

**CALLEGUAS MUNICIPAL WATER DISTRICT  
LAS VIRGENES-CALLEGUAS INTERCONNECTION  
PROJECT 450  
OAK PARK, VENTURA COUNTY, CALIFORNIA  
OAK TREE REPORT**

**Prepared for:**

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**Prepared by:**

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**Project No. 2002-4401**

## INTRODUCTION

This tree report, and all analyses and recommendations contained herein have been prepared according to the plans and information provided by Phoenix Civil Engineering, Inc., the engineering design consultant for the Calleguas Municipal Water District (CMWD). CMWD and Las Virgenes Municipal Water District (LVMWD) are the joint proponents for the Las Virgenes-Calleguas Interconnection Project (Project), with CMWD acting as lead agency under the California Environmental Quality Act (CEQA). An Environmental Impact Report (EIR, State Clearinghouse No. 2018111008) was prepared according to CEQA for CMWD in August 2019. Construction of a new, buried turn-out (Triunfo Water & Sanitation District [TWSD] meter station and control valve vault) and associated vents, pipelines, and electrical conduits are proposed within a landscaped area at the southeast corner of Lindero Canyon Road and Kanan Road.

According to the EIR, oak trees protected under the Ventura County Non-Coastal Zoning Ordinance occur immediately adjacent to the temporary construction easements for the Interconnection PS / PRS site. These trees would not be removed by construction activities. In any case, under Section 53091.e of the California Government Code, this water storage and transmission project is not subject to zoning ordinances (i.e., Ventura County Non-Coastal Zoning Ordinance inclusive of Tree Protection Regulations). Nonetheless, CMWD has requested a tree evaluation to determine if the project will have a detrimental effect on one (1) existing coast live oak (*Quercus agrifolia*) tree adjacent to the new turn-out location and develop a list of protective measures to minimize or avoid impacts to the subject tree.

To complete this evaluation, due to the tree's location within unincorporated Ventura County, Padre Associates, Inc. (Padre) used the County Tree Protection Regulations as a basis for determining what size tree should be protected, the tree's recommended root and canopy protection zone, and to what extent encroachment or pruning can occur that will not endanger the tree. The following criteria were excerpted from Section 8107-25 et seq. of the Tree Protection Regulations for this purpose:

- A protected tree is any single-trunk oak tree with a circumference of over 9.5 inches at 4.5 feet off the ground or any multi-trunk oak tree with at least one trunk measuring a circumference of over 6.25 inches at 4.5 feet off the ground.
- The tree protection zone is defined as the surface and subsurface area within the dripline and extending a minimum of five (5) feet outside the dripline or 15 feet from the trunk of a tree, whichever is greater.
- Pruning and trimming of living limbs and roots, each of which is less than 20% of the tree trunk's girth, is acceptable provided such trimming does not endanger the life of the tree, result in an imbalance in structure, or remove more than 20% of its canopy or the root system. Said alterations shall be performed by the property owner, resident with the owner's consent, or a qualified tree trimmer. For trimming and pruning, ISA standards shall be used and climbing spurs shall not be used.

## METHODOLOGY

The tree survey consisted of the following activities, as applicable to the number of protected trees present within the survey area:

- Identifying all oak trees located onsite requiring encroachment or protection in place;
- Inspecting each oak tree to determine if the protected zone is located in the immediate vicinity of designated impact areas (potentially impacted trees);
- Measuring the diameter or girth of each trunk at 4.5 feet above natural grade (dbh). If codominant stems are located at least 2 feet above the root crown, the measurement was taken just below the junction of the two stems;
- Measuring the canopy radius at four to eight locations about 45 to 90 degrees apart;
- Measuring the canopy ground clearance at four to eight locations about 45 to 90 degrees apart;
- Evaluating the health of each tree for aesthetics, pests, vigor, disease, structure and environment;
- Taking at least one photograph of each tree;
- Comparing the location of tree trunks and associated protected zones to the relative location of designated impact areas to determine the type and extent of impact to each tree;
- Assigning an overall appearance (health and aesthetics) rating to each tree. The appearance rating is based on the following criteria:
  - A Outstanding - free of obvious disease or pest infestation, with a full and mostly symmetrical canopy;
  - B Above Average – minor disease or pest infestation, with a mostly full and somewhat symmetrical canopy;
  - C Average – healthy overall appearance, but some disease or pest infestation, canopy mostly lopsided with some gaps;
  - D Below Average/Poor – extensive disease or pest infestation and tree appears to be in a state of decline, canopy with many gaps and extensive signs of dieback;
  - E Dead – tree exhibits no signs of life whatsoever.
- Determining the more specific vigor rating modified from the International Society of Arboriculture standard condition evaluation for landscape trees that includes evaluation of canopy, foliage, trunk, and root condition (source: Dagit and Downer, 2002) for each tree:
  - 1 Dead – No living canopy;
  - 2 Decline – Less than 50 percent living canopy, few growth cracks (<1mm), some root and trunk defects, moderate pest infestation or disease;
  - 3 Stable – 50 percent of more living canopy, few growth cracks (1-3 mm), some root or trunk defects, minor pest infestation or disease;
  - 4 Good – Greater than 75 percent living canopy, many growth cracks (1-4 mm), few root or trunk defects, minimal pest infestation or disease;

- 5 Excellent – Well balanced, symmetrical canopy, many growth cracks (1-8 mm), few root or trunk defects, healthy tree.

## RESULTS

A single coast live oak tree is present on a somewhat linear, earthen knoll at the southeast corner of Lindero Canyon Road and Kanan Road, within the community of Oak Park, California. The tree is positioned adjacent to and above two existing concrete masonry unit (CMU) retaining walls, connected by a slope of large boulders. The vertical height from the base of the tree (on the top of the knoll) down to a landscaped patch of turfgrass toward the northwest is approximately 5.5 feet. On the back side (toward the southeast), the knoll drops off steeply down to a CMU retaining wall and narrow sidewalk bordering the adjacent building, measuring approximately 13 feet in height from the base of the tree to the sidewalk. Other landscape planted pine (*Pinus* sp.) and western sycamore (*Platanus racemosa*) trees and toyon (*Heteromeles arbutifolia*) shrubs are adjacent to the subject oak tree.

Tree survey data was collected at the Project site on January 29, 2020. Data collected during the survey are summarized in Table 1. The tree’s location and canopy extent (dripline) are presented on the Tree Location Exhibit in Attachment A. No tree tags were observed or attached to the tree in the field.

**Table 1. Summary of Tree Assessment Data**

Tree Number	Species	Number of Trunks	Diameter and Circumference at Breast Height (in)	Tree Height (ft)	Canopy Measurements from Trunk (ft)	Canopy Ground Clearance (ft)	Appearance Rating	Modified ISA Vigor Rating
1	Coast live oak	1	29/91	35	North: 20 Northeast: 20 East: 25 Southeast: 25 South: 20 Southwest: 25 West: 30 Northwest: 30	North: 8 Northeast: 6 East: 3 Southeast: 10 South: 15 Southwest: 7 West: 4 Northwest: 5	A	5

Tree 1 is a mature and apparently healthy coast live oak with one trunk and a relatively symmetrical canopy. It appears to have been planted as part of past landscaping activities along with other adjacent trees and shrubs to complement the Oak Park community sign attached to the larger of the two CMU walls. The main trunk appeared intact with numerous new growth cracks and few, if any pathological cracks (aka, “cracks of death”). The trunk diverges into scaffolding branches at seven feet off the ground where only minor evidence of bark inclusion and a shallow crotch that was collecting (mainly pine) leaves were observed. No potentially weak junctions, development of soil, water traps, or other cavities were observed in the tree. No low branching in the form of epicormic growth was observed on the main trunk. Evidence of boring insect exit holes was present, but in very low concentration, and no bark staining or other exudates were observed. No ants or other pests were observed on the trunk or main scaffolding branches.

Conditions within the canopy also typified a healthy tree, absent of chlorosis or wilt, and low amounts of twig dieback and deadwood. A thinning crown was not observed, but typical winter shedding was observed, particularly during the windy conditions on the day of the field evaluation. Low concentration of crown white fly (*Aleuroplatus coronatus*) was observed on leaf undersides, which are not typically a threat to the health of the tree, but may affect the tree's appearance or cause a nuisance by honeydew production and related sooty mold growth (source: Swiecki and Bernhardt, 2006). A low concentration of wasp galls was observed in the canopy. Two (2) potential crow's nests were also observed in the canopy and were assumed unoccupied at this time of year, but may be expected to become occupied by late February. The canopy extends approximately 20 to 30 feet from the trunk in all directions. Due to the tree's elevated position, the canopy drapes down to below the level of the trunk's base. Ground clearance measurements in Table 1 present the heights of the canopy outer edge (dripline) directly over the ground below.

Tree roots around the base of the tree were moderately exposed and devoid of any thick organic mulch layer or wet conditions; however, sprinkler heads were observed as close as three (3) feet to the trunk. No evidence of recent irrigation or direct water spray onto the trunk or exposed root crown was observed, as appropriate to avoid root rot. The tree roots are likely mostly limited to the upper portion of the knoll as they may be constrained by the vertical cut slopes and retaining walls. However, due to the presence of an irrigation system on all sides of the tree, it is possible that some root development has occurred beneath the boulder slope and into the turfgrass patch below (i.e., into the Project work area). Evidence or potential evidence of tree roots within the work area included exposed roots from a pine tree located to the east observed between the boulder slope and bike path and slightly hummocky topography of the turfgrass patch, possibly indicating belowground roots directly within the proposed vault's footprint.

Photographs of the tree's trunk and canopy are provided in Attachment B. Complete survey and horticultural results for the tree are documented on the tree evaluation form in Attachment C.

## **TREE IMPACT ANALYSIS**

Construction of the new TWSD Meter Station near Tree 1 may result in minor root encroachment and may require minor root and branch pruning. Other adjacent trees may also undergo minor root zone encroachment. However, this report is intended to only address impacts to the subject coast live oak tree (Tree 1) in any detail.

Based on the location of the new turn-out outside of the majority of Tree 1's known root crown (atop the knoll), potential root zone impacts associated with the excavation of the vault may be as low as 0 percent if no roots are encountered within the work area or as high as 10 percent if it is discovered roots have grown beneath the boulder slope and CMU wall footings down to the landscaped area below. Excavation of an approximately 50-foot-long trench from the northeast corner of the vault for a 4-inch conduit to the proposed SCADA control panel (see Tree Location Exhibit) may also encounter an additional 0 to 5 percent of Tree 1's outer root zone extent, in addition to pine and western sycamore roots.

It is our professional opinion that the most critical portion of Tree 1's root zone will be avoided and any root impacts that do occur will be considered minor. Therefore, the project is not expected to endanger the life of the tree or compromise its structural integrity. Nonetheless, there may be a low potential for the reduction of long-term vigor of the tree if minor root impacts occur.

The northwest quadrant of Tree 1's canopy drapes over the proposed work area of the vault excavation to as low as 5 feet off the ground. Anticipating that a full-size excavator would be required for construction, it is estimated that approximately six (6) branches measuring between 2 and 6 inches in diameter would require removal in the lower canopy to provide sufficient vertical workspace. This amount of pruning would total approximately 5 to 10 percent of the total canopy and would not endanger the health of the tree or create any significant aesthetic impact or imbalance. Proper pruning techniques are briefly described in Attachment D, Tree Protection Measures.

### **CONSTRUCTABILITY ANALYSIS**

The current design of the Project is not expected to endanger the life or the structural integrity of Tree 1. The majority, and possibly all, of the tree's root zone extent is limited to the knoll located over 5 feet in elevation above the proposed work area, separated by a CMU wall and boulder slope. However, it is possible that some feeder and absorptive roots have become established in the work area and would be severed by construction. Nonetheless, this potential root zone impact area is not considered critical to the survival of the tree and any roots encountered in this area would comprise a very small percentage of the total root system. In regard to the canopy, careful pruning of selected branches can be accomplished to provide a sufficient workspace without affecting the health of the tree or creating any imbalance. Therefore, the design of the project is feasible with implementation of tree protection measures described in Attachment D.

### **References**

- Dagit and Downer, 2002. To Prune or Not to Prune: Responses of Coast Live Oaks (*Quercus agrifolia*) to Canopy Retention during Transplanting. USDA Forest Service Gen. Tech. Rep. PSW-GTR-184.
- Swiecki and Bernhardt, 2006. A Field Guide to Insects and Diseases of California Oaks. USDA Forest Service Gen. Tech. Rep. PSW-GTR-197.

Should you have any questions, please contact me at (805) 644-2220 ext. 12, or [cdunn@padreinc.com](mailto:cdunn@padreinc.com).

Sincerely,

PADRE ASSOCIATES, INC.



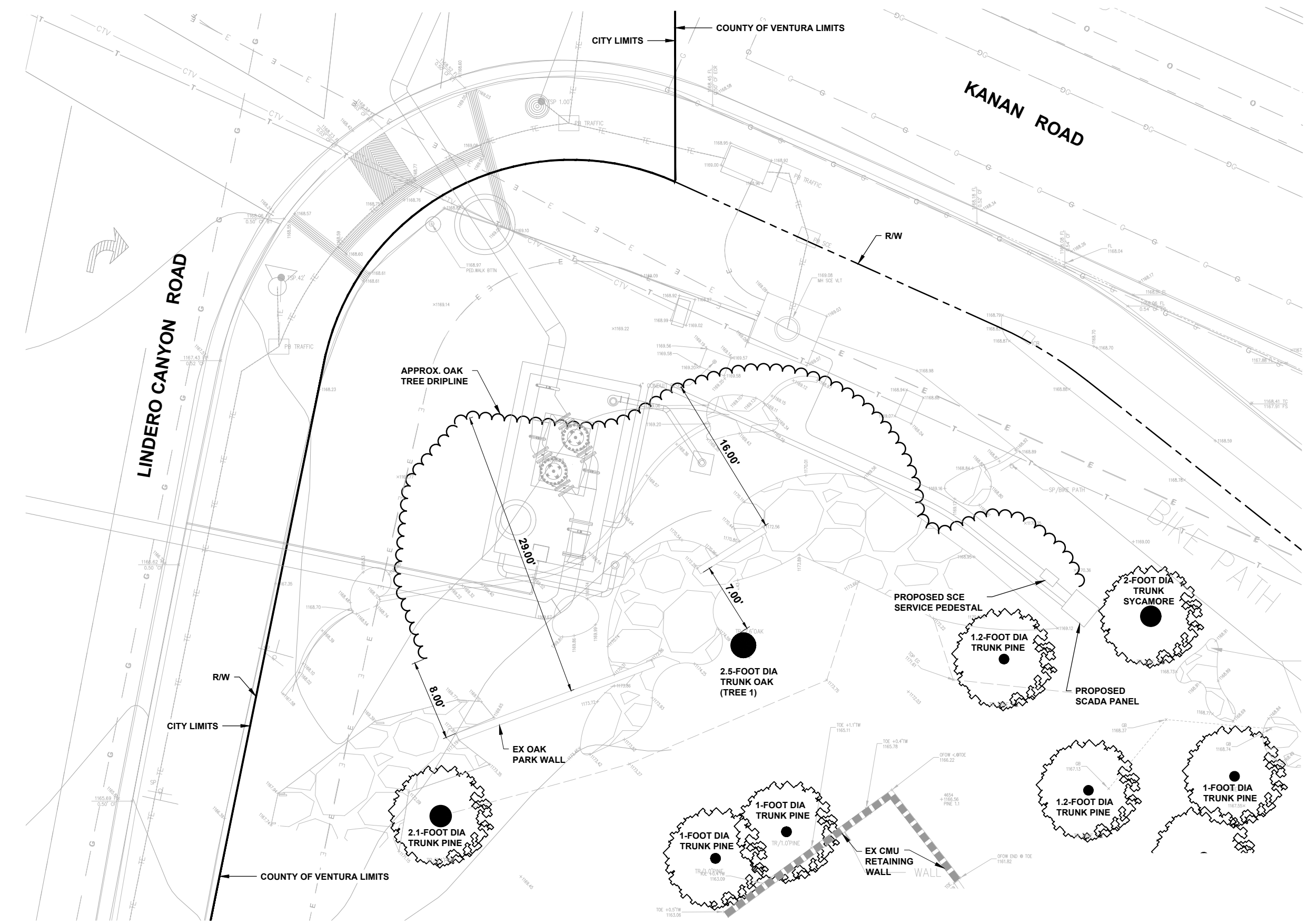
Chris Dunn

ISA Certified Arborist #9525A

## **ATTACHMENT A. TREE LOCATION EXHIBIT**



DWP: C:\Users\asmith\Box\Las Virgenes-Calleguas Interconnection\CAD Project 450\CADD\EXHIBITS\CADD\Alignment Prop 41-40-Emits Square Footage.dwg  
 USER: ASmith  
 DATE: Feb 05, 2020 8:57am  
 AREFS: PC-EDH-BDR Alignment CADD-LO 1802811\_PCE CADD-LO  
 ED-UTILITIES LV\_CADD Interconnect PROJ



VERIFY SCALES  
 BAR IS ONE INCH ON ORIGINAL DRAWING  
 0 1  
 IF NOT ONE INCH ON THIS SHEET,  
 ADJUST SCALES ACCORDINGLY

**TREE LOCATION EXHIBIT**  
 SCALE: 1" = 5'

PREPARED BY:  
 PHOENIX CIVIL ENGINEERING, INC.  
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 SANTA PAULA, CA 93060  
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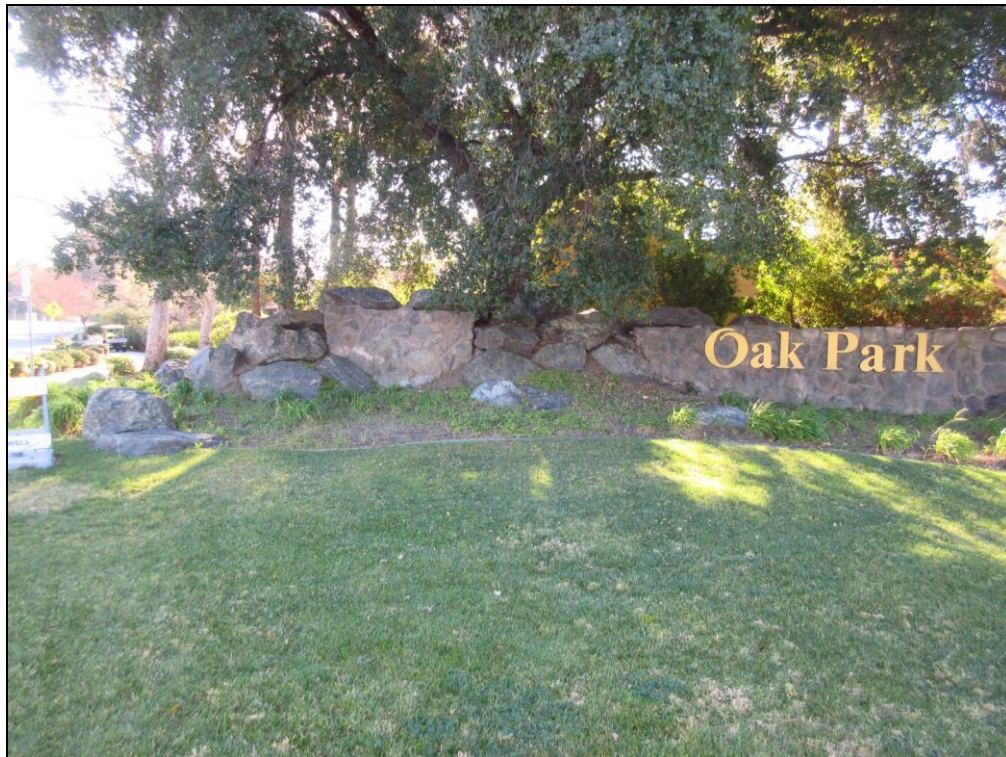
CALLEGUAS MUNICIPAL WATER DISTRICT  
 LAS VIRGENES-CALLEGUAS INTERCONNECTION  
 PROJECT 450  
**RELOCATED FALLING STAR TURNOUT/  
 METER STATION TREE LOCATION EXHIBIT**

02/05/2020

## **ATTACHMENT B. TREE PHOTOGRAPHS**



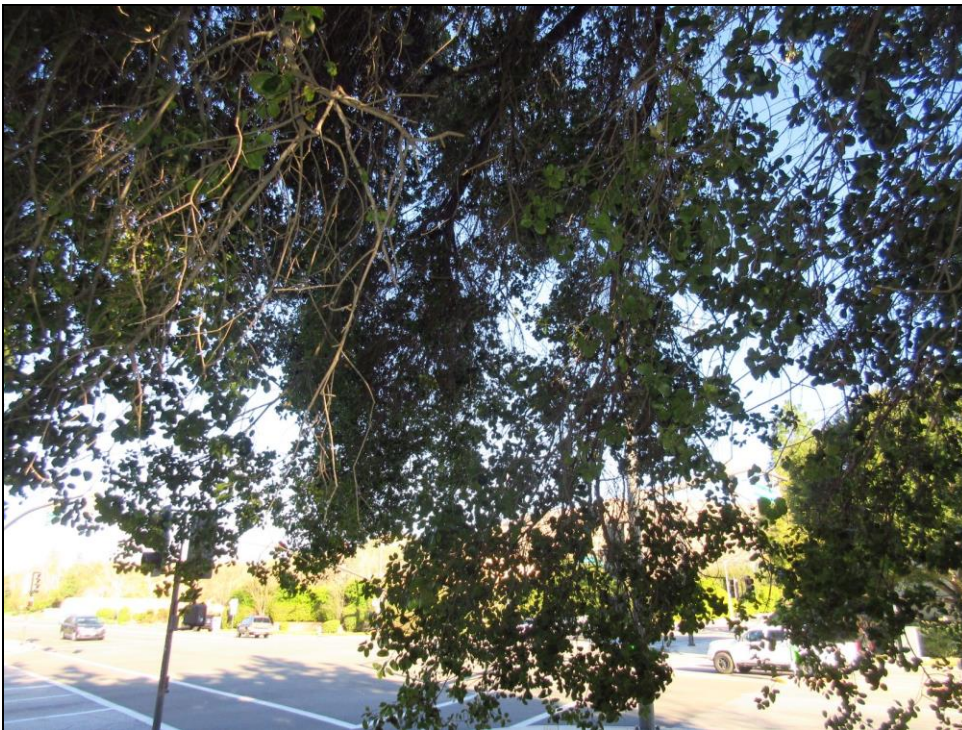
**Figure 1.** View of Tree 1, Coast live oak tree, located on knoll above proposed work area in foreground. Photograph taken on January 29, 2020.



**Figure 2.** View of proposed work area in foreground, partially beneath the canopy of Tree 1. Photograph taken on January 29, 2020.



**Figure 3.** View of trunk of Tree 1, atop knoll. Photo taken on January 29, 2020.



**Figure 4.** View of lower canopy in northwest quadrant of Tree 1, requiring minor pruning according to current Project design. Photo taken on January 29, 2020.

## **ATTACHMENT C. TREE EVALUATION FORM**

**TREE EVALUATION FORM**

**Project:** LV-CMWD int.

**Tree No.:** 1

**Canopy Measurements (ft)**

North	<u>20</u>
Northeast	<u>20</u>
East	<u>25</u>
Southeast	<u>25</u>
South	<u>20</u>
Southwest	<u>35</u>
West	<u>30</u>
Northwest	<u>30</u>

**Species:** Ave. age

**Rating (A-E):** A

**Number trunks:** 1

**Diameter ("): (girth) 9 1/2" = 29"**

**Height (ft):** 35

**Date:** 5/29/20

**Inspector:** Duan / Crooks

**Can. Grnd Clearance (ft)**

North	<u>8</u>
Northeast	<u>6</u>
East	<u>3</u>
Southeast	<u>10</u>
South	<u>15</u>
Southwest	<u>7</u>
West	<u>4</u>
Northwest	<u>5</u>

**Vigor:**

**Chlorosis:** -

**Wilt:** -

**Dieback:** low, typ.

**Deadwood:** low, typ.

**Thinning crown:** typ. winter shedding

**Structure:**

**Broken branches:** -

**Poor pruning:** -

**Mechanical injury:** -

**Wire/nails:** -

**Torn branch scars:** -

**Sharp branch angle:** -

**Low branching:** -

**Water trap:** low-leaf collected

**Cavity-trunk:** -

**Cavity-branch:** -

**Lopsided canopy:** -

**Excess horiz growth:** -

**Decay/rot:** -

**Fire/lightening:** -

**Roots exposed:** Med

**Hazardous condition:** -

**Disease:**

**Leaf scorch:** -

**Twig blight:** -

**Exfoliation:** -

**Lesions:** -

**Exudations:** -

**Heart rot:** -

**Notes:**

New growth cracks  
little/no cracks of death

**Tree Rating System**

- A: Outstanding
- B: Above average
- C: Average
- D: Below Average/Poor
- E: Dead

**Environment:**

**Change in grade:** ✓

**Poor drainage:** -

**Undermining erosion:** -

NW: Boulder well + CMU well as close as 3' from trunk drops 5-6' to grass below.

SE: Back slope dips steeply down to retain wall (top 9' below tree) (sidewalk 13' below tree) back of building

pruning → need for work

- 2"
- 3"
- 4"
- 3"
- 5"

**Pests:**

**Borers:** low

**Termites:** -

**Ants:** -

**Woodpeckers:** -

**Galls:** low

**Pit-scale:** none

**Oak moth:** -

**Bees:** -

**Pit-scale:** -

**Parasites:** -

**Mistletoe:** -

**Poison oak:** -

**Notes:**

relatively healthy  
low # crown white fly

+ bring it 21" outer leaf bundles

5-10%

canopy removal.

**PHOTOGRAPH**

9788-9795

Specimen near by needs tree protection plan

Possible old bird nests in canopy -  
March 1 - Sept 15 B.B. season

## **ATTACHMENT D. TREE PROTECTION MEASURES**

## TREE PROTECTION MEASURES

- Prune overhead branches according to International Society of Arboriculture (ISA) pruning standards by hand (e.g., pole chainsaw). Avoid arbitrary cuts that may leave a portion of deadwood on the tree to reduce pest infiltration. Cut at 1 inch above the “branch bark collar” (a patch of rough bark that is the growth center) at an angle perpendicular to the cut branch, not the scaffolding branch or trunk. All cuts shall be conducted by a qualified tree trimmer or overseen by a Certified Arborist who can direct the chainsaw operator to the correct cut locations.
  - Mark the tree protection zone as appropriate, and limit entry into the tree protection zone only within the approved work area. Avoid encroaching upon the remaining portion of the tree protection zone for equipment and materials storage or other project activities.
  - If possible, hand-dig the excavation and trench down into the main potential root zone to identify any roots for proper pruning to avoid tearing roots with the excavator bucket. Most tree roots are present within the upper two feet.
  - Once roots are exposed, saw-cut each root flush with the trench edge.
  - Cover each cut root over 1 inch in diameter with wet burlap or backfill the trench within 5 days.
  - Select an area to station the excavator where it will not blow hot exhaust directly into the tree canopy.
  - Upon work completion, wherever full soil compaction is not an engineering requirement, backfill the excavation with the upper 2 to 3 feet firmly tamped but not overly compacted to avoid closing air pore spaces in the soil.
-