

BALCERAK DESIGN

LANDSCAPE ARCHITECTURE • URBAN FORESTRY

608 Beaver Street Santa Rosa, CA 95404 (707)573-8234

ARBORIST'S REPORT

52 FREMONT ROAD

SAN RAFAEL, CALIFORNIA

April 5, 2019

Revised: February 17, 2020

BALCERAK DESIGN

LANDSCAPE ARCHITECTURE • URBAN FORESTRY
608 Beaver Street Santa Rosa, CA 95404 (707)573-8234

February 17, 2020

Chris Dluzak
3877 Gravenstein Highway South
Sebastopol, CA 95472

INTRODUCTION

The property at 52 Fremont Road (APN: 012-043-12), in the City of San Rafael, is currently an undeveloped lot. The development proposal is to construct a single-family residence with attached garage, driveway, and associated improvements.

This Report has been prepared to address the tree removal and replanting requirements contained in the Design Standards and Guidelines for Hillside Residential Development (Standards). In accordance with the Standards, all living trees over 12" in circumference that would be impacted by the proposed project, were evaluated for this Report. This includes trees in severe decline and those with serious structural defects. The trees were observed to determine their species and trunk diameter.

The Site Plan for the project has changed considerably since this Report was issued. As a result, this Report has been revised to address the probable impacts to the existing trees based upon the current development proposal. The construction impacts are based upon the Grading Plan prepared by Balcerak Design, dated February 10, 2020.

The evaluations are based upon a visual inspection of the trees, from ground level. No crown explorations or climbing inspections were performed. A detailed analysis was not requested, nor performed. The evaluations do not take into consideration the aesthetics of any individual tree, therefore should not be used as a means of appraising the intrinsic value of any tree.

Of the 20 trees observed for this Report, 14 are proposed for removal to accommodate the development proposal. A detailed description of each tree can be found in the Tree Evaluation section of this Report. Guidelines for tree protection during construction and general tree preservation measures are contained within the Report. A Tree Exhibit showing the location of the existing trees and their identification numbers has been provided for reference. A glossary of the terms used is provided at the end of this Report.

SITE DESCRIPTION

The site is approximately 0.15 acre and has a north, northeast aspect, and slopes up at approximately 40% from Marquard Avenue. The subject property is contained within an existing residential neighborhood. The predominant native trees in the area are Coast Redwoods (*Sequoia sempervirens*) with associated California Bay (*Umbellularia californica*); the understory consists

of grasses and forbs. As is common of northerly facing slopes of Redwood plant communities, the subject property has limited available sunlight. At the northern edge of the subject property there are a number of Cherry Plum (*Prunus cerasifera*) trees. The California Invasive Plant Council (Cal-IPC) has rated this tree as a species of concern as it appears to be naturalizing in some local areas and has the potential to displace native species. It should be noted that Marin County has been identified as an area where this species is spreading.

All of the Coast Redwood trees observed had copious numbers of suckers associated with them. This is a common response from Coast Redwood trees when more sunlight becomes available. It appears that the site was overgrown with woody shrubs, Scotch Broom (*Cytisus scoparius*) was noted in the area, and then cleared allowing the Redwoods to take advantage of the additional light.

English Ivy (*Hedera helix*) was noted on the eastern edge of the subject property and the neighboring property. The Cal-IPC has ranked English Ivy as a species of high concern because of its severe ecological impacts on plant communities and rapid rate of reproduction. Native to Europe this plant has become a noxious weed in the cool, moist environments of California's coniferous forests. By the use of its aerial roots, English Ivy will attach to a tree's trunks and climb into the canopy. Its presence deprives the tree of the essential sunlight required, and also allows moisture to build up against the tree's bark and may promote rot. In advanced cases, the weight alone may result in limb failures. The removal of the English Ivy would be a benefit to the trees and would enhance the ecological services of the subject property.

METHODS

A field observation was performed on January 15, 2018 to observe the trees. The species identification was determined based upon visual analysis of the features present at the time of the observation. All tree diameters were recorded using a standard diameter tape with units in feet and tenths of feet. Trees were measured at 4.5' off natural grade, referred to as Diameter at Breast Height (DBH). When a tree had a crotch below DBH, the smallest trunk diameter below the crotch was measured and its height above natural grade was recorded. When the tree had more than one discrete trunk, each trunk was measured individually. The site had a tree inventory performed in the past at some point as some of the trees have existing tree tag numbers. For trees that had been previously tagged the old inventory numbers are shown in the Tree Evaluations. See the Tree Exhibit for the location of the trees and their number corresponding to the Tree Evaluations section of this Report.

The overall condition of each tree is represented by its vigor and structure. Vigor is an indication of the overall vitality and relative capacity of that tree to increase in size. Vigor corresponds to the ability of that species, and individual, to compartmentalize decay fungi and

resist other pathogens. The site conditions, other plants growing in the area, and cultural care the tree has received over time also have a profound influence on vigor. Structure refers to the physical form of the tree and is inferred by an examination of the bark, branches, leaves, flowers, or fruit. Observing the branch attachment, presence of decay (estimating to what degree decay has been compartmentalized), and mechanical damage the tree has suffered in the past are all important in evaluating tree structure. Principally, structure is an evaluation of the risk potential of parts of the tree to fail, however it should not be confused with a Risk Analysis, which is a far more extensive inspection of an individual tree. Each tree has been rated, in each category, using a value of good, fair, or poor.

DISCUSSION

A total of 20 trees have been evaluated for this Report, consisting of three different species. Only the Cherry Plum (*Prunus cerasifera*) is exotic to California. The other species Coast Redwood (*Sequoia sempervirens*) and California Bay (*Umbellularia californica*) are native to California and Marin County. See the section below entitled Tree Species Encountered for additional information.

Because the issue of who owns and controls the management of an individual tree is so commonly misunderstood, a few words on the subject are in order. The ownership of a tree is determined by where the trunk is located, regardless of the foliage or roots. When a tree trunk is found solely on one property that property owner has complete ownership of the tree. In a case where the property line passes through some portion of the trunk, then the tree is referred to as a boundary tree. California law states “trees whose trunks stand partly on the land of two or more coterminous owners, belong to them in common”. Therefore, neither owner may unilaterally undertake any action that would be detrimental to the tree. Tree #20 is a boundary tree.

Roots are opportunistic and will grow wherever possible and extend where they can to support the tree. It is impossible to know how many roots, and of what size, will be encountered during the grading operations. Given the clear limitations regarding root location, extent, and total mass, all trees should be observed during and post grading operations so that additional recommendations and mitigation measures can be offered by the Project Arborist.

Because subsurface conditions are unknown, including root locations, and construction methods vary significantly, it is impossible to accurately predict the impacts upon any individual tree prior to completing all of the work. Therefore, it is recommended that a post construction observation, and if warranted a complete Risk Analysis, be made for all trees prior to occupying the residence.

TREE SPECIES ENCOUNTERED

Coast Redwood trees are naturally restricted to a narrow strip of fog belt along the coastline, from near the southern border of Oregon to the southern tip of Monterey County. They are long living trees that can ultimately reach heights of over 350' high in the wild, the tallest tree in the world. In urban zones they may quickly grow 70' to 90' with a branch spread of 15' to 30'. Coast Redwoods are adaptable to site disturbances, including fill soil conditions. In nature, this factor allows them to be competitive with other tree species following disturbances such as landslides and flooding.

California Bay trees are found in California extending to the southwest corner of Oregon. This large, evergreen tree has strong aromatic leaves; they can be used to replace the culinary spice, bay leaves. The California Bay tree will commonly have multiple trunks and sprout vigorously from the trunk or roots following mechanical damage. The ultimate size is 30' to 70' tall, often with a greater spread. This tree is found in forests and woodlands below 5000' throughout much of California. This species is tolerant of clay and serpentine soils. It has a moderate tolerance for site disturbances generally, but is intolerant of fill soil.

Cherry Plum is a deciduous tree that is native to Eurasia but its many cultivars are widely grown. This tree is most commonly a small statured tree with a mature height of 20' and a spread of 15'. The yellow to dark red fruits are distributed widely by people, birds, raccoons, and other wildlife. This tree has escaped cultivation, and has been listed by the Cal-IPC as having a limited impact on native vegetation communities. Control cannot be achieved by simply cutting trees down, as the plant will resprout from trunks and roots. The use of a stump grinder is generally sufficient to eradicate an individual tree.

DEMOLITION AND TREE PROTECTION

The goal is not merely to have the trees survive the construction impacts but to protect them sufficiently that they are long-term assets to the property. Trees that are not properly protected during construction, or are inadequately maintained after construction, will become a liability.

Prior to the initiation of any construction activity, temporary protective fencing shall be erected in the construction area. Fencing shall be placed as shown on the Tree Plan (T-1). Fencing shall encroach into the dripline only as is necessary to perform approved construction operations. Fencing shall be a minimum of four feet high, and shall form a continuous barrier around the tree or trees to be protected. Fencing shall be tensor plastic fencing or approved equal. Fencing installation shall be performed by qualified personnel with all necessary supports and braces to provide a secure fence throughout the construction process. The final fence location

shall be based upon field staking of the improvements, the project arborist shall approve fence location. The fence shall not be removed during the construction process without authorization from the project arborist. All equipment and personnel shall remain outside the fenced area at all times; the storage of materials (of any kind) is prohibited.

All work shall be performed by International Society of Arboriculture (ISA) certified tree workers experienced in tree preservation and demolition. All work shall conform to the latest edition of the ANSI Z133 and A300 standards, as well as the *Best Management Practices – Tree Pruning*, published in 2002 by the International Society of Arboriculture (ISA). Trees to be removed shall be felled in such a way that they fall away from trees designated to remain. All brush shall be chipped on site and placed within the Tree Protection Zone. Care shall be taken not to pile mulch against the trunks, the excess moisture will likely promote rot. The mulch will improve the soil structure, provide a source of slow release fertilizer, moderate soil temperature and protect the soil from compaction.

Disruption of the roots is a serious matter and care should be used to minimize root damage. Where indicated on the Tree Protection Plan, the root mass shall be severed with the use of a machine specifically designed for root pruning (a trencher shall not be used). It is important that the blades are sharp. Root pruning shall go to the depth as directed by the project arborist. This process shall occur prior to the soil excavation process. Once the roots have been severed an excavator can then remove the soil. Once the soil has been excavated, the exposed roots shall be hand pruned back to sound tissue using sharp and clean tools. Roots shall not be exposed to the air any longer than necessary. The roots shall then be protected by the use of moist burlap placed on the exposed soil face, or as directed by the project arborist. The burlap shall be maintained in a moist condition continuously until the native soil is backfilled against the tree roots.

GENERAL NOTES ON TREE PRESERVATION

The General Contractor shall have the responsibility for informing all subcontractors and individuals who are working, or visiting, the site of the tree protection requirements and conditions of approval for the project. It is imperative that all contractors and construction personnel understand the procedural guidelines and follow them. Any deviation from the guidelines presented here will increase the chances of tree decline, failure, or death.

Should unexpected conditions arise or if there is to be any deviation from the approved plans, the project arborist shall be notified so that guidance and mitigation measures can be provided. If any injury should occur to any tree during construction the project arborist shall be notified immediately so that appropriate treatments and measures can be taken.

There are some general recommendations that apply to all of the existing trees that are to be retained. All trees should be protected from mechanical damage during the construction work.

Construction impacts on existing trees are a serious matter. All trees are subject to stress when construction activities occur around them therefore, it is important to use care during any and all construction. Often the impacts of the construction are not visible for months or years after the construction has been completed. It is often the case that by the time the tree has exhibited overt signs of decline it is too late to return the tree to a healthy condition. Trees are huge living systems where health problems are slow to manifest and slow to be reversed.

Soil compaction shall be kept to a minimum, no machinery, worker, or operation shall be allowed on exposed soil surfaces, except that which is necessary to complete the approved work. The established drainage patterns should be respected. The soil elevation, particularly at the trunk, shall not be altered.

Please feel free to contact me if further discussion of these items is necessary, or if you have any questions.

Respectfully,
BALCERAK DESIGN



Gary Balcerak
Landscape Architect C-3704
Certified Arborist WE-3069A
Certified Urban Forester 125

TREE EVALUATIONS

Tree	Species	Diameter	Vigor	Structure	Status	Notes
1	Coast Redwood (<i>Sequoia sempervirens</i>)	19"	Good	Good	Save	Many suckers at base, common for the species. No overt defects noted. Trunk is touching edge of existing residence, roof is notched to allow space for tree. Tree not located on the subject property. Tagged as #88.
2	Coast Redwood (<i>Sequoia sempervirens</i>)	22.5"	Good	Good	Save	Many suckers at base, common for the species. No overt defects noted. Tree not located on the subject property. Tagged as #87.
3	Coast Redwood (<i>Sequoia sempervirens</i>)	19.5"	Good/Fair	Good	Save	Many suckers at base, common for the species. No overt defects noted.
4	Coast Redwood (<i>Sequoia sempervirens</i>)	24.6"	Good	Good	Save	Many suckers at base, common for the species. No overt defects noted.
5	Coast Redwood (<i>Sequoia sempervirens</i>)	37.3"	Good	Fair	Remove	Has ± 3' high by 2' wide fire scar on downslope side of tree. Cavity extends ± 1' to 2' inside, woundwood noted at edges of cavity. Tagged as #90.
6	Coast Redwood (<i>Sequoia sempervirens</i>)	17.0"	Good	Fair	Remove	This tree has a metal hook in the upper trunk with a bar through it and connects to tree #7, which also has a hook for the bar. Appears to have been an old swing.
7	Coast Redwood (<i>Sequoia sempervirens</i>)	18.8"	Good	Fair	Remove	Cavity noted on upslope side 2.5' high and 10" wide, ± 6" deep. See Tree #6 comments.
8	Coast Redwood (<i>Sequoia sempervirens</i>)	23.2"	Good	Good	Remove	Many suckers at base, common for the species. No overt defects noted. Tagged as #91.
9	Coast Redwood (<i>Sequoia sempervirens</i>)	19.5"	Good	Good	Remove	Many suckers at base, common for the species. No overt defects noted.

TREE EVALUATIONS

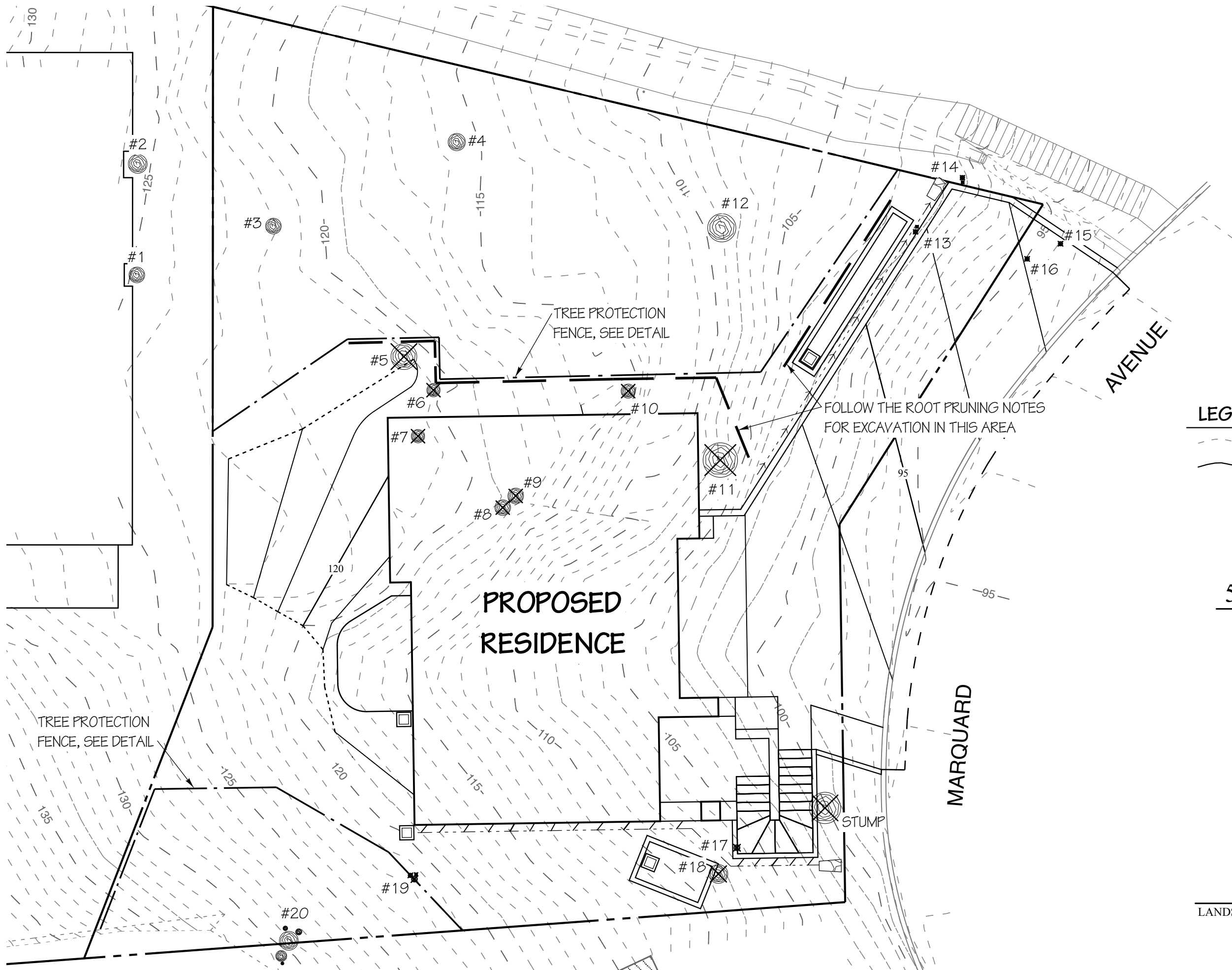
Tree	Species	Diameter	Vigor	Structure	Status	Notes
10	Coast Redwood (<i>Sequoia sempervirens</i>)	19.8"	Good	Good	Remove	Many suckers at base, common for the species. No overt defects noted. Tree has been used as a pole to attach old electrical wiring.
11	Coast Redwood (<i>Sequoia sempervirens</i>)	35.3"	Good	Good	Remove	Trunk bifurcates at ± 7' off steep grade. Many suckers at base, common for the species. Had a third trunk on the up slope side that was removed at ± 2.5' off grade, no decay evident. Old fire scar on downslope side of trunk, no decay evident.
12	Coast Redwood (<i>Sequoia sempervirens</i>)	30.5"	Good	Good	Save	Many suckers at base, common for the species. No overt defects noted.
13	Cherry Plum (<i>Prunus cerasifera</i>)	8.2"	Fair	Poor	Remove	Cal-IPC has identified this tree as a species of limited concern, and therefore removal is recommended.
14	Cherry Plum (<i>Prunus cerasifera</i>)	10.7" at 14" off grade	Fair	Poor	Remove	Cal-IPC has identified this tree as a species of limited concern, and therefore removal is recommended.
15	Cherry Plum (<i>Prunus cerasifera</i>)	5.2"	Good	Good	Remove	Cal-IPC has identified this tree as a species of limited concern, and therefore removal is recommended.
16	Cherry Plum (<i>Prunus cerasifera</i>)	5.6"	Fair	Fair	Remove	Cal-IPC has identified this tree as a species of limited concern, and therefore removal is recommended.
17	Coast Redwood (<i>Sequoia sempervirens</i>)	9.5"	Fair/Poor	Good	Remove	Suppressed by Tree #18. Many suckers at base, common for the species. No overt defects noted.
18	Coast Redwood (<i>Sequoia sempervirens</i>)	26.3"	Good	Good	Remove	No overt defects noted. Many suckers at base, common for the species.

TREE EVALUATIONS





Tree	Species	Diameter	Vigor	Structure	Status	Notes
19	California Bay (<i>Umbellularia californica</i>)	4.2"; 7.3"; 3.2"	Fair	Poor	Remove	Tree originally with many more trunks most have been removed. Decay noted on downslope side of the trunk. Thinly foliated, largest trunk is growing towards proposed residence. This tree had been covered with Ivy, but is has been killed off.
20	California Bay (<i>Umbellularia californica</i>)	9.7"; 5.0"; ± 29.0	Fair	Poor	Save	This was once a much larger tree, the largest trunk is now completely hollowed out, there is one live shoot on the main trunk. The other two trunks are suckers. Overgrown with Ivy. All observations were performed from the subject property. This is a boundary tree.

NOTES ON TREE STATUS:

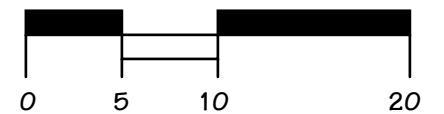
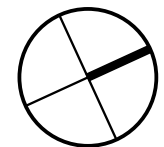
Save: Tree to remain, but will be impacted by the proposed development. Exercise care while working in the root zone of the tree. See the General Notes on Tree Preservation in this Report as well as the Tree Protection & Removal Plan for more information. It is advisable to have the Project Arborist on-site during the grading near trees when roots are to be cut.



LEGEND

-  EXISTING CONTOUR
-  PROPOSED CONTOUR
-  EXISTING TREE TO REMAIN
-  EXISTING TREE TO BE REMOVED

**52 FREMONT ROAD
TREE EXHIBIT**



SHEET 1 OF 1
2/17/20

Glossary

Abiotic: nonliving

Adventitious: appearing in abnormal or unusual position or place.

Aerobic: living or acting only in the presence of air (oxygen).

Allelopathy: the chemical process by which a plant suppresses competing plants

Anaerobic: living or acting only in the absence of air (oxygen).

Arborescent: having the nature or habit of a tree.

Bifurcation: natural division of a branch or stem into two or more stems or parts.

Biotic: pertaining to living organisms.

Boundary tree: said of a tree when a property line crosses through the trunk.

Branch bark ridge: swelling of bark tissue on the upper side of the branch junction; normal pattern of development (contrast with embedded and included bark).

Branch collar: wood that forms around a branch attachment, frequently more pronounced below the branch.

Buttress root: a large woody root located at the base of the trunk (the root crown), which helps to support the tree.

Cambium: a layer several cells thick between the wood and the bark. This is the tissue that gives trunks the ability to grow in circumference.

Canker: a necrotic lesion in the bark of the stem or root; also, the scar left after shedding of bark tissues killed by localized disease or environmental injury.

Chlorosis: lacking in chlorophyll, typically yellow in color.

Codominate: equal in size and relative importance, usually associated with either the trunks/stems or scaffold limbs/branches in the crown; in the context of crown class, trees whose crowns form the bulk of the upper layer of the canopy but which are crowded by adjacent trees.

Compartmentalization: physiological process which creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.

Conk: fruiting or spore producing body of a group of fungi.

Crotch: the point (or angle) at which two branches (or branch and the leader) meet.

Crown: parts of the tree above the trunk, including leaves, and branches.

Dripline: the width of the crown, as measured by the lateral extent of the foliage.

Epicormic: shoots, which result from adventitious or latent buds.

Excurrent: crown form where a strong central leader is present (contrast with decurrent) to the top of the tree.

Exotic: introduced from another place or region; non-native.

Exudate: bleeding or oozing.

Flush cut: pruning cut where the branch collar is removed, causing unnecessary injury to the trunk or parent stem.

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

Gall: a plants response to irritation from an insect, fungus, or a virus on the foliage, branches, or roots; producing growth, which isolates the irritation.

Girdling root: root that encircles all or part of the trunk, or other roots, which constricts the vascular tissue and inhibits secondary growth and the movement of materials.

Habit: the general characteristic appearance of a plant.

Heading: pruning technique where the cut is made to a bud, weak lateral branch not large enough to assume the role as a leader, or stub.

Herbaceous: a perennial plant that is not woody.

Hybrid: the offspring of two plants of different varieties, species, or genera.

Included bark: pattern of development at branch junctions where bark is turned inward rather than pushed out.

Internode: the space between two nodes.

Latent bud: a bud that is more than one year old, which has grown enough to be located just below the surface of the bark.

Lenticel: a small opening in the bark that permits the exchange of gasses between the tree and the air.

Mechanical damage: injury caused by human activities as opposed to natural forces like wind, snow, or ice loads.

Moribund: nearly dead; having lost all vitality.

Necrotic: dead

Node: the often swollen or modified part of the stem that normally bears a bud.

Odoriferous: giving off an odor or scent or fragrance.

Parasite: an organism that grows in or on a host, getting all or part of its nutrients from the host.

Pathogen: any agent that causes disease, usually refers to microorganisms.

Pollarding: pruning technique where young trees or branches are initially headed, then re-headed on an annual (or regular) basis without disturbing the callus knob (knuckle).

Reaction wood: specialized secondary wood, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.

Saprophyte: an organism that gets nourishment from dead or decaying matter.

Scaffold limb: primary structural branch of the crown.

Structural Root: the large lateral roots that are responsible for anchoring the tree into the ground and allowing it to remain upright; these roots also store materials for the tree's later use.

Sucker: a shoot arising from the roots.

Suppressed: trees which have been overtopped and whose crown development is restricted from above by the canopies of adjacent trees.

Watersprout: upright, epicormic shoot arising from the trunk or branches of a plant above the soil.

Wetwood: a clear, watery liquid that originates from infections of the heartwood and inner sapwood by common soil-inhabiting bacteria. It normally flows to the wounded bark surface where it changes to brown, slimy ooze as a result of feeding by fungi, bacteria, and insects. Wetwood infected wood is resistant to decay by fungi.

Woundwood: lignified, partially differentiated tissue that develops from the callus associated with wounds.

Xylem: tissue produced by the cambium that functions to transport and store water and mineral elements, as well as provide support; wood.