

TREE REPORT

Whole Foods In The Park City of Malibu

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Environmental Planning and Research

January 2009

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Tree Report
for the
Whole Foods In The Park Project

PROJECT DESCRIPTION

Project Location

The proposed project site is located in Los Angeles County within the City of Malibu. The project site is bordered by Civic Center Way to the south, Cross Creek Road to the east and vacant commercially zoned land to the north and west (Figure 1).

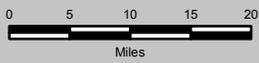
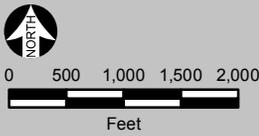
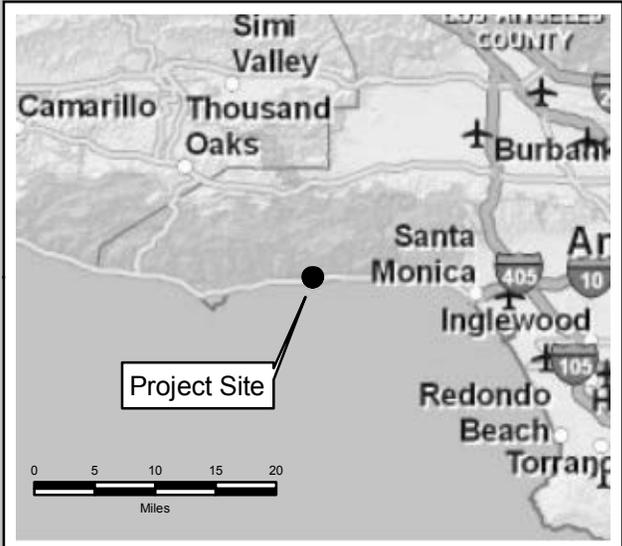
The project site is located within the designated Civic Center Area of Malibu, which is comprised of approximately 185 acres extending from Pacific Coast Highway to the base of the Santa Monica Mountains, and from Malibu Creek to the Malibu Country Village Condominiums. Natural resources within and adjacent to the Civic Center Area include a riparian zone located along Malibu Creek, some native vegetation on the hillsides, a sensitive tidally-influenced wetland located within Malibu Creek State Park and Lagoon, a wetland area located at the base of the Malibu Country Village Condominiums and the Winter Canyon area.

The 5.67-acre project site is located on the northwest corner of Civic Center Way and Cross Creek Road (Figure I, Project Location Map). Parcels located to the south include commercial/retail uses and vacant land. Parcels to the north are a mix of vacant land, commercial uses and single-family residences with equestrian uses. Parcels to the east of the project sites consist of various commercial uses. An approximately 7,723 square foot (0.18 acre) Skate Park is located at the northeast corner of the project site.

The City of Malibu General Plan Land Use Map designates the project site as Commercial General (CG) and the site is also zoned Commercial General (CG), which permits professional offices and general community serving retail uses.

Proposed Project Description

The proposed Whole Foods in the Park is a Shopping Center with 50,650 GSF of building area with 257 parking stalls. The projected mix of tenants includes a retail uses with the major tenant in the being Whole Foods Market (WFM) specializing in natural and organic food products. The project is broken up into four structures with the largest being the Whole Foods Market. The project proposes to add an architectural character component to



Source: ESRI Streetmap, County of Los Angeles and Christopher A. Joseph & Associates; October 2008.

include the Storm Water Treatment facility to engage this structure and develop the streetscape. The project is designed to a 0.20 FAR with the Public Amenity component being a replacement site of Papa Jack's Skate Park including dedicated restroom and parking facilities.

TREE INVENTORY AND ASSESSMENT

Tree Survey Methods

The tree survey was conducted on September 26, 2008. The survey team was comprised of a California licensed landscape architect and a qualified field biologist. The purpose of this survey was to determine whether any protected species trees as defined under the City of Malibu Local Coastal Program, Local Implementation Plan, as adopted by the California Coastal Commission on September 13, 2002 (Malibu LIP), i.e., Oaks (*Quercus spp.*), California Black Walnut (*Juglans californica*), Western Sycamore (*Platanus racemosa*) White Alder (*Alnus rhombifolia*) and Toyon (*Heteromeles arbutifolia*), are present on the subject site.

Protected tree locations were recorded using a hand-held global position system (GPS) device. The coordinates of each tree were later mapped by the Geographic Information Systems (GIS) Manager at Christopher A. Joseph & Associates (CAJA) using GIS technology. Inventoried trees were tagged on their north side with rectangular (3/4" x 3") metal tags inscribed with their corresponding Tree Matrix number. Trees were inventoried according to City of Malibu criteria as to their species, caliper size, circumference, canopy dimensions, health and aesthetic appearance; the details of these methods are given below.

Caliper and circumference measurements were taken at approximately four and one half (4.5) feet above natural grade (Diameter at Breast Height – DBH). Trees with multiple trunks growing from one root system were measured with the largest trunk noted in the caliper section of the Tree Survey Matrix sheets and secondary trunks noted in the area immediately below on the matrix sheets. The Tree Survey Matrix sheets are presented in Appendix A.

The extent of the canopy for each protected tree was measured by using a tape measure and extending it from the trunk of the tree to the edge of the foliar canopy at the northern, eastern, southern and western extents. The measurement of the canopy extent at each direction was recorded onto the Tree Survey Canopy Measurement sheets contained in Appendix B. Tree photographs are contained in Appendix C.

Each tree was evaluated using a health matrix and given a letter grade as an aesthetic assessment. It should be noted that the health of a tree is generally dependant on general climactic and soil conditions, as well as potential physical or mechanical damage of a non-biotic origin, such as fire, and/or infestation of various pests including, but not limited to, ants, termites, wood boring beetles, cambium eating beetles, fungus of various types, and parasitic plants (i.e., mistletoe [*Phoradendron villous*] or Dodder vine [*Cuscuta californica*]). Climbing plants which may use trees for support, such as Algerian or English ivy (*Hedera sp.*), honeysuckle (*Lonicera subspicata*), wild cucumber (*Marah macrocarpus*) and poison oak (*Toxicodendron diversilobum*) would also be considered as health threatening infestations. While the aesthetic value of a tree is subjective, a tree is usually considered highly aesthetic if it has generally dense foliage, a relatively uniform or spectacular irregular shape and large size.

Assessments of aesthetic and health factors for each tree, as well as an overall aesthetic grade, were recorded on the Tree Survey Matrix sheets contained in Appendix A.

The following criteria were used to establish each overall grade:

“A” = Outstanding (90-100% rating):

A healthy and vigorous tree characteristic of its species and reasonably free of any visible signs of stress, disease or pest infestation.

“B” = Above Average (70-89% rating):

A healthy and vigorous tree with less than 25% of the tree affected by visible signs of stress, disease and/or pest infestation.

“C” = Average (50-69% rating):

Although healthy in overall appearance, 25% - 75% of the tree shows evidence of stress, disease and/or pest infestation.

“D” = Below Average/Poor (25-49% rating):

Greater than 75% of this tree shows evidence of stress, disease and/or pest infestation and appears to be in a state of rapid decline. The degree of decline may vary greatly.

“F” = Dead:

This tree exhibits no signs of life at all.

Tree Survey Results

The following are general field observations made during the visit to the project site. Vegetation typical of a disturbed, suburbanized setting is present throughout the project site, including annual grasses (wild oat [*Avena sp.*], ripgut brome [*Bromus diandrus*], rattail fescue [*Vulpia myuros*]) and other weedy forbs (Petty spurge [*Euphorbia peplus*] and castor bean [*Ricinus communis*]). Portions of the southern and central areas of the site have been covered in pea gravel to form an access road for the Skate Park and a small parking area at the southwestern edge of the site, off of Civic Center Way.

In total, 12 Western Sycamore trees which meet the Malibu LIP trunk diameter criterion were recorded on the project site. Specifically, the trunk diameter criterion used was six (6) inches or more for protected species with one trunk or a combination of any two trunks measuring a total of eight (8) inches or more for protected species with multiple trunks. The site has no other native/protected species trees; however several non-native trees, including eucalyptus, jacaranda and pine are also present on the site.

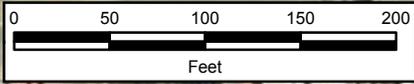
The 12 Western Sycamores on-site were clustered into three groups, one located in the north-central portion of the site, and two located in the northwest corner of the site (Figure 2). The DBH of these trees ranged from nine to 28 inches, and four were multi-trunked (Table 1). Half of these trees exhibited an above-average (B) health and

aesthetic rating, and the other half exhibited an average (C) health and a below average/poor (D) aesthetic rating (Table 1). The majority of the trees exhibiting the lower health and aesthetic ratings are located in the northwest corner of the site and appear to have been damaged by fire in the past and/or are suffering from termite damage. Nearly all of the trees exhibited signs of Anthracnose, a fungal infection common to sycamores, which rarely causes permanent damage but can cause cankers or defoliation.¹ The canopy extent for the protected trees on-site ranged from a radius of zero (where two trees were adjacent to each other) to 43.5 feet; Figures 3 through 5 depict the trunk diameter and canopy extent measurements for each protected tree.

Table 1
Detail of Observed Native Trees

Tree Number	Common Name	Scientific Name (<i>Genus species</i>)	Caliper (in inches) ^a	Aesthetic Rating	Health Rating
1	Western Sycamore	<i>Platanus racemosa</i>	25	B	B
2	Western Sycamore	<i>Platanus racemosa</i>	19, 16	B	B
3	Western Sycamore	<i>Platanus racemosa</i>	27, 14	B	B
4	Western Sycamore	<i>Platanus racemosa</i>	10	D	C
5	Western Sycamore	<i>Platanus racemosa</i>	28	B	B
6	Western Sycamore	<i>Platanus racemosa</i>	17.5, 17, 15, 9	B	B
7	Western Sycamore	<i>Platanus racemosa</i>	23.5, 22.5	B	B
8	Western Sycamore	<i>Platanus racemosa</i>	18	D	C
9	Western Sycamore	<i>Platanus racemosa</i>	24.5	D	C
10	Western Sycamore	<i>Platanus racemosa</i>	14	D	C
11	Western Sycamore	<i>Platanus racemosa</i>	16	D	C
12	Western Sycamore	<i>Platanus racemosa</i>	9	D	C
^a – multiple numbers indicate multi-trunk tree measurements					
Source: Christopher A. Joseph & Associates, September 2008					

¹ Svihra, P. 2003. Pest Notes: Anthracnose. IPM Education and Publications, University of California Statewide IPM Program. UC ANR Publication 7420. <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7420.html>



Source: Google Earth, County of Los Angeles and Christopher A. Joseph & Associates; October 2008.

Legend

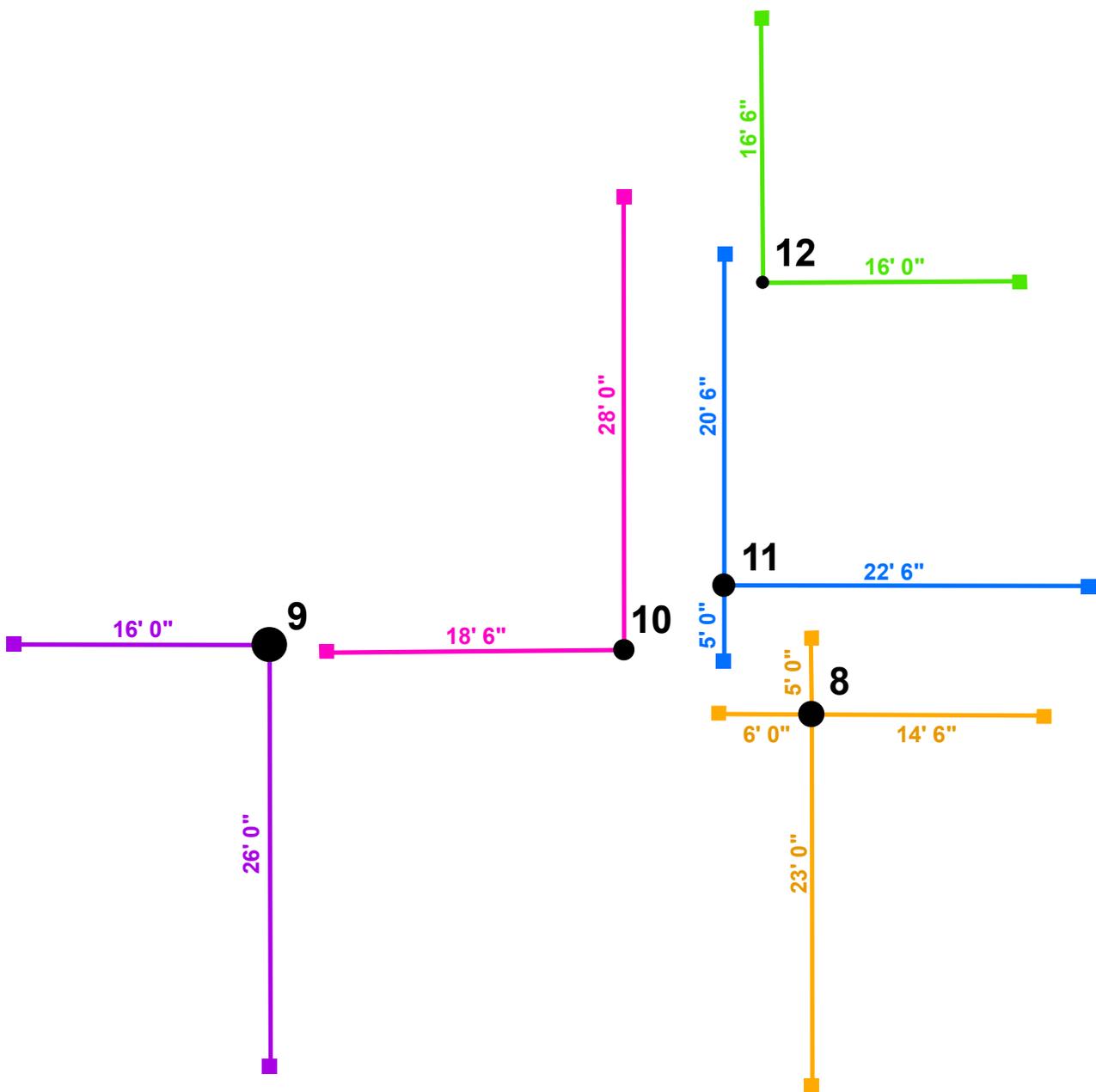
 Protected Trees Proposed for Removal

 Project Site

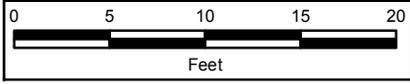
1 inch = 100 feet



Note: Displayed tree trunk arrangements may differ from actual arrangements.



1 inch = 10 feet



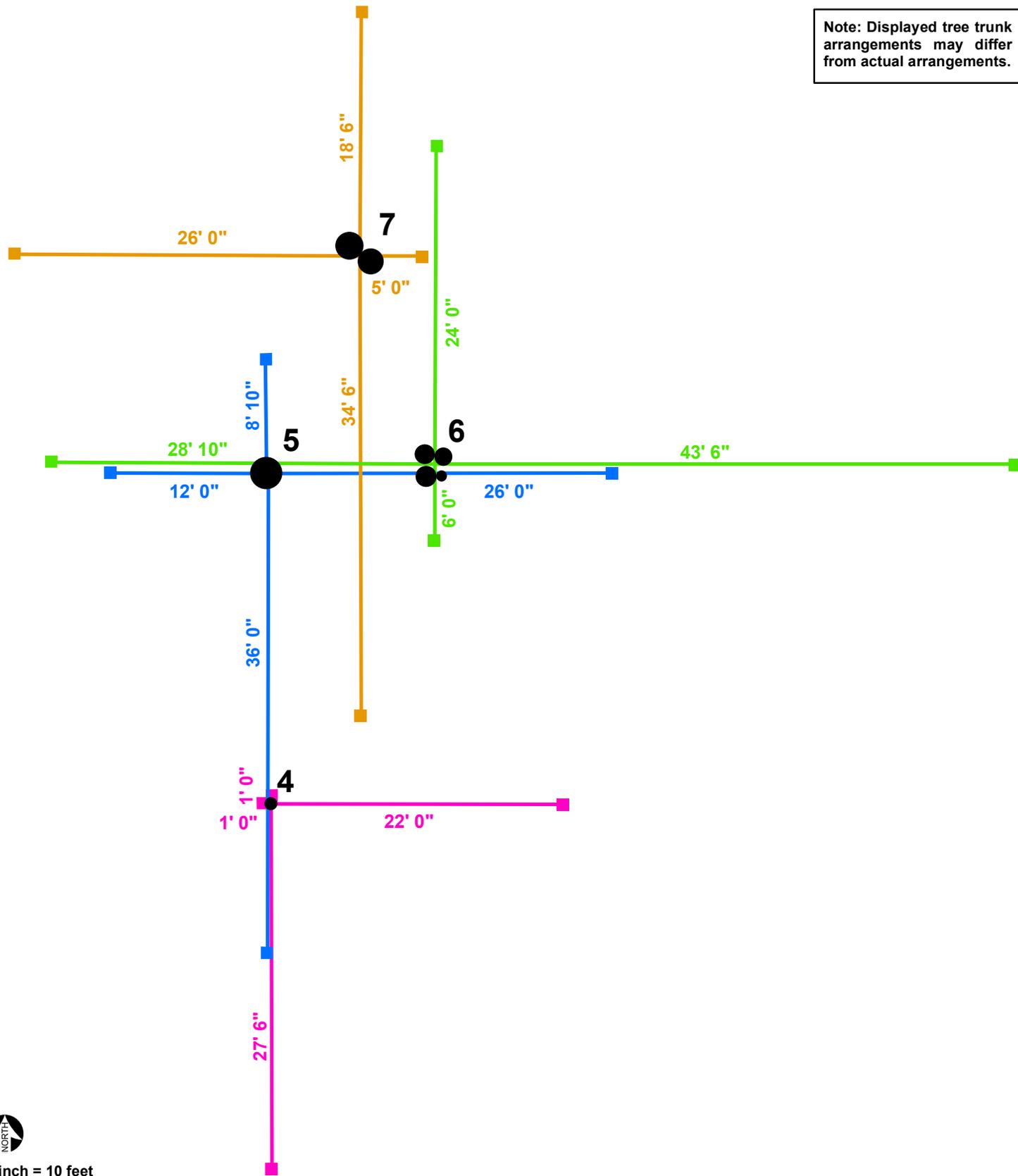
Source: Christopher A. Joseph & Associates; October 2008.

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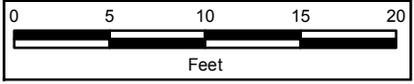
- Protected Trees Proposed for Removal
- Tree Canopy

Figure 3: Scale Drawing of Protected Tree Trunks and Canopies

Note: Displayed tree trunk arrangements may differ from actual arrangements.



1 inch = 10 feet



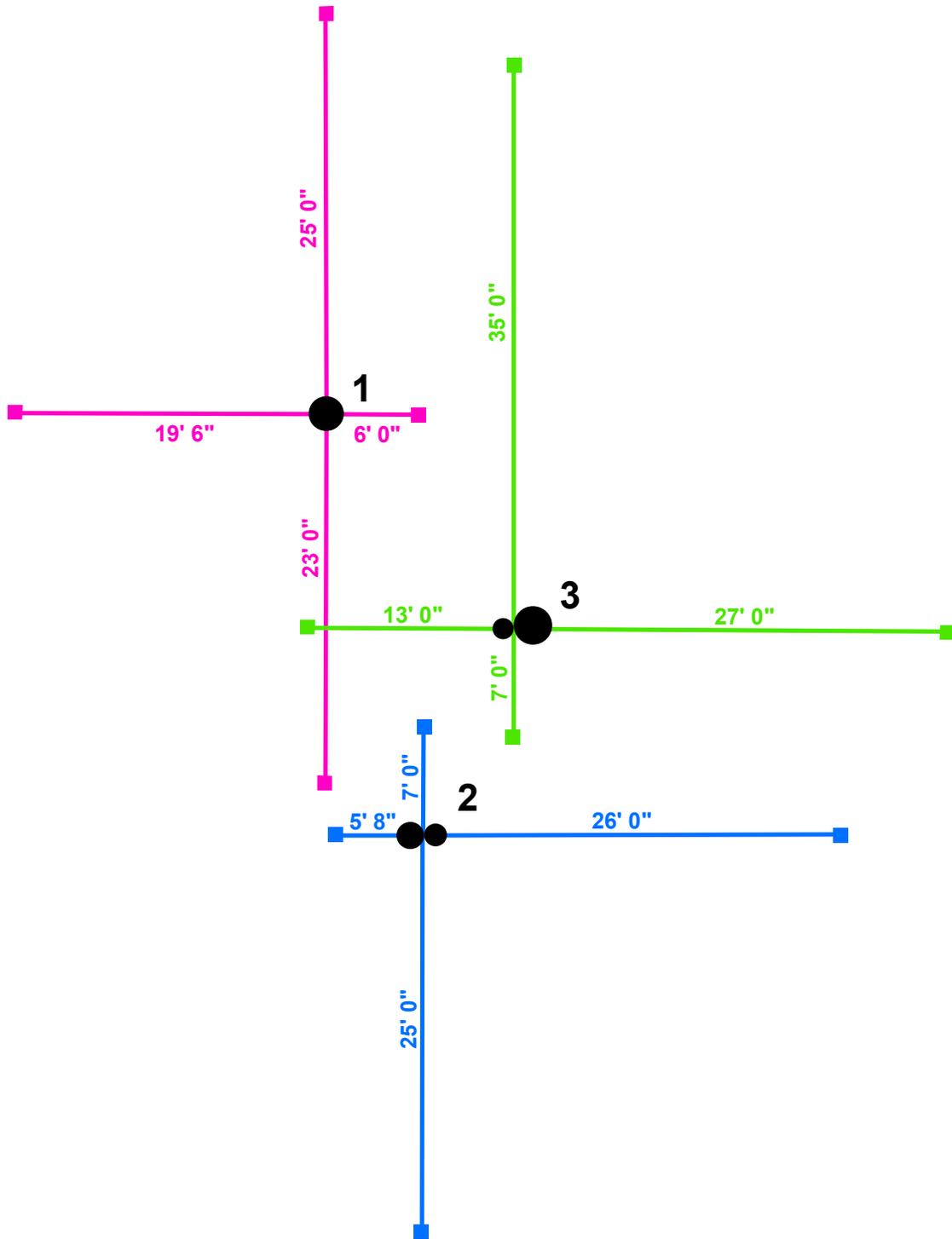
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- Protected Trees Proposed for Removal
- Tree Canopy

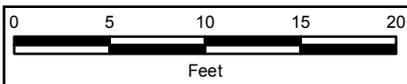
Source: Christopher A. Joseph & Associates; October 2008.

Figure 4: Scale Drawing of Protected Tree Trunks and Canopies

Note: Displayed tree trunk arrangements may differ from actual arrangements.



1 inch = 10 feet



Source: Christopher A. Joseph & Associates; October 2008.

Legend

- Protected Trees Proposed for Removal
- Tree Canopy

PROJECT IMPACTS

Construction and Post-Construction Impacts

Due to the physical constraints of site and feasibility constraints dictated by the City and the major tenant, as discussed further below, all of the 12 protected trees on-site will be impacted by the proposed project and will require removal during construction; therefore, there will be no post-construction impacts to protected trees as none are proposed to be retained on-site.

Feasibility of Alternatives for Impact Avoidance/Minimization

The Papa Jack's Town Center project located at the corner of Civic Center Way and Cross Creek is planned around the major tenant for the center, Whole Foods Market (WFM). The requirements dictated by the tenant have driven much of the site planning process. Following discussions with WFM executives and the City of Malibu staff, Cross Creek Ventures LLC (CCV) and its Architect, CWA, proceeded to explore alternative site plans for the proposed commercial development in an attempt to find the optimal solution to a very difficult balance of regulatory, political, physical, functional, economic and aesthetic imperatives. Over a period of four months CWA produced over sixteen (16) different major alternative site plans (with many more minor variations in-between) until the final Site Plan emerged which is the basis of the Coastal Development Permit application.

The City's regulatory restrictions concerning grading, landscaping, parking, storm drainage, building height, building setbacks, parking, landscape area, open space, access, onsite wastewater treatment and disposal, and other factors (including dedication of a portion of the site for a public Skate Park recreational facility) make this project design extremely complex. However, CCV/CWA has made a best possible effort to comply and conform with all of these known restrictions as far as practicable.

The unique geometry of the site has presented a challenge based on WFM's additional requirements which dictate that the Market be pushed to the west and north, in part because the eastern and southern boundaries front entrance roads. In addition, of great concern to WFM is visibility of the store. An initial scheme was developed that moved the Whole Foods store forward on the site and placed parking towards the back of the site. This solution located the building area away from the area of the protected trees. This solution was rejected by WFM as it limited visibility of the front door, did not address the requirements of the delivery function and due to the site geometry did not achieve the minimum store depth of 150 feet and generate the required parking.

WFM requires that customer parking spaces be located at the front of the store and visible from the street. There is a minimum requirement for 200 stalls and the stall size must be standard stall dimensions (as opposed to compact), larger than code minimum to address larger vehicles. There are also requirements that there be only one customer entrance to the store, that the grading to the parking area and throughout the parking area be at a maximum of 2% to help control the movement of errant grocery carts and that the paving in the parking area be finished in a way that allows for the smooth movement of the carts.

There is a requirement that the structures be raised above the flood plain; compliance with this measure would require that the finish floor elevation of the structure be raised approximately three to four feet above the current natural grade. This, with the maximum 2% allowable gradient across the parking area, would require the importation and placement of fill soil. This substantial raising of the natural grade would create problems maintaining the health of the existing trees by cutting off air circulation and preventing moisture and nutrients from effectively reaching feeder roots. Under this scenario, the most effective way to maintain the health of the existing trees would be through the use of tree wells in order to ensure that the root crowns are not buried. However this would further impinge on the amount of the site area available for other development.. The high water table and required interior vertical clearance for the structure have precluded the introduction of subterranean or semi-subterranean parking.

The delivery and service support functions are required to be located at the rear of the store and the movements of delivery vehicles for loading functions have been carefully considered. A generator and private sewage treatment facility are also located at the rear of the property for service and routine maintenance and visibility concerns. Employee parking would be located at the rear of the store and there is a requirement to restrict the number of stalls at the back of the store to discourage customers from parking there and conflicting with delivery vehicle maneuvers.

Finally, the proposed store is already much smaller than most Whole Foods stores and smaller than what WFM would prefer, but given the constraints of the site WFM is willing to accept a smaller store. Therefore, reducing the size of the store further is not considered feasible.

Therefore, given the constrained site geometry, WFM's requirements, City requirements, and voluntary dedication of land on-site for public recreation, the currently proposed site layout is considered the only feasible development option, albeit one which cannot feasibly preserve the protected trees on-site.

PROPOSED MITIGATION MEASURES

As permitted in Section 5.5 of the LIP, if there is no feasible alternative to prevent the removal of protected trees, adverse impacts shall be fully mitigated. This mitigation shall include, at a minimum, the planting of replacement trees at a ratio of ten (10) replacement trees for every one removed tree. Where on-site planting is not feasible, off-site mitigation can be provided by either planting replacement trees at a suitable off-site location protected from development, or by paying an in-lieu fee to the Native Tree Impact Fund (administered by the Santa Monica Mountains Conservancy).

As discussed above, given the infeasibility of avoiding removal of the 12 protected trees located on-site, these trees will be mitigated as required by the LIP. This mitigation will consist of the following combination of on-site planting and payment of the in-lieu fee:

- On-site mitigation for some of the protected trees will be accomplished by planting 39 Western Sycamores on-site as part of the proposed landscape plan. Given the available area on-site for landscaping within the

proposed project, it is not feasible to accomplish all of the mitigation as on-site planting, which would require planting 120 Western Sycamores on-site; therefore,

- Off-site mitigation will account for the remaining protected tree mitigation and will be accomplished through payment of the in-lieu fee to the Native Tree Impact Fund; per the LIP, the fee shall be based on the type, size and age of the trees proposed for removal.

A detailed description of the Replacement Planting Program is discussed below, including installation specifications, followed by a Maintenance and Monitoring Program.

Proposed Replacement Planting Program

The 39 Western Sycamores included on the proposed landscape plan (Figure 6) will be installed as replacement trees to mitigate for the removal of nearly four (4) of the protected trees currently on-site. These trees will be planted within planting areas located within the proposed parking lot and around the perimeter of the site along the western, northern, and northeastern boundary. Although the LIP notes that seedlings should be planted as mitigation for removed protected trees, seedlings would not be appropriate as trees installed as part of commercial landscaping. Not only would they be aesthetically inferior for several years, but they would be much more vulnerable to inadvertent impacts by shoppers as they may be too small to see prior to trampling. Therefore, the replacement trees proposed for installation will be at least 15-gallon size, and more likely will be 24-inch box size.

Relocation

While the transplanting of mature, naturalized western sycamores has been successful in limited instances, relocation of large, mature trees is generally fraught with problems and low success rates. For this reason, it is not believed that the transplantation of mature sycamores is a viable means of mitigating project impacts. Nevertheless, should relocation be considered, it is recommended that healthy trees with DBHs of less than 12 inches, located on level terrain be considered as prime candidates. The identification of trees suitable for relocation should be done by a qualified arborist in consultation with the City's Environmental and Community Development department in coordination with the rough grading activities at the project site. While the relocation of healthy candidate trees rather than their outright removal is encouraged, due to the low likelihood of long-term survival, any existing trees relocated before or during project construction would not be counted toward the mitigation of project impacts.



- PLANTING CONCEPT**
- TREES:**
- ACCENT TREES:**
- ACONIS FLENGOSA** - AUSTRALIAN YELLOW HYDRATE
KEEPING EVERGREEN AND FLOWERING ACCENT
 - CHORISIA SPECIOSA** - FLOSS SILK TREE
FLOWERING ACCENT, INTERESTING TRUNK AND STRUCTURE
 - HEPATICODENDRUS ENGELSA** - NEW ZEALAND CHRISTMAS TREE
FLOWERING ACCENT
- EVERGREEN CANOPY TREE:**
- ARELIS MARINA** - NEW MARINA STRAWBERRY TREE
EVERGREEN WITH JUNGLE REDDISH BARK CHARACTER
- VERTICAL COMPENSATION TREE:**
- SEQUOIA SEMPERVIRENS** - COAST REDWOOD
- LARGE CANOPY TREES:**
- PLATANUS RACEMOSA** - CALIFORNIA DYSMANTHE
REPAIRS VEGETATION WITH TRUNK AND BRANCHING CHARACTER
- SHRUB & GROUNDCOVER PLANTINGS:**
- LOW FOREGROUND - ACCENT PLANTINGS**
- ARNDIA HARTMIA - THRUPT
 - BERNARDI INCANUM - NEW
 - BERNARDI SANGUINEA - BLOSSOM CRANESBILL
 - HESPERALOE PARVIFLORA - RED TISSE
 - HEUCHERA SANGUINEA HYBRIDS -
 - ILEX VICTORICA STONES - DWARF YALPON HOLLY
 - LEUCOPHYSCUM - BIG BLUE LILLY TURP
 - MANOIA REPENS - CREEPING MANOIA
 - HALIMEDENDRA CAPLARIIS REDAL HOT - REDAL HOT HEALY 5 BALLON
 - HEBEDIA CADRELLA - HEBEDIA FAVORABLE COLORS, FRENCH COUNTRY GARDEN APPEARANCE
 - RHODIOLA ADIANTIFORMIS - LEATHERLEAF FERN
- LARGE SIZED PLANTINGS**
- DYATHEA COOPERI - AUSTRALIAN TREE FERN
 - DIOGONIA ANTARCTICA - TASMANIAN TREE FERN
 - HETEROSILES ARBUSTIFOLIA - TOYON
 - HIBISCUS SYRIACUS - ROSE OF SHARON
 - MANOIA LOHARIFOLIA - NEW
 - HELAUSICA NEOFILIA PINK HELAUSICA
- MEDIUM SIZED PLANTINGS**
- ARELIS JACED COMPACTA - STRAWBERRY SHRUB 5 BALLON
 - GARSSIA MACROCARPA - NATAL PLUM
 - SANDORA DOMESTICA COMPACTA - DWARF HEAVILY BAHDDO 5 BALLON
 - FRAXIA BRANATH - DWARF POMEGRANATE
 - PODOPHYLLUM PIPERITATA - GIANT CHAIN FERN
 - SANTERSONIA HETROPHICA - COMMON CALLA
- VINE PLANTINGS**
- GLYSTOSTOMA CALLISTEIOIDES - VILLOT TRUMPET VINE
 - PARBIFLORA X BELLOTTI - PASSION VINE
- STORMWATER RETENTION**
- TURF PAVERS
 - TUMBLED CONCRETE PAVERS - VARY COLORS
- ALL IRRIGATION SHALL BE DRIPLINE OR POINT SOURCE ORIP APPLICATION - AUTOMATIC SYSTEM



30' 15' 0 30' 60' 90'
SCALE: 1" = 30'



TCLA, Inc.

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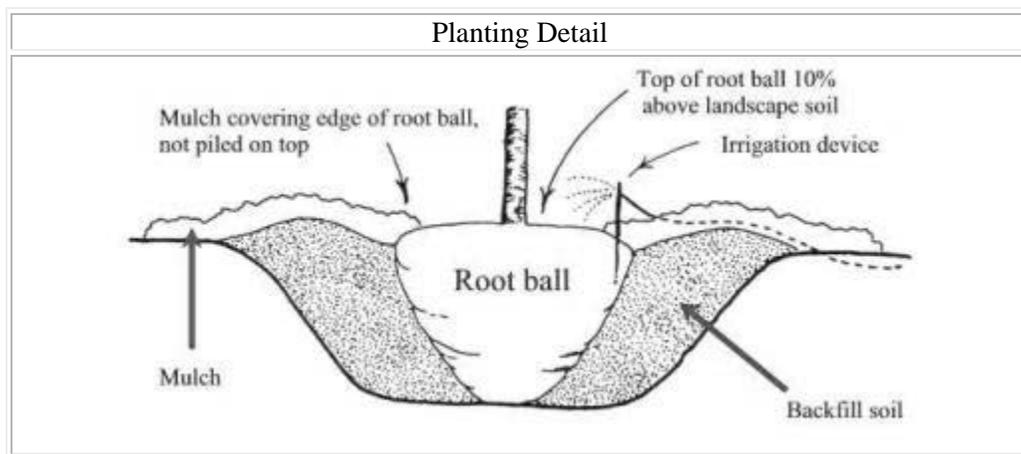
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10/17/07 Revised 6/10/08

Tree Planting Specifications²

1. All tree planting stock to be planted using these "Planting Specifications" shall conform at minimum to the Specification Guidelines for Container-Grown Landscape Trees issued by the California Department of Forestry & Fire Protection (CDF)³ and current recognized horticultural practices.
2. Prior to commencement of planting operations, all planting areas [except slopes higher than 3' and steeper than 4:1] shall be tilled to a depth of 8-inches. Break-up and remove all lumps of compacted soil, rocks larger than 1-inch in any dimension, and all other deleterious material from site. Finish grade all areas to a smooth, even, surface, free of abrupt changes in grade. Make minor grading adjustments to insure positive drainage [slope 1% minimum].
3. Trees are to be located and planted in accordance to the City-approved landscape plan as well as adhering to current recognized horticultural practices.
4. Trees shall be planted so that the top of the root ball is set equal to or slightly higher than the surrounding soil surface. The depth of the planting pit should be LESS than the height of the root ball, especially in compacted or natural wet soils. If the hole has been inadvertently dug too deep, soil shall be added to the bottom of the hole and re-compacted to prevent later subsidence. The width of the planting pit shall be a minimum of twice the width of the root ball of the tree being planted.



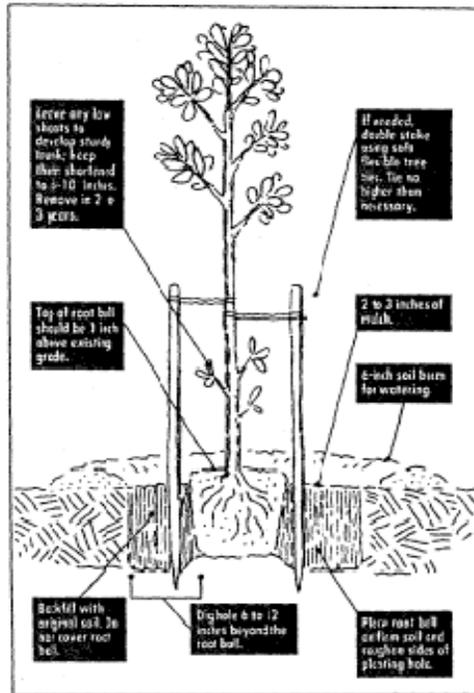
5. Native site soil shall be used as backfill for all planting holes. Soil amendments should only be used as needed to supplement site soil or loosen heavy clay soil. Backfill methods shall avoid the presence of large air pockets/voids within the backfill soil profile. Large clayey soil clumps shall be broken up as much as possible during planting. Backfill soil shall be settled with a thorough watering. Backfill soil shall not be mechanically compacted, as this could restrict root growth, especially in clayey soil.

² Adapted from the California Department of Forestry and Fire Protection website, <http://www.ufe.org/standards&specs.html#plant>, accessed October 23, 2008

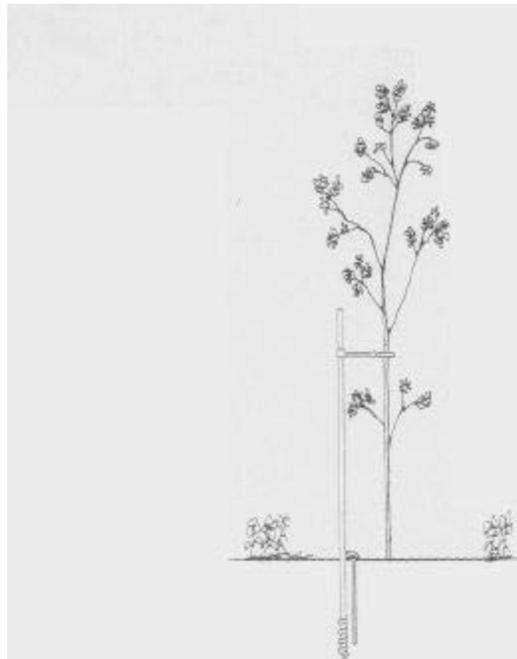
³ These specifications can be found on the CDF website, as cited above.

6. Following installation, the trunk flare (root crown) shall be evident and free of any container soil and/or planting backfill. If the trunk flare is not visible, remove soil or media from the top of the ball until it is visible.
7. The root flare shall be slightly above the surface of the surrounding soil at all times. When planting on a sloping site, the top-most root in the root ball shall be even with the grade on the uphill side of the tree.
8. During all phases of the planting operations, tree stock shall be protected from excessive vibration; including avoiding being thrown or bounced off mobile equipment to the ground. Trees shall not be dragged, lifted, or pulled by the trunk or foliage parts in a manner that will damage or loosen the roots in the ball.
9. Planted trees shall exhibit no circling root conditions or evidence of untreated root bound container stock. Prior to planting, the rooting structure of the container tree shall be examined for possible root bound conditions and corrections implemented if needed, adhering to current recognized horticultural practices.
10. Trees shall all be planted in an upright position avoiding any appearance of leaning.
11. All synthetic materials from around the tree trunk, limbs and root ball shall be removed and not evident within the backfill soil mix. String, rope, synthetic burlap, plastic, strapping, identification tags and other materials that will not decompose in the soil shall be removed at planting.
12. Upon completion of plant installation; a minimum 4-inch layer of natural mulch material shall be applied to at least a 6-foot diameter circle around each tree, where planting areas and conditions permit.
13. Should staking be utilized, the following staking systems should be considered as minimum standards: Double Stake Support System, ReddyStake Support System, Alternative Staking System (as illustrated) and as approved by the City of Malibu.

Double Stake Support System



ReddyStake Support System



Alternative Staking Systems

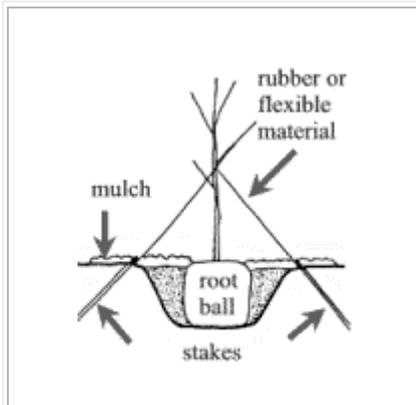


Figure 1: Three short stakes (2 shown) attached to the trunk with rubber or similar stretchable material. Stakes driven in as shown above may be better secured in the soil than those shown in Figure 2.

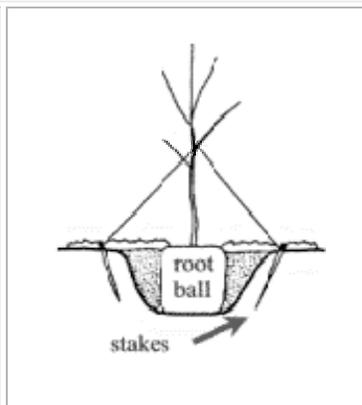


Figure 2: Three short stakes (2 shown) driven into soil in a traditional manner attached to the trunk with stretchable material.
Use a wide strapping or rubber to secure stakes to trees.

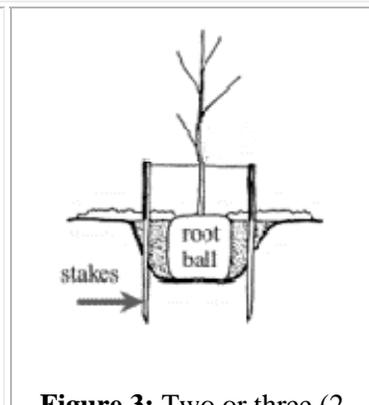


Figure 3: Two or three (2 shown) 2 x 2 wood stakes driven through the backfill soil.
Do not use wire in garden hose to secure trees because these can injure or girdle the tree.

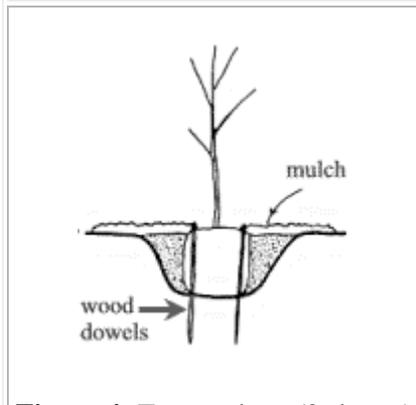


Figure 4: Two or three (2 shown) wood dowels driven through edge of root ball. These do not have to be removed because they simply rot in place. There is no danger of this system girdling the trunk since nothing is attached to the trunk.

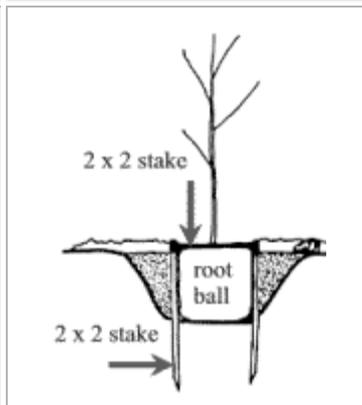


Figure 5: One horizontal 2 in. x 2 in. screwed to two vertical 2 x 2s against the side of the root ball. A second set is used on the other side if needed for larger trees.

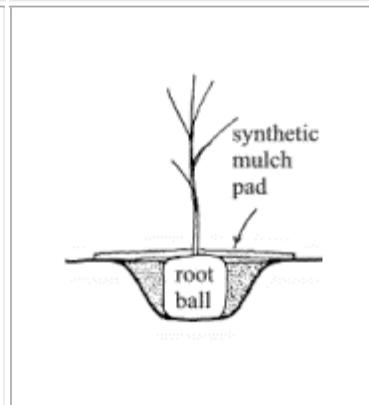


Figure 6: Synthetic mulch, in this case made from rubber, can be used as an organic mulch replacement in areas where organic mulch could blow or float away.

MAINTENANCE AND MONITORING PROGRAM

The following maintenance and monitoring program will be implemented to ensure the successful establishment and survival of replacement (or mitigation) plantings, as required by Section 5.6.2 of the Malibu LCP Local Implementation Plan. This plan includes performance standards and contingency measures to be implemented in the event that the health of replacement trees declines or fails.

Maintenance Program and Contingency Measures

Irrigation. All replacement trees will be irrigated for a minimum period of ten years. Irrigation rates will be determined by the landscape or maintenance contractor and may be adjusted periodically according to results of annual monitoring (as discussed below). The irrigation system shall be monitored and maintained regularly by the landscape or maintenance contractor.

Weed Control. The biological monitor will coordinate with the landscape or maintenance contractor, regarding the control of non-native, weedy species if recommended during annual monitoring (as discussed below). Where feasible, non-native trees, shrubs, and noxious weeds should be removed from tree mitigation areas where they threaten the health and survival of the replacement trees.

Replacement Plantings. The biological monitor will coordinate with the landscape or maintenance contractor regarding replacement of dead or dying trees as determined through annual monitoring (as discussed below).

Pruning and Pest Control. Pruning of the replacement trees shall be conducted by a licensed arborist. If annual monitoring results suggest disease or pests that threaten the health of replacement trees, and control is recommended, any application of fungicides, pesticides, herbicides, or other related chemicals shall be applied by a state-certified applicator and in consultation with a licensed arborist.

Monitoring Schedule and Data Collection

Annual monitoring of planted or transplanted trees shall be conducted by qualified biological monitors for a minimum of ten (10) years after planting, preferably between the months of May and September. Information gathered will include indicators of plant health, such as survival, growth, and vigor, and potential risks, such as disease or pests.

Monitoring shall begin at the initiation of replacement planting. The biological monitor will be on-site during all activities involving tree planting and irrigation installation, and periodically each year throughout the ten-year monitoring period to track the progress of the tree mitigation. The monitoring period will be ten years in duration following the completion of tree installation. Monitoring visits shall be completed annually, totaling ten visits. Following each monitoring visit, a report summarizing site conditions, observations, tree health, and recommendations for promoting tree health shall be submitted to the City. Any tree mortality shall be noted and any tree dying during the ten-year monitoring period shall be replaced on-site in coordination with the City.

Plant condition will be based on an objective assessment and rated excellent, good, fair, or poor. Plants will be rated as "excellent" if they exhibit signs of abundant new growth, healthy leaves, and had no indication of water stress. Plants will be rated as "good" if they exhibit some signs of new growth, healthy leaves, and show no indication of water stress. A "fair" rating will be given if the plant had little to no new growth or had a significant portion of discolored leaves. Plants which had few leaves, no new growth, and signs of continued stressful

conditions such as insufficient water, excessive erosion, or herbivory, will be given a rating of “poor.” Data will be analyzed using an Excel spreadsheet. General observation of the appearance and health of each tree will also be recorded, including any observations of non-native plants, disease or pests which may have a detrimental effect on the health of the trees during the following year.

Performance Standards

Performance standards establish a threshold for determining success. With respect to tree plantings in restoration/enhancement areas, growth and survival generally provide the basis for determining the success of tree restoration, replacement, and enhancement programs. The following standards will guide the success of these efforts:

1. All planted replacement trees must survive and be in “fair” or better health for a period of at least ten years.
 - a. Trees shall exhibit normal vigor and exhibit annual growth rates normal for the tree species.
 - b. Trees shall be free of any serious pest or disease issues.
 - c. Trees shall have a well-established root system with no indication of circling, kinked, or defective roots.
 - d. Trees shall have normal trunk taper and be able to stand with no supplemental staking.
2. If any replacement tree dies during the first ten years, it shall be replaced by another tree of the same species and approximately the same size. If any such tree is replaced, it shall be monitored for a total of ten years following its installation.

If these standards are not being met, contingency measures may be necessary to bring the situation into compliance. Contingency measures may include payment of an additional in-lieu fee to the Native Tree Impact Fund in case of mitigation failure, as approved by the City.

Reporting

An annual Tree Monitoring Report shall be prepared by a qualified biologist, arborist, or other resource specialist. The monitoring report shall describe the health of each replacement tree and determine whether each tree is considered to be healthy and growing normally. This report shall also include any recommendations deemed necessary to improve the health of trees that are exhibiting “poor” health or are subject to observed health or survival threats. However, recommended remedial actions may be implemented at any time during the monitoring time frame. Monitoring reports shall be provided to the City annually and at the conclusion of the ten-year monitoring period that document the success or failure of the mitigation. If performance standards are not met by the end of ten years, the monitoring period shall be extended until the standards are met.

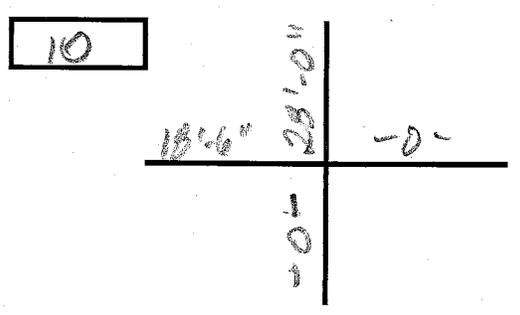
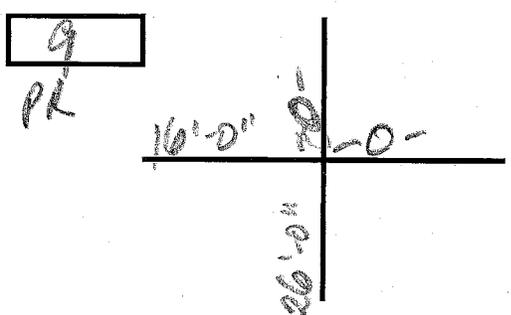
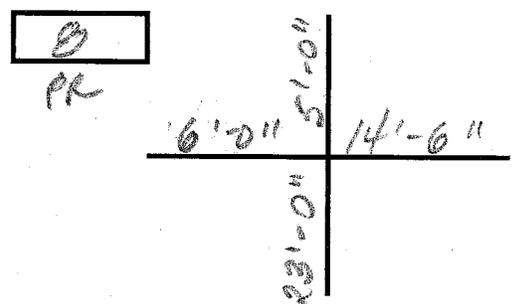
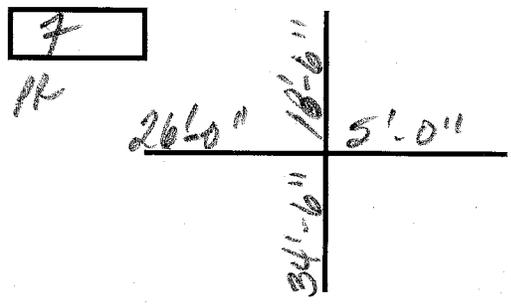
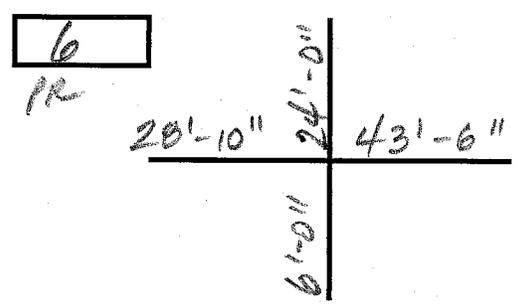
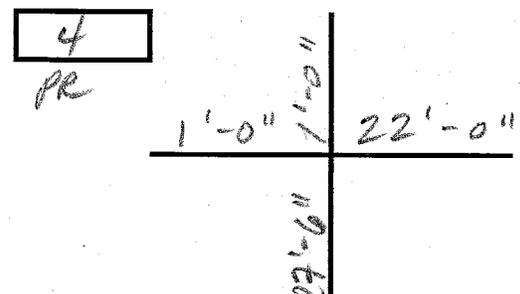
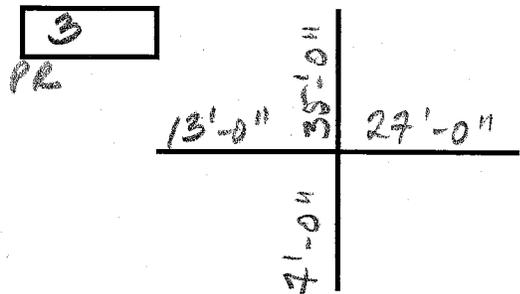
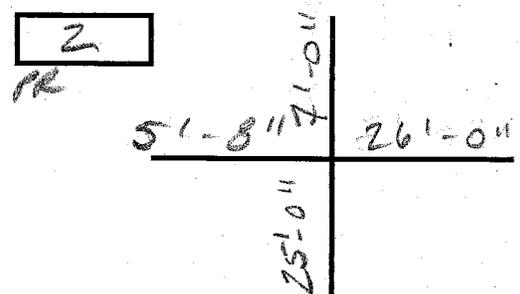
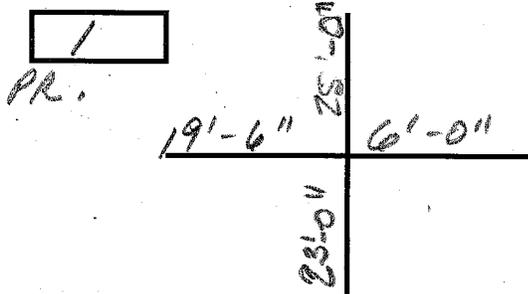
Respectfully submitted
for
Christopher A. Joseph & Associates

S. Lynn Kaufman
Landscape Architect
CA License # 2975
Date: _____

NOTICE OF DISCLAIMER: Opinions given in this report are those of Christopher A. Joseph & Associates (CAJA) and are derived from current professional standards based on visual observations at the time the field surveys were conducted. The trees discussed herein were generally reviewed for physical and biological function and aesthetic conditions. This examination was conducted in accordance with presently accepted industry procedures, which are ground plane macro-visual observation only. This visual record does not include aerial or subterranean inspections, microbiological or soil-root excavations, upper crown examinations or internal tree investigation (i.e. core sampling), and therefore may not reveal existing hidden conditions or hazards. Records are only represented as accurate as of the dates of the surveys due to variable environmental factors, including but not limited to the reasonably foreseeable deterioration and/or growth of existing plant material. No warranty is made, expressed or implied, that problems or deficiencies of the trees or the property will not occur in the future, from any cause. CAJA shall not be responsible for damages or injuries caused by any tree defects, and assumes no responsibility for the correction of defects or tree related problems. It is assumed that statements of fact regarding property ownership, property boundaries, exact structure and proposed utility locations are “as represented” by the client, in all verbal, written or drawn communications. CAJA assumes no responsibility for verification of ownership or locations of property or utility lines, or for results of any actions or recommendations based on inaccurate information. *The Advisory Agency or City to whom this report is submitted has the final word regarding any recommendation(s) or required mitigation(s).*

Appendix A: Tree Survey Matrix Sheets, 1-2

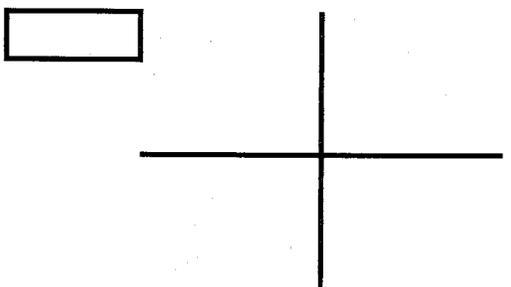
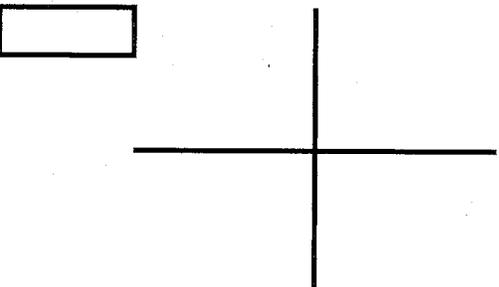
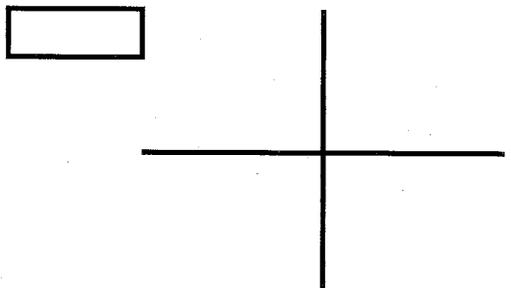
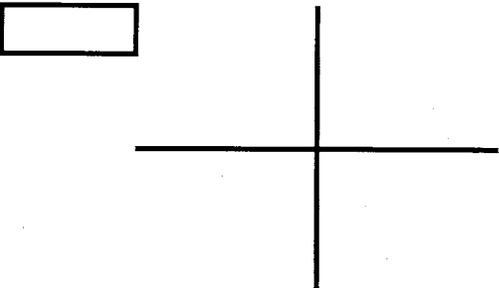
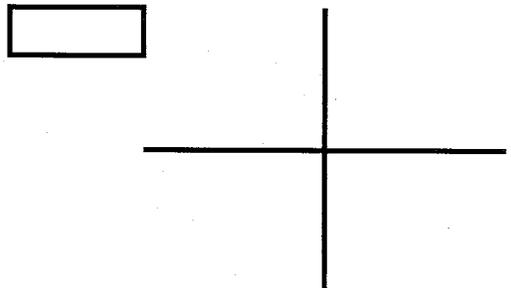
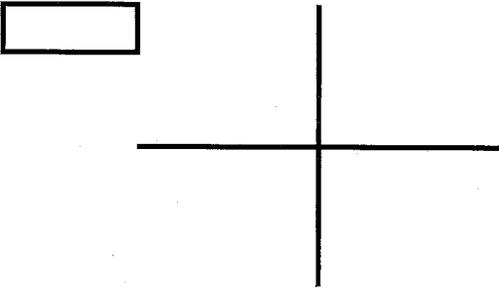
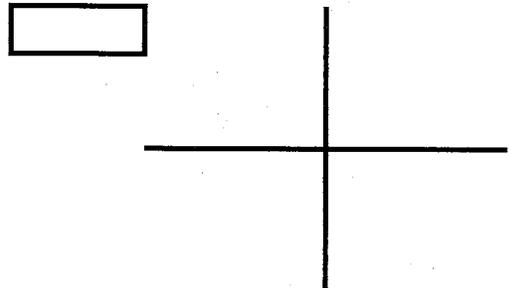
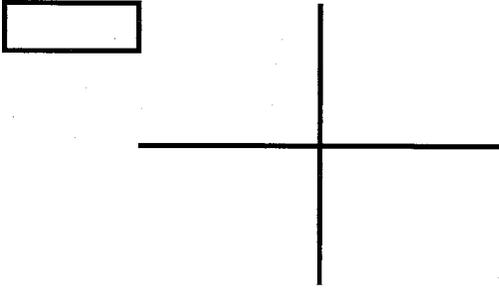
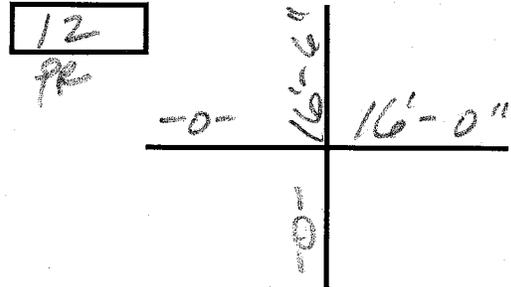
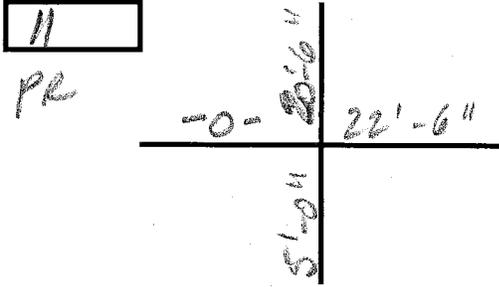
Appendix B: Tree Survey Canopy Measurement Sheets, 1-2



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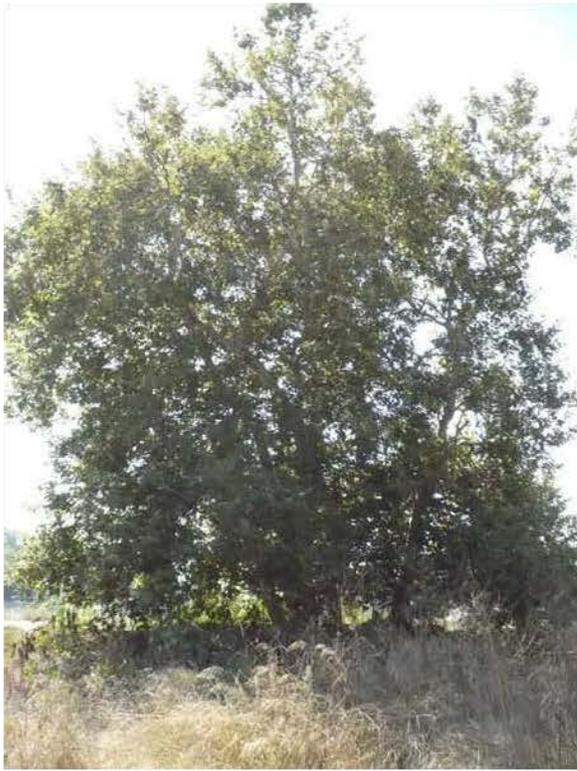


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Appendix C: Tree Photographs



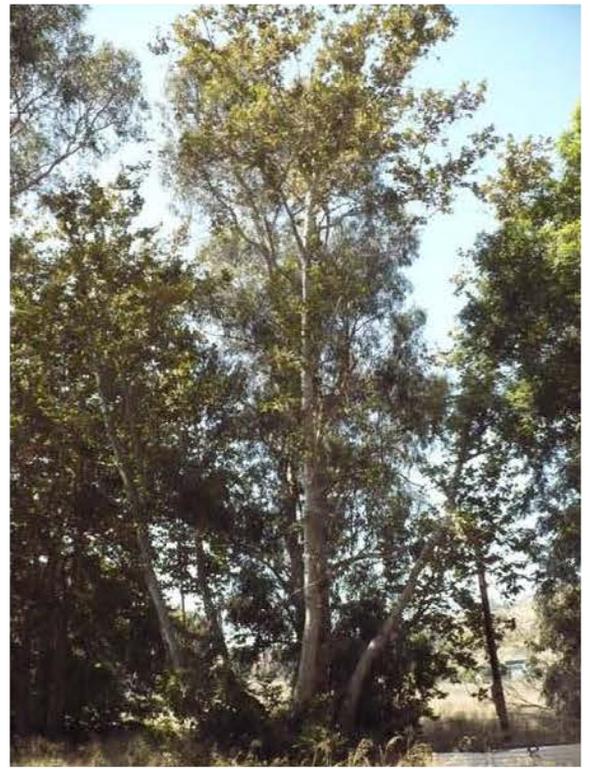
Tree # 1-3



Tree # 4



Tree # 5-8



Tree # 9-12

