



**URBAN FORESTRY ASSOCIATES, INC.**

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**Creekwood Development  
Tree Protection and Removal Plan**

***Prepared for:***

Doyle Heaton  
DRG Builders Inc.

***Prepared by:***

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209 San Anselmo Ave., San Anselmo, CA 94901

March 16, 2021

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Mr. Doyle Heaton,

Enclosed is a report of my findings regarding trees within/near the Creekwood development project in at 270 & 280 Casa Grande Road in Petaluma. The project proposes to demolish one of the two existing homes onsite and to construct a new subdivision. This report describes the current health and condition of the trees, documents trees scheduled for removal, and provides tree preservation guidelines and specific comments on tree protection measures. Please note there is a supplementary map to accompany this report. The map indicates tree locations, trees slated for removal, and tree protection fencing locations.

I conducted a site visit on March 4, 2021 to evaluate trees in the development area, along the riparian zone near Adobe Creek, and trees on adjacent properties with driplines extending into the project area. Tree cover in the development area is sparse. Most trees in are small, non-native ornamental varieties. The riparian zone is populated with a mixture of native tree and plant species most of which are in good health. In general, impacts to trees as a result of the project is minimal. Installation of fencing to establish tree protection zones will comprise the bulk of tree protection measures.

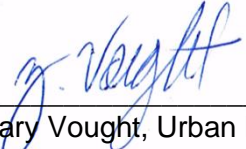
A total of fifteen (15) trees were included in the assessment. "Tree 16" is the riparian zone along Adobe Creek. Trees in this area were not individually assessed. Rather, a cursory assessment of the condition and species was included. "Tree 17" is a row of oak trees growing at 400 Casa Grande Rd. The trees are offsite but some of their canopies extend over the property line.

Eight (8) trees are scheduled for removal for the project, none of which are native trees.

Seven (7) trees will be preserved and protected.

Please let me know if you have questions regarding the contents of this report.

Regards,



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Zachary Vought, Urban Forester  
ISA Certified Arborist WE-9995A  
RCA #691

## Tree Protection and Removal Plan

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## ASSIGNMENT/ PURPOSE

DRG Builders Inc. asked me to evaluate trees on two parcels (017-040-016, 017-040-051) as a part of the proposed Creekwood housing development project in Petaluma. The purpose of my assessment and this report is to document the species and condition of the trees onsite, provide protection measures for leave trees, and provide a list of trees scheduled for removal. There is a supplementary map to accompany this report which includes tree locations and fencing locations.

## SUMMARY

A total of eight (8) trees are slated for removal for the project, all of which are relatively small non-native ornamentals. All the trees scheduled for removal do not qualify as protected per the Petaluma Tree Ordinance. The following trees are to be preserved and protected: Tree-1; Trees 5-10.

Two outfall locations will be placed in the riparian zone though their locations have not yet been staked. Efforts will be made to minimize impacts in these areas.

No trees are planned for removal within the riparian zone, and the goal is to remove no trees in this area.

## METHODOLOGY

Per Section 17.070 of the Petaluma Municipal Code, trees in/near the development area with a dbh<sup>1</sup> measuring four inches or larger were evaluated and identified with a metal numbered tag corresponding to the inventory. A cursory assessment was performed in the riparian zone along the eastern property boundary, and along the north property line near a row of English oak trees. The health, structure and form of the trees were assessed and adapted to conform with a numerical rating system which combines those ratings into a single condition rating. Condition ratings were assessed on a scale of 1-5, 1 being poor condition, 5 being good condition.

## SITE

The project site is on two adjacent parcels which are relatively flat. Tree cover in the development footprint is sparse and composed of mostly small non-native ornamental species and fruit trees. The Casa Grande Senior Apartments stands north of the project site. There is a row of established English oak (*Quercus robur* 'Fastigiata') trees on the senior living property. There are two existing homes onsite. I understand the home and vegetation at 280 Casa Grande Rd. will be demolished. Most of the trees included in the inventory are at 270 Casa Grande Rd. The Malanati home at 270 Casa Grande Rd. will be preserved. The largest trees onsite are mature Coast redwood (*Sequoia sempervirens*), all of which will be preserved and are well outside the development area. Along Adobe Creek to the east, there is a riparian zone composed of native trees and vegetation. The native tree species include: Willow (*Salix spp.*); Buckeye (*Aesculus californica*); Coast live oak (*Quercus agrifolia*); Toyon (*Heteromeles arbutifolia*). In general, the trees in the riparian area exhibit good health and are well outside the development zone.

## SPECIFIC AREAS OF CONCERN

### Storm drain outfalls

Two storm drain outfalls are proposed in the riparian zone (#16 in inventory); one in near the northeast portion of the property, and another at the southeast corner of the property. The location of these outfalls has not yet been solidified in the field. I recommend a site visit between myself and the project team/contractor to place these outfalls as far from trees as possible. If excavation is required, ideally it will be performed by hand. If the use of heavy equipment is necessary, mitigation measures should be employed to minimize soil compaction/damage to tree trunks. Additional fencing or trunk protection may be required in these areas when the work is being performed. I understand the goal is to remove no trees in the riparian zone.

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<sup>1</sup> Trunk diameter measured at 4.5' above grade.

### English oak trees

The row of oaks on the senior living property was in leaf-off condition at the time of my assessment. However, the trees appear to be in good health and structural condition. There is an existing fence that separates this row of trees from the project area. Only small branches from these trees extend over the property line which may require some minor pruning for the project, but nothing significant. For the most part these trees are not expected to be negatively impacted by development. This cultivar of English oak has upright/columnar form and can be pruned to maintain clearance from structures over the long term.

### Tree Protection Zones

The tree protection zones (TPZ) indicated on the Arborist's map were determined by the trees' trunk diameter, canopy spread and distribution, topography around the tree and access needs. It is not a work exclusion zone, but a zone where the roots need to be protected from soil compaction and grading.

Please see the Arborist's map for location of tree protection fencing (See Page 9 for specifications).

Mulch To promote tree health wood chips may be installed to a depth of 3 inches within the tree protection fencing area, but not directly against the trunk.

## **INSPECTION SCHEDULE**

**Inspection of site:** Prior to Equipment and Materials Move In, Site Work, Demolition and Tree Removal: The Project Arborist will meet with the General Contractor, Architect / Engineer, and Owner or their representative to review tree preservation measures, designate tree removals, delineate the location of tree protection / non-intrusion zone fencing, specify equipment access routes and materials storage areas, review the existing condition of trees and provide any necessary recommendations.

**Inspection of site:** After installation of NIZ fencing: Inspect site for the adequate installation of tree preservation measures. Review any requests by contractor for access, soil disturbance or excavation areas within root zones of protected trees. Assess any changes in the health of trees since last inspection.

**Inspection of site:** During excavation or any activities that could affect trees: Inspect site during any activity within the Non-Intrusion Zones of preserved trees and any recommendations implemented. Assess any changes in the health of trees since last inspection.

**Final Inspection of Site:** Inspection of site following completion of construction: Inspect for tree health and make any necessary recommendations.

## **SCOPE OF WORK / LIMITATIONS**

Information regarding property boundaries, land ownership, and tree ownership was evident from a land survey, property fencing and/or provided by the client. UFA has no personal or monetary interest in the outcome of this matter. All determinations reflected in this report are objective and to the best of our ability. All observations regarding the sites and trees were made by UFA personnel, independently, based on our education and experience. Determinations of the health and hazard potential of the subject trees are through visual inspection only and of our best professional judgment.

The health and hazard assessments in this report are limited by the visual nature of the assessment. Defects may be obscured by soil, brush, vines, aerial foliage, branches, multiple trunks or other trees. None of the subject trees were examined using invasive techniques such as increment coring or Resistograph® tests. The probability of tree failure is dependent on a number of factors including: topography, geology, soil characteristics, wind patterns, species characteristics (both visually evident and concealed), structural defects, and the characteristics of a specific storm. Structurally sound, healthy trees fail during severe storms. Consequently, a conclusion that a tree does not require corrective surgery or removal is not a guarantee of no risk, hazard, or sound health.

## **TREE WORK STANDARDS AND QUALIFICATION**

All tree work, removal, pruning, planting, shall be performed using industry standards as established by the International Society of Arboriculture. Contractor must have a State of California Contractors License for Tree Service (C61-D49) or Landscaping (C-27) with general liability, worker's compensation, and commercial auto/equipment insurance.

Contractor standards of workmanship shall adhere to current Best Management Practices of the International Society of Arboriculture (ISA) and the American National Standards Institute (ANSI) for tree pruning, fertilization and safety (ANSI A300 and Z133.1).

## **ARBORIST'S CHECKLIST**

- An urban forester, certified or consulting arborist shall establish the Tree Protection Zone (TPZ) prior to starting the demolition work. Four-foot-high metal wire deer fencing will be erected by the contractor and inspected by the arborist to limit access to the TPZ. This will protect the trunk and root zone throughout construction.
- The Arborist shall have a pre-demolition meeting with contractor or responsible party and all other foremen or crew managers on site prior to any work to review all work procedures, access and haul routes, and tree protection. The contractor must notify the Arborist if roots are exposed or if trunk or branches are wounded.
- Any trunk and root crown that is not protected by a TPZ where heavy equipment operation is likely to wound the trunk, install a barrel stave-like trunk wrap out of 2 X 4 studs connected together with metal straps, attached to the 2 X 4's with driver screws or 1" nails.
- Storage of equipment shall be as far away from protected trees as possible and optimally on asphalt or ground protected by mulch / plywood.
- Heavy equipment use should be limited around trees and the roots. No equipment may be transported or used on bare ground within the root zone. A 6" layer of mulch and plywood must be placed under the path for access and egress. The protective "bridge" shall be maintained by the contractor and inspected by the arborist when on site.
- Any damage to trees due to demolition or construction activities shall be reported to the arborist within 6 hours, so that remedial action can be taken.
- All trenching within the NIZ shall be done pneumatically or by hand, being careful not to damage any of the bark of any root encountered.
- An arborist shall inspect all grading, trenching, tunneling or other excavation within the root zones of trees prior to backfill.
- No chemicals or other waste materials shall be dumped within 20' of the base of any tree. There shall be no material storage in the NIZ.
- Any tree pruning will be done in accordance with the latest version of ISA or ANSI best management practices/ standards. All pruning will be inspected by the arborist.
- The arborist must perform a final inspection to ensure that no unmitigated damage has occurred and to specify any pest, disease or other health care. The arborist shall specify and oversee any necessary restorative actions.
- Any suspected omissions or conflict between various elements of the plan shall be brought to the attention of the arborist and resolved before proceeding with the work.

## **SOURCES**

- Field data collected by Urban Forestry Associates on March 4, 2021.
- Site plan and site survey provided by Steven J Lafranchi & Associates Inc.

**TREE CONDITION RATINGS**

Rating category	Condition components		
	Health	Structure	Form
Excellent	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.
Good	Vigor is normal for the species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.
Fair	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may comprise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.
Poor	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.
Very poor	Poor vigor. Appears to be dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.
Dead			

**Table 1. Sourced from *The Guide for Plant Appraisal, 10<sup>th</sup> Edition***

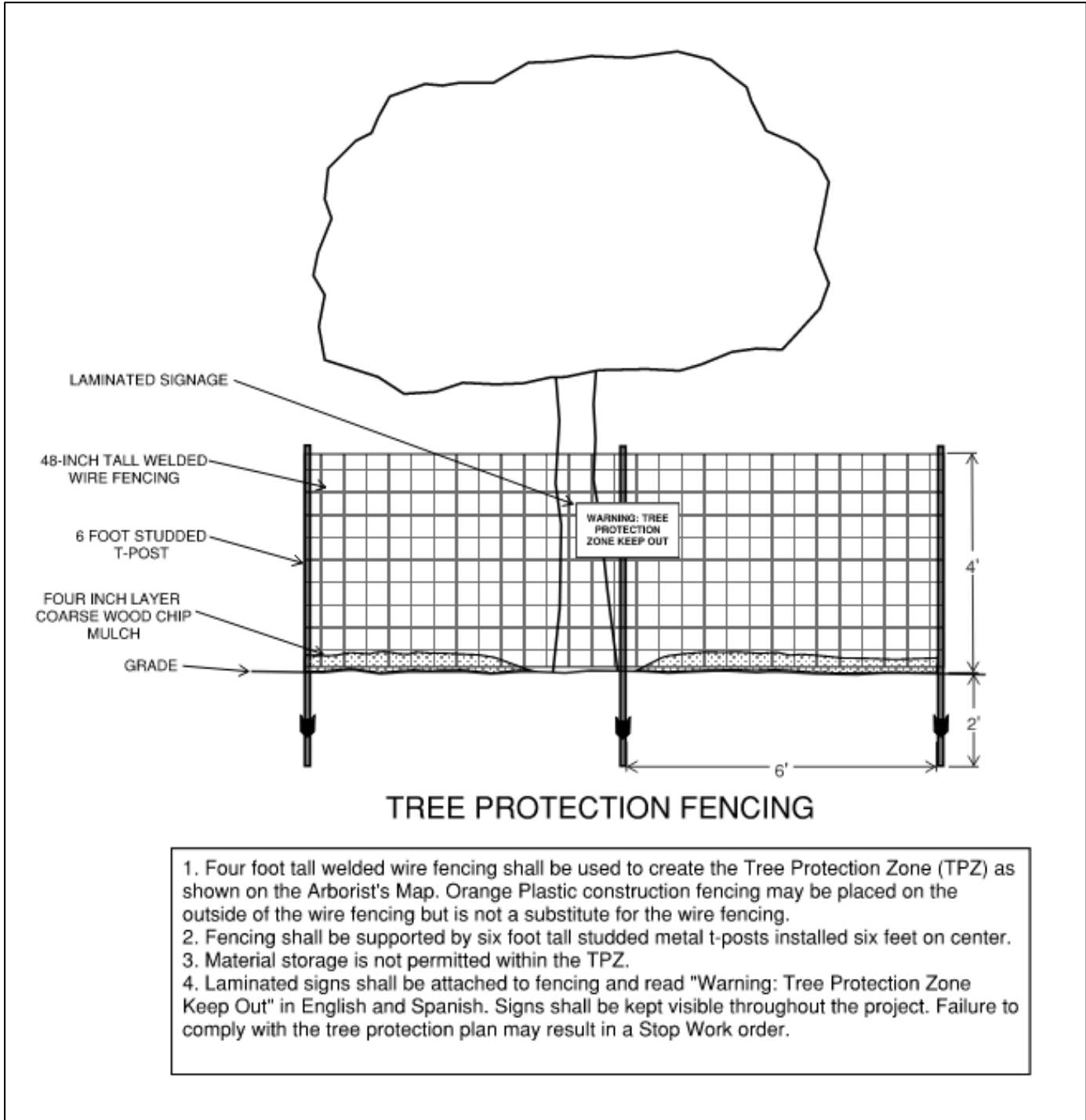


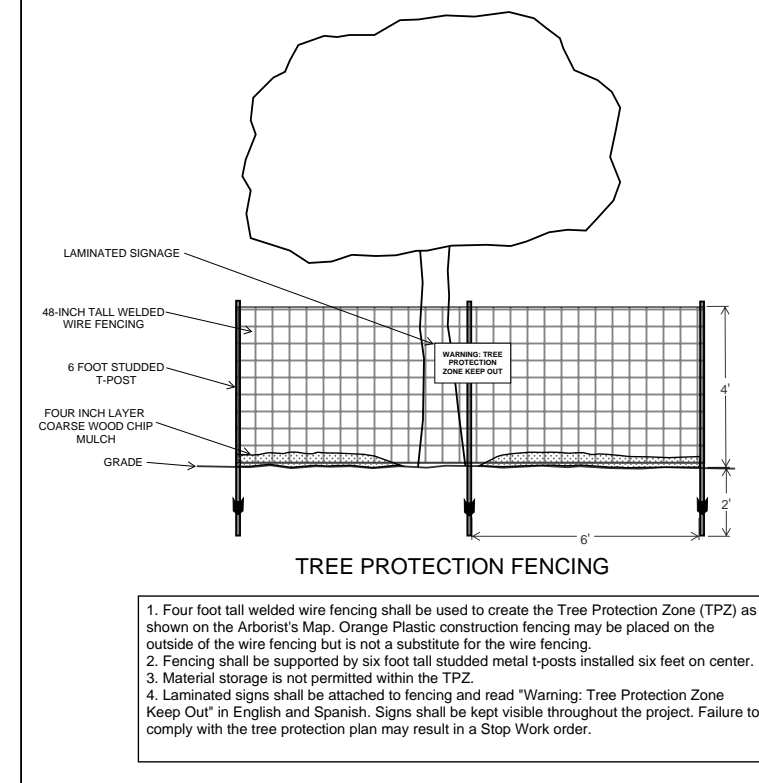
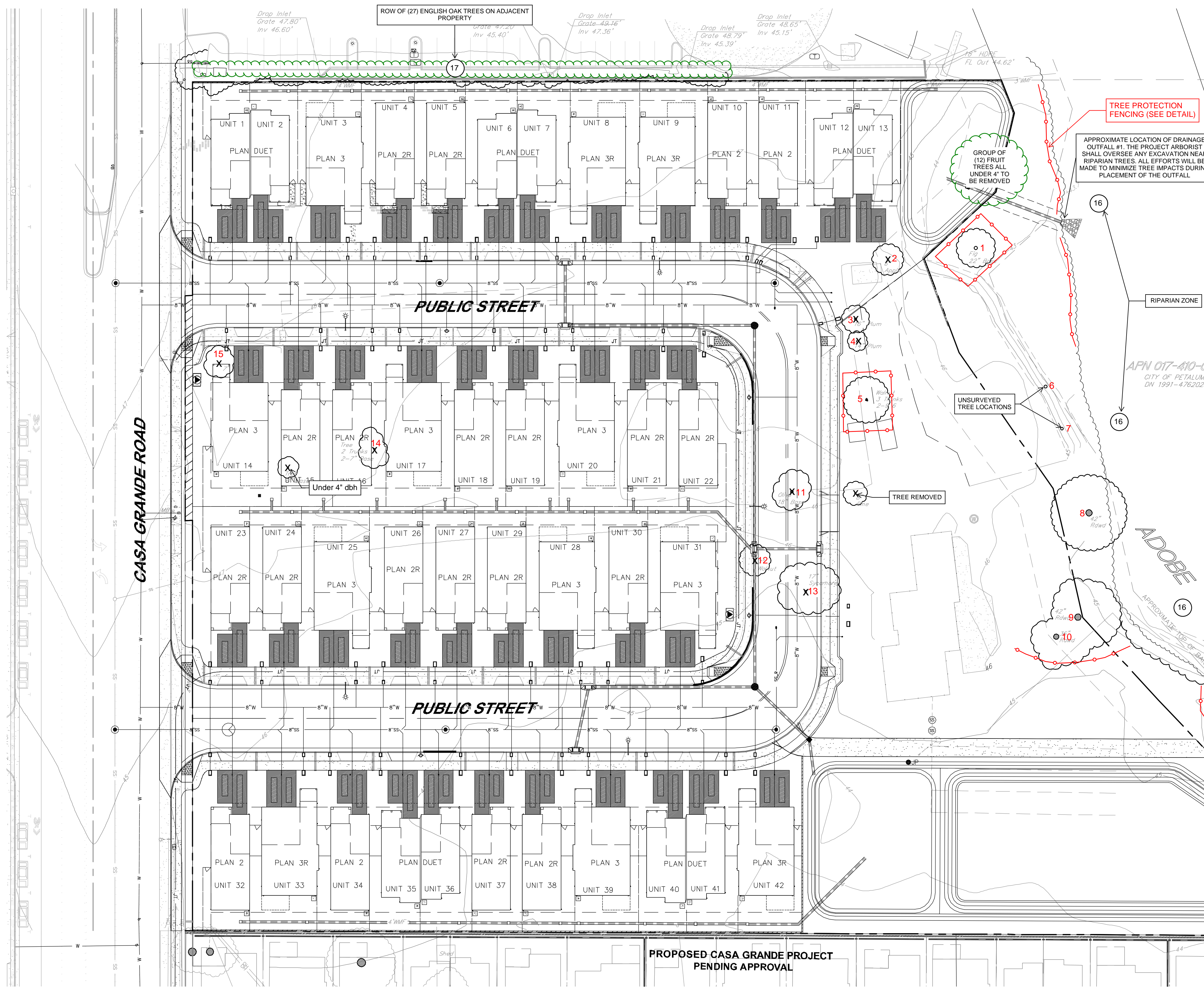
**INVENTORY**

Tree #	Common Name	Botanical Name	Trunk Diameter(s) (Inches)	Condition & Structure (1-5)	Protected Status	Comments	Recommendation
1	Edible Fig	<i>Ficus carica</i>	7, 6.4, 6.2	5	Unprotected		Preserve and protect with fencing.
2	Apple	<i>Malus domestica</i>	6	4	Unprotected	Sun burn and associated necrosis on main trunk. In footprint of development.	Whole tree removal.
3	Plum sp.	<i>Prunus sp.</i>	14.5	4	Unprotected	Near footprint of development.	Whole tree removal.
4	Plum sp.	<i>Prunus sp.</i>	11.5	3	Unprotected	Near footprint of development.	Whole tree removal.
5	English Walnut	<i>Juglans regia</i>	8.5, 7.5, 5.5	5	Unprotected	Near footprint of development.	Preserve and protect with fencing.
6	Edible Fig	<i>Ficus carica</i>	8, 6.5	5	Unprotected	Outside footprint of development.	Preserve.
7	Edible Fig	<i>Ficus carica</i>	10	5	Unprotected	Outside footprint of development.	Preserve.
8	Coast Redwood	<i>Sequoia sempervirens</i>	37	5	Protected	Outside footprint of development.	Preserve.
9	Coast Redwood	<i>Sequoia sempervirens</i>	38	4	Protected	The tree bifurcates at approximately 25 feet above grade. The stems are codominant and there is bark pressed between the two stems. Outside footprint of development.	Preserve and protect with fencing.
10	Coast Redwood	<i>Sequoia sempervirens</i>	33	4	Protected	Outside footprint of development.	Preserve and protect with fencing.
11	Olive	<i>Olea europaea</i>	6, 6, 4	5	Unprotected	In footprint of development.	Whole tree removal.
12	English Walnut	<i>Juglans regia</i>	7	5	Unprotected	In footprint of development.	Whole tree removal.
13	Sweetgum	<i>Liquidambar styraciflua</i>	14	4	Unprotected	In footprint of development.	Whole tree removal.
14	Photinia	<i>Photinia fraseri</i>	7, 5, 4	4	Unprotected	In footprint of development.	Whole tree removal.
15	Crape Myrtle	<i>Lagerstroemia sp.</i>	6	4	Unprotected	In footprint of development.	Whole tree removal.
16	Riparian zone	Various native species		4	Protected	The riparian zone is populated with native tree and plant species. The predominant tree species are: Willow ( <i>Salix spp.</i> ); Buckeye ( <i>Aesculus californica</i> ); Coast live oak ( <i>Quercus agrifolia</i> ); Toyon ( <i>Heteromeles arbutifolia</i> ). In general trees are in good health and the vast majority will not be impacted by development. Two outfall locations (See map) will be installed within the riparian zone, which will require project arborist involvement.	Preserve and protect with fencing. Consult project arborist for input on best outfall locations.
17	Row of Upright English oaks	<i>Quercus robur</i> "Fastigiata"	4 to 12	5	Unprotected	Outside footprint of development. Small diameter limbs extend over property line.	Preserve. Existing fence is sufficient protection.

### TREE PROTECTION FENCING

4-foot-tall wire deer fencing shall be used to create the **tree protection zones**, installed as shown on the Arborist's Map. Fencing shall be supported with 6' metal t-stakes and installed 6-foot on center. Laminated signage shall be attached to fencing and read "Warning Tree Protection Zone Keep Out". Signage shall be kept visible and intact throughout the project. Failure to comply with the tree protection plan may result in a stop work order.





**INSPECTION SCHEDULE**

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**Final Inspection of Site: Inspection of site following completion of construction:** Inspect for tree health and make any necessary recommendations.

Tree #	Common Name	Botanical Name	Trunk Diameter(s) (Inches)	Condition & Structure (1-5)	Protected Status	Comments	Recommendation
1	Edible Fig	Ficus carica	7, 6.4, 6.2	5	Unprotected	Sun burn and associated necrosis on main trunk in footprint of development.	Preserve and protect with fencing.
2	Apple	Malus domestica	6	4	Unprotected	Near footprint of development.	Whole tree removal.
3	Plum sp.	Prunus sp.	14.5	4	Unprotected	Near footprint of development.	Whole tree removal.
4	Plum sp.	Prunus sp.	11.5	3	Unprotected	Near footprint of development.	Whole tree removal.
5	English Walnut	Juglans regia	8.5, 7.5, 5.5	5	Unprotected	Near footprint of development.	Preserve and protect with fencing.
6	Edible Fig	Ficus carica	8, 6.5	5	Unprotected	Outside footprint of development.	Preserve.
7	Edible Fig	Ficus carica	10	5	Unprotected	Outside footprint of development.	Preserve.
8	Coast Redwood	Sequoia sempervirens	37	5	Protected	Outside footprint of development.	Preserve.
9	Coast Redwood	Sequoia sempervirens	38	4	Protected	The tree bifurcates at approximately 25 feet above grade. The stems are codominant and there is bark pressed between the two stems. Outside footprint of development.	Preserve and protect with fencing.
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17	Row of upright English oaks	Quercus robur 'Fastigata'	4 to 12	5	Unprotected	Outside footprint of development. Small diameter limbs extend over property line.	Preserve. Existing fence is sufficient protection.

PROPOSED CASA GRANDE PROJECT  
PENDING APPROVAL



270 & 280 CASA GRANDE ROAD  
TREE PROTECTION/REMOVAL PLAN

Zachary Vought  
Certified Arborist: WE9995A  
RCA# 691  
03/16/2021