

# AGUA DULCE TOWN COUNCIL

33201 Agua Dulce Canyon Road \* Box Number 8 \* Agua Dulce, CA 91390

Website: [www.adtowncouncil.com](http://www.adtowncouncil.com)

February 16, 2022

Mr. Jason Gibbs, Chair  
Santa Clara River Watershed Steering Committee  
Safe, Clean Water Program/Measure W

Via Email to: [JGIBBS@santa-clarita.com](mailto:JGIBBS@santa-clarita.com)

**RE: Request for Public Access for Santa Clara River Watershed  
Area Steering Committee Meeting Video Recordings**

Dear Mr. Gibbs:

The Agua Dulce Town Council is formally requesting that video recordings of the Santa Clara River (SCR) Watershed Area Steering Committee (WASC) meetings be posted on the Safe Clean Water/Measure W website for public access. The SCR WASC meetings are held during daytime hours when many of our community members are working and unable to attend.

We get regular reports from our Agua Dulce Town Council Member, Mary Johnson, who serves on the SCR WASC and from the SCR WASC Watershed Coordinator, Peter Massey, at our regular meetings. However, having video recordings of the meetings available to the public would allow our community members to see and hear the project presentations, discussion from Committee members, and comments. The annual budget for your watershed is nearly \$6 million. How that money gets distributed needs to be done in a transparent manner. Having the meeting video recordings available for the public will increase community engagement, education and accountability.

We thank you and the SCR WASC members for your service and commitment and for your part in developing funding plans and recommendations to provide water quality, water supply, and community enhancement benefits to the Santa Clara River Watershed. We request video recordings of all SCR WASC meetings be posted for public review. Having the recordings available to the public creates a pathway to increased equitable access and added community engagement. Please have this distributed to all SCR WASC members.

Respectfully,

*Don Henry*

Don Henry, President  
Agua Dulce Town Council – 2022

cc: Mr. Peter Massey, Santa Clara River WASC Watershed Coordinator [petermassey@treepeople.org](mailto:petermassey@treepeople.org)  
Ms. Stephanie English, 5<sup>th</sup> District Deputy [SEnglish@bos.lacounty.gov](mailto:SEnglish@bos.lacounty.gov)  
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# TREE REPORT

## **PREPARED FOR**

Los Angeles County Public Works

## **PROPERTY**

Pico Canyon Park

25600 Pico Canyon Rd

Stevenson Ranch, CA 91381

## **CONTACT**

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February 5, 2018

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# TREE REPORT

Pico Canyon Park  
25600 Pico Canyon Rd.  
Stevenson Ranch, CA 91381

## SUMMARY

Los Angeles County is preparing to install a new stormwater infiltration system in Pico Canyon Park. This park includes a collection of mature oaks trees including the historic Old Glory Oak.

The purpose of this report is to review the potential impacts of the proposed project and provide recommendations for protecting the oak trees on site throughout the course of construction.

## PROJECT DESCRIPTION

The Project is located at Pico Canyon Park in the unincorporated County area of Stevenson Ranch. The Park sits on the south side of Pico Canyon Road between Southern Oaks Drive and Stevenson Ranch Parkway (Thomas Guide 4640: B-1, B-2, C-1, and C-2, Attachment A). It is nestled in a residential neighborhood and vacant mountainous terrain within the Santa Clara River watershed and Fifth Supervisor District.

This 21.3-acre recreational park is under the jurisdiction of Los Angeles County Department of Parks and Recreation (DPR). The park has open space that provides the opportunity to improve water quality by constructing above and underground infiltration systems. Dry and wet-weather flows from existing storm drains (PD 2522, PD 2492, and PD 2495), that would normally discharge into the Santa Clara River, will be diverted into the Park for infiltration up to the approximate RAA stormwater volume of 12,600 cubic feet. The infiltration system will consist of bioswales, a pre-treatment baffle box, infiltration galleries, and meters to measure the incoming flow. The Project will accomplish the following objectives:

- Provide a **water quality benefit** by reducing the amount of bacteria, nutrients, toxics, and metal pollutants.
- **Recharge the local ground water supply** with a combination of infiltration galleries, dry wells and pervious pavement.
- **Preserve and enhance** the existing recreational and aesthetic benefits of the Park.

- **Provide an educational opportunity** on sustainable development and increase public awareness of water quality and conservation efforts by installing interpretive signs in Project areas.
- **Mitigate existing sheet flow problems** and prevent rill erosion with new bioswales and diversion berms.

## CONSTRUCTION AREAS

Construction activities will be optimized to minimize obtrusiveness and maintain the functionality of the Park. **The exact installation methods and locations of the new infiltration system gallery are flexible and will be responsive to the discovery of major roots or other issues in the field.**

The construction will take place in three locations in the park, named Area 1, Area 2, and Area 3. Trenching will occur in every location at a width of 4 feet.

### Area 1

**The Area 1 Trench** will be aligned with the service trail, to a depth of 15 feet. The typical storm drain pipe is around 24 inches RCP. The final trench width will be approximately 4 feet wide and approximately 6 feet deep.

The primary infiltration structure is approximately 20 feet to the invert. Area 1 includes a collection of oak trees, including the Old Glory oak. An alternate location for this trench follows a trail from the top of the park. Both options are addressed in the photographs and notes included in Appendix B.

### Area 2

**The Area 2 Trench** roughly runs along the south edge of the existing trail to a depth of 5 feet. The exact location of this trench can be modified in the field.

### Area 3

**The Area 3 Trench** is located in an open field, to a depth of 5 feet.

## OTHER POTENTIAL CONSTRUCTION

### Bioswales and/or Berms

The project team may elect to install one or more bioswales (1 foot to 2 feet in depth) or berms (1 foot in height) throughout the site.

## GENERAL GUIDELINES FOR TRENCHING

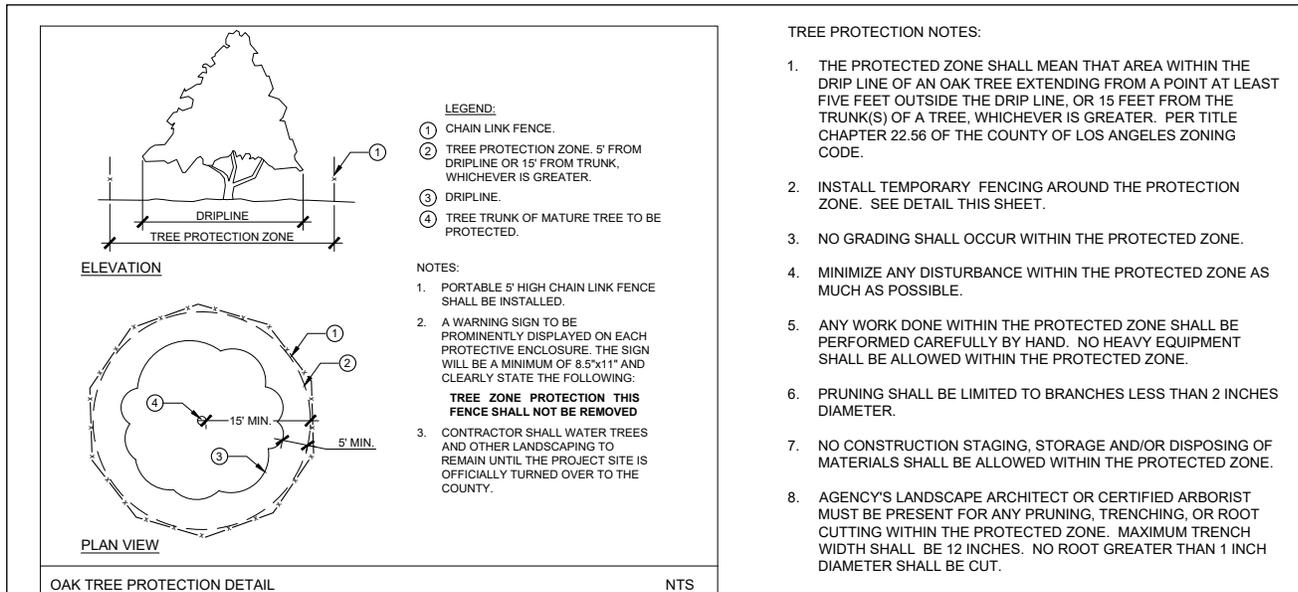
The design of the infiltration system trenching is flexible and may be modified in the field. In order to minimize impact to any potential roots, **the first 18 inches of all trenching activities should be performed by hand and retain all roots 2 inches or greater.** If the hand trenching exposes roots 2 inches in diameter or greater, the project team should discuss further impacts with the Project Arborist. Options may include limited root pruning, risk mitigation canopy pruning that may compensate for any loss of root plate stabilization, or re-routing the trench location. This work will require on-site inspection by the Project Arborist to determine the acceptable actions that will allow retention of the tree with minimal impact to health, vigor and/or stability.

Other minor grade changes, such as elevating the soil grade for a berm, are generally acceptable if outside of the drip line of the canopy and limited to one foot of additional soil.

Trenching and excavation removes soil and tree roots. When performed in the critical root zone (approximately 5x the trunk diameter of any tree) or within the dripline (outer edge of the natural canopy), there is the potential to remove roots or tear roots that will stay attached to the tree. Torn roots cannot callous over or generate new roots in the manner of cleanly-cut roots. Torn roots are entry points for disease and decay organisms, and eventually die. Significant root loss and/or severance can negatively impact the health and structure of trees to remain in a landscape. It is therefore critical that trenching be performed with caution in order to preserve the existing roots.

## THE TREE PROTECTION ZONE

The **tree protection zone** is defined by Los Angeles County in the following the tree protection detail:

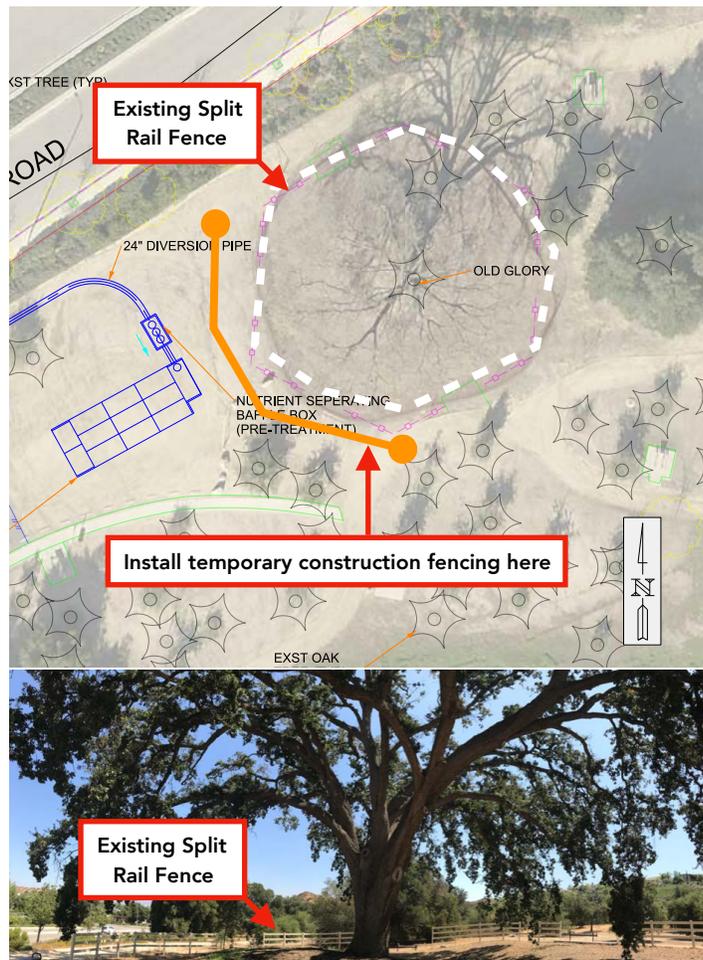


## THE OLD GLORY OAK TREE PROTECTION ZONE

The Old Glory Oak tree protection zone will be established per the Los Angeles County tree protection guidelines included on page five.

The Old Glory Oak is currently protected at the dripline by an existing split rail fence. **This fence will serve as the primary protective fencing throughout the course of construction, with signage designating the area a protected zone.**

Additionally, a line of temporary construction fencing should be installed adjacent to the new construction. This fencing should be set back 5 feet from the split rail fence perimeter and installed in the location indicated in the diagram on the right.



# IMPACT ANALYSIS AND SPECIFIC RECOMMENDATIONS

## POTENTIAL IMPACT TO THE OLD GLORY OAK - AREA 1

### Potential Short Term Impacts of Construction

The Old Glory Oak tree is located adjacent to Area 1, the proposed site of a new infiltration system gallery. However, as the location of the trenching and new construction are well outside of the dripline of this tree, performing the trenching by hand for the first 18 inches may not be necessary.

The Old Glory Oak is showing new growth since being transplanted in 2004, and appears in fair condition. This tree should be relatively tolerant of construction activity outside of dripline, which is surrounded by an existing split rail fence. Add tree protection fencing signage to the split rail fence designating the area a protected zone. Additionally, a line of temporary construction fencing should be installed adjacent to the new construction. Monitor the hydration of the tree and perform regular deep soaking throughout construction.

### Potential Impacts of the Infiltration Gallery Installation

A second line of protective fencing will be installed along the the perimeter of the split rail fence adjacent to the infiltration gallery installation area, providing an additional 5 feet of protective setback from the tree. Significant impacts are not anticipated due to the distance of the construction from the dripline of the tree.

### Potential Long Term Impacts of Construction

Once the project is complete, the health, vigor, irrigation practices, and soil moisture of the Old Glory Oak should be monitored quarterly. Significant long term impacts are not anticipated to this tree.

## POTENTIAL IMPACT - AREA 2

Area 2 includes a dense collection of oaks. Installation of the proposed trenching and piping will have some level of impact to the roots and canopy. To reduce impact to these oaks, the following “Best Management Practices” are recommended during the course of construction.

- 1) **Have the Project Arborist assess the trees in Area 2 for structurally deficient or dead branches. Prune out identified deadwood and deficient branches** on all trees to minimize branch failure onto any workers before work begins. Perform mitigation pruning (such as end weight reduction) to reduce risk on branches that have potential for failure within the next 12 months.
- 2) **Perform exploratory trenching with hand tools** in the optimal piping locations. Follow the attached trenching guidelines, which includes retaining all roots 2 inches or greater. Exposed roots will be evaluated by the Project Arborist to observe the size and volume of roots that may require root pruning. If shifting of the pipeline location is required, this will be discussed in the field.
- 3) **Root prune carefully under the guidance of the project arborist.** Roots should be cut at a 90-degree angle and cut cleanly. No roots should be torn or jagged; this can lead to rotting and decay in the root zone and reduced stability and health in the tree. The roots should be exposed first through hand digging.
- 4) **Lightly apply moisture to keep the root from drying out** if any root zone is left open for an extended period of time. Do not let the roots sit in any pools of water during construction. This situation can also cause rotting and decay.
- 5) **Backfill the trench with native soil** after the root pruning is complete, or use an amendment blend, depending on soil conditions. Do not overly compact. Water in every 1 – 2 feet, to reduce air pockets.
- 6) **Apply a light layer of organic mulch or natural leaf litter duff from the area, over the root zone (approx. 3 - 4 inches thick)** after backfilling of soil over the pruned roots. The mulch will reduce loss of moisture from the soil, protect against compaction, and moderate soil temperatures. It also has been demonstrated that the addition of mulch reduces soil compaction over time. Do not allow mulch to touch trunk of tree.
- 7) **Irrigate the root-pruned trees with deep, occasional watering.** Avoid light, infrequent irrigation, excess irrigation from surrounding landscaping, and wetting the trunk.

### Potential Impact of the Diversion Structure in Area 2

The installation of the diversion structure should be performed with the hand trenching method outlined above. Because the majority of roots are in the top 24” of the soil, the 5’ depth of the diversion structure will not necessarily create additional impacts. Roots discovered by exploratory trenching in this area will be assessed in the field.

## **POTENTIAL IMPACT - AREA 2, continued**

### **Potential Long Term Impacts to Surface Water**

Changes to surface water flow due to the Infiltration Structure and Diversion Structure are not anticipated to significantly impact the trees in this area.

## **POTENTIAL IMPACT - AREA 3**

There are no oak trees in the vicinity of the proposed construction in Area 3. This area should have no impact to Perform trenching by hand for the first 18 inches in this area to inspect for potential roots.

## **POTENTIAL IMPACTS OF MODIFIED WATER FLOWS**

Currently, water flow on site is a combination of natural rainfall, irrigation runoff, and intentional hydration of the subject trees. The proposed project, specifically in Area 2 and Area 3, will modify water flows on site by redirecting or limiting the runoff, and may potentially provide new water flows. To monitor the effects of the modifications, the soil throughout the site should be checked regularly with a moisture meter. Supplemental or reduced hydration to the subject oak trees can be discussed at that time.

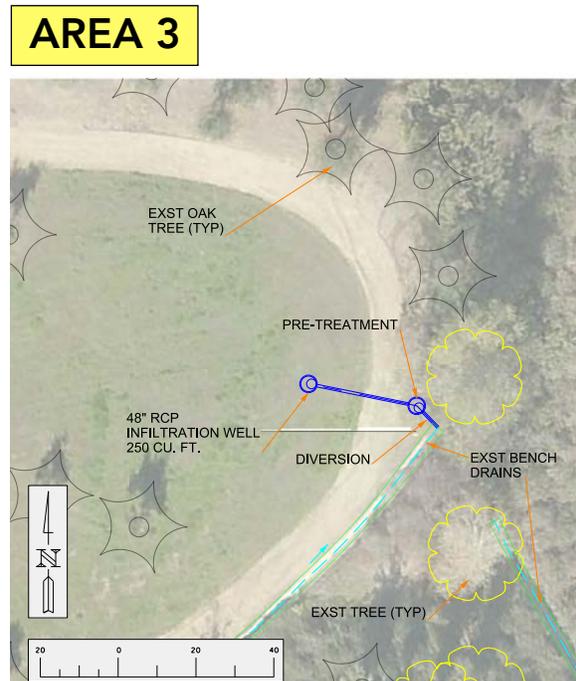
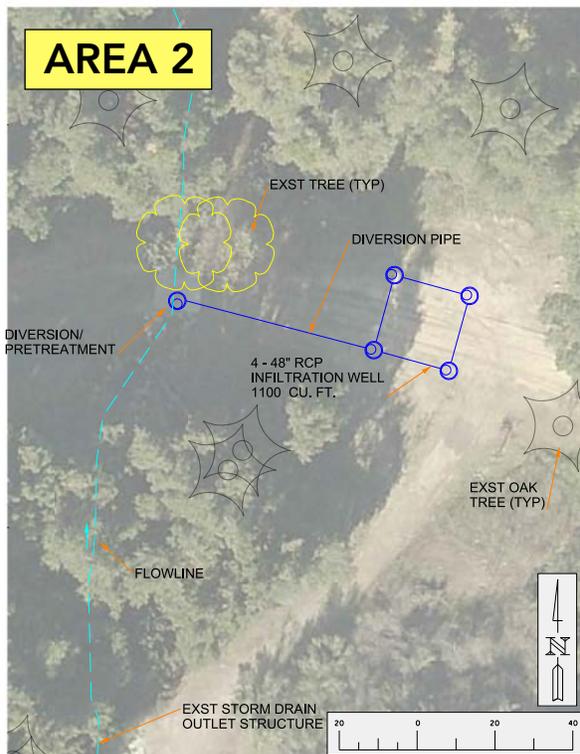
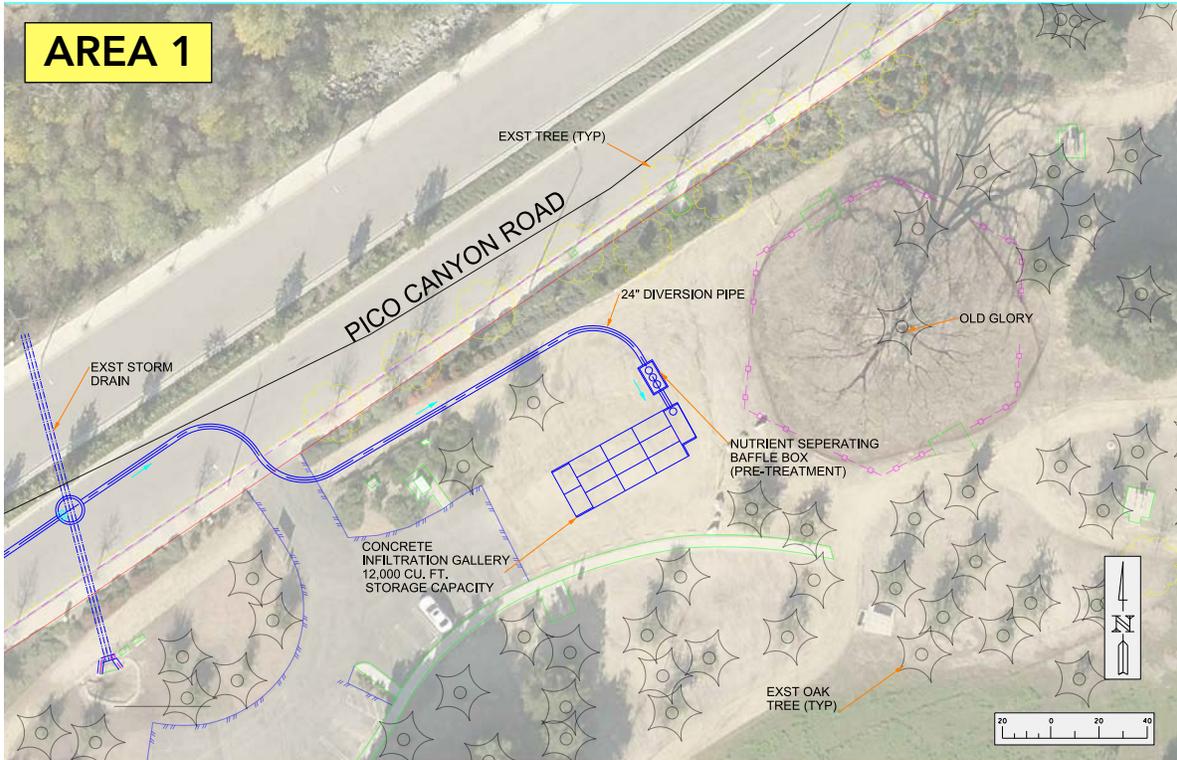
### **Potential Long Term Impacts of Modified Water Flows**

Soil moisture base measurements should be recorded and monitored seasonally.

Modifying the water flow may have some impact on the trees for the next 5-10 years. However, they should ultimately adapt to the limited hydration provided by natural rainfall, similar to the other oaks in park that are not adjacent to irrigation runoff and do not receive supplemental irrigation.

Other factors that will contribute to their tolerance include the heavy layer of leaf litter throughout the site. Leaf litter retains moisture, provides nutrients, and regulates soil temperature. Leaf litter should be retained throughout the site.

# APPENDIX A - SITE MAP



## APPENDIX B - PHOTOS - AREA 1 - Old Glory Oak



**Photo 1** - The Old Glory Oak in its current condition. This tree has pushed out extensive new growth during its establishment over the past 10 years. The existing fence surrounding the dripline of this tree will be utilized as protective fencing throughout the course of construction.

## APPENDIX B - PHOTOS - AREA 1 - Old Glory Oak



**Photo 2** - A view of the base of The Old Glory Oak, showing appropriate taper and root flare.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 3** - A view of Area 2, where trenching may occur. There is a collection of oaks in this area which have recently had a greater water availability due to a water collection pipe installed approximately 18 years ago.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 4** - The water collection runs through this small stream and allows for a continual supply of water to the roots of this oak area.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 5** - Note there is extensive deadwood in many of these trees. Prior to the commencement of any work, these trees should have deadwood pruning performed. This is not a safe working environment and there is great potential for dead stems and branches to drop and potentially cause injury.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 6** - Note close up of extensive deadwood in canopies.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 7** - Current conditions of stream adjacent to collection of oaks.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 8** - This photo shows some of the oaks adjacent to the small stream.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 9** - Panoramic view of the collection of oaks in this area.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 10** - The proposed piping would travel under this pathway and to the right, into another collection of oak trees.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 11** - This shows the water culvert and where the excess water from the hillside finally is captured. It empties out into the small stream that runs past the collection of oak trees in Area 2.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove

Water Culvert  
Area



**Photo 12** - Collection of oaks on either side of the path. The piping would connect on the left and run through the grove to the right.

## APPENDIX B - PHOTOS - AREA 2 - Oak Grove



**Photo 13** - Mistletoe was noted in the canopies of several oaks. This should also be pruned out.

## APPENDIX B - PHOTOS - AREA 3 - Hillside



**Photo 14** - the upper hillside (left) has extensive ground cover that is watered causing runoff to occur weekly into the V-ditch below.

## APPENDIX B - PHOTOS - AREA 3 - Hillside



**Photo 15** - This area is open and can be utilized for any replacement trees or other dedicated activity.

## APPENDIX B - PHOTOS - AREA 3 - Hillside



**Photo 16** - Note the extensive ground cover and V-ditches to capture water runoff. This area is open and can be utilized for any replacement trees or other dedicated activity.

## APPENDIX B - PHOTOS - AREA 3 - Hillside



**Photo 17** - Note the runoff that is occurring throughout this park when there is excess water or rain.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 18** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 19** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 20** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 21** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 22** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 23** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## APPENDIX B - PHOTOS - Western Edge - Outside of Construction



**Photo 24** - This trail was identified in earlier designs as a potential location to begin the pipe line, however it is no longer being impacted.

## Assumptions and Limiting Conditions

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. The Consultant 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.

The owner of the trees may choose to accept or disregard the recommendations of the Consultant, or seek additional advice to determine if a tree meets the owner's risk abatement standards.

The Consulting Arborist has no past, present or future interest in the removal or retaining of any tree. Opinions contained herein are the independent and objective judgments of the consultant relating to circumstances and observations made on the subject site.

The recommendations contained in this report are the opinions of the Consulting Arborist at the time of inspection. These opinions are based on the knowledge, experience, and education of the Consultant. The field inspection was a visual, grade level tree assessment.

The Consulting Arborist shall not be required to give testimony, perform site monitoring, provide further documentation, be deposed, or to attend any meeting without subsequent contractual arrangements for this additional employment, including payment of additional fees for such services as described by the Consultant.

The Consultant assumes no responsibility for verification of ownership or locations of property lines, or for results of any actions or recommendations based on inaccurate information.

This Arborist report may not be reproduced without the express permission of the Consulting Arborist and the client to whom the report was issued. Any change or alteration to this report invalidates the entire report.

Should you have any further questions regarding this property, please contact me at (310) 663-2290.

Respectfully submitted,



**Lisa Smith**

Registered Consulting Arborist #464

ISA Board Certified Master Arborist #WE3782

ISA Tree Risk Assessor Qualified

American Society of Consulting Arborists, Member



## GENERAL RECOMMENDATIONS

During the course of construction, trees can receive much stress, pollution, soil compaction and lack of water. The following general recommendations should be followed to establish and maintain a healthy environment for all retained trees.

### WORKING IN THE TREE PROTECTION ZONE

This area generally encompasses an area within the dripline of the tree plus additional feet depending on the species and size of the tree. However, if you should need to encroach within a tree's protected zone, please follow these guidelines.

**Observation** – All work within the protected zone should be observed by a certified arborist experienced with each specific tree's requirements. The arborist should be contacted in a timely manner to ensure their availability.

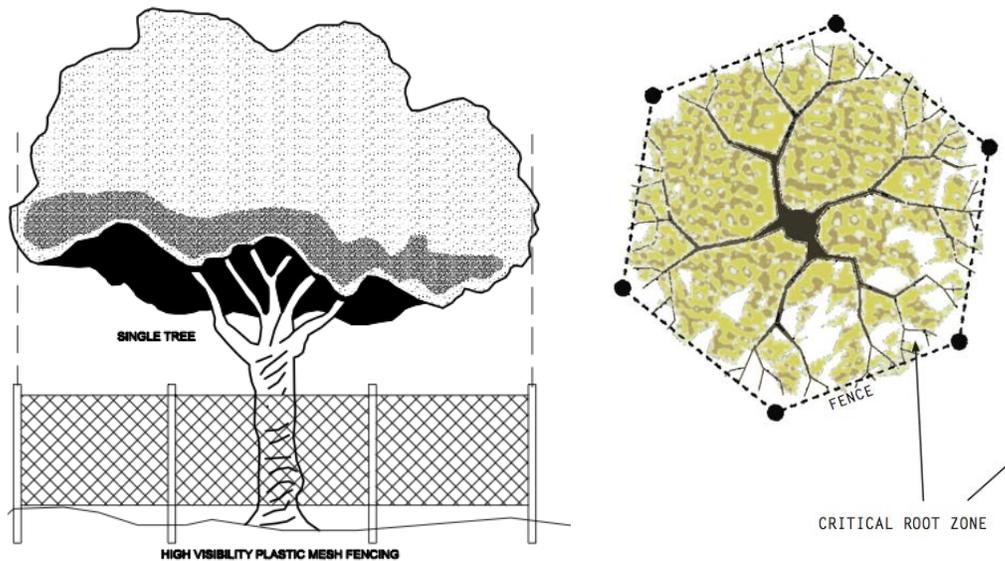
**Hand Tools** – All work should be performed utilizing hand tools only. To reduce compaction in the root zone, no large equipment, such as backhoes or tractors should be utilized in this protected zone.

**Root Pruning - Should** there be a need to perform any light root pruning, it should be done carefully. The roots should be exposed through hand digging. **The roots should be cut at a 90-degree angle and cut cleanly.** No roots should be torn or jagged; this can lead to rotting and decay in the root zone and reduced stability and health in the tree. I caution excessive root pruning, and encourage you to err on the conservative side. If a tree is in any existing stress or is lacking in health and vigor, the root pruning can contribute to the quick decline of a tree.

**Protective Fencing** – If necessary, the arborist should be contacted to develop a specific fencing plan for your trees. Fencing may be of a flexible configuration and be a minimum of 4 feet in height. A warning sign must be displayed on the street side of the fence, stating the requirements of all workers in the protected zone. Throughout the course of construction, maintain the integrity of the tree protection zone fencing and keep the site clean and maintained at all times.

**Irrigation** – Irrigate trees for the duration of the project. If the tree is newly planted, deep watering should be weekly during its establishment period. If the tree is quite mature, deep water once per month during spring and summer months.

## PROTECTIVE FENCING



Tree protection fencing must be installed at the edge of the Tree Protection Zone (critical root zone) or beyond **prior to the start of any clearing, grading or other construction activity**. If space limits the fencing, place at the furthest possible distance from the trunk.

- 1) Fencing may be of a **flexible configuration or chain-link** and be a minimum of 4 feet in height supported by vertical posts at a maximum of ten-foot intervals to keep the fence upright and in place.
- 2) A warning sign should be posted on the fencing which states, **“Warning: Tree Protection Zone”** and stating the requirements of all workers in the protected zone. Example available upon request.
- 3) Throughout the course of construction, **maintain the integrity of the tree protection zone fencing and keep the site clean and maintained at all times**. No construction staging or disposal of construction materials or byproducts including but not limited to paint, plaster, or chemical solutions is allowed in the Tree Protection Zone.

## PLANTING WITHIN THE PROTECTED ZONE

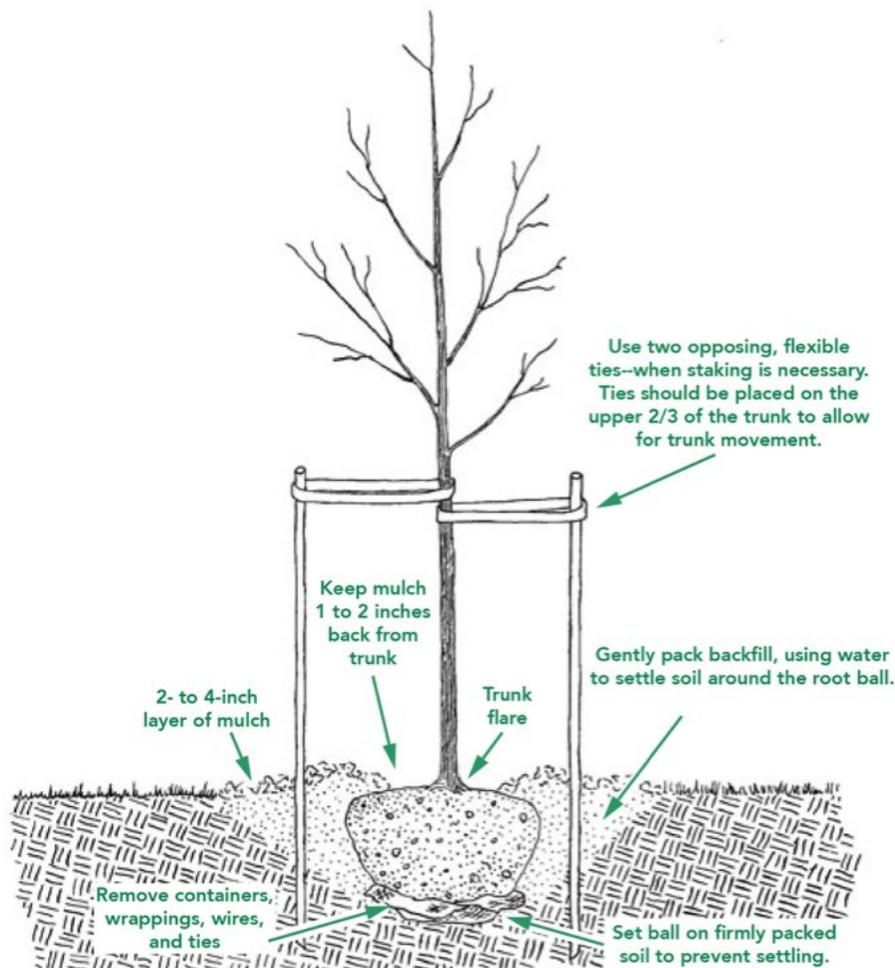
Trees remain healthier and vigorous with NO plantings within the protected zone. The natural leaf litter that the tree provides should be allowed to remain on the ground, to provide natural mulch and nutrients. If planting is desired, please follow these recommendations:

**Plant Selection** – Only drought tolerant plants that are compatible with the specific trees should be selected. Most importantly, select plants that are resistant to Armillaria or Phytophthora. Some trees are particularly susceptible to these diseases in urban areas and when under construction stress. Please refer to local guides for acceptable plant recommendations

**Irrigation** – Water should not be spraying toward the base of the trunk or tree; this can encourage rotting of the root crown. Excessive moisture on the base of the trunk can encourage Armillaria mellea (Oak Root Fungus) or Phytophthora cinnamomi (Avocado Root rot). Both of these fungus' can reduce the health and vigor of the tree, thus leading to decline and potential failure of the tree (falling over). It is recommended to only provide irrigation to the roots in the warmer months of spring and early summer, thus extending the natural rainy season. This irrigation should be provided via soaker hoses that do not spray upward.

**Mulch** - Apply a light layer of organic mulch over the root zone (approx. 3- 4 inches thick). The mulch will reduce loss of moisture from the soil, protect against construction compaction, and moderate soil temperatures. It also has been demonstrated that the addition of mulch reduces soil compaction over time. Do not place mulch against the trunk, instead placing at least 3 inches from base.

## NEW TREE PLANTING



The ideal time to plant trees and shrubs is during the dormant season, in the fall after leaf drop or early spring before budbreak. Weather conditions are cool and allow plants to establish roots in the new location before spring rains and summer heat stimulate new top growth. Before you begin planting your tree, be sure you have had all underground utilities located prior to digging.

If the tree you are planting is balled or bare root, it is important to understand that its root system has been reduced by 90 to 95 percent of its original size during transplanting. As a result of the trauma caused by the digging process, trees commonly exhibit what is known as transplant shock. Containerized trees may also experience transplant shock, particularly if they have circling roots that must be cut. Transplant shock is indicated by slow growth and reduced vigor following transplanting. Proper site preparation before and during planting coupled with good follow-up care reduces the amount of time the plant experiences transplant shock and allows the tree to quickly establish in its new location. Carefully follow nine simple steps, and you can significantly reduce the stress placed on the plant at the time of planting.

## NEW TREE PLANTING, continued

**1. Dig a shallow, broad planting hole.** Make the hole wide, as much as three times the diameter of the root ball but only as deep as the root ball. It is important to make the hole wide because the roots on the newly establishing tree must push through surrounding soil in order to establish. On most planting sites in new developments, the existing soils have been compacted and are unsuitable for healthy root growth. Breaking up the soil in a large area around the tree provides the newly emerging roots room to expand into loose soil to hasten establishment.

**2. Identify the trunk flare.** The trunk flare is where the roots spread at the base of the tree. This point should be partially visible after the tree has been planted (see diagram). If the trunk flare is not partially visible, you may have to remove some soil from the top of the root ball. Find it so you can determine how deep the hole needs for proper planting.

**3. Remove tree container for containerized trees.** Carefully cutting down the sides of the container may make this easier. Inspect the root ball for circling roots and cut or remove them. Expose the trunk flare, if necessary.

**4. Place the tree at the proper height.** Before placing the tree in the hole, check to see that the hole has been dug to the proper depth and no more. The majority of the roots on the newly planted tree will develop in the top 12 inches of soil. If the tree is planted too deeply, new roots will have difficulty developing because of a lack of oxygen. It is better to plant the tree a little high, 1-2 inches above the base of the trunk flare, than to plant it at or below the original growing level. This planting level will allow for some settling.

**5. Straighten the tree in the hole.** Before you begin backfilling, have someone view the tree from several directions to confirm that the tree is straight. Once you begin backfilling, it is difficult to reposition the tree.

**6. Fill the hole gently but firmly.** Fill the hole about one-third full and gently but firmly pack the soil around the base of the root ball. Be careful not to damage the trunk or roots in the process. Fill the remainder of the hole, taking care to firmly pack soil to eliminate air pockets that may cause roots to dry out. To avoid this problem, add the soil a few inches at a time and settle with water. Continue this process until the hole is filled and the tree is firmly planted. It is not recommended to apply fertilizer at time of planting.

**7. Stake the tree, if necessary.** If the tree is grown properly at the nursery, staking for support will not be necessary in most home landscape situations. Studies have shown that trees establish more quickly and develop stronger trunk and root systems if they are not staked at the time of planting. However, protective staking may be required on sites where lawn mower damage, vandalism, or windy conditions are concerns. If staking is necessary for support, there are three methods to choose among: staking, guying, and ball stabilizing. One of the most common methods is staking. With this method, two stakes used in conjunction with a wide, flexible tie material on the lower half of the tree will hold the tree upright, provide flexibility, and minimize injury to the trunk (see diagram). Remove support staking and ties after the first year of growth.

**8. Mulch the base of the tree.** Mulch is simply organic matter applied to the area at the base of the tree. It acts as a blanket to hold moisture, it moderates soil temperature extremes, and it reduces competition from grass and weeds. A 2- to 3-inch layer is ideal. More than 3 inches may cause a problem with oxygen and moisture levels. When placing mulch, be sure that the actual trunk of the tree is not covered. Doing so may cause decay of the living bark at the base of the tree. A mulch-free area, 1 to 2 inches wide at the base of the tree, is sufficient to avoid moist bark conditions and prevent decay.

## TREE MAINTENANCE AND PRUNING

Some trees do not generally require pruning. The occasional removal of dead twigs or wood is typical. Occasionally a tree has a defect or structural condition that would benefit from pruning. Any pruning activity should be performed under the guidance of a certified arborist or tree expert.

Because each cut has the potential to change the growth of the tree, no branch should be removed without a reason. Common reasons for pruning are to remove dead branches, to remove crowded or rubbing limbs, and to eliminate hazards. Trees may also be pruned to increase light and air penetration to the inside of the tree's crown or to the landscape below. In most cases, mature trees are pruned as a corrective or preventive measure.

Routine thinning does not necessarily improve the health of a tree. Trees produce a dense crown of leaves to manufacture the sugar used as energy for growth and development. Removal of foliage through pruning can reduce growth and stored energy reserves. Heavy pruning can be a significant health stress for the tree.

Yet if people and trees are to coexist in an urban or suburban environment, then we sometimes have to modify the trees. City environments do not mimic natural forest conditions. Safety is a major concern. Also, we want trees to complement other landscape plantings and lawns. Proper pruning, with an understanding of tree biology, can maintain good tree health and structure while enhancing the aesthetic and economic values of our landscapes.

### Pruning Techniques – From the I.S.A. Guideline

Specific types of pruning may be necessary to maintain a mature tree in a healthy, safe, and attractive condition.

**Cleaning** is the removal of dead, dying, diseased, crowded, weakly attached, and low-vigor branches from the crown of a tree.

**Thinning** is the selective removal of branches to increase light penetration and air movement through the crown. Thinning opens the foliage of a tree, reduces weight on heavy limbs, and helps retain the tree's natural shape.

**Raising** removes the lower branches from a tree to provide clearance for buildings, vehicles, pedestrians, and vistas.

**Reduction** reduces the size of a tree, often for clearance for utility lines. Reducing the height or spread of a tree is best accomplished by pruning back the leaders and branch terminals to lateral branches that are large enough to assume the terminal roles (at least one-third the diameter of the cut stem). Compared to topping, reduction helps maintain the form and structural integrity of the tree.

## **TREE MAINTENANCE AND PRUNING, continued**

### **How Much Should Be Pruned?**

Mature trees should require little routine pruning. A widely accepted rule of thumb is never to remove more than one-quarter of a tree's leaf-bearing crown. In a mature tree, pruning even that much could have negative effects. Removing even a single, large-diameter limb can create a wound that the tree may not be able to close. The older and larger a tree becomes, the less energy it has in reserve to close wounds and defend against decay or insect attack. Pruning of mature trees is usually limited to removal of dead or potentially hazardous limbs.

### **Wound Dressings**

Wound dressings were once thought to accelerate wound closure, protect against insects and diseases, and reduce decay. However, research has shown that dressings do not reduce decay or speed closure and rarely prevent insect or disease infestations. Most experts recommend that wound dressings not be used.

## **DISEASES AND INSECTS**

Continual observation and monitoring of your tree can alert you to any abnormal changes. Some indicators are: excessive leaf drop, leaf discoloration, sap oozing from the trunk and bark with unusual cracks. Should you observe any changes, you should contact a Tree specialist or Certified Arborist to review the tree and provide specific recommendations. Trees are susceptible to hundreds of pests, many of which are typical and may not cause enough harm to warrant the use of chemicals. However, diseases and insects may be indication of further stress that should be identified by a professional.

## **GRADE CHANGES**

The growing conditions and soil level of trees are subject to detrimental stress should they be changed during the course of construction. Raising the grade at the base of a tree trunk can have long-term negative consequences. This grade level should be maintained throughout the protected zone. This will also help in maintaining the drainage in which the tree has become accustomed.

## **INSPECTION**

The property owner should establish an inspection calendar based on the recommendation provided by the tree specialist. This calendar of inspections can be determined based on several factors: the maturity of the tree, location of tree in proximity to high-use areas vs. low-use area, history of the tree, prior failures, external factors (such as construction activity) and the perceived value of the tree to the homeowner.