

MACNAIR
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CONSULTING ARBORISTS AND HORTICULTURISTS



September 19, 2015

Donald Blayney
Landscape Architect
16 Partridge Drive
San Rafael, CA 94901

RE: Malama Bahia Subdivision- Tree Inventory and Evaluation

Dear Mr. Blayney:

Pursuant to your request, this report is an evaluation of trees growing on the Malama Bahia Subdivision property in Novato, CA. The purpose of this evaluation is to assess the health and structural condition of the trees and their suitability for preservation.

Tree evaluations were performed on September 17, 2015. The tree evaluation data are provided in Appendix A of this report. Also provided are tree images depicting typical tree conditions and a site plan showing tree locations and tag numbers.

The trees on the site are located south and southeast of existing, rough graded building pads. A total of 78 trees were inventoried and consist of three (3) bay laurels (*Umbellularia californica*), 39 blue oaks (*Quercus douglasii*), 32 coast live oaks (*Quercus agrifolia*), one (1) Italian stone pine (*Pinus pinea*), and 3 madrone (*Arbutus menziesii*). The individual tree data is provided in Appendix A of the report.

Included in this discussion is a description of the tree data and evaluation criteria used in this assessment. Proposed grading and drainage plans were not reviewed. Construction impacts and tree protection procedures are not addressed in this report.

Generally, trees rated as having poor preservation suitability are not recommended for preservation. Trees rated as moderate may require special procedures and/or further advance diagnostic assessments to abate potential defects and/or improve health. For trees potentially suitable for preservation, recommended tree protection and critical root zones are provided.

Tree Condition:

Tree conditions are variable. The bay laurels are in generally acceptable health, although structural conditions are marginal due to the multiple trunk structures. Bay laurels are the primary host for *Phytophthora ramorum* (SOD- Sudden Oak Death) and are located close to coast live oaks. For this reason, the bays are recommended for removal for protection of the remaining oaks. There has been tree mortality on the site due to SOD infection and at least one oak is symptomatic with trunk bleeding occurring.

The blue oaks are significantly drought stressed with low vigor and branch/twig dieback occurring. Certain trees have structural defects relating to cankers and decay, but all typical of a blue oak woodland. The limited numbers of madrone are relatively young trees in moderately low vigor due to drought and limited infection by madrone canker (*Botryosphaeria spp.*).

The coast live oaks are highly variable with many of the trees having multiple trunk structures with attachment defects, tree loss due to SOD infection, and smaller trees shade suppressed when growing below mature trees.

There is one mature non-native Italian stone pine in good health and numerous volunteer seedling trees of various ages. The mature pine and the volunteer trees are recommended for removal due to their status as a pyrophytic and invasive tree species.

Individual Tree Evaluations:

Following is a description of the various data used in the evaluations.

Tree #:

The trees have been assigned a number and are physically tagged as indicated on the demolition site plan.

Common and Botanical Name (Species):

The botanical name and common name are provided for each tree.

Trunk Diameter and # of Trunks:

Trunk diameter refers to the measurement of the trunk diameter at 24 inches above grade. Also provided are the equivalent circumferences at 24 inches. The # of trunks notes single or multiple trunk trees. Trunks must occur at or below 24 inches above grade for a tree to be considered as having multiple trunks for purposes of measurement. Trunk measurements may differ from that shown on the plans due to the method of measurement.

Height and Crown Diameters:

These fields are approximate visual estimates of the tree's height and crown spread. Accuracy is within plus or minus 10% of the indicated estimate.

Health and Structural Ratings and Descriptions:

The following chart describes the health and structural rating system used in the evaluation. It is a rating of relative conditions such as vigor, extent of decay, structure, and insect or disease problems. Good and moderate ratings indicate limited structural problems, acceptable vigor, and an absence of significant pest or disease problems. Poor and marginal ratings indicate serious health or structural problems especially if the tree is situated near structures or public areas. Trees rated as poor or marginal are often a high risk of structural failure.

Rating Chart:

3.0	Moderate (or better) condition	Normal and correctable problems of structure or pests and diseases.
2.0	Marginal condition	Indicates serious problems with structure, decay, or significant insect or disease problems.
1.0	Poor condition	Indicates very poor health, vigor, and/or hazardous structural condition

Trees may be rated between two conditions, such as 2.5 or 3.5. This indicates the tree does not

precisely meet the criteria for either of the two categories and allows the rating system to be used as a continuum.

The comments and observations describe the basis for the health and structural rating. The specific pests, disease, and structural defects observed are described and identified, if possible.

This evaluation is of above ground structure only, and additional defects may exist at the root collar. Often, larger mature and over-mature trees require a root collar examination to evaluate the primary structural roots and root collar for decay and disease. In addition, an aerial inspection of the limb structure may be required.

Comments/Observations:

This is summary discussion of the health and structural ratings as well as identification of any significant pest or disease issues or structural defects.

Suitability For Preservation Ratings:

Ratings Factors:

Tree Health: Vigorous and healthy trees are better able to tolerate construction impacts including root loss or injury,

Structural Condition: Preserved trees should be structurally sound or have defects that can be effectively abated in areas near structures or high use areas.

Tree Age and Species: Older trees may have reduced ability to tolerate construction impacts and adapt to changed site conditions. Additionally, individual tree species have varying tolerances to environmental impacts and changes.

Rating Scale:

Good: Trees in good health and structural condition with high potential for longevity.

Moderate: Trees in fair health and/or with structural defects that may be abated with management procedures. Trees in this category generally require more intense management and monitoring and may have shorter life spans.

Poor: Trees in poor health and/or structural condition that cannot be effectively abated with treatment. These trees have a high risk of decline or structural failure regardless of management. Also included in this category are trees that are undesirable in a landscape setting or inappropriate for high use areas.

Tree Protection Zone (TPZ) and Critical Root Zone (CRZ):

A tree protection zone designated as a radial distance from the trunk establishes the area where tree protection procedures are required. The critical root zone is the radial area around the trunk where all root impacts should be avoided or mitigated with specialized procedures. Impacts in this zone are likely to permanently affect tree health and could potentially destabilize the tree.

Heritage Tree Status:

Status of tree as defined by the Novato Ordinance No 144, Chapter XVII Trees and Shrubs. Sections 17-1 and 17-2.

Please contact me with any questions, or if additional information is required.

Sincerely,

James MacNair
International Society of Arboriculture Certified Arborist WC-0603A
International Society of Arboriculture Qualified Tree Risk Assessor

Tree Images:



View of blue oak wood edge at rear of west building pad.



Upper crowns of blue oaks with defoliation (early dormancy) and branch and twig dieback occurring from drought stress.



Blue oak woodland conditions behind west building pad.



Solitary coast live oak growing on edge of cut slope.



View from the west of coast live oak grove in central portion of the property. Two madrone are to the right.



View of the coast live oaks and the mature Italian stone pine (arrow) from the north.



Dead coast live oak killed by SOD infection. Mature bay laurel is to right (arrow). The three bay laurels growing within this grove are recommended for removal to prevent further oak losses.



View of interior of coast live oak grove.



Numerous volunteer Italian stone pine seedlings are growing on the property. All are recommended for removal.



Semi-mature coast live oak located at edge of building envelope.