

APPENDIX 2

AMENDMENT
Arborist Assessment for Whitewood-29 in Murrieta

In the original arborist report dated April 2021, the live oak tree—CLO-2 (*Quercus agrifolia*), was identified as being within the property boundary. After additional review, the engineer has noted that this tree is located outside of the property limits. This was also the tree that we noted had a severe ant infestation.

Arborist Assessment for Whitewood-29 in Murrieta

Background and Assignment

Tom Dodson and Associates requested an arborist's report regarding the potential impact of proposed development on trees located on an undeveloped parcel at the southeast corner of Clinton Keith Road and Whitewood Road in the City of Murrieta.

The assignment was to report on the current health and/or structural stability of the existing trees on the site and to propose restorative or remedial measures for mitigation of development impacts to the existing trees.

Of the 11 trees that were surveyed on the site, efforts should be made to save 3 to 4 of them. This report discusses the current condition of the trees with recommendations. Tree survey data, photos, maps, and tree preservation guidelines that should be adhered to during construction are included in the appendices.

Site Description

The site is located in the City of Murrieta in southwestern Riverside County at an elevation of approximately 1,100 feet. Vista Murrieta High School is located on the southwest corner of Clinton Keith Road and Whitewood Road. There is a single-family residential development at the northwest corner; and the northeast corner is occupied by large parcels with scattered structures. (See Appendix B, Maps, Figures 1 and 2.) Clinton Keith Road intersects with Interstate 215 just to the west of Whitewood Road

Chamise-Sage chaparral

The majority of the project site is a mature and dense community of chamise-sage chaparral (described by the California Native Plant Society Manual of California Vegetation Online), except in the bare area in the southwest corner of the parcel where there is a non-native grassland with the occasional elderberry tree. Chamise or greasewood (*Adenostoma fasciculatum*), and black sage (*Salvia mellifera*) are common in the chamise-sage scrub of Southern California, and these were co-dominant in the shrub canopy at the site. Trees found in this community and onsite include coast live oak (*Quercus agrifolia*) and elderberry (*Sambucus nigra*).

A few graded hiking and biking trails and disturbed areas occur in the eastern and western corners. These disturbed areas are characterized by non-native grasses

(*Brumus* ssp.), short podded mustard (*Hirschfeldia encana*), and a few elderberry trees.

Procedures

Matthew South and I visited the site on March 27, 2021. We collected data for the trees located onsite. We examined 11 trees and conducted visual inspections from the ground. There were only two species of trees present—coast live oak and elderberry. All but one of the elderberry trees are located along the western boundary, and the southeastern corner of the site is where the oak trees and one elderberry tree are located. (See Appendix B, Maps, Figures 3.)

We recorded each tree's diameter at breast height (dbh) and approximate height and spread. We graded each tree's condition and structure, and we noted any defects or conditions of concern. (See Appendix A, Tree Survey.) We graded tree structure on a scale of 1 to 3 where 1=Poor; 2=Fair; and 3=Good. We used the following grading scale to determine condition:

- 1 – Large, dead branches, evidence of bark loss on trunk, and appearance of advanced decline
- 2 – Many dead branches with little shoot growth
- 3 – Scattered dead twigs in outer crown and increased crown thinning with little current shoot growth
- 4 – Minor crown thinning and reduced shoot growth
- 5 – Maximum health

Individual tree locations were collected and recorded using a Geographic Information System (GIS) and assigned unique numbers. (See Appendix A, Tree Survey and Appendix B, Maps, Figures 3.)

Survey Results

We surveyed a total of 11 trees. There were two tree species in the survey—coast live oak (*Quercus agrifolia*) and black elderberry (*Sambucus nigra*).

All of the surveyed trees were rated in good to maximum health with generally good structure. The oak trees were mature with generous spreads. We observed no dead trees in the survey. Of the oaks, one tree (CLO-2) has a severe ant infestation on the main trunk. CLO-4 has one large dead main stem; and CLO-3 has a cavity in the trunk and has lost some large limbs.

Comments and Recommendations

Based on the proposed development site plan (See Appendix B, Maps, Figure 4.), the entire site will be impacted during construction. Most of the trees will need to be removed, but efforts should be made to save three to four of the trees. One of the

elderberry trees (ELD-1) and three of the oak trees—CLO-1, CLO-3, CLO-4—fall outside the limits of construction and can be saved. They will need to be protected with fencing during construction. (*See Appendix C, Tree Preservation Guidelines.*) If possible, the project should avoid them or incorporate them into the design.

The community uses CLO-1 based on the presence of graffiti, a sitting bench under the canopy, and the managed grasses under the canopy that allow for human use. It is a massive tree, and efforts should be made to save it.

ELD-1 is growing under the canopy of CLO-4 and competing for resources. It is suppressed and unbalanced. While construction will not impact this tree, its removal should be considered to allow the oak tree better opportunity for vigorous growth.

CLO-4 has a large dead stem, which should be removed; CLO-3 has lost some limbs, and those wounds should be repaired. There is also an ant infestation in this tree that will need to be treated. Remove dead branches and repair old wounds from lost limbs on all of the trees that are to remain.

All pruning must be performed by a certified arborist or tree worker according to guidelines set forth by the International Society of Arboriculture (ISA) in its publication, *Best Management Practices: Tree Pruning (Third Edition)*. ISA best management practices recommend removing no more than 20 percent of the live crown of a tree in a single year. In mature trees, pruning even that much can have negative effects.

Situations might arise whereby a tree on-site can be spared from construction. Alternatively, a tree located off-site but in proximity to construction might be impacted by the site work. In these instances, precautions should be taken so as not to compact the soil during construction and to avoid unnecessary root removals. (*See Appendix C, Tree Preservation Guidelines.*)

Mature trees are often the most valued in a community, and they evoke powerful emotional attachments. Arborists try to weigh these values with concerns related to the useful lifespan of a tree and the benefits it can provide. Maintaining health and a stabilizing structure are the two main goals of mature tree management.

Consulting Arborist Disclosure

Consulting arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist or seek additional advice. Consulting arborists cannot detect every

ISA Certified Arborist WE8206A

ISA Qualified Tree Risk Assessor

ASCA Member

April 2021 3

condition that could possibly lead to the failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Consulting arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments an arborist may recommend, like any medicine, cannot be guaranteed. Trees can be managed, but they cannot be controlled. To live near a tree is to accept some degree of risk. The only way to eliminate all risks from trees is to eliminate all trees, and that would be bad for the environment.

Appendix A

Photos and Tree Survey Data

West Elevation

☀ 109°E (T) ● 33.596069, -117.161333 ±7 m ▲ 436 m



27 Mar 2021, 10:51:50

North West Elevation

☉ 161°SE (T) ● 33.596071, -117.161403 ±3 m ▲ 437 m



27 Mar 2021, 10:51:54

East Elevation

☀ 300°W (T) ● 33.596071, -117.161437 ±5 m ▲ 435 m



27 Mar 2021, 10:51:58

North West Elevation

☉ 140°SE (T) ● 33.595927, -117.160924 ±6 m ▲ 422 m



27 Mar 2021, 10:53:37

South East Elevation

☉ 323°NW (T) ● 33.595859, -117.160775 ±4 m ▲ 426 m



27 Mar 2021, 10:53:42

East Elevation

☉ 295°W (T) ● 33.595028, -117.158156 ±4 m ▲ 415 m



27 Mar 2021, 11:29:36

South East Elevation

☉ 312°NW (T) ● 33.595036, -117.158131 ±5 m ▲ 414 m

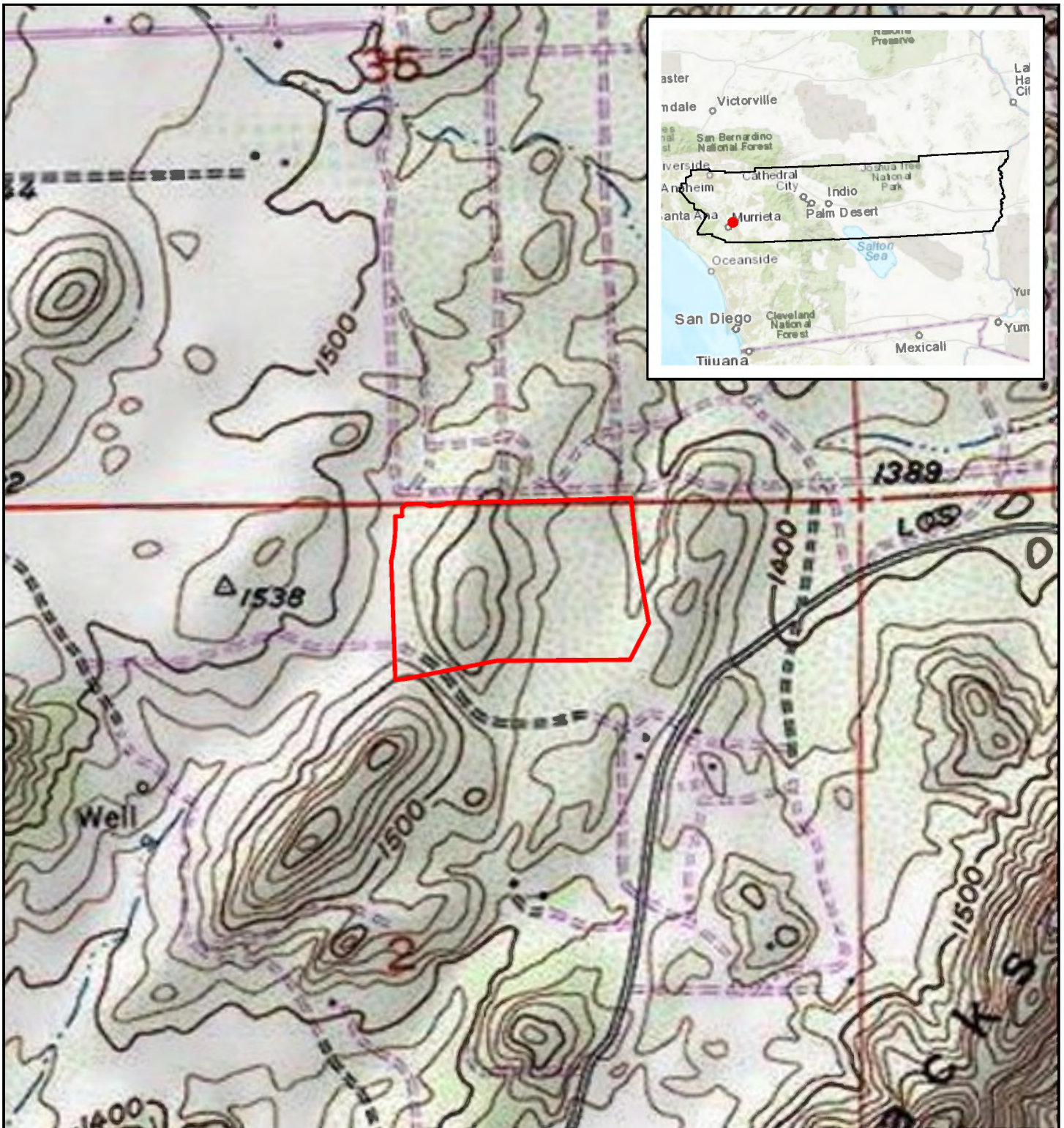


27 Mar 2021, 11:29:42

Tree Survey

ID#	Scientific Name	Common Name	dbh (inches)	Ht. (feet)	Spread (feet)	Structure Rating	Condi tion	Impact	Recommendation	Comments
CLO-1	Quercus agrifolia	coast live oak	55	50	60	3	4	Encroach 10% of canopy	protective fencing	spraypaint on trunk, massive tree, area beneath canopy is grassy, and shrubs removed, sitting bench under canopy
CLO-2	Quercus agrifolia	coast live oak	44,30	50	80	2	4	Remove		infested with ants in main trunk, entire trunk covered with ants
CLO-3	Quercus agrifolia	coast live oak	26,31	45	40	2	3	No Impact/Remain	protective fencing	mammal burrows, ant infestation, cavity in base of trunk, losing large limbs, borer holes in dead area, lost limbs
CLO-4	Quercus agrifolia	coast live oak	20,16,12	25	50	2	3	No Impact/Remain	protective fencing	one large trunk is dead
ELD-1	Sambucus nigra ssp. caerulea	blue elderberry	9	20	20	2	4	No Impact/Remain	protective fencing	underneath CLO-4 canopy, suppressed and unbalanced
ELD-2	Sambucus nigra ssp. caerulea	blue elderberry	6,3,3,2	20	25	3	5	Remove		
ELD-3	Sambucus nigra ssp. caerulea	blue elderberry	7,5,3,3,2	20	25	3	5	Remove		mammal burrow beneath, large burrow
ELD-4	Sambucus nigra ssp. caerulea	blue elderberry	5,4,3	15	25	3	4	Remove		chamise is competing with tree and is underneath canopy
ELD-5	Sambucus nigra ssp. caerulea	blue elderberry	4,2,2	13	15	2	4	Remove		
ELD-6	Sambucus nigra ssp. caerulea	blue elderberry	7,5,3,3	25	28	2	4	Remove		huge woodrat midden near tree, at fenceline near road
ELD-7	Sambucus nigra ssp. caerulea	blue elderberry	7,6,6,3	20	25	2	4	Remove		near road in fence, near culvert under main road

Appendix B Maps



Source: ESRI USA Topo Maps 2021

Clinton Keith Development Project

Figure 1. Project Location

Project Site (32-acres)

Project Site is in the City of Murrieta in Riverside County on the USGS Murrieta 7.5-minute quadrangle map in Section 02 of Township 07 South (T07S) and Range 03 West (R03W)

Center Coordinate (decimal degrees):
Latitude: 33.5963N Longitude: -117.1604W



0 500 1,000 Feet

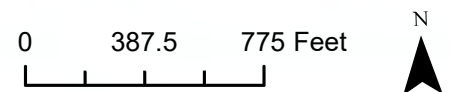




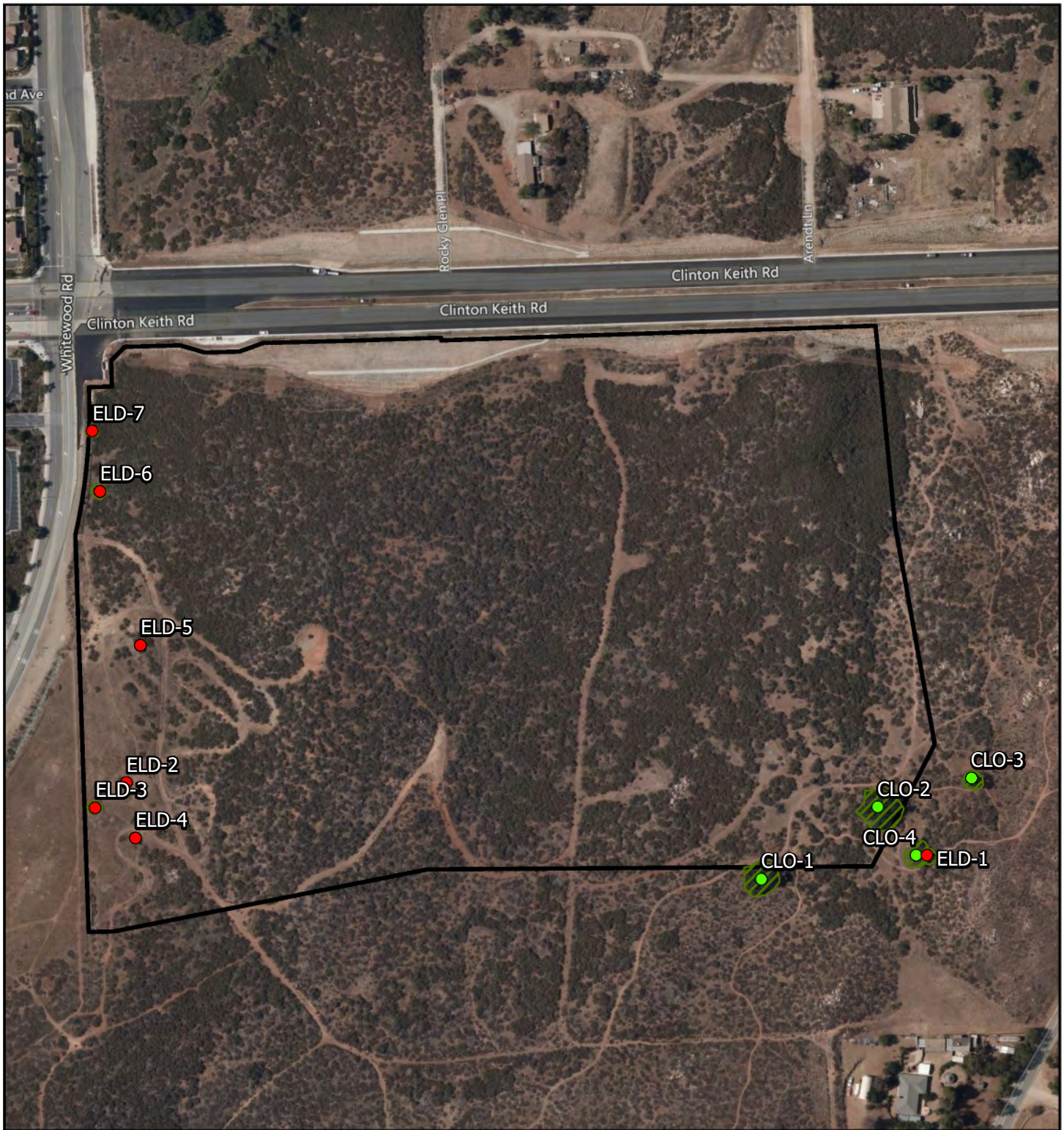
Source: BING Aerial Basemap 2021

Clinton Keith Development Project

Figure 2. Site Vicinity



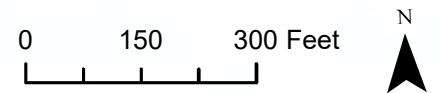
 Project Site (32-acres)



Source: BING Aerial Basemap 2021

Clinton Keith Development Project

Figure 3. Tree Survey



Project Site (32-acres)

Tree

- Coast Live Oak (*Quercus agrifolia*)
- Blue Elderberry (*Sambucus nigra* ssp. *caerulea*)

Canopy



Figure 4

Appendix C Tree Preservation Guidelines

Tree Preservation Guidelines

Trees are an essential element of a landscape's image and quality of life. Hardscape elements, such as sidewalks, curbs, gutters, walls, and driveways are also part of the landscape. Trees that are impacted during construction need to be protected.

Trees should be considered for preservation for the following benefits they provide:

- 1) They stabilize the soil and prevent erosion;
- 2) They reduce stormwater runoff by intercepting rainfall, promote infiltration, and lower the water table through transpiration;
- 3) They moderate temperature changes, promote shade, and reduce the force of wind;
- 4) They provide buffers and screens against noise and visual disturbance, providing a degree of privacy;
- 5) They filter pollutants from the air, remove carbon dioxide from the air, and produce oxygen;
- 6) They provide a habitat for animals and birds; and
- 7) They increase property values and improve site aesthetics.

To manage this process and protect existing trees, the following guidelines should be followed during the construction process:

1. Root Pruning

- a. There shall be no disturbance to roots more than 2 inches in diameter. Roots less than 2 inches in diameter must be cleanly cut to encourage good callus tissue. It is recommended that roots be pruned back to the next root node.
- b. Recommended distances from the trunk that roots should be pruned have been established for construction activities around trees. The recommendations are: Preferred distance – 5 times the diameter of the tree at breast height (dbh); Minimum distance – 3 times dbh.
- c. The recommended time to prune roots is before active root growth in late summer and fall.
- d. The less frequently roots are pruned the less impact there will be on tree health and stability.

2. Construction Projects

The following guidelines have been developed to protect trees during construction projects:

- a. A root protection zone shall be defined by a minimum 42" high barrier constructed around any potentially impacted tree. This barrier shall be at the drip line of the tree or at a distance from the trunk equal to 6

inches for each inch of trunk diameter 4.5 feet above the ground, if this method defines a larger area.

- b. Should it be necessary to install irrigation lines within this area, the line shall be located by boring, or an alternate location for the trench is to be established.

The minimum clearance between an open trench and a tree shall be no closer than 10 feet or 6 inches for each inch of trunk diameter measured at 4.5 feet above existing grade, if this method defines a larger distance. The maximum clearance shall be 10 feet. The contractor shall conform to these provisions.

- c. At no time shall any equipment, materials, supplies or fill be allowed within the prescribed root protection.

It is recognized that failure to abide by these provisions will result in substantial root damage to trees that might not be immediately apparent.

3. Protecting Tree Roots from Compaction.

No vehicles shall be permitted to be parked under the dripline of trees in non-paved areas. Avoid placing heavy equipment, large rocks or boulders, and gravel under the drip line of the tree. The object is to avoid soil compaction, which makes it difficult for roots to receive oxygen from the soil.

4. Preventing Damage from Grade Changes

Preventing tree damage from grade changes must be undertaken before the grade of the land is actually altered. Trees that are seriously declining due to grade changes seldom respond to corrective measures designed to save them.

If fill must be placed over tree roots, a well and drainage system must be installed. The dry well must be large enough to allow for future growth of the trunk. Agricultural drain tile (4 to 6 inches) should be placed on the natural grade of the land. The tile should drain to a lower level to prevent water from collecting within the well. Cover the tile with 6 to 8 inches of 2- to 3-inch stone. (Do not use limestone because this will raise the soil pH and could adversely affect tree growth.) Connect vent tiles with the drain tile to allow for gaseous exchange between the root zone and atmosphere. The fill should consist of a sandy soil or organic matter such as biochar to allow maximum aeration of the root zone.

For lowering the grade, all cuts in the natural grade must be made outside the dripline of a tree. Where trees are growing on a slope, the landscape sometimes is

cut and filled to create a level site. Again, all grade changes should be made outside the dripline of the tree.

In summary, trees are valuable resources, and in the interest of protecting them, it is imperative that these guidelines be followed. Although it might be slightly more costly in the short run, the long-term results will be beneficial both aesthetically and fiscally.