 2	Fair	
50	Yarwood Sycamore	7.7	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
51	Coast Redwood	48.7	Yes	85 / 30	1 / 2	Good	
52	Yarwood Sycamore	7.2	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
53	Yarwood Sycamore	10.1	No	10 / 15 (EG)	1 / 4	Fair	Topped Crown - Poor Structural Integrity
54	Canary Island Date Palm	-------	-------	-------	-------	-------	Previously Removed
55	Canadian Redbud	4.8	No	10 / 10	4 / 1	Poor	Sparse Canopy
56	Yarwood Sycamore	4.8	No	8 / 10 (EG)	2 / 4	Poor	Topped Crown - Poor Structural Integrity
57	Canadian Redbud	6.1	No	10 / 12	4 / 4	Poor	Sparse Canopy; Girdling Roots
58	Norfolk Island Pine (Araucaria heterophylla)	6.6	No	20 / 10	1 / 1	Excellent	



Tree Map
A Mark-Up of the Topographic Map
Prepared by Bowman and Williams
Site: 190 West Cliff Drive
Santa Cruz, CA
Site Observations: 5-8-18
Michael L. Bench
Consulting Arborist

190 W. Cliff Dr.
Santa Cruz, California

Photos of Trees Added to the Tree Inventory

It appears these four trees were not included in the Coate Inventory because of their small size.

Tree # 55, a Canadian redbud (*Cercis Canadensis*).

Tree # 56, Yarwood sycamore (*Platanus acerifolia* 'Yarwood')

Prepared by Michael L. Bench,
Consulting Arborist

Site Observations:
May 8, 2018

190 W. Cliff Dr.
Santa Cruz, California

Tree # 57, a Canadian Redbud (*Cercis Canadensis*). The sparse canopy and die-back may be partially explained by the fact this tree has girdling roots, as seen in the photo below of its root collar.

Tree # 58, Norfolk Island Pine (*Araucaria heterophylla*). This tree is in excellent condition. It is a species that can become very large.

Prepared by Michael L. Bench,
Consulting Arborist

Site Observations:
May 8, 2018

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Site Observation: May 8, 2018

Subject: ENSEMBLE Investments
Project Site: 190 West Cliff Drive
Santa Cruz, California

Assumptions and Limiting Conditions

1. Any description provided to the consulting arborist/appraiser is assumed to be correct. No responsibility is assumed for legal matters in character nor is any opinion rendered as to the quality of any title.

2. The consulting arborist/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

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7. Sketches, diagrams, graphs, photos, etc., in this report are intended as visual aides and are not done necessarily to scale and should not be construed as engineering information or specifications.

8. This report makes every attempt to be in conformity with generally acceptable evaluation/diagnostic/appraisal methods and procedures, as recommended by the International Society of Arboriculture.

9. No tree described in this report/evaluation has been climbed, unless otherwise stated. As such, structural defects that could only have been discovered by climbing are not reported. Likewise, a full root collar inspection, consisting of the excavation of soil around the tree for the purpose of uncovering major root defects/weaknesses, has not been performed, unless otherwise stated. I take no responsibility for any root defects, which were not uncovered by such an inspection.

Consulting Arborist Disclosure Statement
As a consulting arborist, I provide opinions, recommendations, and appraisals about trees based on observations, information provided, education, and experience. I recommend procedures in the attempt to reduce the risk of branch and tree failures, to improve the health of trees, and/or to enhance the beauty of trees. Clients my choose to accept or to disregard my recommendations, or may seek the advice of others.

I cannot detect every defect or condition, which may cause a structural failure of a tree. Trees are living organisms, highly variable and subject to numerous environmental influences. Trees sometimes fail unpredictably in ways we do not fully understand. Conditions, flaws, or weaknesses are often hidden inside stems/trunks or below ground and, thus, elude detection. I cannot guarantee the health and safety of any tree. Likewise, remedial treatments, like medicine, cannot be guaranteed.

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