



Council Agenda Report

From: Darren Nash, Associate Planner

Subject: Oak Tree Removal Permit 17-014 (Dallons Drive – Leo Tidwell III)
Council consideration of OTR 17-014 a request to remove two oak trees (Tree Nos. 2 and 3) located west of the intersection of Dallons Drive and Golden Hill Road (APN 025-423-003).

Date: September 7, 2017

Facts

1. Leo Tidwell III has submitted a request to remove two oak trees on a vacant 2.78-acre lot approximately 450-feet west of the intersection of Dallons Drive and Golden Hill Road (See Vicinity Map, Attachment 1).
2. Both trees proposed for removal are Valley Oak trees. Tree No. 2 is a 31-inch diameter tree and Tree No. 3 is a 43-inch diameter tree. The trees are located in the middle of the 2.78-acre lot (See attached Site Plan/Tree Location Map, Attachment 2).
3. The request for the trees to be removed is in conjunction with a development plan (PD 17-007) for a 9,960 square foot office building with an accessory outdoor contractor's storage yard that was approved by the Planning Commission on August 22, 2017. Both Tree No. 2 and Tree No. 3 are in advanced stages of decline and are recommended for removal by Rodney Thurman, Certified Arborist, as demonstrated by the Arborist Report (See Arborist Report, Exhibit A to Attachment 3) The report concludes that both trees present a safety hazard to equipment and people.
4. There are two additional oak trees located on the site, Tree No. 1 and Tree No. 4. Tree No. 4 is healthy and may be retained with tree protection. Per the recommendation of the Arborist report and staff site visit to inspect the trees, Tree No. 1 has been determined by the Community Development Director to be "clearly dead or diseased beyond correction" and qualifies for removal per Section 10.01.050D.
5. Per the recommendation of the Arborist report and staff site visit to inspect the trees, the Community Development Director could not make the determination that Tree No. 2 and Tree No. 3 are "clearly dead or diseased beyond correction," and therefore, Section 10.01.050.D of the Oak Tree Ordinance would consider the trees "healthy" and require that the City Council make the determination of whether the tree should be removed or not, after consideration of the factors listed in Section 10.01.050.E.
6. Regardless of whether the City Council approves the Oak Tree Removal request for Tree No. 2 and Tree No. 3, the project could move forward since mitigation measures have been incorporated into the development plan (PD 17-007) to protect all remaining oak trees during construction and ongoing operations of the site.

Options

1. Approve Draft Resolution A, approving OTR 17-014, authorizing the removal of Tree No. 2 (31-inch Valley Oak) and Tree No. 3 (43-inch Valley Oak), based on the trees being in poor health and being a safety hazard, as indicated in the Arborist Report and require eight (8) 2.5-inch diameter Valley Oak replacement trees be planted on site at the direction of the Arborist.
2. Denial of OTR 17-014 with findings and require the oak trees to remain and be protected.
3. Amend the above noted options.
4. Refer back to staff for additional analysis.

Analysis and Conclusions

According to Section 10.01.050.E, there are several factors that the City Council needs to review when considering the removal of a “healthy” oak tree. These factors along with Staff’s analysis of each factor are listed below:

- E. *If a request is being made to remove one or more healthy oak trees for which a permit to remove is required, the director shall prepare a report to the City Council, outlining the proposal and his recommendation, considering the following factors in preparation of his recommendation.*
1. *The condition of the oak tree with respect to its general health, status as a public nuisance, danger of falling, proximity to existing or proposed structures, interference with utility services, and its status as host for a plant, pest or disease endangering other species of trees or plants with infection or infestation;*
Based on the Arborist indicating that the trees are in poor condition and represent a safety hazard to vehicles, equipment, and people, the trees appear to be good candidates for removal.
 2. *The necessity of the requested action to allow construction of improvements or otherwise allow reasonable use of the property for the purpose for which it has been zoned. In this context, it shall be the burden of the person seeking the permit to demonstrate to the satisfaction of the director that there are no reasonable alternatives to the proposed design and use of the property. Every reasonable effort shall be made to avoid impacting oak trees, including but not limited to use of custom building design and incurring extraordinary costs to save oak trees;*
It is possible for the project to move forward since the trees proposed for removal are located in the middle of the storage yard area. Mitigation measures have been incorporated into the project to protect all remaining oak trees during construction and ongoing operations of the site. Given that the trees are currently in poor condition, and furthermore, there could be safety hazards if the trees remain on-site, removal would seem to be the best option.
 3. *The topography of land, and the potential effect of the requested tree removal on soil retention, water retention, and diversion or increased flow of surface waters. The director shall consider how either the preservation or removal of the oak tree(s) would relate to grading and drainage. Except as specifically authorized by the planning commission and city council, ravines, stream beds and other natural water-courses that provide a habitat for oak trees shall not be disturbed;*
The removal of the trees would not result in negative effects on soil retention, water retention or surface water flows for the neighborhood.

4. *The number, species, size and location of existing trees in the area and the effect of the requested action on shade areas, air pollution, historic values, scenic beauty and the general welfare of the city as a whole;*

If the trees are allowed to be removed, the applicant would be required to plant eight (8) replacement trees in addition to Tree No. 4 remaining on the site.

5. *Good forestry practices such as, but not limited to, the number of healthy trees the subject parcel of land will support.*

The removal of the trees will require replacement trees to be planted on site. The site will also incorporate various additional landscaping once it is developed.

Option 1:

Option 1 takes into account that both Tree No. 2 and Tree No. 3 present safety hazards that cannot be mitigated by pruning of the trees. The trees are in severe decline and cannot support additional growth. On-site replacement or payment to the City's Oak Replacement fund would be required as mitigation to the tree removal.

Option 2:

The tree removal request could be denied and the project could still move forward with Trees No. 2 and 3 being retained since mitigation measures have been incorporated into the development plan (PD 17-007) to protect all remaining oak trees during construction and ongoing operations of the site.

Options 3/4:

Council may wish to approve an amended version of one of the options listed above or refer the item back to staff for additional analysis with the arborist.

Fiscal Impact

There is not a fiscal impact to the City related to this oak tree removal request. Oak trees can provide value to a property, and be an aesthetic value to the City as a whole.

Recommendation

1. Approve Draft Resolution A, approving OTR 17-014, authorizing the removal of Tree No. 2 (31-inch Valley Oak) and Tree No. 3 (43-inch Valley Oak), based on the trees being in poor health and being a safety hazard, as indicated in the Arborist Report and require eight (8) 2.5-inch diameter Valley Oak replacement trees be planted on site at the direction of the Arborist.

Attachments

1. Vicinity Map
2. Site Plan/Tree Location Map
3. Draft Resolution A - Approval the removal of the tree
 - a. Whit's Turn Tree Care - Arborist Report



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1. Leo Tidwell III has submitted a request to remove two oak trees on a vacant 2.78-acre lot approximately 450-feet west of the intersection of Dallons Drive and Golden Hill Road (See Vicinity Map, Attachment 1).
2. Both trees proposed for removal are Valley Oak trees. Tree No. 2 is a 31-inch diameter tree and Tree No. 3 is a 43-inch diameter tree. The trees are located in the middle of the 2.78-acre lot (See attached Site Plan/Tree Location Map, Attachment 2).
3. The request for the trees to be removed is in conjunction with a development plan (PD 17-007) for a 9,960 square foot office building with an accessory outdoor contractor's storage yard that was approved by the Planning Commission on August 22, 2017. Both Tree No. 2 and Tree No. 3 are in advanced stages of decline and are recommended for removal by Rodney Thurman, Certified Arborist, as demonstrated by the Arborist Report (See Arborist Report, Exhibit A to Attachment 3) The report concludes that both trees present a safety hazard to equipment and people.
4. There are two additional oak trees located on the site, Tree No. 1 and Tree No. 4. Tree No. 4 is healthy and may be retained with tree protection. Per the recommendation of the Arborist report and staff site visit to inspect the trees, Tree No. 1 has been determined by the Community Development Director to be "clearly dead or diseased beyond correction" and qualifies for removal per Section 10.01.050D.
5. Per the recommendation of the Arborist report and staff site visit to inspect the trees, the Community Development Director could not make the determination that Tree No. 2 and Tree No. 3 are "clearly dead or diseased beyond correction," and therefore, Section 10.01.050.D of the Oak Tree Ordinance would consider the trees "healthy" and require that the City Council make the determination of whether the tree should be removed or not, after consideration of the factors listed in Section 10.01.050.E.
6. Regardless of whether the City Council approves the Oak Tree Removal request for Tree No. 2 and Tree No. 3, the project could move forward since mitigation measures have been incorporated into the development plan (PD 17-007) to protect all remaining oak trees during construction and ongoing operations of the site.

Options

1. Approve Draft Resolution A, approving OTR 17-014, authorizing the removal of Tree No. 2 (31-inch Valley Oak) and Tree No. 3 (43-inch Valley Oak), based on the trees being in poor health and being a safety hazard, as indicated in the Arborist Report and require eight (8) 2.5-inch diameter Valley Oak replacement trees be planted on site at the direction of the Arborist.
2. Denial of OTR 17-014 with findings and require the oak trees to remain and be protected.
3. Amend the above noted options.
4. Refer back to staff for additional analysis.

Analysis and Conclusions

According to Section 10.01.050.E, there are several factors that the City Council needs to review when considering the removal of a “healthy” oak tree. These factors along with Staff’s analysis of each factor are listed below:

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The removal of the trees would not result in negative effects on soil retention, water retention or surface water flows for the neighborhood.

4. *The number, species, size and location of existing trees in the area and the effect of the requested action on shade areas, air pollution, historic values, scenic beauty and the general welfare of the city as a whole;*

If the trees are allowed to be removed, the applicant would be required to plant eight (8) replacement trees in addition to Tree No. 4 remaining on the site.

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Recommendation

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Attachments

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Attachment 1

Vicinity Map

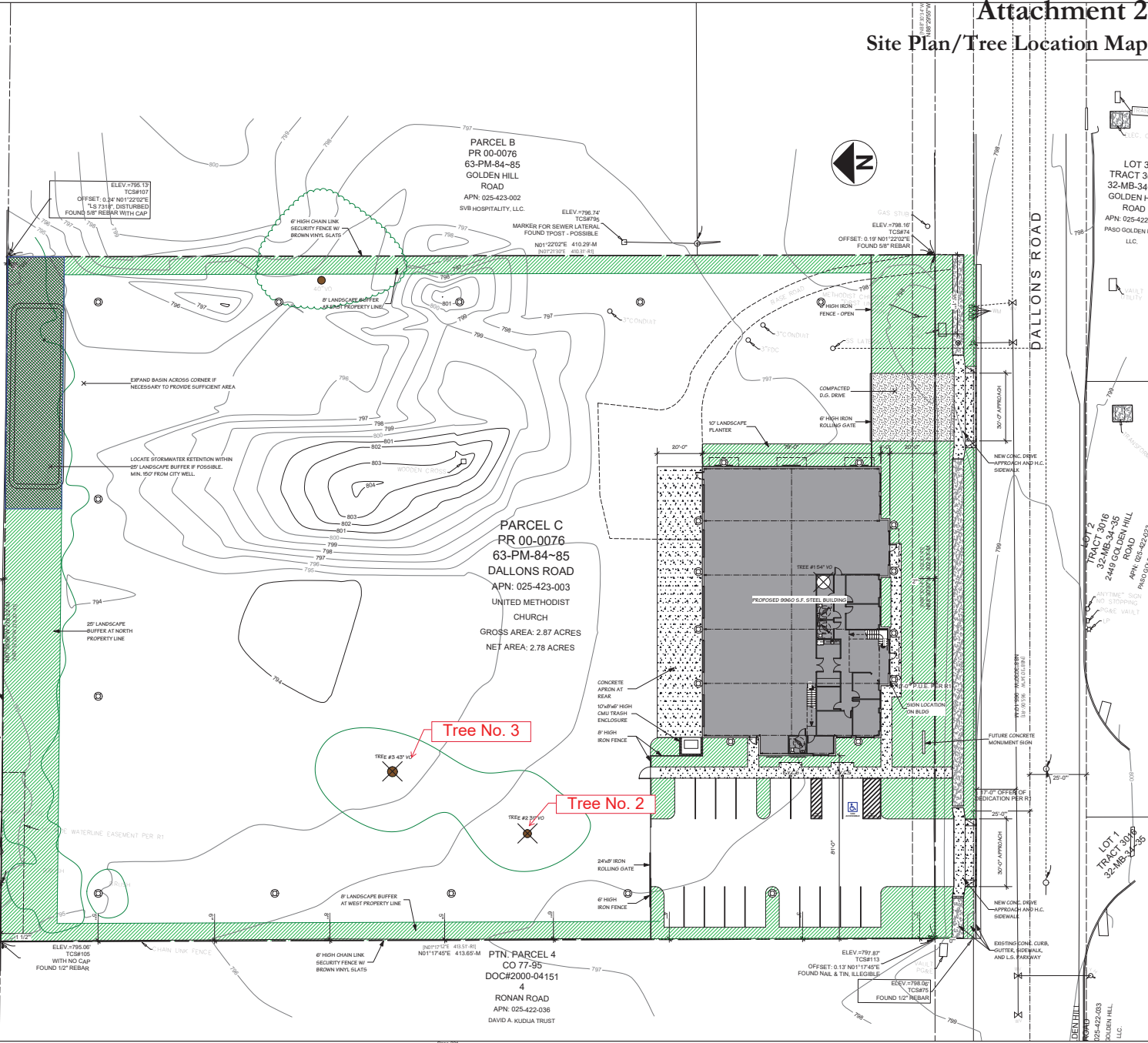


Attachment 2 Site Plan/Tree Location Map

SITE AND PROJECT DATA

ASSESSORS PARCEL NUMBER : 025 - 423 - 003
 LEGAL DESCRIPTION - PARCEL C: 1/4 SECTION 10, T13S, R10E, S44, 63-PM-84-85
 PARCEL SIZE : 2.87 ACRES (GROSS) / 2.79 ACRES (NET)
 PROPOSED BUILDING FOOTPRINT : 9960 S.F.
 PROPOSED BUILDING AREA BREAKDOWN :
 MAIN FLOOR OFFICE AREA : 2088 S.F.
 UPPER FLOOR AREA (FUTURE OFFICES) : 2088 S.F.
 LIGHT MAINTENANCE SHOP AREA : 3916 S.F.
 MAIN FLOOR STORAGE AREA : 3896 S.F.
 BUILDING OCCUPANCY GROUP : (MIXED) GROUP 'B' / 'S-1'
 BUILDING CONSTRUCTION TYPE : TYPE 'V-B'
 BUILDING HEIGHT : 25'-0"
 CLIMATE ZONE : ZONE '4'
 FIRE SEVERITY ZONE : HIGH
 PROPOSED HOURS OF OPERATION FOR THIS FACILITY : 6 A.M. - 5 P.M. (MON. / SAT.)
 NUMBER OF EMPLOYEES : THERE ARE NO SHIFTS, EXCEPT FOR A FULL TIME OFFICE STAFF OF 4 EMPLOYEES AND 1 MECHANIC. ALL OTHER LITEC EMPLOYEES WORK OUT OF THE LOCAL AREA OR COUNTY FOR THE ENTIRE WEEK, RETURNING ON THURSDAY OR FRIDAY P.M.
 OUTDOOR STORAGE YARD FOR : COMMERCIAL TRUCKS AND TRAILERS, BACKHOES, EXCAVATORS, PIPE ROLLS, PIPE STICKS, UNDERGROUND UTILITY MATERIALS, MOST VEHICLES AND EQUIPMENT GO OUT TO THE JOBSITE MONDAY MORNING AND RETURN ON THURSDAY OR FRIDAY EVENINGS. ON SOME OCCASIONS, INDIVIDUAL PIECES OF CONSTRUCTION EQUIPMENT WILL BE ROTATED OUT OF THE VARIOUS JOBSITES.

INDICATES LOCATION OF WALL PACK OR POLE MOUNTED (ALL 12'-0" HIGH) FULL CUT-OFF L.E.D. LIGHT FIXTURES (LITHONIA OLIV-31 AT PARKING LOT LIGHTS / OLIV-23 WALL PACKS)



ROBERT FISHER
AN ARCHITECTURAL CORPORATION

8775 San Rafael Road
Menlo Park, CA 94025
650-461-4804
Email: rfisher@rfg.com

LOT 3
TRACT 30
32-MB-34
GOLDEN HILL
ROAD
PASO ROBLES, CA
APN: 025-422-002

LOT 2
TRACT 16
32-MB-34-105
2440 GOLDEN HILL
ROAD
PASO ROBLES, CA
APN: 025-422-023

LOT 1
TRACT 30
32-MB-34-106

Shade Tree Home Design & Drafting

Joe Duhan
469-6715 - phone
461-6715 - fax
joe@shadetree.com

PREPARED FOR:
A NEW COMMERCIAL SERVICE BUILDING FOR
LEO TIPWELL EXCAVATING CORP.
DALLONS ROAD
PASO ROBLES, CA 93446
APN: 025-423-003

DATE: 05/11/2017
REVISION: 06/23/2017

PRELIMINARY SITE DEVELOPMENT PLAN
SCALE: 1"=30'-0"
SHEET
A0

Attachment 3

Draft Resolution A

RESOLUTION 17-XXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES
AUTHORIZING THE REMOVAL OF TWO OAK TREES ON DALLONS DRIVE
(OTR 17-014 / TIDWELL)
APN 025-423-003

WHEREAS, Leo Tidwell III has submitted a request to remove two oak trees on a vacant 2.78-acre lot approximately 450-feet west of the intersection of Dallons Drive and Golden Hill Road; and

WHEREAS, Rodney Thurman, Certified Arborist, has evaluated the trees and concludes that the two trees are in advanced stages of decline, have had past limb failure due to decay, and are in poor condition, as described in the Arborist Report, Exhibit A. Tree No. 2 is a 31-inch diameter Valley Oak and Tree No. 3 is a 43-inch diameter Valley Oak; and

WHEREAS, the request for the trees to be removed is in conjunction with a development plan (PD 17-007) for a 9,960 square foot office building with an accessory outdoor contractor's storage yard; and

WHEREAS, there are two additional oak trees located on the site, Tree No. 1 and Tree No. 4. Per the Arborist report, Tree No. 1 is also in advanced stages of decline and is recommended for removal. Tree No. 4 is healthy and may be retained with tree protection; and

WHEREAS, per the recommendation of the Arborist report and staff site visit to inspect the trees, Tree No. 1 has been determined by the Community Development Director to be "clearly dead or diseased beyond correction" and qualifies for removal per Section 10.01.050D; and

WHEREAS, the Community Development Director could not make the determination that Tree No. 2 and Tree No. 3 are "clearly dead or diseased beyond correction," and therefore, Section 10.01.050.D of the Oak Tree Ordinance would consider the tree "healthy" and require that the City Council make the determination of whether the tree should be removed or not, after consideration of the factors listed in Section 10.01.050.E; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EL PASO DE ROBLES DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. All of the above recitals are true and correct and incorporated herein by reference.

Section 2 Findings. The City Council finds the factors outlined in Section 10.01.050.E, and the information provided by the Arborist, justify the removal of the 31-inch diameter Valley Oak tree and 43-inch diameter Valley Oak tree, based on the trees being in poor health, as indicated in Exhibit A.

Section 3. Mitigation. Eight (8) 2.5-inch diameter Valley Oak tree replacement trees shall be planted on site at the direction of the Arborist to mitigate the visual impact of the tree's removal.

APPROVED this 7th day of September, 2017, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Steven W. Martin, Mayor

ATTEST:

Kristen L. Buxkemper, Deputy City Clerk

Exhibits

A. Whit's Turn Tree Care Arborist Report



P.O. Box 1784 Templeton, CA 93465
Telephone: 805-434-9630 Fax: 805-434-9610

Oak Tree Impact Report

Project Name: LTEC – Leo Tidwell Excavating Corp. Proposed Shop and Maintenance Yard Construction

Project Location: 0 Dallons Road, Paso Robles, CA -Parcel #025-423-003

Report Prepared By: Rodney D. Thurman

Professional Certifications:

- International Society of Arboriculture (ISA) Certified Arborist # PN2684AUM – Expires 6/1/2020
- ISA Municipal Specialist– Expires 6/1/2020
- ISA Utility Specialist– Expires 6/1/2020
- ISA Tree Risk Assessment Qualification – Expires 8/5/2020

City of Paso Robles Business License: #06603

Proof of Liability Insurance: Wesco Insurance Co. #WPP145976100

Respectfully Submitted,

Rodney D. Thurman



P.O. Box 1784 Templeton, CA 93465
Telephone: 805-434-9630 Fax: 805-434-9610

August 3, 2017

To: Leo Tidwell Jr. – LTEC – Leo Tidwell Excavating Corp.

From: Rodney Thurman – Whit's Turn Tree Care

Re: Oak Tree Impact Report in regard to proposed construction

Mr. Tidwell,

In response to your request at our on-site meeting January 3, 2017, I have assessed tree health and stability for four (4) Valley Oaks (*Quercus lobata*) located at APN parcel # 025-423-003, a 2.87 acre parcel on Dallons Road in Paso Robles, CA. Additionally I have provided tree protection measures for trees regarding construction of structures, grading and paving.

Summary:

I assessed the health and stability of 4 Valley Oak trees on the property you are proposing to construct your new warehouse building and equipment yard. Trees 1, 2 and 3 on the lot are in advanced stages of decline with ratings of very poor. None of these trees can be successfully pruned to make them safe enough to be retained in a commercial building setting where vehicles, equipment and pedestrians will be at risk. Tree 4 is in fair condition. With proper pruning and root protection it can be a retained and be a viable tree.

Introduction:

You have proposed to build a maintenance shop and office building on this 2.87 acre site. Automobile parking and a construction equipment storage yard will also be built on site. The property is located on the north side of Dallons Road which is behind the Lowes and T.J. Maxx retail development at 2453 Golden Hills Rd. The terrain is relatively flat at the south, west and northwest portions of the parcel. The northeast corner of the parcel has mounded terrain measuring approximately 8 feet tall. Some of the mounds appear to be from construction debris that were dumped on site in the past. Other mounds look relatively natural, but I cannot determine that as fact. There are four mature valley oak trees on the site. To my knowledge, there has not been any commercial or residential housing on site previously. Aside from a gravel driveway, it did not appear that any improvements had been made to the property.



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Observations:

I conducted health and condition assessments for each oak tree on the property with a diameter at breast height (DBH) Six (6) inches and greater. I numbered each of the trees with a rectangular metal tag and attached it to the trunk at approximately 6 feet above ground. Locations of each tree listed are in Appendix B- Site Diagrams- Diagram 1

In total, I assessed four (4) trees. A chart for quick reference regarding the assessment is included below. See Tree Information-Chart 1.

To determine condition class rating or each tree, I listed six subcategories of condition with values of 1-5. One was the lowest rating and five was the highest rating. From the average of the six (6) categories, a condition class was assigned according to Chart 2 below. Condition class rating quantification breakdown is listed in Chart 3 below.

Individual Tree Information:

Chart 1-

Individual Tree Information								
Tree #	Species	DBH	Ht.	Canopy Width	Approximate Age*	Location	Condition Rating	Comments
1	Valley Oak (Quercus lobata)	54"	40'	35'	216	South Quadrant	Very Poor	Drought stressed, significant area of trunk decay, loss of major scaffold branches due to decay
2	Valley Oak (Quercus lobata)	31"	55'	50'	124	West Quadrant	Very Poor	Drought stressed, loss of major scaffold branches due to decay
3	Valley Oak (Quercus lobata)	43"	60'	60'	172	West Quadrant	Very Poor	Drought stressed, significant area of trunk decay, loss of branches due to decay
4	Valley Oak (Quercus lobata)	29"	45'	60'	116	East Quadrant	Fair	Drought stressed. Loss of smaller dead branches

*Individual ages were estimated by multiplying the radius of the tree by 8 which represents average growth of 1/8 inch per year. e.g., Radius 12" x 8 = 96 years or R (8) = age in years



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Condition Rating:

Chart 2

Condition Class Rating								
Tree #	Trunk Condition	Growth Rate	Structure	Insects and Disease	Crown Development	Life Expectancy	Rating	Condition Class
1	1	1	1	2	1	1	7	Very Poor
2	3	1	1	2	1	1	9	Very Poor
3	1	1	1	2	2	2	9	Very Poor
4	3	2	3	3	3	3	17	Fair

Chart 3

Condition Class Valuation		
Condition Class	Percent	Rating
Excellent	81-100%	23-30
Good	61-80%	19-23
Fair	41-60%	14-18
Poor	21-40%	10-13
Very Poor	0-20%	0-9

Discussion:

Analysis of Cause of Tree Decline

Tree # 1 has a rating of very poor. This tree is growing in what was once agricultural land used for farming and grazing. Because of these uses this trees' root zone was likely damaged by vehicle activity, plowing and or animal activity. It does not appear that any damage that would have caused these trees to decline was caused by the current owner.

Injuries to the roots allowed decay fungus to enter the root. Over a period of years the decay fungus has advanced and caused a large decay cavity in the lower trunk and root flare on its north side. The decay extends 64 inches up from the ground and has a width of 42 inches. The total circumference of the trunk is 170 inches, which means approximately 25% of the exterior of the trunk is compromised. The actual internal decay is typically advanced at least 1/3 greater than the visible decay area.



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At this point the structural integrity of the anchor roots and the lower stem of the tree have been compromised. Drought conditions over the last 5 years have also contributed to this trees' decline. This is indicated by twig dieback on the extremities of the tree branches as well as loss of entire branches in the upper canopy. Approximately 25 percent of less of the trees original canopy remains.

There is no way to mitigate hazards through pruning. Cultural improvements in the critical root zone (CRZ) such as aeration, mulching and irrigation are unlikely to revive this tree. If cultural improvements were to work, the structure of the tree is not sound enough to support additional canopy weight.

Tree #2 has a rating of very poor. This tree is growing in what was once agricultural land used for farming and grazing. It does not appear that any damage that would have caused these trees to decline was caused by the current owner.

No damage to the structural roots is apparent. The roots in the CRZ although not exposed or visibly damaged, and do not have a favorable environment. No natural mulch from tree debris is present in any significant amount. Without mulch to protect the fine hair roots that transport moisture through the tree, the roots become dehydrated and die.

Due to the reduced feeder roots the canopy has also begun to decline. This is evident in twig, branch and scaffold dehydration and death. Several dead branches have been shed from the tree and are lying on the ground below. Young shoot growth is also poor or dead. The trunk of the tree appears to be in stable condition with no visible defects or decay.

There is no way to mitigate hazards through pruning. Cultural improvements in the CRZ such as aeration, mulching and irrigation are unlikely to revive this tree. If cultural improvement were to work, the structure of the tree is not sound enough to support additional canopy weight.

Tree #3 has a rating of very poor. This tree is growing in what was once agricultural land used for farming and grazing. It does not appear that any damage that would have caused these trees to decline was caused by the current owner.

Because of the farming activity, this trees' root zone could have become damaged by vehicle activity, plowing and animal activity. The tree has a large decay cavity in the lower trunk and root flare on its north side. The decay cavity measures 2 foot by 1 foot 3 inches. Decay most likely entered the tree through a root wound that occurred many years ago. At this point the structural integrity of the anchor roots and the lower stem of the tree have been compromised.

Drought conditions over the last 5 years have also contributed to this trees' decline. This is indicated by twig dieback on the extremities of the tree branches as well as loss large branches in the upper canopy. There is no way to mitigate hazards through pruning. Cultural improvements in the CRZ such as aeration, mulching and irrigation are unlikely to revive this tree. If they did, the structure of the tree is not sound enough to support additional canopy weight.

Tree #4 has a rating of fair. This tree is moderately drought stressed. Multiple years of drought has contributed to the moderate decline of this tree, indicated by twig die back in the canopy and decline of smaller diameter branches ranging between 2 and 4 inches. It does not appear that any damage that would have caused these trees to decline was caused by the current owner.



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With proper pruning and cultural improvements to the root zone this tree could be a viable asset to the property. During construction, the tree will need tree protection fencing to ensure no damage occurs in the CRZ. The CRZ for this tree is a radius of 29 feet measured from the trunk outward past the drip-line of the tree.

Soil is mounded to the west of the tree which was most likely dumped there many years ago. If these mounds are within the CRZ and need to be moved in order to install tree protection fencing, a certified arborist shall be on site to supervise during these activities. Long term protection of the CRZ will also be required. See Tree Protection Requirements section on page 5 of this report for more detail.

Tree Protection Requirements:

- **Tree Protection During Construction-** The tree protection shall be provided during the entire time construction activities occur. A critical root zone protection area shall be established and maintained to ensure roots remain undamaged. A critical root zone or CRZ is an area equal to 1-foot radius from the base of the tree's trunk for each 1 inch of the tree's diameter at 4.5 feet above grade (referred to as diameter at breast height or DBH).
Example: By multiplying a tree diameter of 24 inches by 1, the radius of root protection would be 24 feet from the trunk. At that distance the tree protection fencing would be installed around the perimeter of the tree.
- **Tree Protection Fencing-** Tree protection fencing is required to be in place for the duration of the construction project. The fencing should be 4 feet tall and made of orange, high density, polyethylene with 3.5" x 1.5" openings. It should be installed on steel posts 8 feet on center and tightly stretched to prevent sagging. Weatherproof tree protection signs shall be placed on the fencing and remain in place until completion of the project. See Appendix B - Tree Protection Diagrams- Diagram 2.
- **Root Protection-** No grading or soil disturbance or paving shall occur within the CRZ of this tree. No materials storage, soil storage, debris shall occur in the protected area. No concrete, plaster or paint washout shall be allowed within the CRZ. Additionally, 3 inch deep layer of bark mulch should be placed within the area of the CRZ. See Appendix B - Tree Protection Diagrams- Diagram 2.
- **Monitoring-** An initial inspection should be completed by a certified arborist to ensure that all tree protection measures have been put in place. Weekly inspections of the CRZ and associated fencing should be completed by a certified arborist until construction is complete.
- **Long Term Tree Protection:** In order to give this tree the greatest potential for survival, the CRZ shall be protected permanently. The best way to establish a permanent border around the perimeter of the CRZ is to install a 24 inch tall wood rail or similar fence or a stackable block wall to a height of 24 inches tall or K-Rail barriers. . Examples of these tree protection barriers can be found in Appendix D- Tree Protection – Graphics 1-3
Bark mulch such as arborist chips shall also be applied within the CRZ to a depth of 3 inches deep, taking care not to stack chips against trunk of tree. This mulch will help prevent dehydration of the soil in the CRZ and promote a more favorable environment for the tree.



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Conclusion and Recommendations:

Trees 1 through 3 are in advanced stages of decline and present safety hazards that cannot be mitigated by pruning. Cultural improvements, could improve the vigor of these trees but the structure of the trees would not support the growth. I recommend removal of these trees.

Tree #4 is the healthiest of the four trees on this site. With proper cultural care and maintenance pruning this tree could be retained and become a viable asset to the property and surrounding landscape. During and after construction this tree will require protection of its critical root zone.

Sincerely,



Rodney D. Thurman
ISA Certified Arborist PN-2684AUM
ISA Tree Risk Assessor Qualification

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Email: rodney@whitsturn.com

Appendices: Photographs, Site Diagrams, Tree Protection, Glossary of Terms



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Appendix A- Photographs



Photo 1- Panorama of site looking northwest from driveway entry on Dallons Road.



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Photo 2- Tree #1 Areas of major decay and scaffold failure



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Photo 4- Tree #1- Decay cavity on north side of tree measures 64" x 42"



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Photo 5- Tree #1- Large area of decay in stem approximately 36" by 18".



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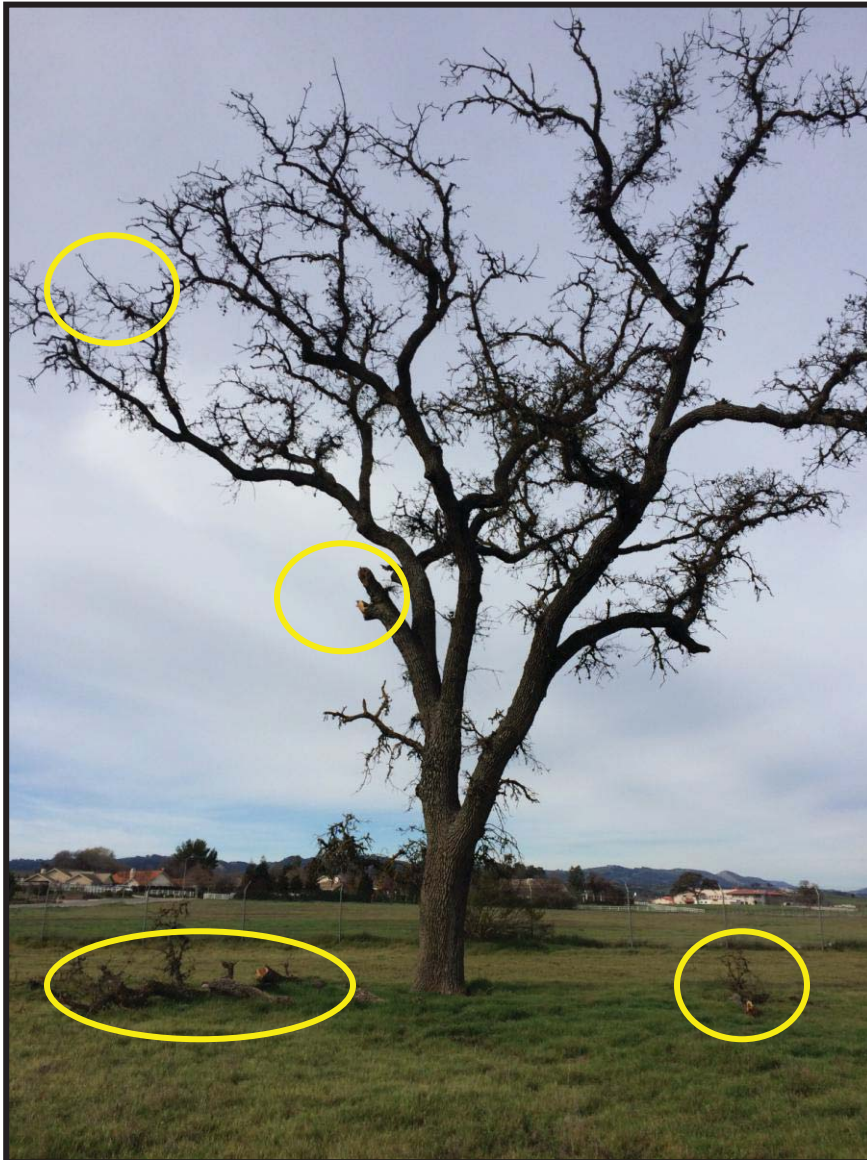


Photo 5- Tree 2. Declining canopy, decreased shoot growth and failed scaffold branches.



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Photo 6- Tree 2. Close up of failed scaffold branches



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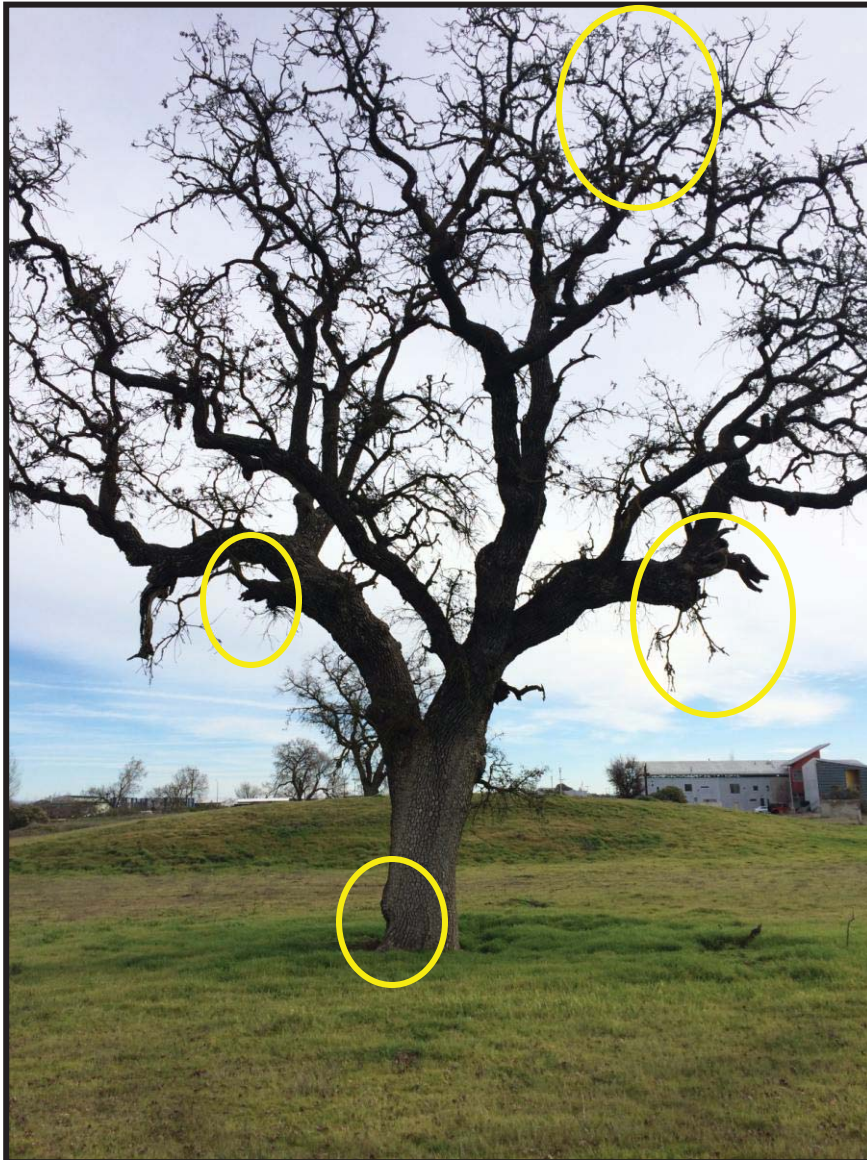


Photo 7- Tree 3. Declining canopy, decaying and failed scaffold branches, decreased shoot growth, trunk decay.



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Photo 8- Tree #3. Decay cavity on north side of tree. Measures 24" x 15"



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Photo 9- Tree # 4. Declining canopy, decreased shoot growth, small diameter branch die-back.



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Photo 10 - Tree #4. Small diameter branch die-back.



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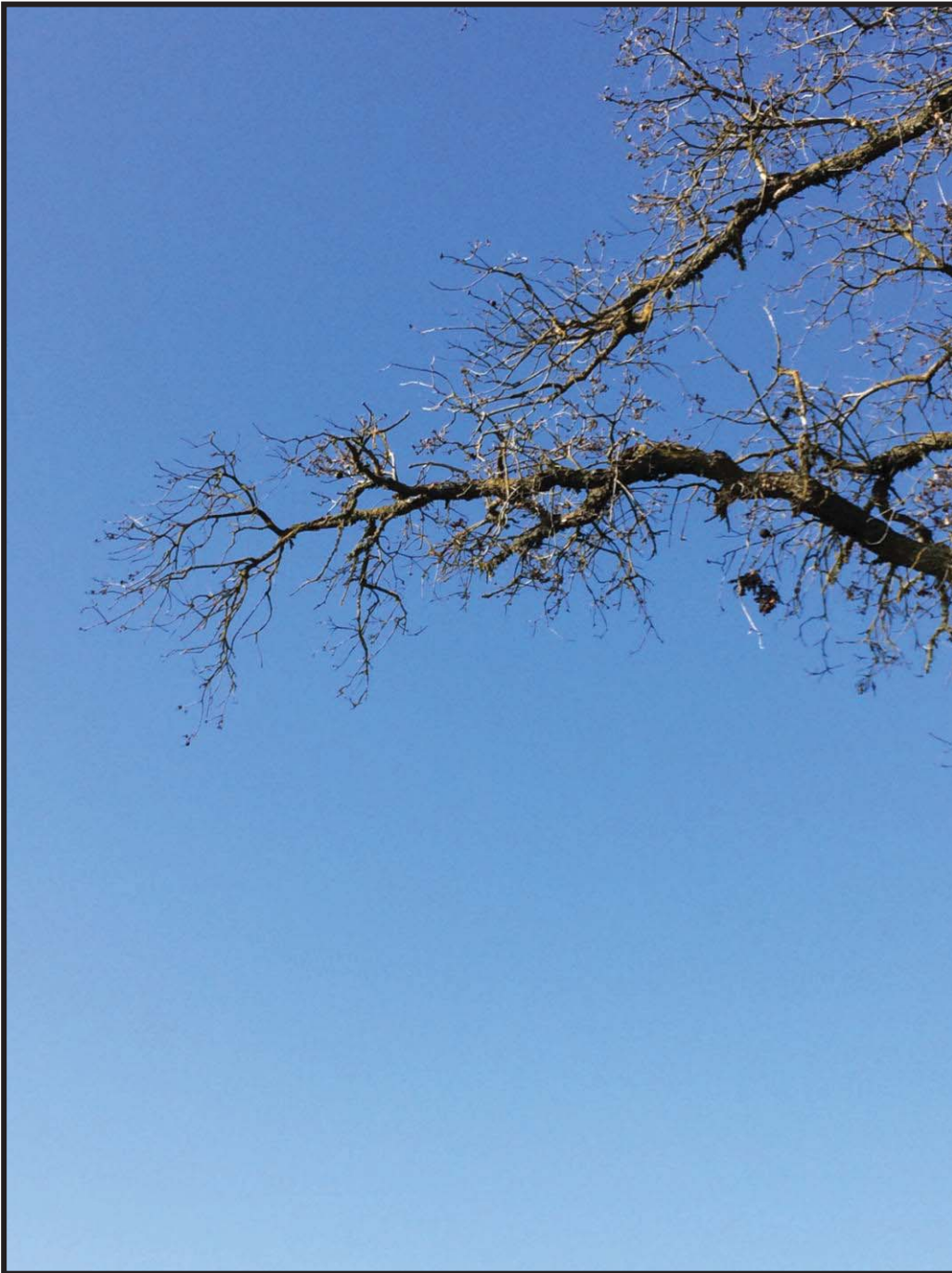


Photo 11- Tree #4. Decreased shoot growth.



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Appendix B- Site Diagrams



Diagram 1- Conceptual Building Plan for Site



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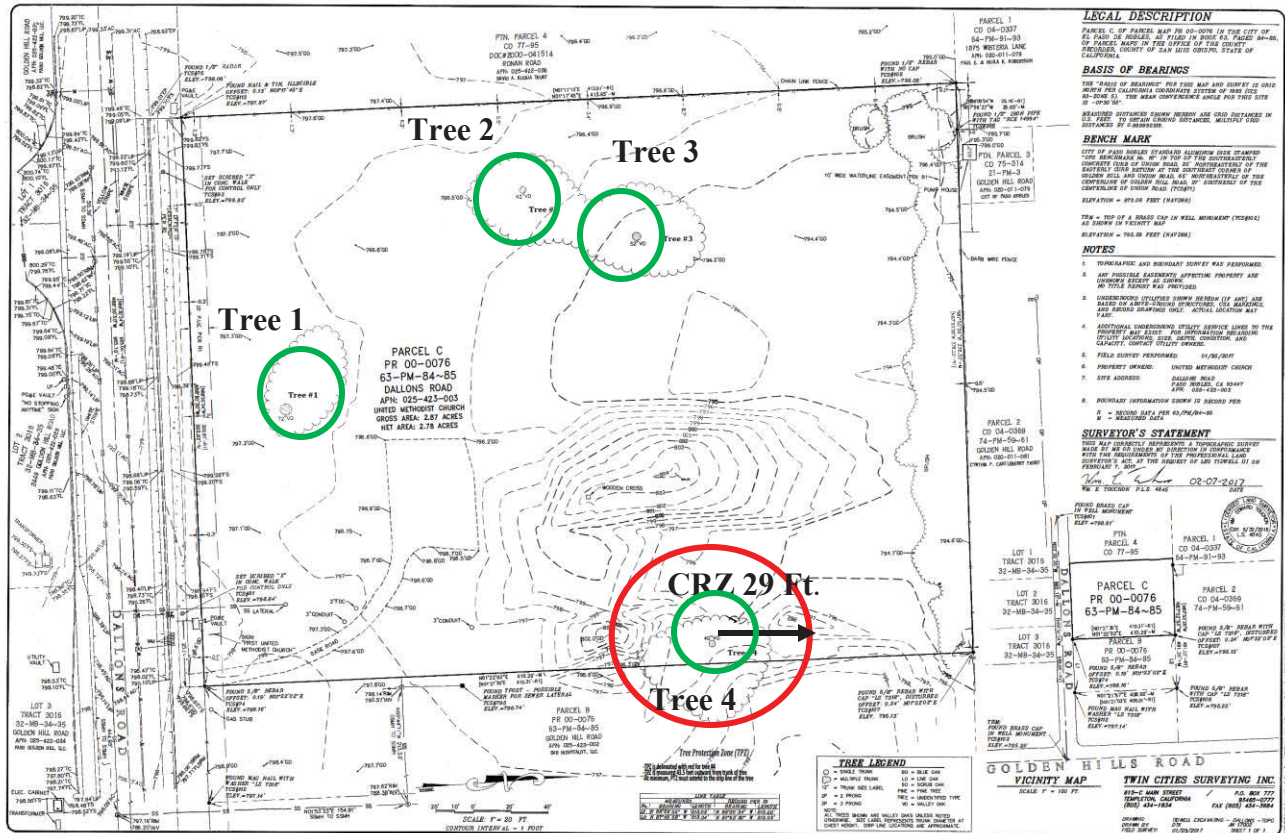


Diagram 2- Topographical Map with Tree Locations and Critical Root Zone delineated for tree #4 highlighted in red.



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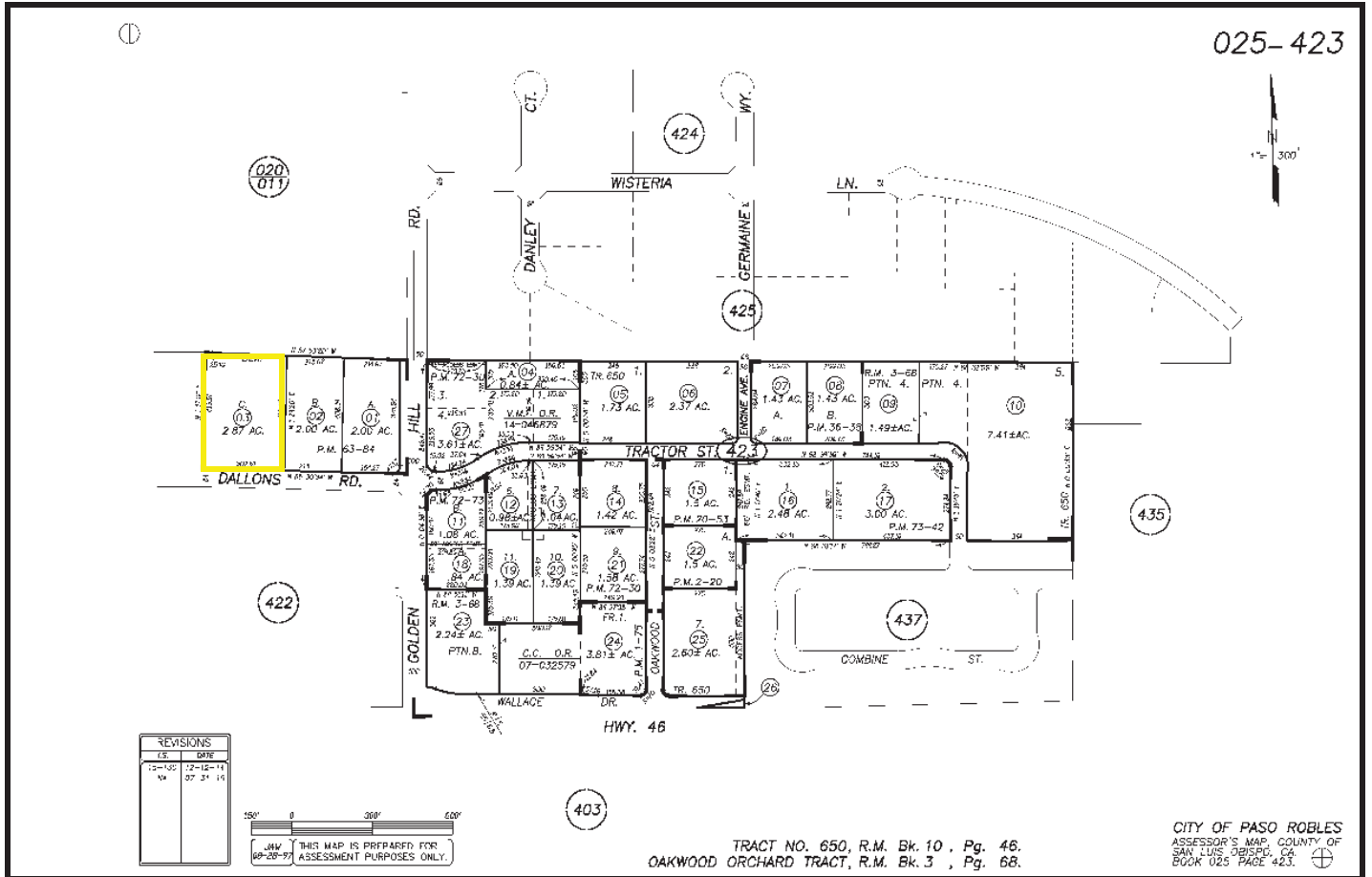


Diagram 3- Parcel Map. Site is highlighted in yellow



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Appendix C- Tree Protection

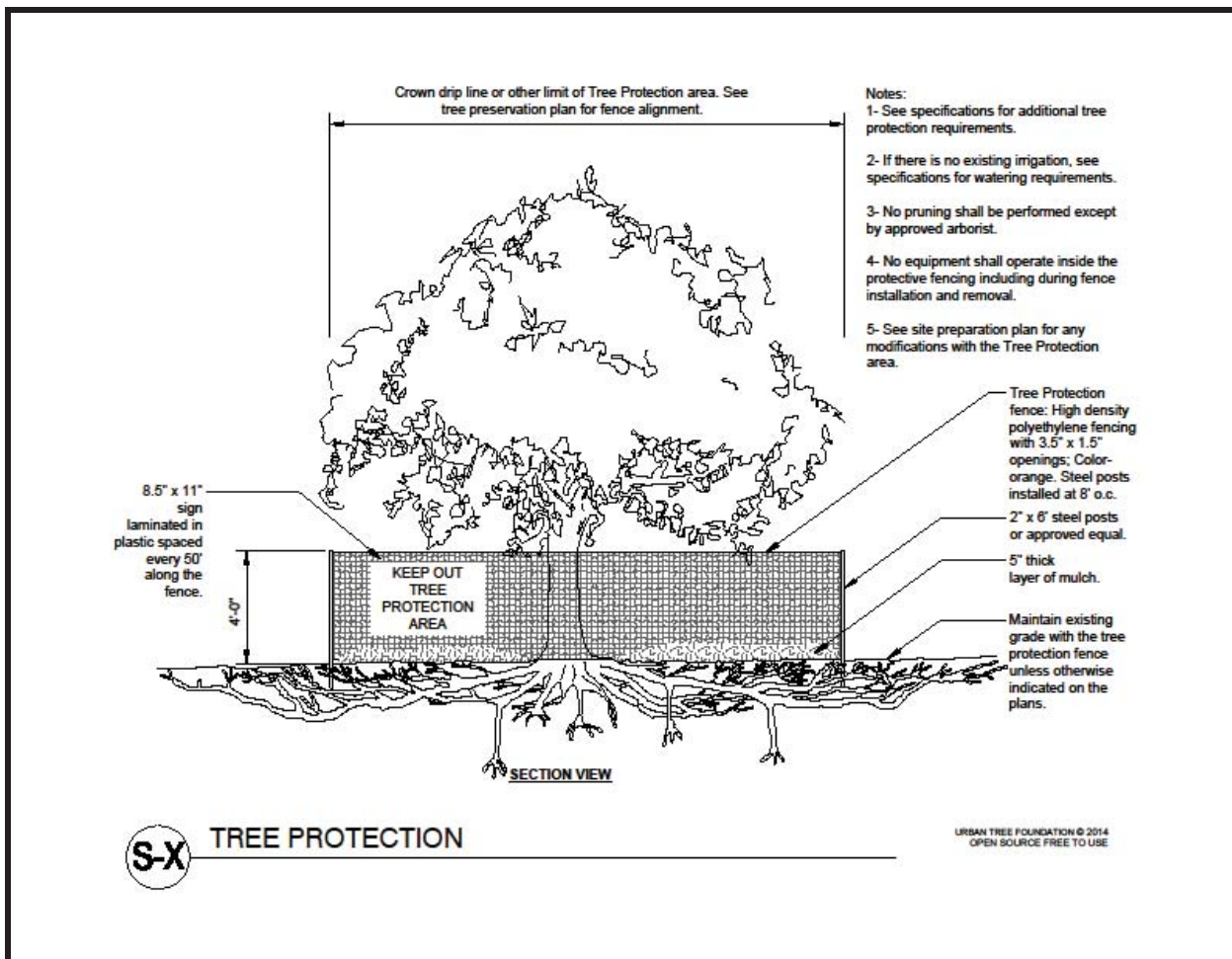


Diagram 1- Tree Protection Fencing Guide – use these measures during construction.



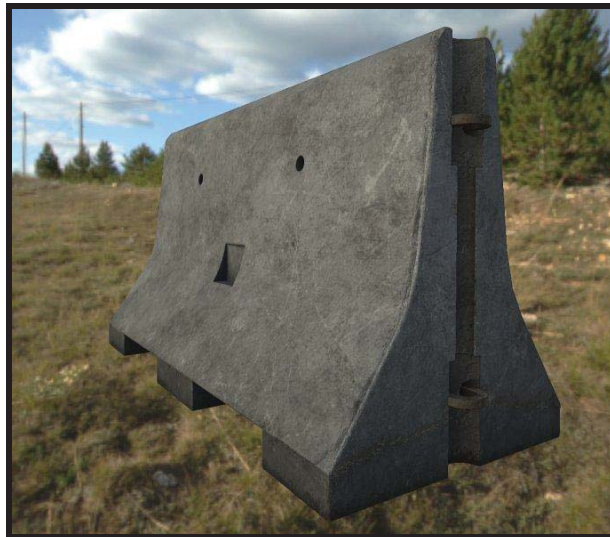
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Graphic 1- Split Rail fencing



Graphic 2- Stackable Brick Wall



Graphic 2- K-Rail Barrier



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Appendix D- Glossary of Terms

- **Canopy-** Collective branches and foliage of a tree or group of trees' crowns. Aggregate or collective tree crowns.
- **Critical Root Zone or CRZ-** The International Society of Arboriculture (ISA) defines Critical Root Zone (CRZ) as an area equal to 1-foot radius from the base of the tree's trunk for each 1 inch of the tree's diameter at 4.5 feet above grade (referred to as diameter at breast height or DBH).
- **Diameter at Standard Height-** Diameter of trunk measured at 4.5 feet above ground level.
- **Drip-line-** Area beneath the tree delineated by the outer edge of the tree canopy.
- **Root Hairs-** Modified epidermal cells of a root that absorb the majority of water and minerals.
- **Scaffold Branches-** Permanent or structural branches that form the scaffold architecture or structure of a tree.
- **Structural Root-** Large, woody, tree roots that anchor and support the trunk and crown. Roots characterized by secondary thickening and relatively large diameter, giving form to the root system and functioning in anchorage and support.
- **Structural Root Zone or SRZ-** Area within 10 feet of the trunk of the tree where larger diameter anchoring roots are located.
- **Tree Protection Zone or TPZ-** Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development.