Appendix D
Biological Resources Data

ESA

D-1 Biological Resources Assessment

BIOLOGICAL RESOURCES ASSESSMENT

CROOKED CREEK RESIDENTIAL DEVELOPMENT PROJECT

CITY OF DIAMOND BAR, CALIFORNIA

LSA

July 2019

BIOLOGICAL RESOURCES ASSESSMENT

CROOKED CREEK RESIDENTIAL DEVELOPMENT PROJECT

CITY OF DIAMOND BAR, CALIFORNIA

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LSA Project No. CVD1901

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EXECUTIVE SUMMARY

LSA has prepared this biological resources assessment for the proposed Crooked Creek Residential Development Project (project) located in Diamond Bar, Los Angeles County, California. Preliminary plans for the project involve subdividing the existing 13-acre parcel to create up to 11 new residential lots ranging from 7,500 square feet (sf) to 9,000 sf, with each home averaging approximately 4,000 sf. Up to 40 percent of the 13-acre parcel would be permanently impacted due to mass grading activities and retaining wall construction, with the remaining land and natural resources on the parcel left undisturbed. The project site is currently vacant and portions of the site have been regularly maintained for many years.

In June 2019, LSA biologists conducted a literature review and records search to identify the existence and potential for occurrences of sensitive or special-status plant and animal species in the vicinity of the project area. Federal and state lists of sensitive species were also examined. Current electronic database records reviewed included the California Natural Diversity Database, the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants, and the United States Fish and Wildlife Service's Environmental Conservation Online System and National Wetlands Inventory. Historic and current aerial imagery, existing environmental reports for developments in the project vicinity (including prior biological assessments conducted on the subject property), and regional habitat conservation plans and local land use policies related to biological resources were also reviewed. A general field survey of the project area was conducted on June 16, 2019. A focused botanical survey covering the entire project area was conducted on June 20, 2019. Reference populations of special-status plant species that bloom during the month of June were visited prior to the botanical survey to ensure that such species were in bloom or otherwise detectable at the time of site surveys.

The project area is strictly upland in nature with well-drained soils. Vegetation on site mostly consists of disturbed annual brome grassland with stands of mature coast live oak woodland and California walnut groves. Historic and ongoing soil disturbance and the resulting competitive exclusion by invasive nonnative plants limit the potential for special-status plant species to occur throughout most of the project area. Some native herbaceous plant species are present in the understory of the mature oak woodland and California walnut groves. Riparian areas and wetlands are absent from the project area. No special-status plant species were observed during the field surveys and none are expected to occur on site due to the lack of suitable habitat as well as historical and ongoing anthropogenic disturbances (e.g., ranching, disking, and fuel modification/firebreaks around existing residences).

Habitat within the preliminary project construction footprint is considered low quality with respect to most regionally occurring special-status animal species, and no special-status animal species were observed during the field surveys or during prior biological assessments conducted on the property. However, several special-status animal species have been documented as occurring within riparian woodland vegetation located immediately to the southwest of the preliminary project construction footprint (associated with unlined portions of Brea Canyon

Channel). While no such aquatic or riparian habitat occurs in the project area and direct impacts to this habitat would not occur with project implementation, there is some potential for indirect disturbances to these adjacent habitats. In addition, suitable nesting and foraging habitat for various bird species (including raptors) would be removed during project clearing and grading activities.

While there is low potential for any special-status species to be directly affected by the project, the project could indirectly affect special-status wildlife species through the attraction of predators and increased levels of noise, vibration, lighting, and dust during construction activities. With implementation of recommended mitigation measures and best management practices (BMPs) during construction, significant impacts to special-status animal species are not anticipated.

The project, as currently proposed, would permanently remove up to 0.11 acre of mature coast live oak woodland and up to 1.23 acres of California walnut groves, which are considered sensitive natural communities. If unmitigated, these impacts on sensitive natural communities would be considered potentially significant.

With the implementation of recommended mitigation measures, including compensatory planting for the loss of sensitive natural communities and preservation of the existing stands of coast live oak and California walnut trees on the remainder of the parcel, no significant impacts to special-status biological resources are anticipated to occur from the proposed project.

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INTRODUCTION

LSA has prepared this Biological Resources Assessment for the proposed Crooked Creek Residential Development Project (project) located at the southern termini of Crooked Creek Drive in the City of Diamond Bar (City), Los Angeles County, California (refer to Figure 1, Project Location; all figures are provided in Appendix A). The purpose of this report is to describe and document biological resources—including sensitive and special-status species—known to occur or with the potential to occur on the project site. This technical information is provided for project planning purposes and preliminary review under the California Environmental Quality Act (CEQA), California Endangered Species Act (CESA), the Federal Endangered Species Act (FESA), and other pertinent regulations.

The Biological Resources Assessment conducted for the project involved the following components:

- Reviewing existing relevant scientific literature and other pertinent information related to the project area;
- Creating a list of regionally occurring special-status species determined to have the potential to occur in the vicinity of the project area;
- Characterizing the vegetation communities present within the project area;
- Conducting a late-season botanical inventory and focused survey for special-status plant species known to occur in the project vicinity;
- Evaluating the potential for the occurrence of special-status plant and wildlife species within the project area;
- Assessing the potential for proposed development activities to adversely impact existing biological resources; and
- Recommending avoidance and mitigation measures to avoid, minimize, or compensate for any potentially significant impacts to biological resources.

PROJECT DESCRIPTION

The project is still in the preliminary planning and approval process. Therefore, this report provides (1) an assessment of existing biological resources associated with the subject property and (2) impact analyses based on preliminary site plans prepared by Michael Baker International (dated March 12, 2019). As such, the project description and footprint presented herein are subject to refinement and approval.

The project, as currently proposed, involves subdividing the existing 13-acre parcel to create up to 11 new residential lots ranging in size from 7,500 square feet (sf) to 9,000 sf, with each home averaging approximately 4,000 sf. Each home would include a driveway and garage, above- and below-grade utility connections, and site finishes (e.g., fenced yards and landscaping). Annual vegetation adjacent to the new homes would be maintained for fuel modification, consistent with current practices (or as otherwise required by the Fire Department). The project would involve a southward expansion of the existing Crooked Creek Drive, with new retaining walls and slope

contouring (with terrace drains) to stabilize and protect the new residential lots. A new Fire Department access road and turnaround area would be constructed at the northern end of the preliminary development footprint. Up to 40 percent of the 13-acre parcel (the western most portion of the parcel) would be permanently impacted due to mass grading activities and retaining wall construction, with the remaining land and natural resources on the parcel left undisturbed.

PROJECT SETTING

The project area consists of Assessor's Parcel Number (APN) 8714-028-003 in the northwestern quarter of the United States Geological Survey (USGS) *Yorba Linda, California*, 7.5-minute topographic quadrangle map within Section 29, Township 2 South, Range 9 West (refer to Figure 1). The "project area" discussed in this report refers to all areas within the project parcel boundary (approximately 13 acres). "Project site" and "project development footprint" refer to all areas where temporary and permanent ground disturbance would occur under the current site plans.

The project area consists of an approximately 13 acre undeveloped parcel situated on relatively flat to steep hillside terrain that supports nonnative grassland as well as coast live oak (*Quercus agrifolia*) and southern California black walnut (*Juglans californica*) woodland. Only the westernmost portion of the parcel (approximately 3.59 acres) would be developed for residential land uses under the proposed project. The parcel is surrounded by existing low-density residential land uses to the north, east, and west, with undeveloped open space to the south. Much of the land in the project vicinity was historically subject to longstanding livestock grazing and ranching activities, which continues on the land to the south of the subject property. The Brea Canyon Channel is located adjacent to the western portion of the project area, but there are no jurisdictional aquatic resources, riparian areas, or wetlands present in the proposed development footprint.

Based on a review of historic aerial imagery and observations made during the June 2019 site surveys, large portions of the site have been maintained for vegetation control (fuel modification/firebreaks) for at least 10 years, especially in areas within approximately 200 feet of existing residences (although it appears several areas within the interior of the property have also been maintained with regularity). Ground disturbance from disking activities and several infrequently used dirt roads were observed during the June 2019 surveys. The existing dirt road on the western portion of the site (within the proposed development footprint) was overgrown with annual nonnative grassland vegetation during the June 2019 site surveys, indicating infrequent use/maintenance. This existing dirt road would be graded and paved to facilitate a southward expansion of Crooked Creek Drive under the proposed project. Figure 2 provides a high-resolution aerial photograph of the project area taken in June 2019.

The westernmost portion of the parcel (within the proposed development footprint) is relatively flat, with steep hilly terrain on the eastern portion of the property and gently rolling terrain on the northern portion. Elevations on the parcel range from approximately 645 to 835 feet above mean sea level.

METHODS

LITERATURE REVIEW AND RECORDS SEARCH

LSA biologists conducted a literature review and records search on June 14, 2019 to identify the existence and potential for occurrence of sensitive or special-status[1] plant and animal species in the vicinity of the project site. Federal and State lists of sensitive species were also examined. Current electronic database records reviewed included the following:

- **California Natural Diversity Data Base information (CNDDB – RareFind 5)**, which is administered by the California Department of Fish and Wildlife (CDFW), formerly known as the California Department of Fish and Game (CDFG). This database covers sensitive plant and animal species as well as sensitive natural communities that occur in California. Records from nine USGS quadrangles surrounding the project area (*Yorba Linda*, *Black Star Canyon*, *Orange*, *Anaheim*, *Prado Dam*, *La Habra*, *Baldwin Park*, *San Dimas*, and *Ontario*) were obtained from this database to inform the field survey.

- **California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants**, which utilizes four specific categories or "lists" of sensitive plant species to assist with the conservation of rare or endangered botanical resources. All of the plants constituting California Rare Plant Ranks (CRPR) 1A, 1B, 2A, and 2B are intended to meet the status definitions of "threatened" or "endangered" in CESA and the California Department of Fish and Game Code, and are considered by CNPS to be eligible for State listing. At the discretion of the CEQA Lead Agency, impacts to these species may be analyzed as such, pursuant to the CEQA Guidelines Sections 15125(c) and 15380. Plants in Rank 3 (limited information; review list), Rank 4 (limited distribution; watch list), or that are considered Locally Unusual and Significant may be analyzed under CEQA if there is sufficient information to assess potential significant impacts. Records from the nine USGS quadrangles surrounding the project area were obtained from this database to inform the field survey

- **United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) Online System**, which lists all proposed, candidate, threatened, and endangered species managed by the Endangered Species Program of the USFWS that have the potential to occur on or near a particular site. This database also lists all known critical habitats, national wildlife refuges, and migratory birds that could potentially be impacted by activities from a proposed project. An IPaC Trust Resource Report (USFWS 2019a) was generated for the project area.

- **The USFWS Critical Habitat Mapper** was reviewed to determine whether critical habitat has been designated within or in the vicinity of the project area (USFWS 2019b).

[1] For the purposed of this report, the term "special-status species" refers to those species that are listed or proposed for listing under the CESA and/or FESA, California Fully Protected Species, plants with a CRPR of 1, 2, or 3, and California Species of Special Concern. It should be noted that "Species of Special Concern" is an administrative designation made by the CDFW and carries no formal legal protection status. However, Section 15380 of the CEQA Guidelines indicates that these species should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

- **The USFWS National Wetlands Inventory** was reviewed to determine whether any wetlands or surface waters of the United States have been previously identified in the project area (USFWS 2019c).

In addition to the databases listed above, historic and current aerial imagery, existing environmental reports for developments in the project vicinity (including a 2002 Biological Assessment prepared for the project area [Environmental & Regulatory Specialists, Inc., 2002] and associated Third Party Biological Assessment Review [Pacific Southwest Biological Services, Inc., 2003), and regional habitat conservation plans and local land use policies related to biological resources were reviewed.

FIELD SURVEYS

A general biological survey of the project area was conducted by LSA Senior Biologist Bo Gould on June 16, 2019. The perimeter of the project site was surveyed on foot, and all biological resources observed were noted. Suitable habitat for any species of interest or concern was duly noted, and general site conditions were recorded. The field survey took place on a clear afternoon with weather conditions conducive to the detection of plant and animal species. Mr. Gould also visited a nearby reference population of intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), a non-listed rare plant species with a CRPR of 1B.2, to determine whether the species was blooming and therefore detectible and identifiable during the planned follow-up botanical survey. Approximately four (4) flowering intermediate mariposa lily individuals were observed at a previously-recorded occurrence within 0.25 mile of the project area (near the coordinates 33.959655, -117.846091).

A focused botanical survey was conducted on the project site by LSA Senior Biologist Bo Gould on June 20, 2019. The survey took place on a partly overcast morning with weather conditions conducive to the detection of plant and animal species. The botanical survey was floristic in nature, meaning that the site visit was appropriately timed to coincide with the blooming period of all special-status plant species deemed to have potential to occur on the project site. The entire project area was surveyed on foot and all plant species observed were identified to the lowest possible taxonomic level and recorded. Vegetation communities and other land cover types existing within the project area were mapped and photographed (refer to Appendix B for representative site photographs). An additional previously-recorded occurrence of intermediate mariposa lily within 0.10 mile of the project area (near the coordinates 33.960291, -117.848890) was visited on June 20, 2019; several individuals were observed and in bloom at this location. In addition, vegetative, budding, and flowering individuals of regional rare plant species within the genera *Atriplex*, *Calochortus*, *Dudleya*, and *Centromadia* were observed by Mr. Gould in Orange and Los Angeles Counties within the week prior to the June 20, 2019 botanical survey.

All wildlife species observed or otherwise detected (e.g., by scat, foot prints, or other sign) during both surveys described above were recorded. An inventory of all plant and animal species observed within the project area during the June 2019 surveys is contained in Appendix D.

RESULTS

This section summarizes the environmental setting and provides further analysis of the data collected in the field. Discussions regarding the existing project site conditions, soils, vegetation communities, potentially occurring special-status biological resources, and habitat connectivity are presented below.

The project area consists of an undeveloped 13 acre parcel with variable terrain supporting nonnative grassland vegetation as well as mature coast live oak and southern California black walnut woodland. A small area in the southwest of the project area contains a portion of the Brea Canyon Channel (mapped as developed); however, this area is outside of the proposed project development footprint. The proposed project development footprint is located to the south of existing single family homes at the southern terminus of Crooked Creek Drive. Annual vegetation throughout a large portion of the project area appears to be regularly maintained for fuel modification/firebreaks, and there are no structures present on the site. The proposed project development footprint is strictly upland in nature, and is located outside of the banks and associated riparian vegetation of the Brea Canyon Channel, which is located southwest of the project limits.

Habitat within the proposed project development footprint is considered low quality with respect to most of the special-status animal species identified during the literature review and is not expected to support any special-status plant species (refer to Appendix C). An inventory of plant and animal species observed during the June 2019 site surveys is provided in Appendix D.

The project area does not serve as a wildlife nursery or as a wildlife migration corridor. Further details regarding specific biological resources are provided in the following subsections.

SOILS

According to the NRCS online soil survey of Los Angeles County and as shown on Figure 3 (Soils Map), four soil types have been mapped within the project area (NRCS 2019). These soil types include: *Urban land-Sorrento-Arbolado complex, 2% to 9% slopes*; *Zaca-Apollo, warm complex, 20% to 55% slopes*; *Mocho loam, 2% to 9% slopes*; and *Counterfeit-Urban land complex, 10% to 35% slopes, terraced*. These soil series are discussed in greater detail below.

Urban land-Sorrento-Arbolado complex, 2% to 9% slopes

Both the Sorrento and Arbolado series consists of very deep, well-drained soils that formed in alluvium mostly from sedimentary rocks. This soil complex is mapped in high density urban residential and recreational areas. Vegetation is mostly non-native and ornamental in urban areas and annual grasses and forbs in natural areas, sometimes with sycamores along drainages. This soil complex occurs within two areas along the northwestern borders of the project area.

Zaca-Apollo, warm complex, 20% to 55% slopes

This soil complex consists of well drained soils formed in material weathered from soft calcareous shale and soft sandstone (Apollo Series), along with material from weakly consolidated marine sediments (Zaca Series). Apollo soils are on low foothills adjacent to valley floors and have slopes of

2 to 30 percent. Zaca soils are on gently rolling to very steep slopes. These soils are used for range, dryland grain and beans, irrigated orchards, and for urban development. The native vegetation is typically annual grasses and forbs. This soil complex is mapped throughout most of the project area.

Mocho loam, 2% to 9% slopes

The Mocho series consists of very deep, well drained soils that formed in alluvium derived mostly from sandstone and shale rock sources. Mocho soils are on alluvial fans and have slopes of 0 to 9 percent. This soil series is mostly intensively used for forage, field crops, some fruit and dry areas are sued for grain and range. Non-tilled areas typically support annual grasses and forbs. This soil type is mapped within the southwestern portion of the project area.

Counterfeit-Urban land complex, 10% to 35% slopes, terraced

Counterfeit series consists of very deep soils that formed from human transported material which originated from material weathered from calcareous sedimentary rocks. Counterfeit soils are on man-made terraces and risers with slopes ranging up to 65 percent on risers. A small area along the eastern project area boundary contains this artificial soil type (on the slope below existing residential developments).

VEGETATION COMMUNITIES AND LAND COVER TYPES

The project area is strictly upland in nature with dominant vegetation consisting of disturbed, annual brome grassland with stands of mature oak and walnut woodland. Several ornamental plant species are found along the northern project area boundaries near existing residences. Ongoing soil disturbance (e.g., disking) and the resulting competitive exclusion by invasive nonnative plants limit the potential for native flora to occur within most of the project area.

The acreages of each vegetation community and land cover type occurring in the project area are shown in Table A, below. Figure 4, Vegetation Map, provides a map of these vegetation and land cover types within the project site disturbance limits. Representative photographs of the project site are presented in Appendix B.

Table A: Vegetation and Land Cover Types Within the Project Area

Vegetation / Land Cover Type	Acreage
Annual Brome Grassland	6.07
California Walnut Groves	3.42
Coast Live Oak Woodland	3.50
Developed [1]	0.01
Total Project Area	**13.00**

[1] Small inlet structure associated with Brea Canyon Channel at the south-westernmost portion of the project area, outside of the proposed project development footprint.

A total of 49 vascular plant species were identified within the project area during the June 2019 field surveys (refer to Appendix D). A total of 29 (approximately 59 percent) of these plant species represent nonnative taxa, reflecting a high level of disturbance within the project area.

Descriptions of the vegetation and land cover types occurring within the project area are listed below, using the Manual of California Vegetation (MCV), Second Edition (Sawyer et. al. 2009). A complete list of plant species identified within the project area is contained in Appendix D.

Annual Brome Grasslands: Areas classified as annual brome grassland within the project area are dominated by nonnative brome grasses (*Bromus* spp.) and wild oats (*Avena* spp.), and support sparse to dense cover by weedy or pioneering plant species in the herbaceous layer, including shortpod mustard (*Hirschfeldia incana*), poison hemlock (*Conium maculatum*), Italian thistle (*Carduus pycnocephalus*), and tocalote (*Centaurea melitensis*), among many others. Herbaceous nonnative species are more prevalent within the internal portions of the project area. As previously noted, areas mapped as annual brome grassland nearest to existing residential developments, particularly along the northernmost boundary of the project area, appear to be regularly cleared/disked for fuel modification/firebreaks. During the June 2019 surveys, emergent annual brome grassland vegetation sparsely covered these areas; therefore, it was determined that these areas function more as disturbed annual brome grassland (rather than purely disturbed/barren land) for most of the year. An existing dirt road along the western portion of the project area was overgrown with annual brome grassland vegetation at the time of the site survey and was mapped using this classification. Several annual native species were detected with minimal cover in these areas, including doveweed (*Croton setigerus*), common horseweed (*Erigeron canadensis*), and arroyo lupine (*Lupinus succulentus*).

California Walnut Groves: Stands of mature southern California black walnut trees are present within portions of the project area. The understory within these areas consists of annual brome grassland vegetation with blue elderberry (*Sambucus nigra* ssp. *caerulea*), poison oak (*Toxicodendron diversilobum*), and lemonade berry (*Rhus integrifolia*) also present in the larger groves. Coast live oak trees are also present within these areas in low numbers.

Coast Live Oak Woodland: A contiguous stand of mature coast live oak woodland occurs within the south-central portion of the project area; most of this woodland is located outside of the proposed project development footprint. Mature coast live oak trees dominate this vegetation community, and similar to the California walnut grove classification described above, the understory is mainly made up of nonnative grasses and herbs, with poison oak and blue elderberry dominating the shrub layer.

Developed: The project area includes small inlet structure associated with Brea Canyon Channel at the south-westernmost portion of the project area, outside of the proposed project development footprint. This 0.01 acre area was mapped as developed.

SPECIAL-STATUS BIOLOGICAL RESOURCES

Portions of southeastern Los Angeles County are known to support various special-status natural communities, plants, and animals. Appendix C provides tables that identify those special-status plant and animal species known to occur or that potentially occur in the vicinity of the project site (based on the literature review and experience in the region) and includes detailed information about each species' habitat and distribution, State and Federal status designations, and probability of occurrence on the project site. As stated in the methodology section above, the background

research included occurrence records from nine USGS topographic quadrangles surrounding the survey area. A nine USGS quadrangle search covers a large, variable geographic and topographic area containing numerous habitat types not found within or around the project site. As such, many of the species listed in Appendix C are not anticipated to occur on the project site due to historic and ongoing anthropogenic disturbances and/or the lack of suitable habitat. Aquatic species that were identified in the literature review were not included in Appendix C due to the lack of suitable aquatic habitat (i.e., streams, lakes, marshes, etc.) within the project area.

The following subsections provide specific discussions for special-status natural communities, plant and animal species, and habitats of concern (including critical habitat, jurisdictional aquatic resources, wildlife movement corridors, and regional and local habitat conservation plans).

Special-Status Natural Communities

The CNDDB search identified occurrences of three special-status natural (i.e., plant) communities within five miles of the project area (hereafter referred to as the "project vicinity"): California Walnut Woodland, Southern California Coast Live Oak Riparian Forest, and Southern Willow Scrub.

California Walnut Woodland is present on the project site (mapped according the MVC convention of "California Walnut Groves"). While Southern California Coast Live Oak Riparian Forest absent from the project site (due to the lack of associations with riparian areas/riparian woodland habitat), mature upland Coast Live Oak Woodland is often considered a special-status plant community by CDFW and regional conservation organizations due to the historical loss of oak trees throughout southern California associated with urbanization and other anthropogenic land uses. Furthermore, the City Municipal Code designates all "native oak, walnut, sycamore, and willow trees with a diameter at breast height (DBH) of eight inches or greater" as protected trees. As such, for the purposes of this report, the mature Coast Live Oak Woodland within the project area is considered a sensitive natural community.

No other special-status natural communities are present within the project area.

Special-Status Plants

The literature review identified 34 special-status plant species that are known to occur within a nine-quadrangle radius of the project site (refer to Appendix C); only one of these species has been documented in the project vicinity (intermediate mariposa lily). The majority of the rare plant species that were identified in the databases have specialized habitat requirements (i.e., they occur on predominantly alkaline soils, woodland, riparian, or wetland habitats, etc.) that do not occur within the project site.

Historic anthropogenic disturbances have greatly altered the natural hydrologic regimes and have either eliminated or greatly impacted the pre-settlement habitats needed to support the special-status plant species identified in the CNDDB and CNPS queries. As such, the specific habitats, soil substrates or "micro-climates" necessary for special-status plant species to occur are absent within the boundaries of the project site. Based on site observations coupled with the results of the focused botanical survey conducted on June 20, 2019 (and other biological surveys conducted on

the subject property), no special-status plant species are expected to occur within the project area and especially not within the proposed project development footprint.

Special-Status Animals

The historic and ongoing anthropogenic disturbances in the project site and adjacent parcels (i.e., disking, highways, and urban development, etc.) have greatly altered, eliminated, or impacted the pre-settlement habitats needed to support most of the special-status animal species identified in the CNDDB and USFWS queries (refer to Appendix C). There are no known occurrences of any special-status animal species on the project site, and none were observed during the January 2019 field survey. Nonetheless, suitable habitat for several regionally occurring special-status species is present adjacent to the project site and those species are listed below.

The following special-status species have been documented adjacent to the project site (e.g., within/associated with unlined portions of the Brea Canyon Channel): western pond turtle (*Emys marmorata*), least Bell's vireo (*Vireo bellii pusillus*), and yellow warbler (*Lanius ludovicianus*). While these species are not expected to occur within the project area, indirect disturbances associated with construction activities (e.g., increased noise and vibration) has potential to disrupt the typical foraging and nesting activities of special-status bird species that have historically been documented in these adjacent riparian habitat areas.

The project area contains suitable foraging and nesting habitat for various common and special-status raptors such as white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and Cooper's hawk (*Accipiter cooperii*). Red-tail hawk and Cooper's hawk were observed perching within mature oak trees and flying over the project area during the June 2019 surveys, although no active nests were observed. Suitable nesting habitat for a variety of common bird species also occurs on site. Birds and raptors are afforded special protections while nesting under the California Fish and Game Code as well as the Federal Migratory Bird Treaty Act.

The evaluation of special-status animal species occurrence within and adjacent to the project site was based on a habitat suitability analysis. It did not include exhaustive surveys to determine their presence or absence, but did include direct observation of on-site and off-site conditions and a review of the CNDDB records documenting recorded occurrence data from the area to conclude whether or not a particular species could be expected to occur. Based on this analysis, it is unlikely that the remaining special-status wildlife species listed in Appendix C occur within the project area or immediately adjacent habitats.

Critical Habitat

There is no designated or proposed critical habitat for any species within the project area.

Jurisdictional Aquatic Resources

The proposed project development footprint is located entirely outside of jurisdictional aquatic resources. Soils on site are well-drained and there are no depressional wetlands or other potentially jurisdictional aquatic resources within the project site. Any potential discharges associated with the

proposed residential development to Brea Canyon Channel would likely be regulated by the Regional Water Quality Control Board.

Wildlife Movement and Habitat Connectivity

The project site is bound by existing developments to the north, east, and west. Given the isolated and disturbed nature of the project site, it is unlikely that the site serves as an important corridor for animals moving locally, regionally, or in broader migrations. Migratory bird species may utilize the project site for foraging; however, the usage is likely transient and limited to species that forage over open grassland areas. The project site does not possess any characteristics that would indicate a locally significant stopover point for migratory species including raptors or waterfowl. No known wildlife movement corridors occur within the project area.

Regional Habitat Conservation Plans and Local Policies

The project area is not located within lands covered under an existing Natural Communities Conservation Plan or Habitat Conservation Plan.

As previously mentioned, the project area contains mature native oak and walnut trees designated as protected under the City's Municipal Code (Title 22, Article III, Chapter 22.38: Tree Preservation and Protection). Trees within the subject property have been previously mapped by a qualified arborist. Section 22.38.050 of the Municipal Code states the following:

> *No person shall remove or relocate a protected tree or develop within the protection zone of a protected tree without first obtaining a tree removal permit from the director. No person shall prune a protected tree without first obtaining a tree pruning permit from the director if branches are to be pruned that are over four inches in diameter at the point of the cut. The maximum amount allowed for the pruning of a protected tree shall be 20 percent, except for oak trees which shall be ten percent.*

No other applicable regional or local policies pertaining to the biological resources covered herein were identified.

IMPACT FINDINGS AND RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

The following impact assessment and recommended avoidance and mitigation measures are intended to support the CEQA review process. The project, as currently proposed by the Applicant, coupled with LSA's survey results, experience in the region, and review of biological literature, provided the basis for this analysis. The impact discussion below addresses the range of impacts that would result from the proposed project, as well as recommended measures that would avoid, reduce, or compensate for such impacts.

SPECIAL-STATUS NATURAL COMMUNITIES

As shown on Figure 5, Impacts to Vegetation, the project (as currently proposed) would permanently remove up to 0.11 acre of mature coast live oak woodland and up to 1.23 acres of California walnut groves, which are considered sensitive natural communities. Trees occurring adjacent to the grading limits could also be permanently impacted. If unmitigated, these impacts on sensitive natural communities and protected trees would be considered potentially significant. Therefore, Mitigation Measure BIO-1 is recommended to compensate for the loss of coast live oak and southern California black walnut trees.

Mitigation Measure BIO-1 **Tree Replacement and Preservation.** Once project grading plans are finalized and approved (and prior to ground disturbance on the project site), an inventory of directly and indirectly affected trees shall be determined either by referencing existing tree inventory data collected on the subject property or by having a qualified arborist conduct an assessment based on the final, approved limits of development. The tree inventory will determine the species, number, sizes, and health of all trees to be impacted by the approved project, and will be used to determine compensation ratios based on City requirements. Protected trees shall not be removed or trimmed without proper City permits. A minimum 1-to-1 planting-to-impact ratio is recommended for all native trees greater than or equal to 8 inches DBH, or as otherwise required by the City. A 3-to-1 planting-to-to impact ratio is recommended for protected trees greater than or equal to 36 inches DBH. Compensatory planting should be conducted within the portion of the project area that would remain undeveloped under the approved plans, or at an off-site location as approved by the City. Existing oak and walnut woodland habitat located within the undeveloped portions of the project area should be preserved.

With incorporation of Mitigation Measure BIO-1, impacts to existing special-status natural communities in the project area, as well as locally-protected trees, would be effectively mitigated. Impacts to special-status natural communities would be considered less than significant under CEQA.

SPECIAL-STATUS SPECIES

No special-status plant species are expected to occur within the project site or to be adversely affected by the project.

Several special-status animal species (and nesting birds) have potential to be directly impacted during vegetation removal and mass grading activities. In addition, several special-status animal species have potential to be indirectly affected during construction activities through increased noise, vibration, lighting, and dust. Such indirect disturbance has the potential to affect foraging patterns and disorient special-status bird species that have the potential of occurring in adjacent habitat areas. Increased anthropogenic disturbance and waste (e.g., litter) during and following project construction could also attract predators of special-status species to the project vicinity. Given that (1) the project is situated at a higher grade than the aquatic habitats associated with Brea Canyon Channel, (2) there is spatial separation between proposed structures and existing riparian habitat to the south of the project area, (3) the project is sited in close proximity to existing residential developments, and (4) operational lighting would have minimal spill into adjacent habitats, long-term significant indirect effects to special-status species are not anticipated.

Indirect temporary effects on hydrology and water quality could occur during construction. Such effects include a potential increase in erosion and sediment transport into adjacent or downstream aquatic areas. Chemical spills or leaks of fuel, transmission fluid, lubricating oil, or motor oil from construction equipment could also contaminate waters and degrade their quality. These potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of best management practices (BMPs), project design features, and a water quality management plan and/or a storm water pollution and prevention plan (if required). As such, significant indirect impacts to water quality—and any aquatic species occurring in adjacent aquatic habitats—are not anticipated.

The project site contains suitable nesting habitat for ground-nesting birds and for other birds that are protected while nesting. Riparian woodland adjacent to the project site serves as suitable nesting habitat for various common and special-status bird species, including least Bell's vireo. Construction activities that occur during the nesting bird season (January 1 through September 15) have potential to result in the direct or indirect take of nesting birds.

Potential direct and indirect impacts on special-status wildlife species would be considered potentially significant. However, implementation of Mitigation Measures BIO-2 and BIO-3, as summarized below, would effectively avoid or minimize any impacts on special-status wildlife species and nesting birds.

Summary of Impacts: The project is located in close proximity to Brea Canyon Channel, which has been documented as being occupied by several regional special-status species. While there is very low potential for any of these special-status species to be directly affected by the project due to the lack of suitable habitat on the project site, the project could indirectly affect special-status wildlife species through the attraction of predators and increased levels of noise, vibration, lighting, and dust during construction activities. There is also the potential for temporary indirect effects to water

quality during construction, which could lead to habitat degradation. To avoid or minimize such impacts, Mitigation Measures BIO-2 and BIO-3 are recommended.

Mitigation Measure BIO-2

Construction Site Housekeeping. Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities shall be minimized by adhering to the following measures:

A. The project disturbance limits shall be clearly marked with construction fencing (or other highly visible material), and construction/materials staging and vehicle/equipment maintenance and fueling areas shall be located at least 100 feet away from Brea Canyon Channel, where feasible.

B. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas.

C. Project-related vehicles shall observe a daytime speed limit of 20 miles per hour (mph) throughout the site in all project sites, except on county roads and State and federal highways. Night-time construction shall be minimized to the extent possible. However if it does occur, then the speed limit shall be reduced to 10 mph. Off-road traffic outside of designated project sites shall be prohibited.

D. To prevent inadvertent entrapment of animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape.

E. For the duration of construction activities, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least daily from the construction site.

F. Pets, such as dogs or cats, shall not be permitted on the project site during construction to prevent harassment, injury, or death of wildlife in the project vicinity.

G. Use of rodenticides and herbicides in project sites shall be restricted. This is necessary to prevent primary or secondary poisoning of predators and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and federal legislation.

Construction site housekeeping measures would effectively minimize temporary construction effects on sensitive biological resources by limiting construction equipment and personnel from entering areas where special-status species may be impacted, limiting the potential for fuel or chemical spills that could adversely impact water quality and adjacent aquatic habitats, minimizing the disturbance area needed for construction access and related effects (i.e., dust, noise, vibration, etc.), reducing the likelihood of attracting or introducing predators of special-status species, and by preventing the primary or secondary poisoning of wildlife in the project vicinity.

Mitigation Measure BIO-4 **Nesting Bird Surveys and Avoidance.** If vegetation removal, construction, or grading activities are planned to occur within the active nesting bird season (January 1 through September 15), the City shall confirm that the Applicant has retained a qualified biologist who shall conduct a preconstruction nesting bird survey no more than 3 days prior to the start of such activities. If construction activities using heavy equipment (i.e., graders, bulldozers, and excavators, etc.) continue through the nesting season, weekly nesting bird surveys shall be conducted. Each nesting bird survey shall include the work area and areas adjacent to the site (within 500 feet, as feasible) that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust, etc. For any active nest(s) identified, the qualified biologist shall establish an appropriate buffer zone around the active nest(s). The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.

Successful avoidance of direct and indirect disturbance to nesting birds during construction would ensure compliance with applicable provisions of the California Fish and Game Code, the Migratory Bird Treaty Act, and other State and federal regulations that afford protections to nesting birds (including species listed under the CESA and FESA, such as least Bell's vireo).

With implementation of Mitigation Measures BIO-3 and BIO-4, impacts to special-status species would be considered less than significant under CEQA.

CRITICAL HABITAT

The project would not result in impacts to designated or proposed critical habitat.

JURISDICTIONAL AQUATIC RESOURCES

The proposed project would not result in any direct impacts to jurisdictional aquatic resources. Indirect temporary effects could occur during construction, such as a potential increase in erosion and sediment transport into adjacent or downstream aquatic areas. Chemical spills or leaks of fuel, transmission fluid, lubricating oil, or motor oil from construction equipment could also contaminate waters and degrade their quality. Mitigation Measure BIO-3, in addition to applicable BMPs and implementation of required water quality plans, would avoid or reduce indirect impacts to jurisdictional aquatic resources to a less than significant level, and no additional mitigation is required.

WILDLIFE MOVEMENT AND HABITAT CONNECTIVITY

The wildlife species that occur in the project vicinity are adapted to the urban-wildland interface, and the project would not introduce new affects to the area. The noise, vibration, light, dust, or human disturbance within construction areas would only temporarily deter wildlife from using areas in the immediate vicinity of construction activities. These indirect effects could temporarily alter migration behaviors, territories, or foraging habitats in select areas. However, because these are temporary effects, it is likely that wildlife already living and moving in close proximity to urban development would alter their normal functions for the duration of the project construction and then re-establish these functions once all temporary construction effects have been removed. The proposed project would not place any permanent barriers within any known wildlife movement corridors or interfere with habitat connectivity. The impact is considered less than significant, and no additional mitigation is required.

REGIONAL HABITAT CONSERVATION PLANS AND LOCAL POLICIES

The project would not conflict with any adopted habitat conservation plan. As previously covered (under Special-Status Natural Communities), project construction activities would result in the removal of trees protected under local ordinances. Implementation of Mitigation Measure BIO-1 would ensure that the project would comply with local policies related to the protection and conservation of protected trees. The impact is considered less than significant with mitigation incorporated, and no additional measures are warranted.

CONCLUSION

The implementation of the recommended mitigation measures detailed herein would ensure consistency local policies related to biological resources, and would reduce any potentially significant impacts on special-status biological resources to less-than-significant levels. If substantial project design changes occur, additional biological resources studies may be warranted to accurately assess the scope of impacts and/or site conditions.

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APPENDIX A

FIGURES

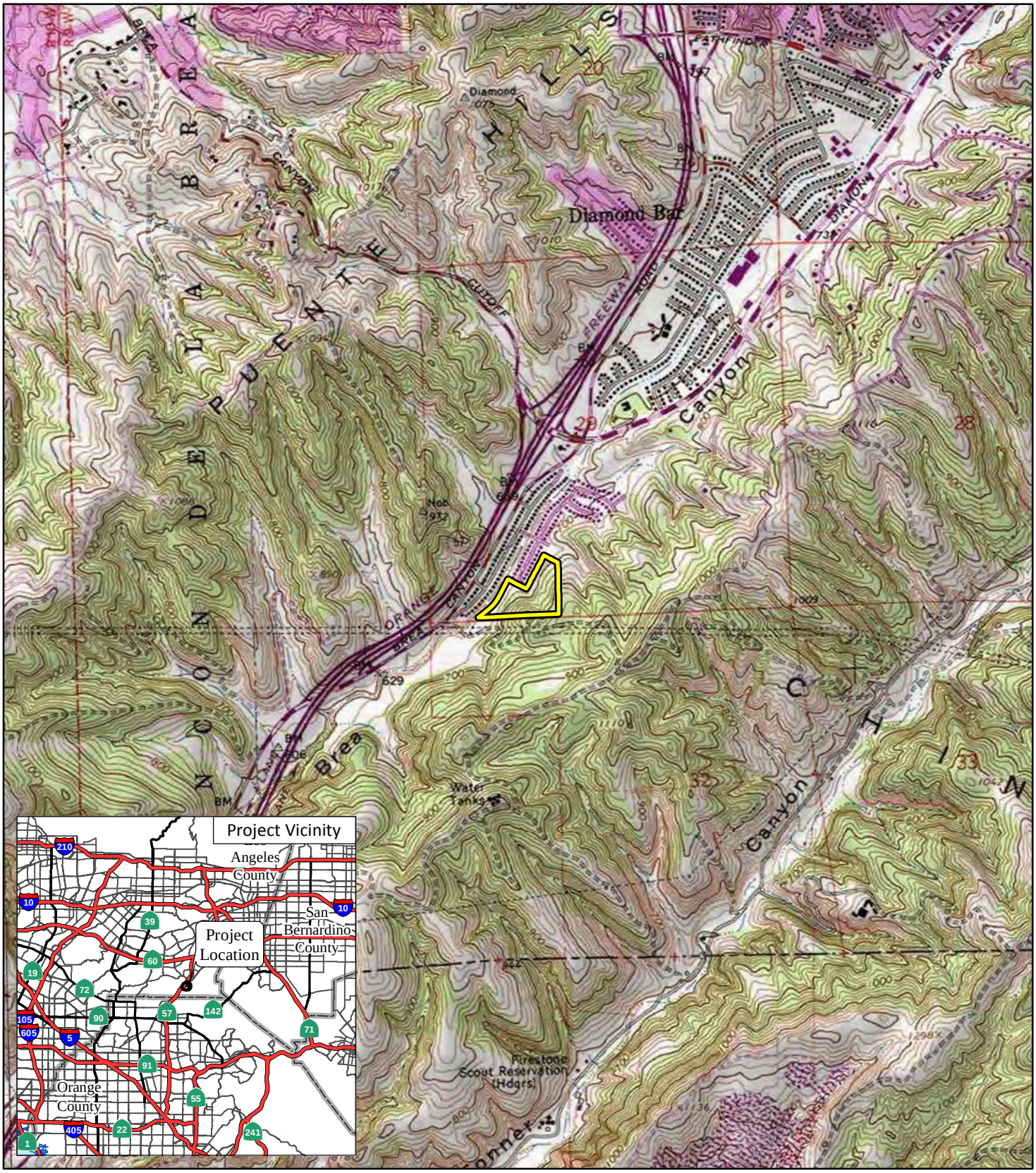

FIGURE 1

Crooked Creek Diamond Bar Development

Regional and Project Location

SOURCE: USGS 7.5' Quad., *Yorba Linda, CA* (1981)

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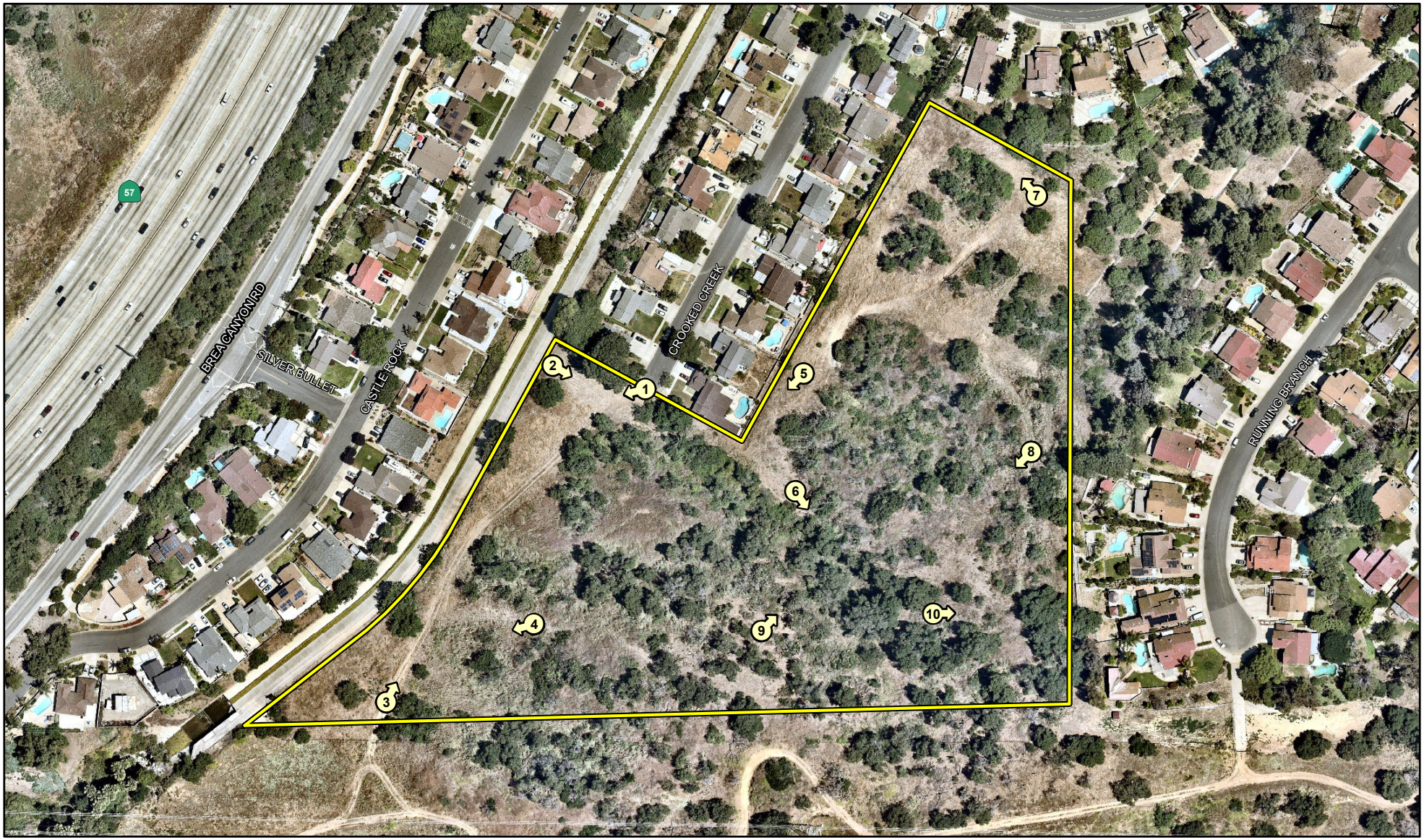

LSA

LEGEND

Project Parcel Boundary

Photo Locations

FIGURE 2

N

0 100 200

FEET

SOURCE: Nearmap (06/2019)

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Crooked Creek Diamond Bar Development

Project Location

LSA

FIGURE 3

LEGEND

Project Parcel Boundary

Soil Type

- 1136 - Urban land-Sorrento-Arbolado complex, 2% to 9% slopes
- 1141 - Zaca-Apollo, warm complex, 20% to 55% slopes
- 1232 - Counterfeit-Urban land complex, 10% to 35% slopes, terraced
- 167oc - Mocho loam, 2% to 9% slopes

N

0 100 200

FEET

SOURCE: NRCS Soil Survey (CA696 2017); Nearmap (06/2019)

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Crooked Creek Diamond Bar Development

Soils Map

LSA

FIGURE 4

LEGEND

Project Parcel Boundary

Vegetation Type

- Annual Brome Grasslands (6.07 Ac)
- California Walnut Groves (3.42 Ac)
- Coast Live Oak Woodland (3.50 Ac)
- Developed (0.01 Ac)

N

0 100 200

FEET

SOURCE: Nearmap (06/2019)

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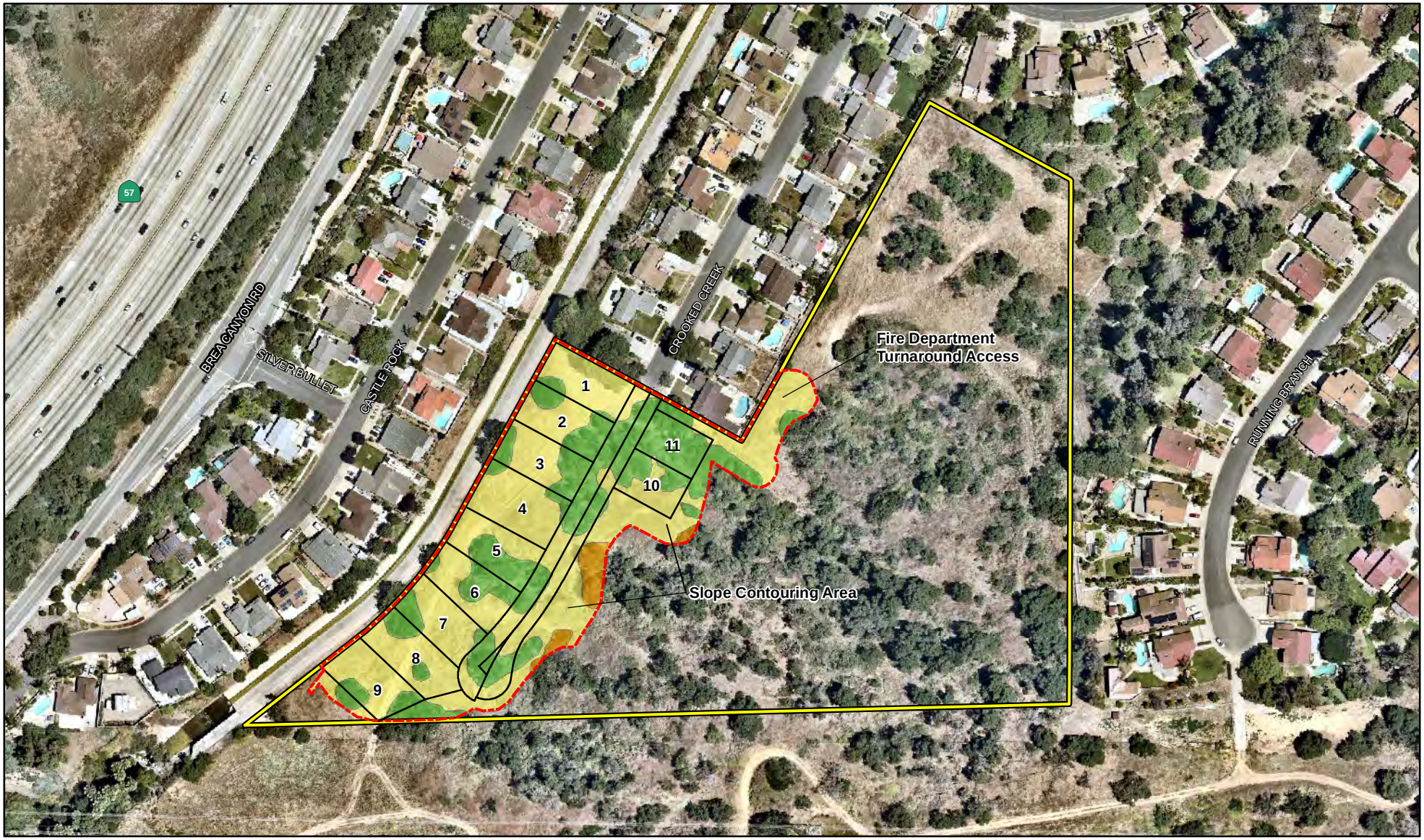
Crooked Creek Diamond Bar Development

Vegetation Map



LSA

FIGURE 5

LEGEND

Project Parcel Boundary

Preliminary Site Plan

Preliminary Grading Limits*

* Limits are approximations based on preliminary site plans and are subject to refinement

Vegetation Within Grading Limits

Annual Brome Grasslands (2.25 Ac)

California Walnut Groves (1.23 Ac)

Coast Live Oak Woodland (0.11 Ac)

N

0 100 200

FEET

SOURCE: Nearmap (06/2019)

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Crooked Creek Diamond Bar Development

Vegetation Impact Map

APPENDIX B

REPRESENTATIVE SITE PHOTOS

1. Photo taken facing southwest at the southern end of Crooked Creek Drive. The existing road would be extended into the area shown and up to 11 new residential lots would be created under the proposed project (based on preliminary site plans). Photo taken June 20, 2019.

2. Photo taken facing east near the southern end of Crooked Creek Drive. Note that annual brome grassland vegetation adjacent to existing homes appears to be regularly maintained for fuel modification purposes. Some mature California walnut trees and coast live oak trees would be removed under the proposed preliminary site plans for construction of new homes, roads, and retaining walls. Photo taken June 20, 2019.

3. Photo taken near the southernmost portion of the preliminary development footprint, facing north. Most of the area shown would be permanently impacted during road and home construction under the preliminary site plans. Photo taken June 20, 2019.

4. Overview of the southern portion of the preliminary development footprint and large open space area existing further south. Photo taken from the interior of the southwestern portion of the parcel, on a slope facing southwest. Photo taken June 20, 2019.

5. Photo taken facing south near the backside of 3722 Crooked Creek Drive. The area in the foreground is proposed to be developed and maintained as a Fire Department access turnaround under the preliminary site plans. Annual vegetation in this area appears to be regularly maintained for fuel modification purposes. The majority of coast live oak woodland and California walnut groves shown in the background (left) would be retained under preliminary site plans. Photo taken June 20, 2019.

6. View of coast live oak woodland near the central portion of the parcel. This area would remain undisturbed under preliminary site plans. Photo taken June 20, 2019.

7. Photo taken facing west near the northeastern corner of the project parcel. Annual vegetation in this area appears to be regularly maintained for fuel modification purposes. This area would remain undisturbed under preliminary site plans. Photo taken June 20, 2019.

8. Overview of the central portion of the project parcel. Photo taken facing southwest near the eastern parcel boundary. The vast majority of the area shown would remain undisturbed under preliminary site plans. Photo taken June 20, 2019.

9. Photo taken facing northeast from the central portion of the project parcel. These mature coast live oak trees and California walnut groves would remain undisturbed under preliminary site plans. Photo taken June 20, 2019.

10. Photo taken facing east from the central portion of the project parcel. This mature coast live oak woodland would remain undisturbed under preliminary site plans. Photo taken June 20, 2019.

APPENDIX C

SPECIAL-STATUS SPECIES IDENTIFIED AS POTENTIALLY OCCURRING IN THE PROJECT VICINITY

Table C-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
chaparral sand-verbena	*Abronia villosa* var. *aurita*	US: - CA: S2 CNPS: 1B.1	Annual herb. Occurs on sandy soils in chaparral, coastal scrub, and desert dune habitats between 75 and 1600 m in elevation.	January - September	**Not Expected.** There are no known occurrences in the project vicinity[1] and suitable habitat is absent on the project site.
Braunton's milk-vetch	*Astragalus brauntonii*	US: FE CA:- CNPS: 1B.1	Perennial herb. Occurs in chaparral, coastal scrub, Valley and foothill grassland in recent burns or disturbed areas, usually sandstone with carbonate layers between 4 and 640 m in elevation.	January-August	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent on the project site.
Coulter's saltbush	*Atriplex coulteri*	US: - CA: S1/S2 CNPS: 1B.2	Perennial herb. Occurs on alkaline or clay soils in coastal dune, coastal scrub, and valley and foothill grassland habitats up to 460 m in elevation.	March-October	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent on the project site.
Parish's brittlescale	*Atriplex parishii*	US: - CA: S1 CNPS: 1B.1	Annual herb. Occurs on alkaline soils in playas, vernal pools, and chenopod scrub habitats between 25 and 1,900 m in elevation.	June-October	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent on the project site.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	US: - CA: S1 CNPS: 1B.2	Annual herb. Found on alkaline soils in coastal bluff scrub and coastal scrub up to 200 m in elevation.	April–October	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent on the project site.
Malibu baccharis	*Baccharis malibuensis*	US:- CA:- CNPS: 1B.1	Perennial deciduous shrub. Found in Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland between 150 and 305 m elevation.	August	**Absent.** This perennial shrub was not detected during the focused botanical survey conducted in June 2019.
Nevin's barberry	*Berberis nevinii*	US: FE CA: CE CNPS: 1B.1	Perennial evergreen shrub. Occurs on sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub habitats from 70 to 825 m in elevation.	February-June	**Absent.** This perennial evergreen shrub was not detected during the focused botanical survey conducted in June 2019.

Table C-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
intermediate mariposa lily	*Calochortus weedii var. intermedius*	US: - CA: S2 CNPS: 1B.2	Perennial bulbiferous herb. Occurs in chaparral, coastal scrub, and valley and foothill grassland. Often in dry, rocky soils. From 120 to 855 m in elevation.	May–July	**Not expected.** There are multiple occurrence records within one mile of the project site. The June 2019 botanical survey included a focused effort to detect this species, and reference populations were visited to ensure the species was in bloom at the time of the botanical survey; no individuals were found and suitable habitat is absent on the project site.
lucky morning-glory	*Calystegia felix*	US: - CA: S1 CNPS: 1B.1	Annual rhizomatous herb. Occurs in meadows, seeps, and alluvial riparian scrub habitats (sometimes alkaline soils) up to 215 m in elevation.	March-September	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
Lewis' evening-primrose	*Camissoniopsis lewisii*	US: - CA: S4 CNPS: 3	Annual herb. Occurs on sandy and clay soils in coastal scrub, cismontane woodland, and grassland habitats up to 300 m in elevation.	May-November	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
southern tarplant	*Centromadia parryi* ssp. *Australis*	US: - CA: S2 CNPS: 1B.1	Annual herb. Occurs in vernal pools, margins of marshes and swamps, and vernally mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soils. Up to 427 m in elevation.	May-November	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
Smooth tarplant	*Centromadia pungens ssp. laevis*	US: - CA: - CNPS: 1B.1	Annual herb found in Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland in alkaline soils between 0 and 640 m elevation.	April-September	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
San Fernando Valley spineflower	*Chorizanthe parryi* var. *fernandina*	US: FC CA: CE CNPS: 1B.1	Annual herb of sandy soils in coastal scrub and valley and foothill grasslands between 150 to 1220 m in elevation.	April–July	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.

Table C-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
Parry's spineflower	*Chorizanthe parryi var. parryi*	US: - CA: - CNPS: 1B.1	Annual herb found in Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland in sandy or rocky openings between 275 and 1220 m in elevation.	April-June	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	US: - CA: - CNPS: 1B.2	Annual herb. Habitat types include chaparral, coastal sage scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Often occurs in clay soils between 100 ft and 5,019 ft in elevation.	April–July	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
California sawgrass	*Cladium californicum*	US:- CA: - CNPS: 1B.1	Perennial rhizomatous herb. Occurs in meadows and seeps, marshes and swamps in Alkaline or Freshwater environments. Found between 60 and 1600 m elevation.	June-September	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
slender-horned spineflower	*Dodecahema leptoceras*	US: FE CA: CE CNPS: 1B.1	Annual herb found in Chaparral, Cismontane woodland, Coastal scrub in alluvial fan sandy soils between 200 an 760 m elevation.	April-June	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
many-stemmed dudleya	*Dudleya multicaulis*	US: - CA: S2 CNPS: 1B.2	Perennial herb. Occurs in chaparral, coastal scrub, and valley and foothill grassland usually in heavy, often clayey soils. From 45 to 2,370 ft in elevation.	April–July	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. This perennial species was not detected during the botanical survey conducted within the species' typical blooming period.
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *san ctorum*	US: FE CA: CE CNPS: 1B.1	Perennial herb. Occurs on sandy substrates within chaparral and alluvial fan scrub habitats between 91 and 610 m in elevation.	April-September	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.

Table C-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
vernal barley	*Hordeum intercedens*	US: CA: S3/S4 CNPS: 3.2	Annual herb. Occurs in coastal dunes, coastal scrub, Valley and foothill grassland (saline flats and depressions), and vernal pools between 5 and 1000 m in elevation.	March-June	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
mesa horkelia	*Horkelia cuneata* var. *puberula*	US: - CA: S1 CNPS: 1B.1	Perennial herb. Occurs on sandy and gravelly soils in chaparral, cismontane woodland, coastal scrub habitats between 70 and 810 m in elevation.	February-September	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. This perennial species was not detected during the botanical survey conducted within the species' typical blooming period.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	US: - CA: S2 CNPS: 1B.1	Annual herb. Occurs in marshes and swamps, playas, and vernal pools up to 1220 m in elevation.	February–June	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
heart-leaved pitcher sage	*Lepechinia cardiophylla*	US: - CA: - CNPS: 1B.2	Perennial shrub found in closed-cone coniferous forest, chaparral, Cismontane woodland between 520 and 1370 m elevation.	April-July	**Not Expected.** There are no known occurrences in the vicinity and suitable habitat is absent on the project site. The project site is outside of the known elevation range.
Jokerst's monardella	*Monardella australis ssp. jokerstii*	US: - CA: - CNPS: 1B.1	Perennial rhizomatous herb found in Chaparral, Lower montane coniferous forest in Steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes. Occurs between 1350 and 1750 m elevation.	July-September	**Not Expected.** There are no known occurrences in the vicinity and suitable habitat is absent on the project site. The project site is outside of the known elevation range.
Intermediate monardella	*Monardella hypoleuca* ssp. *intermedia*	US: - CA: - CNPS: 1B.2	Perennial rhizomatus herb. Usually found in understory. Habitat types include chaparral, cismontane woodland, lower montane coniferous forest. Elevation from 1,312 ft to 4,101 ft.	April– September	**Not Expected.** There are no known occurrences in the vicinity and suitable habitat is absent on the project site. The project site is outside of the known elevation range.

Table C-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
prostrate vernal pool navarretia	*Navarretia prostrata*	US: - CA: S2 CNPS: 1B.1	Annual herb. Occurs on mesic soils in coastal scrub, meadows and seeps, vernal pools, and valley and foothill grassland habitats between 3 and 1,210 m in elevation.	April–July	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
Chaparral nolina	*Nolina cismontana*	US: - CA: - CNPS: 1B.2	Perennial evergreen shrub. Habitat type includes chaparral and coastal scrub. Occurs on sandstone or gabbro soils between 140 and 1275 m in elevation.	March–July	**Absent.** This perennial evergreen shrub was not detected during the focused botanical survey conducted in June 2019.
California beardtongue	*Penstemon californicus*	US: - CA: - CNP 1B.2S:	Perennial herb found in chaparral, Lower montane coniferous forest, Pinyon and juniper woodland between 1170 and 2300 m elevation in sandy soils.	May-August	**Not Expected.** There are no known occurrences in the vicinity and suitable habitat is absent on the project site. The project site is outside of the known elevation range.
Allen's pentachaeta	*Pentachaeta aurea ssp. allenii*	US: - CA: S1 CNPS: 1B.1	Annual herb. Occurs in chaparral and coastal scrub openings and valley grassland habitats from 75 to 520 m in elevation.	March-June	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period.
south coast branching phacelia	*Phacelia ramosissima var. austrolitoralis*	US: - CA: - CNPS: 3.2	Perennial herb found in chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt) between 5 and 300 m elevation in sandy and rocky soils.	March-August	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site. The species was not detected during the botanical survey conducted within the species' typical blooming period..
white rabbit-tobacco	*Pseudognaphalium leucocephalum*	US: - CA: - CNPS: 2B.S	Perennial herb found in chaparral, cismontane woodland, coastal scrub,and riparian woodland between 0 and 2100 m elevation in sandy, gravelly soils.	July-November	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
chaparral ragwort	*Senecio aphanactis*	US: - CA: S2 CNPS: 2B.2	Annual herb. Sometimes occurs on alkaline soils. Occurs in chaparral, cismontane, and coastal scrub habitats between 15 and 800 m in elevation.	January–April	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

Table C-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
salt spring checkerbloom	*Sidalcea neomexicana*	US: - CA: S2 CNPS: 2B.2	Perennial herb found in alkaline and mesic soils within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas from 15 to 1530 m in elevation.	March-June	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
San Bernardino aster	*Symphyotrichum defoliatum*	US: - CA: S2 CNPS: 1B.2	Perennial rhizomatous herb. Occurs near ditches, springs, and streams in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, mashes and swamps, and grasslands between 2 and 2,040 m in elevation.	July–November	**Not expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

[1]Project vicinity = project site plus a 5-mile buffer
Status: Federal Endangered (FE), Federal Threatened (FT), Federal Candidate (FC), Federal Proposed (FP, FPE, FPT), Federal Delisted (FD), California Endangered (CE), California Threatened (CT), California Species of Special Concern (SSC), California Fully Protected Species (CFP), California Special Plant (CSP), California Special Animal (CSA), NCCP Identified Species (IS), NCCP Target Species (TS), NCCP Conditionally Covered Species (CCS), S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure

CNPS Designations:
1B = Rare threatened, or endangered in California and elsewhere
2B = Rare, threatened, or endangered in California, but not elsewhere
3 = Not very endangered in California
4 = Plants of Limited Distribution – Watch List

Abbreviation/Acronym Definitions:
CA = California
CNDDB = California Natural Diversity Database
CNPS = California Native Plant Society
ft = foot/feet
US = United States

Table C-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
INVERTEBRATES				
San Diego fairy shrimp	*Branchinecta sandiegonensis*	US: FE CA: -	Endemic to vernal pools in Orange and San Diego Counties. Usually appears in late fall, winter, and spring when rains fill the small, shallow, seasonal pools.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is absent from the project site.
quino checkerspot butterfly	*Euphydryas editha quino*	US: FE CA: -	Meadows or openings within coastal sage scrub or chaparral below about 5,000 feet where food plants (*Plantago erecta* and/or *Orthocarpus purpurascens*) are present. Currently known only from southwestern Riverside County, southern San Diego County, and northern Baja California.	**Not Expected.** There are no known occurrences of this species in the project vicinity and food plants are absent from the project site.
AMPHIBIANS				
Northern leopard frog	*Lithobates pipiens*	US: CA: SSC	Aquatic habitats with permanent or semi-permanent water, submerged and emergent aquatic vegetation, and shoreline cover. Native range is east of the Sierra Nevada/Cascade crest. Not native to southern California.	**Not Expected.** There are no known occurrences of this species in the project vicinity and suitable aquatic habitat is absent from the project site.
Western spadefoot	*Spea hammondii*	US: - CA: SSC	Occurs primarily in grassland and other relatively open habitats. Found in elevations ranging from sea level to 4,500 ft. Requires temporary pools for breeding.	**Not expected.** There are no known occurrences in project vicinity and suitable seasonal pond habitat is absent from the project site.
Coast Range newt	*Taricha torosa*	US: - CA: SSC	Associated with woodlands that are often interspersed with grasslands and chaparral. Breeding takes place in streams, ponds, lakes, and reservoirs. Breeding takes place from December to May. Estivation occurs in underground retreats and perhaps in rotting logs from July to early fall.	**Not Expected.** There are no known occurrences of this species in the project vicinity and suitable aquatic breeding habitat is absent from the project site.
REPTILES				
Glossy snake	*Arizona elegans*	US: - CA: SSC	Found in a wide variety of habitats types, including open desert, grass land, shrublands, chaparrals, and woodlands. Records show that this species occurs in relatively open patches in a surrounding matrix of denser vegetation.	**Low.** There are no known occurrences in the project vicinity but there is marginally suitable habitat on the project site.
Southern California legless lizard	*Anniella stebbinsi*	US: - CA: SSC	Found in wide variety of habitat types, including sandy washes, alluvial fans, sparsely vegetated desert scrub, chaparral, and pine-oak woodlands. Requires moisture and leaf litter/surface objects. Most prevalent in coastal dune habitats in coastal counties to Baja California.	**Low.** There are no known occurrences in the project vicinity but there is marginally suitable habitat on the project site.

Table C-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Red diamond rattlesnake	*Crotalus ruber*	US: - CA: SSC	Associated with chaparral, woodland, grassland, and desert communities from Los Angeles County to Baja California Sur. Prefers rocky areas with dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects for shelter.	**Moderate.** This species is known to occur in the immediate project vicinity and some suitable habitat is present on the project site.
Western pond turtle	*Emys marmorata*	US: - CA: SSC	Occurs in a variety of habitats, including woodland, grassland, and open forest. Thoroughly aquatic, existing in good-quality ponds, marshes, rivers, streams, and irrigation ditches that have rocky or muddy bottoms. Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks.	**Not expected.** While there are known occurrences in the vicinity of the project site, suitable aquatic habitat is absent from the project site.
Coast horned lizard	*Phrynosoma blainvillii*	US: - CA: SSC	Occurs in CSS, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.	**Low.** There are historical occurrences in the project vicinity, but habitat is marginal on the project site.
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	US: - CA: SSC	Occupies desert scrub, coastal chaparral, washes, sandy flats, and rocky areas.	**Low.** There is a historical occurrence record in the project vicinity, but habitat is marginal on the project site.
Two-striped garter snake	*Thamnophis hammondii*	US: - CA: SSC	Aquatic-feeding specialist, inhabiting permanent and intermittent drainages of the seasonally arid regions of southwest California. Prefers watercourses with good riparian stands, feeds on aquatic invertebrates.	**Not Expected.** There are no known occurrences of this species in the project vicinity and suitable aquatic breeding habitat is absent from the project site.
BIRDS				
Tricolored blackbird (nesting colony)	*Agelaius tricolor*	US: - CA: SSC	Highly colonial nester largely endemic to California. Most numerous in the Central Valley and vicinity. Requires open water, protected nesting substrate, and a foraging area with insect prey within a few kilometers of the colony.	**Not Expected.** While there is one nonspecific historic occurrence record in the project vicinity, no nesting colonies have been recorded in the project vicinity and suitable nesting habitat is absent from the project site.
Grasshopper sparrow (nesting)	*Ammodramus savannarum*	US: - CA: SSC	Occurs in dense grasslands, preferring native grasslands with a mixture of forbs and shrubs.	**Low.** There is a historic occurrence record in the project vicinity, but the disturbed nonnative grassland on the project site is considered to be only marginally suitable for this species.

Table C-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Long-eared owl (nesting)	*Asio otus*	US: – CA: SSC	Rare resident in Southern California coastal and foothill areas and uncommon resident in desert areas. Dense willow-riparian woodland and oak woodland. Breeds from valley foothill hardwood up to ponderosa pine habitat.	**Low.** There are no known occurrences in the project vicinity but there is suitable habitat on the project site. Nesting is very uncommon in this area.
Golden eagle	*Aquila chrysaetos*	US: FP CA: -	Generally open country of the Temperate Zone worldwide. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	**Not Expected.** There are no known occurrences in the project vicinity and the species is not known to nest in this area.
Burrowing owl (burrow sites and some wintering sites)	*Athene cunicularia*	US: - CA: SSC	Burrows in open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	**Low.** There is one known occurrence in the project vicinity and habitat on the project site is considered marginally suitable. Nesting and overwintering are very uncommon in this area.
Swainson's hawk	*Buteo swainsoni*	US: - CA: CT	Found in open habitats (e.g. grasslands, sage flats and prairies) in western North America; migrates south to Argentina during the winter.	**Low.** There are no known occurrences in the project vicinity but there is suitable habitat on the project site. Nesting is very uncommon in this area.
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	US: - CA: SSC	Occurs in CSS habitats. Requires tall *Opuntia* cactus for nesting and roosting.	**Not expected**. There are known occurrences in the project vicinity, but suitable cactus habitat is absent from the project site.
Western yellow-billed cuckoo (nesting)	*Coccyzus americanus occidentalis*	US: FT CA: CE	Nests in riparian forests along the broad lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods with understory of blackberry, nettle, or grape.	**Not expected.** There are no known occurrences of this species in the project vicinity and suitable riparian nesting habitat is absent from the project site.
yellow rail	*Coturnicops noveboracensis*	US: - CA: SSC	Occurs in shallow marshes and wet meadows. During winter, may occupy drier fresh-water and brackish marshes as well as dense, deep grass and rice fields.	**Not expected.** There are no known occurrences of this species in the project vicinity and suitable riparian nesting habitat is absent from the project site.
White-tailed kite (nesting)	*Elanus leucurus*	US: - CA: CFP	Breeds in riparian trees such as oaks, willows, and cottonwoods in lower-elevation areas, particularly coastal valleys and plains.	**Low.** There are no known occurrences in the project vicinity but there is suitable habitat on the project site. Nesting is very uncommon in this area.

Table C-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	US: FE CA: CE	Occurs in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands including lakes and reservoirs.	**Not expected.** There are no known occurrences of this species in the project vicinity and suitable riparian nesting habitat is absent from the project site.
American peregrine falcon	*Falco peregrinus anatum*	US: FD CA: CFP	Occurs in open habitats, usually near water. Generally requires cliffs, very tall buildings, or similar situations for nesting.	**Not expected.** There are no known occurrences of this species in the project vicinity and suitable nesting habitat is generally absent from the project area. Low potential of foraging in the project vicinity.
California black rail	*Laterallus jamaicensis coturniculus*	US: FP CA: CT	Nests in tidal salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	**Not Expected**. While there is one nonspecific historic occurrence record in the project vicinity, suitable nesting habitat is absent from the project site.
Coastal California gnatcatcher	*Polioptila californica californica*	US: FT CA: SSC	Obligate, permanent resident of coastal sage scrub habitats below 2,500 ft in elevation in Southern California.	**Not expected.** There are many known occurrences in the general vicinity of the project site, but suitable coastal sage scrub nesting habitat is absent from the project site.
Bank swallow	*Riparia riparia*	US: - CA: CT	Occurs in low areas along rivers, streams, ocean coasts, or reservoirs. Nesting colonies require tall vertical cliffs, bluffs, or similar situations such as sand/ gravel quarries or road cuts.	**Not Expected.** There are no known occurrences of this species in the project vicinity and suitable nesting habitat is generally absent from the project area.
Yellow warbler	*Setophaga petechial*	US: - CA: SSC	Requires habitats with riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests. Frequently found nesting and foraging in willow shrubs and thickets and in other riparian plants, including cottonwoods.	**Not expected.** There are many known occurrences in the general vicinity of the project site, but suitable riparian nesting habitat is absent from the project site.
California least tern	*Sternula antillarum browni*	US: FE CA: CE, CFP	Nest on beaches, mudflats, and sand dunes, usually near shallow estuaries and lagoons with access to the near open ocean.	**Not expected.** There are no known occurrences of this species in the project vicinity and suitable nesting habitat is absent from the project site.
Least Bell's vireo (nesting)	*Vireo bellii pusillus*	US: FE CA: CE	Occurs in moist thickets and riparian areas that are predominantly composed of willow and mule fat.	**Not expected.** There are many known occurrences in the general vicinity of the project site, but suitable riparian nesting habitat is absent from the project site.

Table C-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
MAMMALS				
Pallid bat	*Antrozous pallidus*	US: - CA: SSC	Found in varied habitats in western North America.	**Not expected.** There are no known occurrences in the general vicinity of the project site, and suitable habitat is absent on the project site.
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	US: - CA: SSC	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.	**Not expected.** There are no known occurrences in the general vicinity of the project site, and suitable habitat is absent on the project site.
Mexican long-tongued bat	*Choeronycteris mexicana*	US: - CA: SSC	Occasionally found in San Diego County. Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves as well as in and around buildings.	**Not expected**. There are no known occurrences in the vicinity of the project site, and suitable roosting habitat is absent on the project site.
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	US: FE CA: SSC	Gravelly and sandy soils of alluvial fans, braided river channels, active channels and terraces; San Bernardino Valley (San Bernardino County) and San Jacinto Valley (Riverside County). In San Bernardino County, this species occurs primarily in the Santa Ana River and its tributaries north of Interstate 10, with small remnant populations in the Etiwanda alluvial fan, the northern portion of the Jurupa Mountains in the south Bloomington area, and in Reche Canyon. In Riverside County, this species occurs along the San Jacinto River east of approximately Sanderson Avenue, and along Bautista Creek. Remnant populations may also occur within Riverside County in Reche Canyon, San Timoteo Canyon, Laborde Canyon, the Jurupa Mountains, and the Santa Ana River Wash north of State Route 60.	**Not expected.** There are no known occurrences of this species in the project vicinity and suitable soils and habitat are absent on the project site.
Western mastiff bat	*Eumops perotis californicus*	US: - CA: SSC	Inhabits many open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral communities. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	**Low.** There are known occurrences in the general vicinity of the project site, but there is little suitable habitat on the project site.
Western yellow bat	*Lasiurus xanthinus*	US: – CA: SSC	Occurs in Southern California in palm oases and in residential areas with untrimmed palm trees. Roosts primarily in trees, especially the dead fronds of palm trees. Forages over water and among trees.	**Low.** There are no known occurrences in the vicinity of the project site, and there is little suitable habitat on the project site.

Table C-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	US: – CA: SSC	Occurs in a variety of habitats including open areas or semi-open country, typically in grasslands, agricultural fields or sparse coastal scrub communities.	**Low.** There are no known occurrences in the vicinity of the project site, and there is little suitable habitat on the project site.
San Diego desert woodrat	*Neotoma lepida intermedia*	US: - CA: SSC	Found in open habitats from desert to CSS. Feeds on succulent plants, including stems and pad of cholla and prickly pear cactus and leaves of yucca.	**Low.** There are no known occurrences in the vicinity of the project site, and there is little suitable foraging habitat in the project vicinity,
Pocketed free-tailed bat	*Nyctinomops femorasacca*	US: – CA: SSC	Spotty distribution in California, ranging from Southern California south to the Baja Peninsula, and through southwestern Arizona to at least central Mexico. In California, typically found in rocky, desert areas with relatively high cliffs.	**Not expected.** There are no known occurrences in the general vicinity of the project site, and suitable roosting habitat is absent on the project site.
Big free-tailed bat	*Nyctinomops macrotis*	US: – CA: SSC	Inhabits low-lying arid areas in southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**Not expected.** There are no known occurrences in the general vicinity of the project site, and suitable roosting habitat is absent on the project site.
American badger	*Taxidea taxus*	US: - CA: SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low.** There are no known occurrences in the vicinity of the project site, and there is little suitable habitat on the project site.

[1] Project vicinity = project site plus a 5-mile buffer

Status: Federal Endangered (FE), Federal Threatened (FT), Federal Candidate (FC), Federal Proposed (FP, FPE, FPT), Federal Delisted (FD), California Endangered (CE), California Threatened (CT), California Species of Special Concern (SSC), California Fully Protected Species (CFP), California Special Plant (CSP), California Special Animal (CSA)

BCC = Birds of Conservation Concern
CA = California
CNDDB = California Natural Diversity Database
CSS = coastal sage scrub
DPS = Distinct population segments
ft = foot/feet
US = United States

APPENDIX D

PLANT AND ANIMAL SPECIES OBSERVED

PLANT SPECIES OBSERVED

The following plant species were observed within the project area during the June 16 and June 20, 2019 field surveys. Species denoted with an asterisk (*) are not native to southern California.

EUDICOTS

Adoxaceae		**Muskroot Family**
	Sambucus nigra ssp. *caerulea*	Blue elderberry
Amaranthaceae		**Amaranth Family**
*	*Amaranthus albus*	Tumbling pigweed
Anacardiaceae		**Sumac Family**
	Rhus integrifolia	Lemonade berry
*	*Schinus terebinthifolius*	Brazilian pepper tree
	Toxicodendron diversilobum	Poison oak
Apiaceae		**Carrot Family**
*	*Conium maculatum*	Poison hemlock
Apocynaceae		**Dogbane Family**
	Asclepias californica	California milkweed
	Asclepias fascicularis	Narrow-leaf milkweed
Asteraceae		**Sunflower Family**
*	*Carduus pycnocephalus*	Italian thistle
*	*Centaurea melitensis*	Tocalote
*	*Erigeron bonariensis*	Flax-leaved horseweed
	Erigeron canadensis	Common horseweed
*	*Hedypnois cretica*	Crete hedypnois
*	*Helminthotheca echiodes*	Bristly ox-tongue
	Heterotheca grandiflora	Telegraph weed
*	*Lactuca serriola*	Prickly lettuce
	Malacothrix saxatilis var. *tenuifolia*	Cliff malacothrix
	Pseudognaphalium californicum	California everlasting
*	*Silybum marianum*	Milk thistle
*	*Sonchus asper* ssp. *asper*	Prickly sow-thistle
Boraginaceae		**Borage Family**
	Amsinckia menziesii var. *intermedia*	Common fiddleneck

Brassicaceae		**Mustard Family**
*	*Hirschfeldia incana*	Shortpod mustard
Chenopodiaceae		**Goosefoot Family**
*	*Chenopodium album*	Lamb's quarters
*	*Salsola tragus*	Russian-thistle
Convolvulaceae		**Morning-glory Family**
*	*Convolvulus arvensis*	Field bindweed
Cucurbitaceae		**Gourd Family**
	Marah macrocarpus	Wild cucumber
Euphorbiaceae		**Spurge Family**
	Croton setigerus	Doveweed
Fabaceae		**Legume Family**
	Acmispon americanus var. *americanus*	Spanish lotus
	Lupinus succulentus	Arroyo lupine
*	*Melilotus indicus*	Annual yellow sweetclover
Fagaceae		**Oak Family**
	Quercus agrifolia var. *agrifolia*	Coast live oak
Geraniaceae		**Geranium Family**
*	*Erodium cicutarium*	Redstem filaree
Grossulariaceae		**Gooseberry Family**
	Ribes speciosum	Fuchsia-flowered gooseberry
Juglandaceae		**Walnut Family**
	Juglans californica var. *californica*	Southern California black walnut
Lamiaceae		**Mint Family**
*	*Marrubium vulgare*	Horehound
Malvaceae		**Mallow Family**
*	*Malva parviflora*	Cheeseweed
Myrsinaceae		**Myrsine Family**
*	*Anagallis arvensis*	Scarlet pimpernel
Plantaginaceae		**Plantain Family**
*	*Plantago lanceolata*	English plantain

Polygonaceae		**Buckwheat Family**
*	*Rumex crispus*	Curly dock
Solanaceae		**Nightshade Family**
	Datura wrightii	Jimsonweed

MONOCOTS

Poaceae		**Grass Family**
*	*Avena barbata*	Slender wild oat
*	*Avena fatua*	Wild oat
*	*Bromus diandrus*	Ripgut grass
*	*Bromus hordeaceus*	Soft chess
*	*Bromus madritensis* ssp. *rubens*	Red brome
	Elymus condensatus	Giant wild-rye
	Elymus triticoides	Beardless wild-rye
*	*Festuca perennis*	Perennial rye
*	*Hordeum murinum*	Foxtail barley

ANIMAL SPECIES OBSERVED

The following animal species were observed or otherwise detected (via tracks, scat, calls, etc.) within the project area during the June 16 and June 20, 2019 field survey. Species denoted with an asterisk (*) are not native to southern California.

REPTILIA	REPTILES
Phrynosomatidae	**Phrynosomatid Lizards**
Sceloporus occidentalis	Western fence lizard
Colubridae	**Colubrid Snakes**
Pituophis catenifer annectens	San Diego gopher snake
AVES	**BIRDS**
Odontophoridae	**New World Quail**
Callipepla californica	California quail
Columbidae	**Pigeons and Doves**
Zenaida macroura	Mourning dove
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Accipitridae	**Hawks, Kites, Eagles, and Allies**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	Red-tailed hawk
Picidae	**Woodpeckers and Allies**
Picoides pubescens	Downy woodpecker
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	Black phoebe
Corvidae	**Crows and Jays**
Aphelocoma californica	California scrub-jay
Corvus brachyrhynchos	American crow
Hirundinidae	**Swallows**
Hirundo rustica	Barn swallow
Turdidae	**Thrushes**
Turdus migratorius	American robin

Mimidae	**Mockingbirds and Thrashers**
Mimus polyglottos	Northern mockingbird
Passeridae	**Old World Sparrows**
* *Passer domesticus*	House sparrow
Motacillidae	**Wagtails and Pipits**
Spinus psaltria	Lesser goldfinch
Passerellidae	**New World Sparrows**
Melozone crissalis	California towhee
Icteridae	**Blackbirds**
Icterus cucullatus	Hooded oriole
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and Hares**
Sylvilagus audubonii	Audubon's cottontail
Canidae	**Foxes, Wolves, and Allies**
Canis latrans	Coyote
Cervidae	**Deer, Elk, and Allies**
Odocoileus hemionus	Mule deer
Sciuridae	**Squirrels, Chipmunks, and Marmots**
Otospermophilus beecheyi	California ground squirrel

D-2 Arborist Report

Crooked Creek
(Vesting Tentative Tract Map No. 54081)
Arborist Report

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
GPS	Global Positioning System
ISA	International Society of Arboriculture
PCA	pest control advisor

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1 INTRODUCTION

Dudek evaluated and recorded information about regulated trees classified as protected over 8 inches in diameter at diameter breast height, and prepared this arborist report for the proposed Crooked Creek Project (project) in the City of Diamond Bar (City), California. Primary topics of this arborist report include evaluations of project-related impacts and recommendations for tree protection, relocation, removal, and mitigation. The project site is located on private land.

This arborist report provides a summary of Dudek's site and tree evaluation within the proposed development and infrastructure improvement areas. The following two native tree species on site meet the City's definition of a protected tree: coast live oak (*Quercus agrifolia)* and California black walnut (*Juglans californica*). Of the two native species, California black walnut is the most prominent. No non-native tree species were found on site.

Dudek's International Society of Arboriculture (ISA)-certified arborists performed various tasks associated with surveying, inventorying, and evaluating the condition of the property's trees, as described in the following sections. The purpose of this arborist report is to present the physical characteristics, mapped locations, impact and preservation totals, and appropriate mitigation for impacts to protected trees. The tree quantities and related project impacts have been analyzed and are reported in the following text.

In summary, the Crooked Creek property exhibits Southern California/coast live oak woodland setting with scattered native trees throughout the property. In summary, there are 499 protected trees located throughout the project site that are native to California. Of these, 331 trees (approximately 66%) are expected to be impacted by the proposed project and associated infrastructure improvements. Of the impacted protected trees, none are considered candidates for relocation. Furthermore, due to the region's ongoing drought, 57 trees were found to be dead, and as such, are recommended for removal.

1.1 Site Description

The approximately 12.9-acre project site is located at the terminus of Crooked Creek Road, east of the 57 Orange Freeway and west of Running Branch Road within the City of Diamond Bar, Los Angeles County, California (Figure 1). It is composed of Vesting Tentative Tract Map No. 54081, situated in Section 29 of Township 2 South Range 9 West of the Yorba Linda 7.5-Minute U.S. Geological Survey quadrangle (Figure 2).

1.2 Project Description

The site is approximately 12 acres (Vesting Tentative Tract Map 54081) located at the terminus of Crooked Creek Road in the City of Diamond Bar, California. The proposed project would establish a subdivision consisting of 16 single-family residential home sites and associated infrastructure. The proposed residential development is concentrated on two natural mesas with a sparse tree habitat and a hillside with the proposed project site.

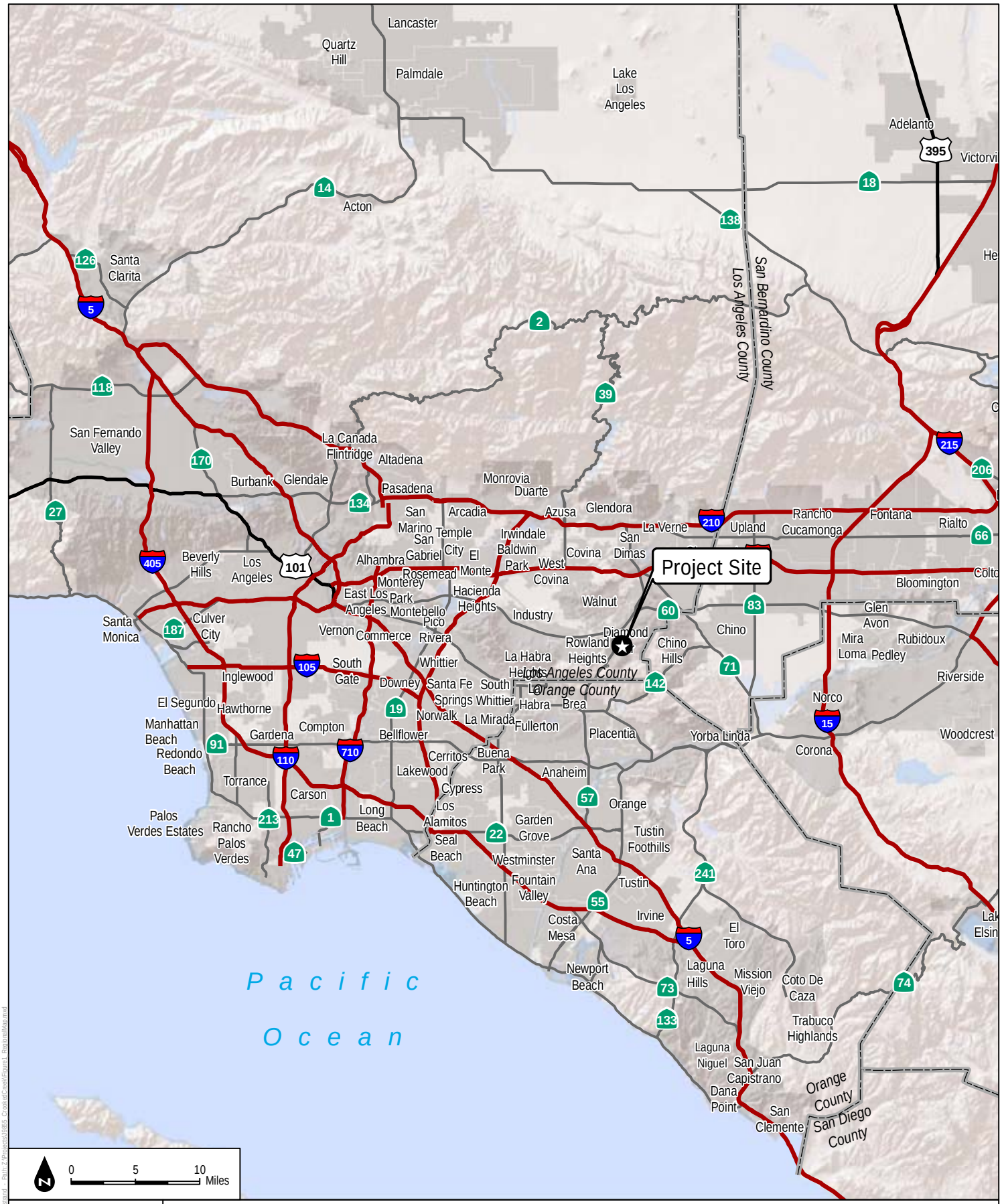

FIGURE 1

Regional Map

DUDEK

Crooked Creek Arborist Report

Fontana, San Bernardino County, California

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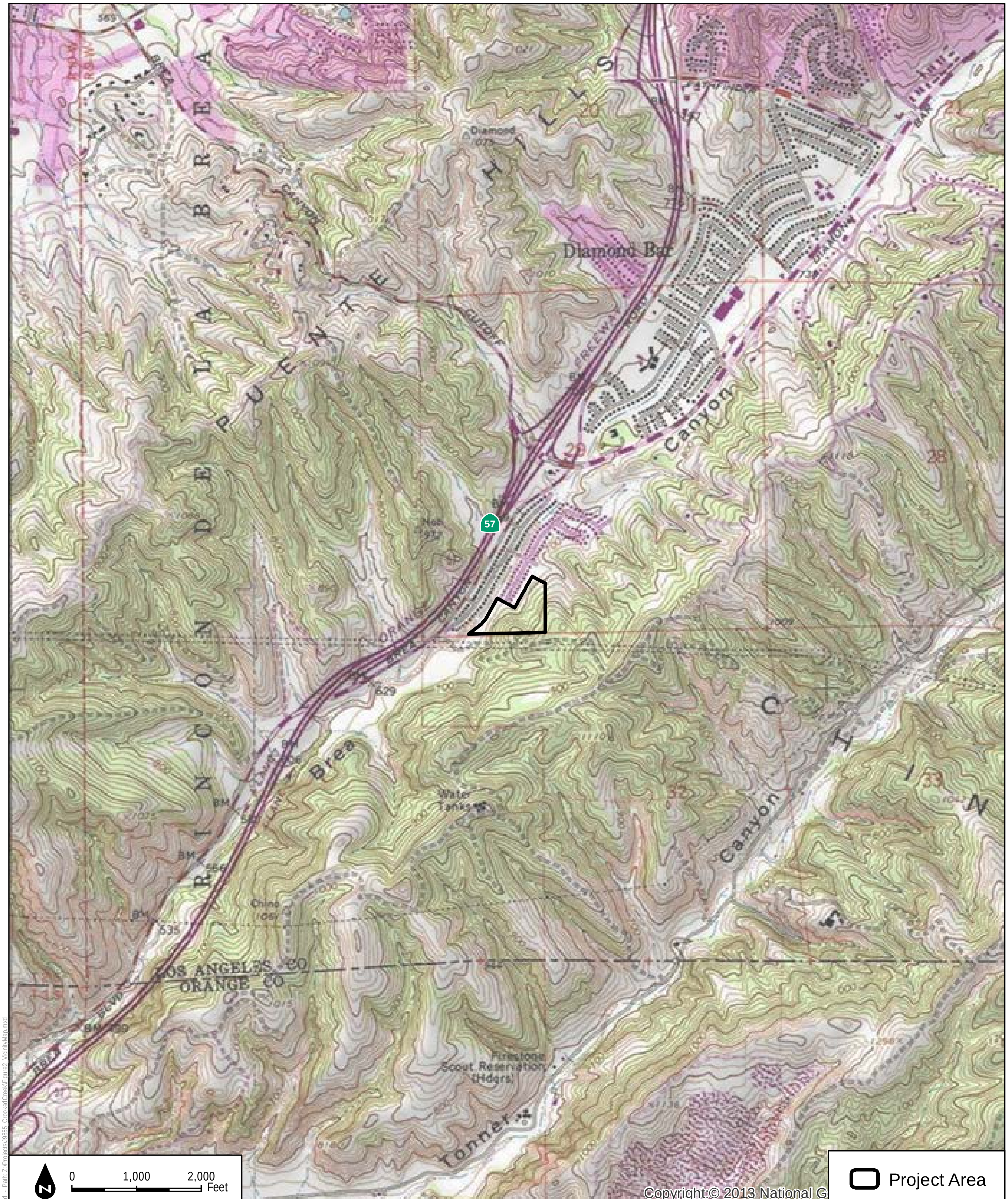

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SOURCE: USGS 7.5-Minute Series Fontana Quadrangle

FIGURE 2

Vicinity Map

Crooked Creek Arborist Report

Diamond Bar, Los Angeles County

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2 METHODS

2.1 Individual Tree Evaluation

Dudek mapped and collected tree attribute information for all trees within and immediately adjacent to the tree survey area meeting the City's definition of a "protected tree," which includes native, prominent, and significant trees that have a minimum diameter of 8 inches at 4.5 feet above natural grade for single-stemmed trees and 12 inches in diameter for multistemmed trees (City of Diamond Bar 2003). The location of each individual mature tree was mapped using a Trimble Pathfinder Pro XH Global Positioning System (GPS) receiver (Appendix A, Tree Location Exhibit). The Pathfinder has a horizontal accuracy of 1 meter (1 sigma) using differential code positioning techniques. Since tree canopies can sometimes cause loss of satellite lock by blocking the line-of-sight to satellites, an electronic compass and reflectorless, electronic distance-measuring device was also used in mapping tree locations. The electronic distance-measuring/compass combination operates in concert with the Pathfinder system to position offsets, and offset information is automatically attached to the GPS position data string. Protected trees were tagged in the field with an aluminum tree tag bearing a unique identification number. The tags were placed on the trunk of each inventoried tree and tag numbers correspond with the individual tree data in Appendix B, Tree Data Matrix.

Concurrent with tree mapping efforts, Dudek arborists collected tree attribute data including species, quantity of individual trunks, individual trunk diameters, overall height, canopy extent, and general health and structural conditions. Trunk diameter measurements were collected at 4.5 feet above the ground along the trunk axis with a few common exceptions. In cases where a tree's trunk is located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively), and the measurement was made at the circumference of the trunk at this point. Tree height measurements were ocular estimates made by experienced field arborists. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of his stride length or by visually estimating the canopy width. The tree crown diameter measurements were made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the *Guide for Plant Appraisal* (ISA 2000), tree health and structure were evaluated with respect to five distinct tree components: roots, trunk(s), scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect, fungal, or pathogen damage; fire damage; mechanical damage; presence of decay; presence of wilted or dead leaves; and wound closure. Components were graded as *good*, *fair*, *poor*, and *dead,* with *good* representing no apparent problems and *dead* representing a dying

and/or dead tree. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common standards. Trees in natural settings have important habitat value, as evidenced by numerous cavity nesters and insects that thrive on and within oak trees, even when they are considered in poor structural or health condition. However, this assessment focuses on tree condition concerning health and structure for the purposes of analyzing potential project impacts, and where necessary, providing recommendations for mitigating potential tree hazards, such as trees with weak limb attachments, cavities and rot, or excessive lean.

Upon completion of field data collection and mapping, raw GPS data were post-processed using GPS Pathfinder Office (version 5.4), and individual tree location data were compiled and updated in a geographic information system. The digital tree locations were linked to individual tree identification numbers and associated tree attribute data. This data set was then evaluated using ArcGIS software (version 10.1) to determine the position of individual trees related to the proposed project development areas. Data resulting from this analysis were used to evaluate the individual tree impact totals presented in this arborist report.

2.2 Scope of Work Limitations

No root crown excavations or investigations, aerial evaluations, or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified ISA-certified arborist before finalizing preservation plans.

3 OBSERVATIONS

3.1 Individual Trees

There are 499 trees located within and immediately adjacent to the Crooked Creek tree survey area that include two different tree species that meet the City's criteria for a "protected tree." As Table 1 indicates, over half of the inventoried trees (63.7%) are California black walnut. Table 1 provides a summary of the trees mapped and evaluated within the tree survey area. Appendix A presents the location of the individual trees mapped and assessed for the project.

Overall, the trees exhibit growth and structural conditions that are typical of their locations and of open grown woodland trees. The trees include various trunk and branch maladies and health and structural conditions. As presented in Appendix B, most of the individually mapped trees, 61.72% (308 trees), exhibit poor health condition; 24.65% (123 trees) are in fair health condition; 2.20% (11 trees) in good health; and 11.42% (57 trees) are dead. Structurally, 1% (5 trees) of the individually mapped trees are considered to exhibit good structure, 23.05% (115 trees) exhibit fair structure, 40.08% (200 trees) exhibit poor structure, 24.45% (122) trees exhibit very poor structure, and 11.42% (57 trees) are dead. Good condition trees exhibit acceptable vigor, healthy foliage, and adequate structure and lack any major maladies. Fair condition trees are typical, with few maladies but declining vigor. Poor and very poor condition trees exhibit declining vigor, unhealthy foliage, poor branch structure, and excessive lean. The high percentage of poor, very poor, and dead trees is directly attributed to the regions ongoing drought. No pests and/or pathogens were observed on site.

Table 1
Summary of Trees Crooked Creek Project Site

Scientific Name	Common Name	Number of Trees
Juglans californica	California black walnut	318
Quercus agrifolia	Coast live oak	181
	Total	**499**

Trees within the tree survey area vary in size and stature according to species and available growing space. The site's trees are composed of single- and multistemmed trees, with single-stemmed trunk diameters that range from 8 to 29 inches and multistemmed that range from 3 to 24 inches. Tree heights vary from 5 to 55 feet. Tree canopy extents range from 5 feet to nearly 55 feet. Over 70% of the trees on site exhibit canopy spreads that are greater than 20 feet across at their widest points.

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4 TREE PRESERVATION

4.1 Regulatory Definitions and Requirements

The following section summarizes the relevant policies regulating tree impact and removal associated with the project.

4.1.1 City of Diamond Bar

The City's Tree Preservation and Protection Ordinance (Chapter 22.38 of the City's Municipal Code; 2003) requires an arborist report be prepared for the removal of protected trees species:

Section 22.38.080 (Application Submittal Requirements):

a. Applications for a tree removal permit or a tree pruning permit shall be filed with the department. The department will consider an application complete when all necessary application forms, materials and exhibits, as established by the department, have been provided and accepted as adequate and all necessary fees have been paid.

b. The director may require the submittal of an arborist report before accepting the application for filing. Arborist reports shall be paid for by the applicant and may be required to include specific information as required by the director. This information may include but is not limited to: The impact on existing trees, the health and structural stability of existing trees and any remedial measures or mitigation recommended.

c. The director may require additional information when deemed necessary for permit processing. Any request for the removal or relocation of a protected tree proposed in conjunction with an application for another discretionary permit shall be subject to approval by the same hearing body as the discretionary permit.

4.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (1918) requires tree removal and potentially disturbing construction activities to occur during certain time periods to avoid harassment of nesting birds. According to this act, no construction or other disturbing activities can occur within 500 feet of an active bird nest during the period beginning in January and ending in June each year. Biological surveys should be conducted to provide clearance for project initiation.

4.2 Impacts

Tree impacts were determined using geographic information system technology and spatial locations of trees relative to the project impact areas (limits of grading). Impacts were further determined based on Dudek's experience with native and non-native trees and their typical reactions to root disturbances from construction activities such as soil compaction, excavation, and remedial grading. The impact analysis results presented were used for developing appropriate mitigation measures for the project.

Impacts to trees can be classified as direct or indirect. Direct impacts to trees related to site improvements are typically the result of physical injuries or changes caused by machinery involved with the development process. Direct impacts include tree removal, root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Indirect impacts include alterations to stream flow rates, diversion of groundwater flow, introduction of exotic plant species, and alterations to disturbance regimes. Wider-scale alterations to the area near trees, as well as specific changes that occur around the trees, are important considerations.

In general, there is a great deal of variation in tolerance to construction impacts among tree species, ages, and conditions. It is important to know how a certain tree, based on its species, age, and condition, would respond to different types of disturbance. The trees in the proposed project area are of varying ages and conditions. Mature specimens are typically more sensitive to root disturbance and grade changes. In general, healthy trees will respond better to changes in their growing environment. Trees of poor health or stressed conditions may not be vigorous enough to cope with direct or indirect impacts from construction activities.

Impact totals presented are based on conceptual disturbance limits, fuel modification zones, and development plans as of the date of this arborist report. As such, the actual number of trees that are subject to direct and indirect impacts may change as the detailed site planning process proceeds.

4.2.1 Direct Tree Impacts (Non-Damaged, Diseased, or in Danger of Falling)

For the purposes of this arborist report, direct impacts are those associated with tree removal or encroachment within the tree-protected zone (canopy dripline plus 5 feet or 15 feet from trunk, whichever is greater). Tree removal is expected to be required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment is expected when soil and roots are disturbed within the tree-protected zone. Table 2 summarizes the number of trees by species that are expected to be subject to direct construction-related impacts. The locations of impacted trees

are presented by impact type on the map in Appendix C, Tree Impact Exhibit. Measures to minimize the extent of impact to preserved trees are provided in Section 6.

Table 2
Summary of All Direct Tree Impacts – Crooked Creek

Scientific Name	Common Name	Removal	Encroachment
Juglans californica	California black walnut	233 (28*)	15
Quercus agrifolia	Coast live oak	74 (6*)	9
	Totals	**307***	**24**

* Total includes dead trees.

4.2.2 Indirect Tree Impacts (Non-Damaged, Diseased, or in Danger of Falling)

Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and stormwater, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, or damming underground water flow (Matheny and Clark 1998). For the purposes of this arborist report, indirect tree impacts are expected for trees within 25 feet of the project's limits of grading and not subject to removal or encroachment. Trees located in fuel modification zones are also typically considered indirectly impacted. Table 3 presents the number of trees expected to be indirectly impacted by the proposed project.

Table 3
Summary of Indirect Tree Impacts – Crooked Creek

Scientific Name	Common Name	Indirect Impact
Juglans californica	California black walnut	12
Quercus agrifolia	Coast live oak	6
	Total	**18**

4.2.3 Tree Removals Due to Health

In accordance with the City's Municipal Code, Section 22.38.060 (2003), a tree that is found to be "so damaged, diseased or in danger of falling (as verified by an arborist) that it cannot be effectively preserved, or its presence is a threat to other protected trees or existing or proposed structures" is exempt from the City's Tree Preservation and Protection Ordinance. As such, those trees found to be dead are exempt from the City's Municipal Code. In total, the project site contains 57 trees that are dead because of the region's ongoing drought. Of the 57 dead trees, 34

fall within the proposed project footprint. Based on the City's Municipal Code, these trees do not require mitigation.

4.2.3.1 Tree Impact Summary – All Trees (Proposed Project)

In total, it is estimated that 307 (61.5%) protected trees will require removal due to direct impacts, 24 (4.8%) will experience encroachment into the tree protected zone, 18 (3.6 %) will be indirectly impacted, 127 (25.5%) will be preserved in place with no direct impacts, and 23 (4.6%) trees are recommended for removal based on their health. Of the 331 trees identified as direct impacts, 297 require mitigation in accordance with the City's Tree Preservation and Protection Ordinance. Individual tree impacts can be seen in Appendix B.

5 MITIGATION

Section 22.38.130 of the City's Municipal Code (2003) identifies tree replacement standards for projects affecting protected trees. Specifically, the City's Municipal Code (2003) states that "replacement trees shall be planted at a minimum 2:1 ratio for residential properties less than 20,000 square feet. Residential parcels greater than 20,000 square feet and commercial and industrial properties shall be planted at a minimum 3:1 ratio." Furthermore, in accordance with Section 22.38.060 (2003), a tree that is found to be "so damaged, diseased or in danger of falling (as verified by an arborist) that it cannot be effectively preserved, or its presence is a threat to other protected trees or existing or proposed structures" is exempt from the City's Tree Preservation and Protection Ordinance. Therefore, the minimum mitigation planting requirements for the removal and encroachment of 297 trees (total does not include 34 dead trees located within the project footprint) is 891 trees. However, Dudek's oak/walnut tree and woodland management experience indicates that mitigation tree planting should be conducted with an ecological approach rather than only planting container tree stock in the post-construction landscape. This ecological approach is the framework for the mitigation-recommended program outlined in this arborist report, which meets the intent of City requirements and is consistent with state oak woodland mitigation regulations (California Public Resource Code, Section 21083.4) concerning tree preservation, replacement, and monitoring.

The proposed Crooked Creek tree mitigation program focuses on preservation (the project will preserve over 30% of the trees on site), restoration, and enhancement of preserved oak/walnut trees/stands through sustainable tree plantings, as well as native tree planting in the transition area between open space and developed areas throughout the proposed project site. However, due to project limitations (available planting space), the plan recommends working with the City to find appropriate planting locations for those trees that site cannot ecologically accommodate.

5.1 Proposed/Recommended Mitigation Program

The recommended mitigation program has been designed to provide mitigation for direct impacts to 297 protected trees associated with the project. The goal of the recommended mitigation program is to offset tree impacts through a sustainable, customized plan that is suitable for the site's unique opportunities for oak and walnut tree preservation, enhancement, and establishment. Dudek recommends that the tree mitigation program focus on the inclusion of native and ornamental trees (e.g., larger container sizes: 15-gallon, 24-inch and 36-inch boxes) within project landscape areas and manufactured slopes. Tree species recommended for individual mitigation include coast live oak, western sycamore (*Platanus racemosa*), London plane (*Platanus acerifolia*), holly oak (*Quercus ilex*), and western redbud (*Cercis occidentalis*). Use of a variety of species will result in a more robust tree population that is less susceptible to

pests and disease that typically are host-species specific. Furthermore, approximately 3.5 acres of native oak and walnut woodland will be preserved by the proposed project. As a result, and in an effort to restore and enhance the existing woodlands, it is recommended that 650 additional tree plantings occur within the site's preserved woodlands. It is recommended that the additional tree plantings within this area include a mixture of acorns, seedlings, and up-to-1-gallon-container-sized native trees in an effort to enhance and restore oak- and walnut-dominated habitats outside the development footprints, primarily on the site's slopes.

Furthermore, due to project site limitations, it is recommended that the project developer work with the City to determine appropriate mitigation for trees that cannot be accommodated by the site. As seen in the following sections, the project site can ecologically accommodate up to 690 replacement trees. Therefore, 201 trees will require mitigation at off-site locations and/or mitigation through an in-lieu of fee.

To meet the requirements of the City's Municipal Code, Dudek recommends that all mitigation trees be maintained and monitored by an ISA-certified arborist for a minimum of 5 years. Should any of the approved and/or required mitigation trees die and/or require removal during the 5-year monitoring period, it is recommended that the tree be replaced in accordance with the City's Municipal Code.

5.2 Mitigation Recommendations

As indicated in Table 4, the total number of plantings required to meet the intent of the City's tree protection and replacement requirements is 891 trees. However, due to site limitations, the replacement of 297 trees with 891 24-inch box trees on site is not considered an ecologically feasible option. To meet the constraints of the site, Dudek recommends that the tree mitigation program focus on the inclusion of native and drought-tolerant ornamental trees within the project landscape areas (e.g., larger container sizes: 15-gallon, 24-inch and 36-inch boxes) and manufactured slopes (e.g., 15-gallon coast live oaks). Based on site analysis, it is estimated that the site's landscape areas and manufactured slopes (approximately 3 acres) can feasibly support up to 300 trees.

Furthermore, it is recommended that an additional 650 acorns, seedlings, and 1-gallon native trees be planted within the existing preserved woodland areas. As discussed in further detail in Section 5.3, Dudek estimates that a 60% success rate (390 trees) can be achieved for these supplemental plantings. The combination of landscape, manufactured slope, and woodland enhancement plantings results in a total site-wide mitigation of 690 trees. It is recommended that the project developer work with the City to determine appropriate mitigation for the remaining 201 trees that cannot be accommodated by the site.

Table 4
City of Diamond Bar Mitigation Planting Requirements

Trees Impacted						
Tree Type	*Common Name*	*Removal*	*Encroachment*	*Total Direct Impacts*	*Replacement Ratio*	*Total Required Tree Plantings*
Juglans californica	California walnut	205	15	220	3:1	660
Quercus agrifolia	Coast live oak	68	9	77	3:1	231
					Total*	**891**

Note:
* Total does not include 26 dead trees.

5.3 Mitigation Discussion

The recommended tree mitigation program for anticipated tree impacts is considered appropriate and sustainable for the location of the site and available planting space. Assuming that 300 trees can be planted within the project landscape areas and manufactured slopes (20-foot on-center spacing on approximately 3 acres of manufactured slope, and throughout the developed landscape) and a 30% (195 trees) survival rate of woodland plantings can be achieved, the recommended mitigation plan results in a minimum replacement ratio of 1.6:1. However, the acorns, seedlings, and 1-gallon planting success ratios cannot be precisely determined at this time but would not be expected to exceed roughly 75% under ideal conditions. Conservative estimates of acorn establishment success result in a 30%–75% success ratio for a project of this scale. At a 30% success ratio, the acorn/seedling planting totals 300 trees, or 1.6 replacement trees for every impacted oak tree when combined with 300 landscape and manufactured slope plantings. At 60% success of acorns/seedlings, the replacement-to-impacted ratio is 2.3:1 when combined with 300 landscape and manufactured slope plantings, which is less than the City's minimum requirement of 3:1 for protected trees. Therefore, to meet the City's required mitigation ratio, it is recommended that the project developer work with the City to find appropriate mitigation for the 201 trees that cannot be accommodated on-site. Following the off-site mitigation (planting and/or in-lieu of fee) the proposed mitigation would result in the City's required 3:1 replacement ratio. It should be noted that the previously mentioned mitigation calculations assume that 300 trees can be planted within the site's landscaped areas and manufactured slopes and a 60% success rate can be achieved.

Concerns over seedling and smaller plant sizes as mitigation for loss of mature or semimature native oak and walnut trees are alleviated when considering how well small tree plantings perform. Planting seeds and seedlings has long been considered the most simple, economical, and successful way of establishing healthy trees. They do not require long-term, supplemental

water (following watering for up to 5 years (2–3 years and no water for the last 2 years to ensure they are viable)), and during drought years, they generally naturalize, outperform larger trees, and produce superior trees. Direct seeding of acorns and seedlings is often discouraged because growers expect poor germination rates and a high loss to rodents. These problems are minimized with careful selection and storage of seed and the use of newly available, low-cost tree shelters to protect the seed and growing seedling in the ground. Proper seed-handling methods have been shown in numerous settings to produce germination rates greater than the 60th percentile. New technology, such as planting hole preparation, amendments, watering techniques, and protective cages, allows experienced restoration specialists to prepare a planting site to enhance the likelihood of successful germination and survival.

To ensure that the City's minimum 3:1 replacement ratio is met, Dudek recommends that the mitigation trees be monitored and maintained for a period of 5 years and replaced if mortality occurs within that period. Furthermore, should the success rate of supplemental woodland acorns/seedlings plantings fall below 60% during the same time period, Dudek recommends the client work with the City to identify appropriate mitigation for any surplus mitigation trees.

The specific location of individual mitigation tree plantings on site shall be addressed in the mitigation planting plan or landscape design plan prepared for the site. The plan shall detail oak planting details, sizes, locations, and long-term maintenance and monitoring for mitigation trees planted within and directly adjacent to the project site. With the exception of 201 surplus mitigation trees, Dudek estimates that all of the required mitigation trees can be accommodated within the proposed project landscape, manufactured slopes, and adjacent woodlands. Should it be found that the site cannot support the total number of recommended plantings, Dudek recommends that the client work with the City to determine appropriate mitigation for any remaining mitigation surplus.

The mitigation requirement and the approved tree replacement mitigation ratio are at the discretion of the City and subject to final tree impact analysis. As such, the final tree numbers associated with tree replacement and other mitigation components may vary from that presented in this arborist report.

5.4 In Lieu of Fee

The City may require an in-lieu fee for those trees that cannot be accommodated on site. As such, in an effort to assists with project planning, the estimated cost associated with planting and maintenance (1-year maintenance period including tree staking, irrigation, mulching, and other tasks) for one 24-inch box oak tree is approximately $500 per tree. However, the final in-lieu fee would be at the discretion of the City.

5.5 Potential Relocation Candidates

The success rates for transplanting large oak trees are relatively low (personal observations of Dudek arborists; Dagit and Downer 1997), especially when coupled with drought-related stress. Transplanting large oak trees places a great deal of stress on the trees because of the difficulties mature oaks have adapting to a new site after losing a minimum of 75% of their root mass. These additional stresses make oak trees more vulnerable to pests and diseases. Although they may live for an extended period, large, transplanted oaks typically do not reach equilibrium health and vitality needed for long-term survival. The trees will exist in a declining spiral. A great deal of care, time, and attention is required during boxing, moving, storing, and transplanting to increase survival probability. Furthermore, boxed oak trees, purchased from a nursery and/or tree vendor, of similar sizes have shown higher establishment success rates following installation than those of relocated trees. As such, none of the potentially impacted trees are recommended for relocation.

5.6 Tree Removal Permit

Consistent with Section 22.38.050 of the City's Municipal Code (City of Diamond Bar 2003), a tree removal permit will be required prior to all tree removals.

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6 TREE PROTECTION MEASURES

Dudek recommends the following measures to protect undisturbed native trees that have protected zones within 20 feet of an active construction area. To the extent that protected trees on the proposed project site remain undisturbed, Dudek recommends similar tree protection measures for those retained trees.

6.1 Tree Protection Measures Prior to Construction

Fencing: Chain-link or orange-webbing polypropylene barricade fencing, no less than 4 feet high with tree protection signs, shall be erected around all undisturbed trees (or tree groups). The protective fence shall be installed at the protected zone boundary of each tree (or tree group), which is defined as 5 feet beyond the tree canopy dripline. Tree fencing shall be placed around trees that will be adjacent to construction related activities. The intent of protection fencing is to prevent root damage and/or compaction by grading equipment. An ISA-certified arborist may be required on site if grading activities occur within the tree's protected zone. The fencing shall be secured to 6-foot, heavy gauge t-bar line posts pounded into the ground a minimum of 18 inches and spaced a minimum of 8 feet on-center. Fencing shall be attached to t-bar posts with minimum 14-gage wire fastened to the top, middle, and bottom of each post. Tree protection signs shall be attached to every fourth post. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities are complete.

Pre-Construction Meeting: A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, builders) and an ISA-certified arborist. The meeting shall focus on instructing the contractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, or those directing operators from the ground shall provide written acknowledgement of their receiving tree protection training. This training shall include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that shall accomplish damage prevention.

6.2 Protection and Maintenance During Construction

Once construction activities have begun, the following protection measures shall be adhered to:

Equipment Operation and Storage: Contractors shall avoid heavy equipment operation around the protected trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration into the soil. All heavy equipment and vehicles shall, at minimum, stay out of the fenced protected tree zone,

unless where specifically approved in writing and under the supervision of an ISA-certified arborist/licensed pest control advisor (PCA) or their representative.

Materials Storage and Disposal: Contractors shall not store or discard any supply or material, including paint, lumber, or concrete overflow, within the protected zone and shall remove all foreign debris within the protected zone. However, the contractors shall leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrient supply. In addition, the contractors shall avoid drainage or leakage of equipment fluids near retained trees. Fluids such as gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (antifreeze) shall be disposed of properly. The contractors shall ensure that equipment be parked at least 50 feet from the protected zone to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could result in tree decline and/or mortality.

Grade Changes: Contractors shall ensure that grade changes, including adding fill, not be permitted within the protected zone without special written authorization and under supervision by an ISA-certified arborist/licensed PCA or their representative. Lowering the grade within the protected zone would necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the trees. Adding soil, even temporarily, on top of the existing grade would compact the soil further and decrease water and air availability to the tree roots. Contractors shall ensure that grade changes made outside of the protected tree zone do not create conditions that allow water to pond at the base of the tree. Water trapped at the base of a tree could lead to root rot and other detrimental tree impacts.

Moving Construction Materials: Contractors shall ensure that care be exercised when moving construction equipment or supplies near the undisturbed oak trees, especially overhead. Contractors shall ensure that damage to the trees be avoided when transporting or moving construction materials and working around the trees (even outside of the fenced protected zone). Contractors shall flag aboveground tree parts that could be damaged (e.g., low limbs, scaffold branches, trunks) with high-visibility flagging, such as florescent red or orange. If contact with the tree crown is unavoidable, conflicting branches may be pruned by an ISA-certified tree worker under supervision by an ISA-certified arborist/licensed PCA or their representative and shall adhere to ISA standards.

Trenching: Except where specifically approved in writing beforehand, all trenching shall be outside of the fenced protected zone. Roots primarily extend in a horizontal direction, forming a support base to the tree that is similar to the base of a wineglass. Where trenching is necessary in areas that contain roots from retained trees, contractors shall use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade

to limit root impacts. An ISA-certified arborist/licensed PCA or their representative shall ensure that all pruning cuts be clean and sharp to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may ultimately result in tree mortality. Use of root pruning and Air-Spade equipment shall be accompanied only by hand tools to remove soil from trench locations. The trench shall be made no deeper than necessary.

Irrigation: Irrigation of native, protected trees retained on site shall seek to mimic natural rainfall patterns in Southern California. Supplemental irrigation for trees adjacent to construction activity may be necessary during winter or spring months. Summer and fall irrigation may be necessary based on variable climatic and site conditions but should be conducted judiciously to avoid over watering. One irrigation cycle shall thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should be allowed to dry out between watering to avoid keeping consistently wet soil. The contractor shall be responsible for irrigating (deep watering) the trees. Soil moisture shall be checked with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary aboveground micro-spray system that would distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone. Over watering of native oaks may promote the growth of tree-damaging agents, such as oak root fungus, so proper soil moisture monitoring is critical to prolong tree health. For trees that have been substantially root pruned (30% or more of their root zone), irrigation shall be required for the first 12 months. The first irrigation shall occur within 48 hours of root pruning. The trees should be deep watered every 2 weeks during the summer and once per month during the winter (adjust accordingly with rainfall).

Canopy Pruning: The contractor shall not prune trees until all construction is completed, unless standard pruning would reduce conflict between canopy and equipment. This will help protect the tree canopies from damage. All pruning shall be conducted by an ISA-certified tree worker under supervision by an ISA-certified arborist/licensed PCA or their representative and shall adhere to ISA pruning standards.

Canopy Washing: During construction, the contractor shall wash the foliage of trees adjacent to construction activity with a strong water stream every 2 weeks in early hours before 10:00 a.m. to control mite and insect populations.

Inspection: An ISA-certified arborist/licensed PCA or their representative shall inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the project. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted by the ISA-certified arborist/licensed PCA or their representative following each inspection.

6.3 Maintenance After Construction

Mulch: The contractors shall ensure that the natural duff layer under all trees be maintained. This would stabilize soil temperatures in root zones, conserve soil moisture, and reduce erosion. The contractors shall ensure that the mulch be kept clear of the trunk base to avoid creating conditions favorable to the establishment and growth of decay-causing fungal pathogens. Should it be necessary to add organic mulch beneath retained, protected trees, packaged or commercial mulch shall not be used because it may contain oak root fungus. The use of redwood chips shall be avoided as well because certain inhibitive chemicals may be present in the wood. Other wood chips and crushed walnut shells can be used, but the best mulch that provides a source of nutrients for the tree is its own leaf litter. Any added organic mulch added by the contractor shall be applied to a maximum depth of 4 inches, where possible.

Pruning: Regular pruning of the trees is not required. An ISA-certified tree worker, under supervision by an ISA-certified arborist/licensed PCA or their representative, shall only prune trees to maintain clearance and remove broken, dead, or diseased branches. No more than 15% of the canopy shall be removed at one time. All pruning shall conform to ISA standards.

Watering: The trees should not require regular irrigation other than the 12 months following substantial root pruning, if applicable. However, soil probing shall be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental irrigation for the trees that sustained root pruning and any newly planted trees may be necessary.

Watering Adjacent Plant Material: All plants near the trees shall require moderate to low levels of water. The contractor shall water surrounding plants infrequently with deep soaks and allowed the plants to dry out in between waterings rather than provide frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet, and drainage should not allow ponding of water beneath the canopy of the oak trees. Irrigation spray shall not hit the trunk of any tree. The contractor shall maintain a 30-inch dry zone around all tree trunks. An aboveground micro-spray irrigation system shall be used in lieu of typical underground pop-up sprays.

Chemical Applications: If the trees are maintained in a healthy state, regular spraying for insect or disease control would not be necessary. If a problem does develop, an ISA-certified arborist/licensed PCA or their representative shall be consulted because the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying shall be performed by a licensed applicator under the direction of a licensed PCA.

Monitoring: An ISA-certified arborist/licensed PCA or their representative shall inspect the trees retained on site for a period of 5 years following the completion of construction activity. Monitoring visits shall be completed quarterly, totaling 20 visits. Following each monitoring visit, a report summarizing site conditions, observations, tree health, and recommendations for promoting tree health shall be submitted. Additionally, any tree mortality shall be noted, and any tree dying during the monitoring period shall be replaced of the same species as specified for minimum replacement standards in this arborist report.

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7 CONCLUSIONS

Dudek inventoried and evaluated 499 regulated trees at the project site. A total of 331 trees would be impacted by the proposed project. Of the 331 impacted trees, 297 require replacement in accordance with the City's Municipal Code. The City requires that impacted trees located on parcels greater than 20,000 square feet be replaced at a minimum 3:1 ratio. Therefore, the minimum mitigation planting requirements for the removal and encroachment of 297 trees is 891 trees. However, Dudek's oak/walnut tree and woodland management experience indicates that mitigation tree planting should be conducted with an ecological approach rather than only planting container tree stock in the post-construction landscape. To meet the goals and intent of the City's Municipal Code, Dudek recommends that the tree mitigation program focus on the inclusion of 300 native and drought-tolerant ornamental trees within the project landscape areas and manufactured slopes, and an additional 650 acorns, seedlings, and 1-gallon native trees planted within the existing woodland areas. At 60% success of acorns/seedlings, the replacement-to-impacted ratio is 2.3:1 when combined with 300 landscape and manufactured slope plantings, which is less than the City's minimum requirement of 3:1 for protected trees. To meet the City's required mitigation ratio, it is further recommended that the project developer work with the City to find appropriate mitigation for the 201 trees that cannot be accommodated on site. Following the off-site mitigation (planting and/or in-lieu of fee) the proposed mitigation would result in the City's required 3:1 replacement ratio.

Finally, this arborist report recommends that undisturbed protected trees be subject to protection measures that, when implemented, minimize the possibility that trees are inadvertently damaged during the construction process.

Arborist's Statement

This arborist report provides conclusions and recommendations based on a visual examination of the trees and surrounding site by an ISA-certified arborist and reasonable reliance on the completeness and accuracy of the information provided to the arborist. The examination did not include subterranean or internal examination of the trees.

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. Although trees provide many benefits to those who live near them, they also include inherent risks from breakage or failure that can be minimized but not eliminated.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms subject to attack by disease, insects, fungi, weather, and other forces of nature, and conditions that lead to failure are often hidden within trees and belowground. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Arborists cannot predict acts of nature, including storms of sufficient strength, which can cause even an apparently healthy tree to fail. Additionally, arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for any specific period of time. A tree's condition could change over a short or long period of time due to climatic, environmental, and other conditions. Further, there is no guarantee or certainty that recommendations or efforts to correct unsafe conditions will prevent future breakage or failure of a tree.

To live or work near trees is to accept some degree of risk. Neither the author of this report nor Dudek assumes any responsibility for, nor will they be liable for, any claims, losses, or damages to any tree; death or injury to any person; or any loss of, or damage to, any personal or real property.

8 REFERENCES

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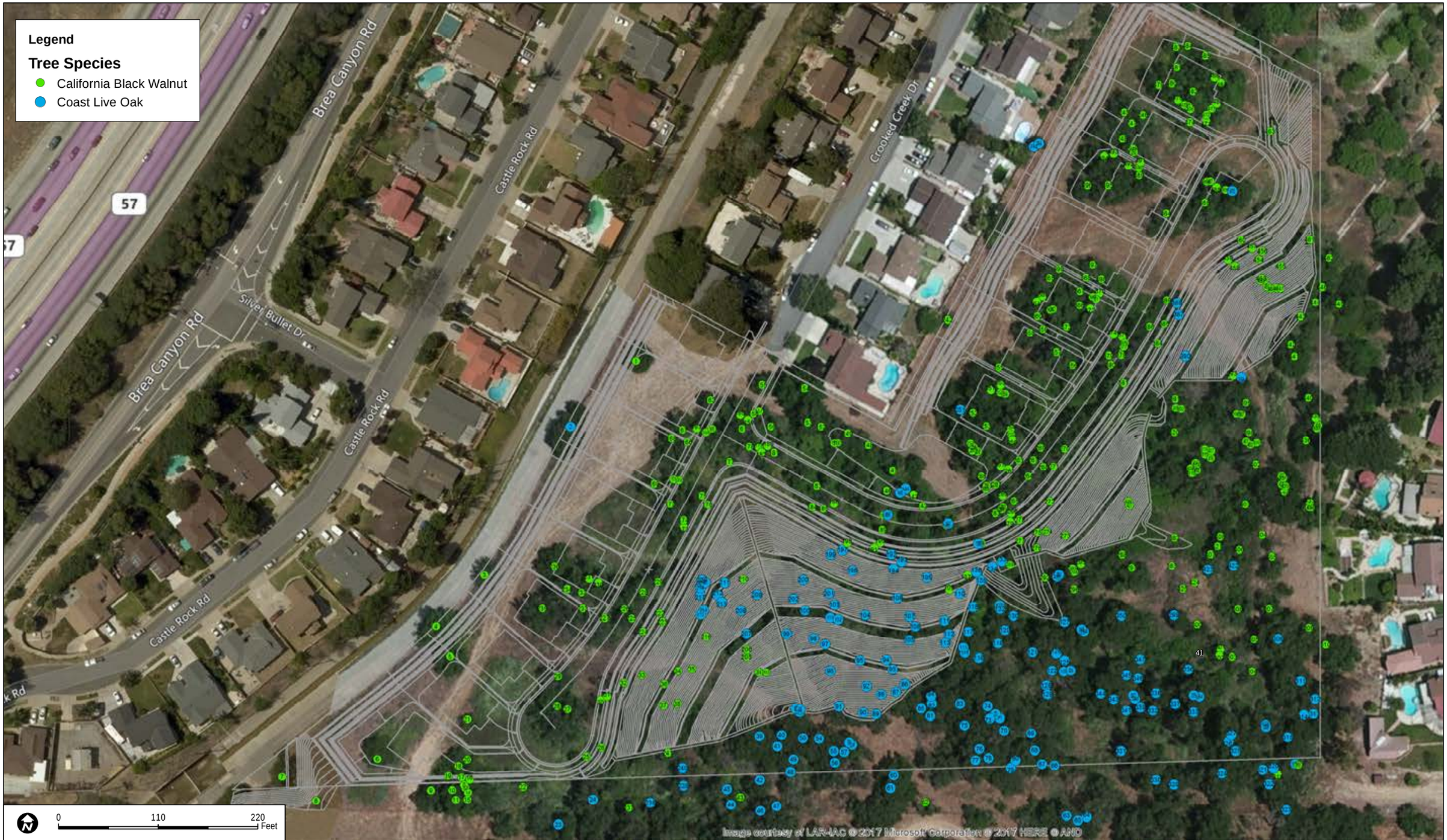
APPENDIX A

Tree Location Exhibit



Appendix A

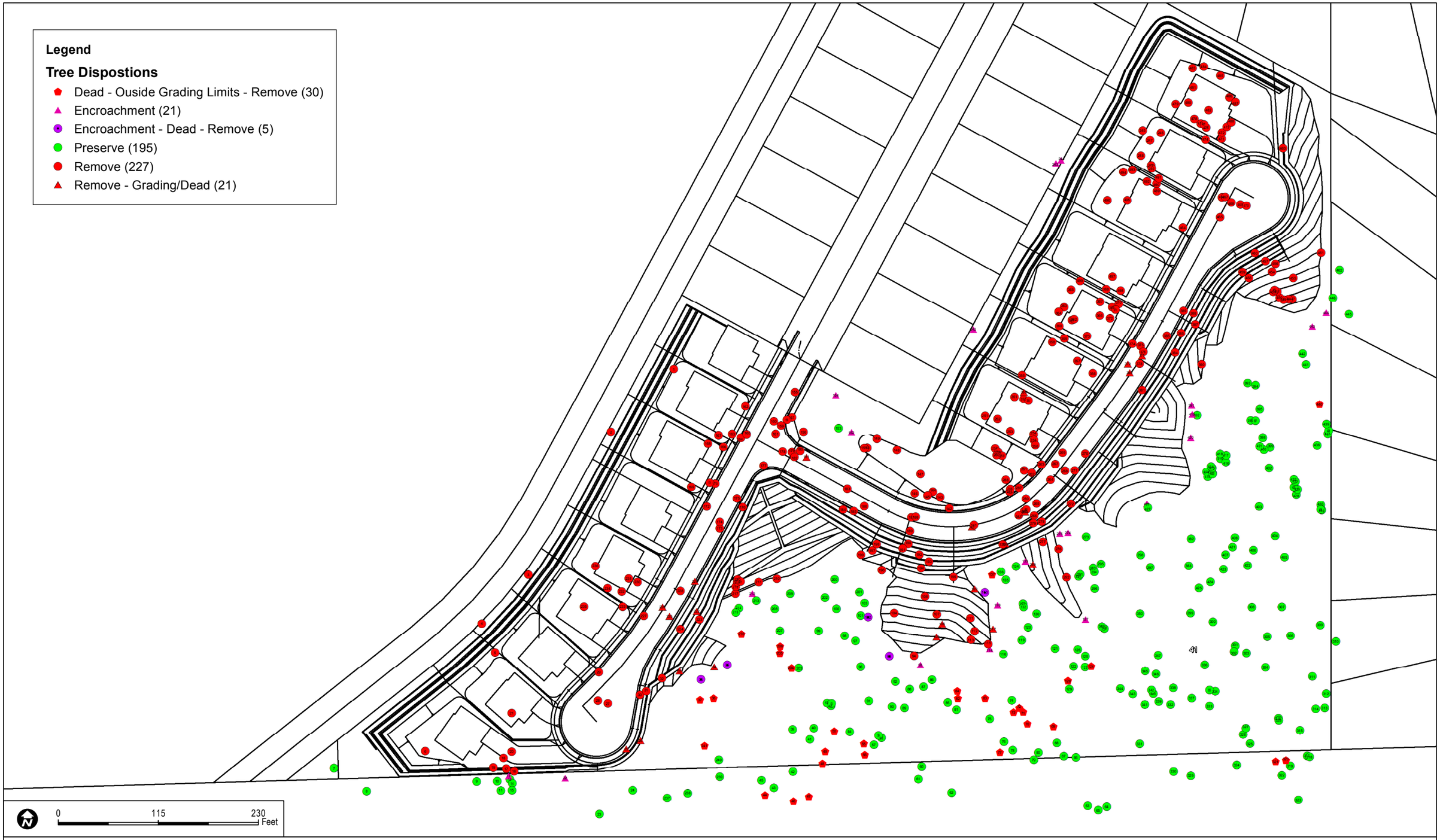
Tree Location Exhibit

DUDEK

Legend

Tree Dispostions

- Dead - Ouside Grading Limits - Remove (30)
- Encroachment (21)
- Encroachment - Dead - Remove (5)
- Preserve (195)
- Remove (227)
- Remove - Grading/Dead (21)



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Appendix A

Tree Location Exhibit

Crooked Creek - Arborist Report

APPENDIX B

Tree Data Matrix

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
1	*Juglans californica*	California black walnut	9	19.313208	7	7	6	5	5	5	6	8	8	0	20	20	Good	Fair		Remove - Grading	3:1	-117.851026	33.962008
2	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	25	Good	Good		Remove - Grading	3:1	-117.851226	33.961877
3	*Juglans californica*	California black walnut	2	12.041595	9	8	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.851578	33.96136
4	*Juglans californica*	California black walnut	5	23.706539	9	11	10	14	8	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.851754	33.961206
5	*Juglans californica*	California black walnut	10	25.179357	9	11	10	11	8	9	4	5	3	4	30	35	Fair	Fair		Remove - Grading	3:1	-117.851704	33.961114
6	*Juglans californica*	California black walnut	6	18.627936	9	7	8	8	8	5	0	0	0	0	25	30	Fair	Poor		Remove - Grading	3:1	-117.851969	33.960803
7	*Juglans californica*	California black walnut	1	16	16	0	0	0	0	0	0	0	0	0	30	35	Poor	Fair		Remove - Grading	3:1	-117.852315	33.96075
8	*Juglans californica*	California black walnut	6	4.898979	2	2	2	2	2	2	0	0	0	0	10	10	Good	Fair		Remove - Grading	3:1	-117.852192	33.960677
9	*Juglans californica*	California black walnut	3	16.733201	12	6	10	0	0	0	0	0	0	0	25	25	Good	Fair		Encroachment	3:1	-117.851774	33.960708
10	*Juglans californica*	California black walnut	3	15.652476	9	8	10	0	0	0	0	0	0	0	20	25	Poor	Poor	old 30	Encroachment	3:1	-117.851697	33.960708
11	*Juglans californica*	California black walnut	4	22.912878	11	8	14	12	0	0	0	0	0	0	30	30	Poor	Poor	old 109	Indirect	N/A	-117.851683	33.960679
12	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	25	20	Poor	Fair		Encroachment	3:1	-117.851649	33.960714
13	*Juglans californica*	California black walnut	2	10	8	6	0	0	0	0	0	0	0	0	15	20	Poor	Poor	old 126	Encroachment	3:1	-117.851653	33.960724
14	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	30	20	Poor	Poor	old 127	Encroachment	3:1	-117.851639	33.960701
15	*Juglans californica*	California black walnut	2	13.453624	9	10	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Indirect	N/A	-117.851641	33.96068
16	*Juglans californica*	California black walnut	3	14.035669	9	10	4	0	0	0	0	0	0	0	20	20	Poor	Poor	old 125	Remove - Grading	3:1	-117.851633	33.96074
17	*Juglans californica*	California black walnut	3	13.747727	8	10	5	0	0	0	0	0	0	0	10	20	Poor	Poor		Remove - Grading	3:1	-117.851663	33.960747
18	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	10	20	Poor	Poor		Remove - Grading	3:1	-117.851673	33.960781
19	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	20	30	Poor	Poor		Remove - Grading	3:1	-117.851711	33.960752
20	*Juglans californica*	California black walnut	1	10	10	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.851642	33.960801
21	*Juglans californica*	California black walnut	2	8.602325	7	5	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.851641	33.960923
22	*Juglans californica*	California black walnut	4	8.306624	6	5	2	2	0	0	0	0	0	0	20	15	Poor	Poor		Encroachment	3:1	-117.851453	33.960708
23	*Quercus agrifolia*	Coast live oak	2	20.518285	14	15	0	0	0	0	0	0	0	0	30	50	Fair	Poor		Preserve	N/A	-117.85131	33.960604
24	*Quercus agrifolia*	Coast live oak	3	29.478806	16	17	18	0	0	0	0	0	0	0	30	40	Fair	Fair		Indirect	N/A	-117.851184	33.960679
25	*Juglans californica*	California black walnut	3	11.489125	10	4	4	0	0	0	0	0	0	0	20	30	Dead	Dead	old 215	Remove - Grading/Dead	None - Dead	-117.851208	33.960808
26	*Juglans californica*	California black walnut	6	12.489996	5	7	4	5	5	4	0	0	0	0	20	30	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.851154	33.960808
27	*Juglans californica*	California black walnut	6	34.899857	15	12	18	13	16	10	0	0	0	0	25	40	Poor	Very Poor		Remove - Grading	3:1	-117.851278	33.960953
28	*Juglans californica*	California black walnut	4	23.579652	15	9	9	13	0	0	0	0	0	0	30	45	Poor	Very Poor		Remove - Grading	3:1	-117.851315	33.960962
29	*Juglans californica*	California black walnut	7	22.449944	12	9	6	11	4	5	9	0	0	0	30	40	Poor	Very Poor	old 137	Remove - Grading	3:1	-117.851312	33.961052
30	*Juglans californica*	California black walnut	4	11.874342	4	4	3	10	0	0	0	0	0	0	15	15	Poor	Very Poor		Remove - Grading	3:1	-117.851156	33.96098
31	*Juglans californica*	California black walnut	4	20.615528	10	10	9	12	0	0	0	0	0	0	25	30	Poor	Very Poor	old 140	Remove - Grading	3:1	-117.851132	33.960991
32	*Juglans californica*	California black walnut	4	21.260292	12	10	12	8	0	0	0	0	0	0	30	30	Poor	Very Poor		Remove - Grading	3:1	-117.851072	33.961032
33	*Juglans californica*	California black walnut	4	9.273618	8	3	3	2	0	0	0	0	0	0	10	15	Dead	Dead	old 148	Remove - Grading/Dead	None - Dead	-117.851006	33.961055
34	*Juglans californica*	California black walnut	2	9.219544	9	2	0	0	0	0	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850874	33.961068
35	*Juglans californica*	California black walnut	2	8.602325	7	5	0	0	0	0	0	0	0	0	15	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850824	33.961074
36	*Juglans californica*	California black walnut	3	7.348469	5	5	2	0	0	0	0	0	0	0	15	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850902	33.961019
37	*Juglans californica*	California black walnut	6	7.615773	4	3	3	2	2	4	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850928	33.960964
38	*Juglans californica*	California black walnut	4	20.615528	12	10	10	9	0	0	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850877	33.960969
39	*Quercus agrifolia*	Coast live oak	1	21	21	0	0	0	0	0	0	0	0	0	40	45	Fair	Fair		Encroachment	3:1	-117.850578	33.96087
40	*Quercus agrifolia*	Coast live oak	2	17.492856	15	9	0	0	0	0	0	0	0	0	35	40	Fair	Fair		Encroachment	3:1	-117.850498	33.960874

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
41	*Quercus agrifolia*	Coast live oak	2	20.808652	12	17	0	0	0	0	0	0	0	0	35	40	Fair	Poor		Preserve	N/A	-117.850513	33.960839
42	*Quercus agrifolia*	Coast live oak	2	10.816654	6	9	0	0	0	0	0	0	0	0	25	30	Fair	Fair	old 154	Preserve	N/A	-117.850577	33.960737
43	*Juglans californica*	California black walnut	2	7.615773	7	3	0	0	0	0	0	0	0	0	15	20	Poor	Very Poor		Preserve	N/A	-117.85065	33.960686
44	*Quercus agrifolia*	Coast live oak	1	9	9	0	0	0	0	0	0	0	0	0	20	10	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850682	33.960663
45	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Preserve	N/A	-117.850696	33.96071
46	*Quercus agrifolia*	Coast live oak	2	16.278821	12	11	0	0	0	0	0	0	0	0	35	40	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850575	33.960644
47	*Quercus agrifolia*	Coast live oak	2	18.601075	15	11	0	0	0	0	0	0	0	0	35	40	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850516	33.960658
48	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	10	15	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850465	33.960762
49	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	25	30	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850454	33.9608
50	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	25	30	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.85042	33.960865
51	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	20	20	Poor	Very Poor	old 148	Remove - Grading	3:1	-117.850432	33.960944
52	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	35	30	Poor	Fair	old 146	Remove - Grading	3:1	-117.850447	33.960953
53	*Quercus agrifolia*	Coast live oak	3	14.035669	12	7	2	0	0	0	0	0	0	0	35	30	Poor	Fair		Remove - Grading	3:1	-117.85043	33.960952
54	*Quercus agrifolia*	Coast live oak	2	20.615528	16	13	0	0	0	0	0	0	0	0	35	30	Fair	Fair	old 165	Indirect	N/A	-117.850362	33.960863
55	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850308	33.960825
56	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	25	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850304	33.96079
57	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Preserve	N/A	-117.85027	33.960822
58	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	30	25	Poor	Fair		Preserve	N/A	-117.850241	33.960843
59	*Quercus agrifolia*	Coast live oak	2	9.219544	6	7	0	0	0	0	0	0	0	0	30	25	Poor	Poor	old 267	Preserve	N/A	-117.850252	33.960851
60	*Quercus agrifolia*	Coast live oak	2	23.345235	16	17	0	0	0	0	0	0	0	0	30	25	Poor	Fair	old 260	Preserve	N/A	-117.85009	33.960752
61	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	15	20	Fair	Fair		Preserve	N/A	-117.850102	33.960713
62	*Juglans californica*	California black walnut	10	14.177447	3	3	2	4	6	5	6	4	5	5	15	35	Poor	Very Poor		Preserve	N/A	-117.849976	33.96067
63	*Quercus agrifolia*	Coast live oak	2	23.345235	16	17	0	0	0	0	0	0	0	0	45	50	Fair	Fair		Preserve	N/A	-117.849461	33.960628
64	*Quercus agrifolia*	Coast live oak	1	30	30	0	0	0	0	0	0	0	0	0	45	40	Fair	Poor		Preserve	N/A	-117.849388	33.960624
65	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	30	20	Fair	Fair	off propert	Preserve	N/A	-117.849421	33.960614
66	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	20	25	Poor	Poor		Preserve	N/A	-117.849505	33.96078
67	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	30	25	Fair	Poor		Preserve	N/A	-117.849551	33.960784
68	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Fair	Poor		Preserve	N/A	-117.849577	33.960826
69	*Quercus agrifolia*	Coast live oak	3	26.019224	15	16	14	0	0	0	0	0	0	0	30	30	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.84959	33.960878
70	*Quercus agrifolia*	Coast live oak	2	20	12	16	0	0	0	0	0	0	0	0	25	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849689	33.960887
71	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	25	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849704	33.960925
72	*Quercus agrifolia*	Coast live oak	2	12.649111	12	4	0	0	0	0	0	0	0	0	35	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849719	33.960937
73	*Quercus agrifolia*	Coast live oak	2	19.104973	13	14	0	0	0	0	0	0	0	0	40	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.84974	33.960924
74	*Quercus agrifolia*	Coast live oak	2	19.79899	14	14	0	0	0	0	0	0	0	0	40	25	Poor	Very Poor		Preserve	N/A	-117.849748	33.96096
75	*Quercus agrifolia*	Coast live oak	2	19.104973	14	13	0	0	0	0	0	0	0	0	40	35	Poor	Poor	old 280	Preserve	N/A	-117.849832	33.960903
76	*Quercus agrifolia*	Coast live oak	1	24	24	0	0	0	0	0	0	0	0	0	45	45	Fair	Fair		Preserve	N/A	-117.849778	33.96083
77	*Quercus agrifolia*	Coast live oak	1	19	19	0	0	0	0	0	0	0	0	0	35	30	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849792	33.960796
78	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	25	20	Fair	Fair		Preserve	N/A	-117.849745	33.960803

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
79	*Quercus agrifolia*	Coast live oak	1	17	17	0	0	0	0	0	0	0	0	0	45	40	Fair	Fair		Preserve	N/A	-117.849664	33.960773
80	*Quercus agrifolia*	Coast live oak	1	17	17	0	0	0	0	0	0	0	0	0	55	40	Fair	Fair		Preserve	N/A	-117.849647	33.960796
81	*Quercus agrifolia*	Coast live oak	2	12.727922	9	9	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Preserve	N/A	-117.849957	33.960931
82	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	20	5	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849951	33.960967
83	*Quercus agrifolia*	Coast live oak	3	22.671568	8	15	15	0	0	0	0	0	0	0	30	20	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849848	33.960968
84	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	15	10	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849953	33.960991
85	*Quercus agrifolia*	Coast live oak	1	9	9	0	0	0	0	0	0	0	0	0	30	15	Fair	Fair		Indirect	N/A	-117.84999	33.960954
86	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Poor	Poor		Remove - Grading	3:1	-117.85005	33.961026
87	*Quercus agrifolia*	Coast live oak	2	18.027756	17	6	0	0	0	0	0	0	0	0	40	40	Fair	Fair		Remove - Grading	3:1	-117.850082	33.961004
88	*Quercus agrifolia*	Coast live oak	3	20.976177	12	14	10	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.850134	33.960997
89	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.850154	33.960937
90	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.850201	33.960942
91	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	35	30	Poor	Poor		Remove - Grading	3:1	-117.850289	33.96096
92	*Quercus agrifolia*	Coast live oak	1	18	18	0	0	0	0	0	0	0	0	0	45	40	Poor	Poor		Remove - Grading	3:1	-117.850189	33.961021
93	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	20	Fair	Fair	old 326	Remove - Grading	3:1	-117.850093	33.961072
94	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	30	20	Fair	Fair		Remove - Grading	3:1	-117.850117	33.961102
95	*Quercus agrifolia*	Coast live oak	2	18.439089	14	12	0	0	0	0	0	0	0	0	20	25	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850212	33.9611
96	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	25	25	Fair	Poor		Remove - Grading	3:1	-117.85032	33.961068
97	*Quercus agrifolia*	Coast live oak	2	21.260292	16	14	0	0	0	0	0	0	0	0	35	25	Fair	Fair		Remove - Grading	3:1	-117.850339	33.961149
98	*Quercus agrifolia*	Coast live oak	2	12.727922	9	9	0	0	0	0	0	0	0	0	25	20	Fair	Fair	old 169	Remove - Grading	3:1	-117.85038	33.961166
99	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.850479	33.961181
100	*Quercus agrifolia*	Coast live oak	2	22.627417	16	16	0	0	0	0	0	0	0	0	45	40	Poor	Poor		Remove - Grading	3:1	-117.850411	33.961251
101	*Quercus agrifolia*	Coast live oak	2	18.35756	9	16	0	0	0	0	0	0	0	0	15	10	Poor	Fair		Remove - Grading	3:1	-117.85032	33.96123
102	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	25	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850291	33.961225
103	*Quercus agrifolia*	Coast live oak	3	9.055385	8	3	3	0	0	0	0	0	0	0	25	20	Fair	Fair		Remove - Grading	3:1	-117.850304	33.961269
104	*Quercus agrifolia*	Coast live oak	3	20.322401	13	10	12	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.850193	33.961237
105	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	15	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850033	33.961161
106	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	20	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.85001	33.961203
107	*Quercus agrifolia*	Coast live oak	2	14.866069	10	11	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.850031	33.961233
108	*Quercus agrifolia*	Coast live oak	2	20.615528	13	16	0	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.850075	33.961289
109	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	20	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849888	33.961313
110	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	20	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849849	33.961302
111	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849904	33.96122
112	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	25	30	Fair	Fair		Remove - Grading	3:1	-117.849888	33.96118
113	*Quercus agrifolia*	Coast live oak	1	9	9	0	0	0	0	0	0	0	0	0	10	5	Poor	Very Poor		Remove - Grading	3:1	-117.849902	33.961152
114	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	35	30	Poor	Poor		Remove - Grading	3:1	-117.849831	33.961123
115	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.849836	33.961138
116	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Poor	Poor		Preserve	N/A	-117.84978	33.961107
117	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	15	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849818	33.961187

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Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
118	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.8498	33.961262
119	*Quercus agrifolia*	Coast live oak	1	17	17	0	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Preserve	N/A	-117.84971	33.961151
120	*Quercus agrifolia*	Coast live oak	3	21.656408	15	12	10	0	0	0	0	0	0	0	30	25	Fair	Fair		Indirect	N/A	-117.849685	33.961192
121	*Quercus agrifolia*	Coast live oak	2	18.439089	14	12	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Preserve	N/A	-117.849584	33.961124
122	*Quercus agrifolia*	Coast live oak	3	25	16	12	15	0	0	0	0	0	0	0	45	40	Fair	Fair		Preserve	N/A	-117.849514	33.961067
123	*Quercus agrifolia*	Coast live oak	3	26.286879	21	9	13	0	0	0	0	0	0	0	40	45	Fair	Fair		Preserve	N/A	-117.84947	33.961065
124	*Quercus agrifolia*	Coast live oak	2	12.041595	8	9	0	0	0	0	0	0	0	0	10	5	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.849447	33.961068
125	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	40	35	Fair	Fair		Preserve	N/A	-117.849469	33.961099
126	*Quercus agrifolia*	Coast live oak	2	15.811388	9	13	0	0	0	0	0	0	0	0	40	35	Poor	Poor		Preserve	N/A	-117.849498	33.961121
127	*Quercus agrifolia*	Coast live oak	3	25.019992	9	16	17	0	0	0	0	0	0	0	40	25	Poor	Very Poor		Remove - Grading	3:1	-117.849468	33.961216
128	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	20	10	Dead	Dead	old 294	Dead - Ouside Grading Limits - Remove	None - Dead	-117.849534	33.961022
129	*Quercus agrifolia*	Coast live oak	3	20.322401	13	12	10	0	0	0	0	0	0	0	35	25	Poor	Poor		Preserve	N/A	-117.84953	33.960996
130	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	25	Fair	Fair		Encroachment	3:1	-117.849654	33.961234
131	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	30	15	Fair	Fair		Encroachment	3:1	-117.849704	33.961266
132	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Encroachment	3:1	-117.849702	33.961255
133	*Quercus agrifolia*	Coast live oak	2	14.866069	11	10	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.849695	33.9614
134	*Quercus agrifolia*	Coast live oak	2	10	8	6	0	0	0	0	0	0	0	0	10	30	Poor	Poor		Remove - Grading	3:1	-117.849731	33.961384
135	*Quercus agrifolia*	Coast live oak	2	28.84441	16	24	0	0	0	0	0	0	0	0	40	35	Poor	Poor		Remove - Grading	3:1	-117.84977	33.961341
136	*Quercus agrifolia*	Coast live oak	2	16.643317	9	14	0	0	0	0	0	0	0	0	25	30	Poor	Poor		Remove - Grading	3:1	-117.849788	33.961366
137	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	10	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849821	33.961358
138	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	10	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.84977	33.961455
139	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	20	20	Fair	Poor		Remove - Grading	3:1	-117.849781	33.961453
140	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	20	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849897	33.961508
141	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.84989	33.961514
142	*Juglans californica*	California black walnut	2	11.313708	8	8	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849984	33.961567
143	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.850017	33.961603
144	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	30	20	Fair	Fair		Remove - Grading	3:1	-117.850046	33.96162
145	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	30	20	Fair	Fair		Remove - Grading	3:1	-117.850065	33.961608
146	*Juglans californica*	California black walnut	5	20.469489	12	9	7	8	9	0	0	0	0	0	30	40	Poor	Poor		Remove - Grading	3:1	-117.850114	33.961614
147	*Juglans californica*	California black walnut	2	23.430749	15	18	0	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.850092	33.961676
148	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.850181	33.961752
149	*Juglans californica*	California black walnut	3	30.199338	16	16	20	0	0	0	0	0	0	0	35	55	Poor	Poor		Remove - Grading	3:1	-117.850256	33.961788
150	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850294	33.961759
151	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850305	33.961758
152	*Juglans californica*	California black walnut	2	12.727922	9	9	0	0	0	0	0	0	0	0	25	30	Poor	Fair		Encroachment	3:1	-117.850353	33.961808
153	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	40	30	Poor	Poor		Preserve	N/A	-117.850402	33.961821
154	*Juglans californica*	California black walnut	3	25.41653	15	15	14	0	0	0	0	0	0	0	40	55	Fair	Fair		Encroachment	3:1	-117.850412	33.961925
155	*Juglans californica*	California black walnut	10	11.489125	3	4	3	3	4	4	4	4	3	4	20	35	Fair	Fair		Remove - Grading	3:1	-117.850567	33.961935
156	*Juglans californica*	California black walnut	1	15	15	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850535	33.961809
157	*Juglans californica*	California black walnut	4	5.744563	4	2	3	2	0	0	0	0	0	0	20	10	Poor	Poor		Remove - Grading	3:1	-117.850578	33.961855
158	*Juglans californica*	California black walnut	4	12.884099	8	2	7	7	0	0	0	0	0	0	15	10	Poor	Very Poor		Remove - Grading	3:1	-117.850598	33.961847

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Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
159	*Juglans californica*	California black walnut	2	9.219544	9	2	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.85062	33.961829
160	*Juglans californica*	California black walnut	3	14.3527	9	5	10	0	0	0	0	0	0	0	25	25	Poor	Very Poor		Remove - Grading	3:1	-117.850647	33.961843
161	*Juglans californica*	California black walnut	3	18.681542	12	13	6	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.85064	33.961802
162	*Juglans californica*	California black walnut	2	12.041595	8	9	0	0	0	0	0	0	0	0	30	30	Fair	Fair		Remove - Grading	3:1	-117.850755	33.96189
163	*Juglans californica*	California black walnut	2	12.041595	8	9	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.850805	33.961802
164	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	25	15	Fair	Fair		Remove - Grading	3:1	-117.850772	33.961791
165	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	25	15	Poor	Poor		Remove - Grading	3:1	-117.85075	33.961802
166	*Juglans californica*	California black walnut	3	17.349352	12	6	11	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.850839	33.961762
167	*Juglans californica*	California black walnut	3	16.431677	14	7	5	0	0	0	0	0	0	0	40	30	Poor	Poor		Remove - Grading	3:1	-117.850857	33.961798
168	*Juglans californica*	California black walnut	3	14.456832	8	8	9	0	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.850897	33.961773
169	*Juglans californica*	California black walnut	4	21.633308	21	3	3	3	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.85096	33.961636
170	*Juglans californica*	California black walnut	2	14.764823	13	7	0	0	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.85087	33.961646
171	*Juglans californica*	California black walnut	2	13.038405	11	7	0	0	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.85089	33.961649
172	*Juglans californica*	California black walnut	4	26.851443	20	10	10	11	0	0	0	0	0	0	30	35	Poor	Poor		Remove - Grading	3:1	-117.850901	33.961574
173	*Juglans californica*	California black walnut	2	15.652476	7	14	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850853	33.961505
174	*Juglans californica*	California black walnut	2	9.899495	7	7	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.850853	33.961525
175	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.850787	33.961599
176	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.850766	33.961572
177	*Juglans californica*	California black walnut	2	8.485281	6	6	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850686	33.961703
178	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850615	33.961748
179	*Juglans californica*	California black walnut	4	10.049876	7	6	4	0	0	0	0	0	0	0	20	20	Poor	Very Poor		Remove - Grading	3:1	-117.850578	33.961746
180	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	10	10	Poor	Poor		Remove - Grading	3:1	-117.850548	33.96175
181	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	10	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850524	33.96173
182	*Juglans californica*	California black walnut	2	12.041595	9	8	0	0	0	0	0	0	0	0	15	15	Poor	Poor		Remove - Grading	3:1	-117.85057	33.961731
183	*Juglans californica*	California black walnut	3	13.928388	9	8	7	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.850369	33.961629
184	*Juglans californica*	California black walnut	3	14.59452	10	8	7	0	0	0	0	0	0	0	25	30	Poor	Very Poor		Remove - Grading	3:1	-117.850385	33.961563
185	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	20	Good	Good		Remove - Grading	3:1	-117.850345	33.961559
186	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	30	15	Poor	Poor		Remove - Grading	3:1	-117.850306	33.961574
187	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.850126	33.961539
188	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.850111	33.96154
189	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	25	15	Poor	Poor		Remove - Grading	3:1	-117.850132	33.961496
190	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.850139	33.961455
191	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.850161	33.961441
192	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	20	15	Fair	Fair		Remove - Grading	3:1	-117.850097	33.961421
193	*Quercus agrifolia*	Coast live oak	2	19.79899	14	14	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Remove - Grading	3:1	-117.85006	33.961399
194	*Quercus agrifolia*	Coast live oak	2	17.691806	12	13	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Remove - Grading	3:1	-117.85009	33.961378
195	*Quercus agrifolia*	Coast live oak	2	19.849433	15	13	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Remove - Grading	3:1	-117.849968	33.961351
196	*Quercus agrifolia*	Coast live oak	2	24.839485	19	16	0	0	0	0	0	0	0	0	30	25	Fair	Poor		Remove - Grading	3:1	-117.850239	33.961373
197	*Quercus agrifolia*	Coast live oak	1	22	22	0	0	0	0	0	0	0	0	0	30	35	Fair	Fair		Remove - Grading	3:1	-117.850275	33.961434
198	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Poor	Poor		Remove - Grading	3:1	-117.850258	33.961455
199	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.850318	33.961421
200	*Quercus agrifolia*	Coast live oak	1	21	21	0	0	0	0	0	0	0	0	0	40	35	Fair	Fair		Remove - Grading	3:1	-117.850418	33.961343
201	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	25	15	Fair	Fair		Remove - Grading	3:1	-117.850324	33.961303

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
202	*Quercus agrifolia*	Coast live oak	2	19.849433	15	13	0	0	0	0	0	0	0	0	30	20	Fair	Poor		Remove - Grading	3:1	-117.850454	33.961286
203	*Juglans californica*	California black walnut	4	25.258662	15	13	10	12	0	0	0	0	0	0	30	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850554	33.961064
204	*Juglans californica*	California black walnut	3	10.630146	9	4	4	0	0	0	0	0	0	0	15	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.85058	33.961064
205	*Juglans californica*	California black walnut	2	10.77033	10	4	0	0	0	0	0	0	0	0	10	10	Dead	Dead	old 174	Remove - Grading/Dead	None - Dead	-117.850626	33.961111
206	*Juglans californica*	California black walnut	4	18.627936	13	9	9	4	0	0	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850624	33.961133
207	*Quercus agrifolia*	Coast live oak	3	19.235384	15	9	8	0	0	0	0	0	0	0	25	30	Fair	Fair		Remove - Grading	3:1	-117.850625	33.961182
208	*Quercus agrifolia*	Coast live oak	2	18.439089	14	12	0	0	0	0	0	0	0	0	30	20	Fair	Fair		Remove - Grading	3:1	-117.850645	33.961251
209	*Quercus agrifolia*	Coast live oak	2	16.970563	12	12	0	0	0	0	0	0	0	0	20	20	Fair	Poor		Remove - Grading	3:1	-117.850586	33.961299
210	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	5	5	Poor	Poor	resprout	Remove - Grading	3:1	-117.850636	33.961345
211	*Quercus agrifolia*	Coast live oak	4	21.260292	12	12	10	8	0	0	0	0	0	0	30	30	Poor	Very Poor		Remove - Grading	3:1	-117.850705	33.961335
212	*Quercus agrifolia*	Coast live oak	2	22.472205	19	12	0	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.850729	33.961298
213	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	15	Fair	Fair		Remove - Grading	3:1	-117.850714	33.961277
214	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.850781	33.961253
215	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.850792	33.96124
216	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	25	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850771	33.961172
217	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	25	25	Fair	Fair		Remove - Grading	3:1	-117.850793	33.961299
218	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	20	25	Fair	Poor		Remove - Grading	3:1	-117.850792	33.96132
219	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.850786	33.961335
220	*Quercus agrifolia*	Coast live oak	2	14.422205	12	8	0	0	0	0	0	0	0	0	10	25	Fair	Poor		Remove - Grading	3:1	-117.850786	33.961343
221	*Quercus agrifolia*	Coast live oak	2	14.142136	10	10	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Remove - Grading	3:1	-117.850774	33.961337
222	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	20	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850941	33.961243
223	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.85093	33.961218
224	*Juglans californica*	California black walnut	3	17.606817	15	7	6	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.851002	33.961188
225	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	25	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.851043	33.961228
226	*Juglans californica*	California black walnut	3	17.492856	13	11	4	0	0	0	0	0	0	0	25	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.851069	33.961257
227	*Juglans californica*	California black walnut	9	20.688161	10	9	6	7	6	4	6	5	7	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.851141	33.961229
228	*Juglans californica*	California black walnut	3	16.911535	13	6	9	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.851002	33.961308
229	*Juglans californica*	California black walnut	3	18.708287	13	10	9	0	0	0	0	0	0	0	20	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.850947	33.961338
230	*Juglans californica*	California black walnut	1	10	10	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor	old 188	Remove - Grading	3:1	-117.851164	33.961336
231	*Juglans californica*	California black walnut	1	10	10	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.851198	33.961347
232	*Juglans californica*	California black walnut	3	18.601075	11	9	12	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.851225	33.961306
233	*Juglans californica*	California black walnut	6	25.573424	11	9	12	8	12	10	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.85122	33.961258
234	*Juglans californica*	California black walnut	1	15	15	0	0	0	0	0	0	0	0	0	30	30	Poor	Poor	old 191	Remove - Grading	3:1	-117.851278	33.961317
235	*Juglans californica*	California black walnut	4	21.118712	9	10	11	12	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.851367	33.961259
236	*Juglans californica*	California black walnut	4	24.289916	13	12	9	14	0	0	0	0	0	0	30	30	Fair	Fair		Remove - Grading	3:1	-117.851323	33.961387
237	*Juglans californica*	California black walnut	2	12.806248	10	8	0	0	0	0	0	0	0	0	30	30	Fair	Fair		Preserve	N/A	-117.851054	33.960654
238	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	25	15	Poor	Poor		Preserve	N/A	-117.850975	33.960669
239	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	20	Poor	Poor		Preserve	N/A	-117.850854	33.960721
240	*Quercus agrifolia*	Coast live oak	2	14.866069	10	11	0	0	0	0	0	0	0	0	30	20	Poor	Poor		Indirect	N/A	-117.850858	33.960774
241	*Juglans californica*	California black walnut	6	7.141428	3	3	4	3	2	2	0	0	0	0	20	30	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.850911	33.96082

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
242	*Juglans californica*	California black walnut	3	6.928203	4	4	4	0	0	0	0	0	0	0	15	15	Fair	Fair		Encroachment	3:1	-117.849897	33.962153
243	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	20	20	Good	Fair		Encroachment	3:1	-117.849587	33.962655
244	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	20	20	Good	Good		Encroachment	3:1	-117.849558	33.962666
245	*Juglans californica*	California black walnut	3	12.688578	9	8	4	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.849249	33.96276
246	*Juglans californica*	California black walnut	3	13.453624	9	8	6	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.84918	33.962752
247	*Juglans californica*	California black walnut	4	19.235384	9	12	9	8	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.849221	33.962728
248	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	10	10	Poor	Poor		Remove - Grading	3:1	-117.849255	33.96268
249	*Juglans californica*	California black walnut	4	7.549834	3	4	4	4	0	0	0	0	0	0	15	15	Poor	Poor		Remove - Grading	3:1	-117.849217	33.962649
250	*Juglans californica*	California black walnut	1	15	15	0	0	0	0	0	0	0	0	0	35	30	Poor	Poor		Remove - Grading	3:1	-117.849214	33.962639
251	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	25	20	Fair	Poor		Remove - Grading	3:1	-117.849846	33.961859
252	*Juglans californica*	California black walnut	6	25	15	13	11	7	6	5	0	0	0	0	40	35	Fair	Poor	pshb	Remove - Grading	3:1	-117.8498	33.961849
253	*Juglans californica*	California black walnut	2	18.681542	18	5	0	0	0	0	0	0	0	0	40	35	Poor	Poor		Remove - Grading	3:1	-117.849752	33.96181
254	*Juglans californica*	California black walnut	1	15	15	0	0	0	0	0	0	0	0	0	40	35	Poor	Poor		Remove - Grading	3:1	-117.849664	33.9618
255	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	35	35	Poor	Poor		Remove - Grading	3:1	-117.849662	33.961783
256	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	35	35	Poor	Very Poor		Remove - Grading	3:1	-117.849657	33.961767
257	*Juglans californica*	California black walnut	1	16	16	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.849809	33.961757
258	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Remove - Grading	3:1	-117.849797	33.961745
259	*Juglans californica*	California black walnut	2	21.633308	18	12	0	0	0	0	0	0	0	0	45	40	Poor	Poor		Remove - Grading	3:1	-117.849783	33.961733
260	*Juglans californica*	California black walnut	1	15	15	0	0	0	0	0	0	0	0	0	10	10	Poor	Poor		Remove - Grading	3:1	-117.849803	33.961736
261	*Juglans californica*	California black walnut	3	15.099669	10	8	8	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.849699	33.961687
262	*Juglans californica*	California black walnut	2	12.806248	10	8	0	0	0	0	0	0	0	0	25	15	Poor	Poor		Remove - Grading	3:1	-117.849671	33.961679
263	*Juglans californica*	California black walnut	3	8.246211	6	4	4	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849634	33.961706
264	*Juglans californica*	California black walnut	1	7	7	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.8496	33.961657
265	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.849652	33.961582
266	*Juglans californica*	California black walnut	3	10.049876	9	2	4	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.849662	33.961543
267	*Juglans californica*	California black walnut	2	11.18034	10	5	0	0	0	0	0	0	0	0	15	20	Poor	Poor		Remove - Grading	3:1	-117.849581	33.961707
268	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	15	20	Poor	Poor		Remove - Grading	3:1	-117.849545	33.961686
269	*Juglans californica*	California black walnut	4	25.632011	14	14	12	11	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.849554	33.961742
270	*Juglans californica*	California black walnut	2	15	12	9	0	0	0	0	0	0	0	0	30	20	Poor	Poor		Remove - Grading	3:1	-117.849467	33.96174
271	*Juglans californica*	California black walnut	2	15.620499	12	10	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.849508	33.961687
272	*Juglans californica*	California black walnut	4	15.165751	9	8	6	7	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849522	33.961581
273	*Juglans californica*	California black walnut	2	11.313708	8	8	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.849464	33.961476
274	*Juglans californica*	California black walnut	2	17.804494	11	14	0	0	0	0	0	0	0	0	35	25	Poor	Poor		Remove - Grading	3:1	-117.849533	33.961489
275	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.849564	33.961487
276	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.84957	33.961439
277	*Juglans californica*	California black walnut	2	13.416408	12	6	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.849629	33.961461
278	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.849634	33.961525
279	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Poor	Poor		Remove - Grading	3:1	-117.849666	33.96152
280	*Juglans californica*	California black walnut	2	17.492856	15	9	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Remove - Grading	3:1	-117.849692	33.961597
281	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Poor	Poor		Remove - Grading	3:1	-117.8497	33.961557
282	*Juglans californica*	California black walnut	2	16.278821	11	12	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849692	33.961563
283	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	30	20	Poor	Poor		Remove - Grading	3:1	-117.84972	33.961544
284	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849696	33.961556

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
285	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	15	10	Fair	Poor		Remove - Grading	3:1	-117.849754	33.961619
286	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	15	10	Poor	Poor		Remove - Grading	3:1	-117.849752	33.961628
287	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	15	10	Poor	Very Poor		Remove - Grading	3:1	-117.849719	33.961632
288	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	15	10	Poor	Poor		Remove - Grading	3:1	-117.849769	33.961657
289	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849666	33.96139
290	*Quercus agrifolia*	Coast live oak	3	20.223748	12	11	12	0	0	0	0	0	0	0	30	35	Fair	Fair		Encroachment	3:1	-117.849494	33.961352
291	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	15	25	Fair	Fair		Encroachment	3:1	-117.849488	33.961358
292	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.84954	33.961349
293	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Indirect	N/A	-117.849438	33.961378
294	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Indirect	N/A	-117.849434	33.961366
295	*Juglans californica*	California black walnut	2	12.041595	8	9	0	0	0	0	0	0	0	0	30	25	Poor	Very Poor		Encroachment	3:1	-117.849409	33.961391
296	*Juglans californica*	California black walnut	1	18	18	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Indirect	N/A	-117.849433	33.961314
297	*Juglans californica*	California black walnut	3	21.377558	13	12	12	0	0	0	0	0	0	0	30	30	Poor	Poor		Preserve	N/A	-117.849223	33.96138
298	*Juglans californica*	California black walnut	2	8.485281	6	6	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Indirect	N/A	-117.849259	33.961419
299	*Quercus agrifolia*	Coast live oak	1	15	15	0	0	0	0	0	0	0	0	0	30	25	Good	Good		Preserve	N/A	-117.84907	33.961236
300	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Preserve	N/A	-117.848986	33.961208
301	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Preserve	N/A	-117.848901	33.961132
302	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	20	20	Poor	Poor		Preserve	N/A	-117.848906	33.961113
303	*Juglans californica*	California black walnut	4	6.557439	3	3	4	3	0	0	0	0	0	0	20	20	Poor	Poor		Preserve	N/A	-117.848859	33.961109
304	*Juglans californica*	California black walnut	3	6.557439	3	3	5	0	0	0	0	0	0	0	20	20	Poor	Poor		Preserve	N/A	-117.848787	33.961064
305	*Juglans californica*	California black walnut	3	9.69536	6	3	7	0	0	0	0	0	0	0	20	20	Poor	Poor		Preserve	N/A	-117.84878	33.961161
306	*Quercus agrifolia*	Coast live oak	1	29	29	0	0	0	0	0	0	0	0	0	35	40	Good	Fair		Preserve	N/A	-117.848691	33.961163
307	*Juglans californica*	California black walnut	4	22.781571	11	9	11	14	0	0	0	0	0	0	35	30	Poor	Poor		Preserve	N/A	-117.848724	33.961254
308	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.848838	33.961253
309	*Juglans californica*	California black walnut	6	11.74734	6	6	5	4	3	4	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.84858	33.961197
310	*Juglans californica*	California black walnut	4	7.348469	5	4	3	2	0	0	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.848519	33.961145
311	*Quercus agrifolia*	Coast live oak	1	17	17	0	0	0	0	0	0	0	0	0	35	35	Fair	Fair		Preserve	N/A	-117.84861	33.961034
312	*Quercus agrifolia*	Coast live oak	3	10.049876	7	6	4	0	0	0	0	0	0	0	20	25	Fair	Fair		Preserve	N/A	-117.848557	33.96098
313	*Quercus agrifolia*	Coast live oak	4	19.723083	10	9	12	8	0	0	0	0	0	0	30	35	Fair	Fair		Preserve	N/A	-117.848563	33.960935
314	*Quercus agrifolia*	Coast live oak	3	24.413111	14	16	12	0	0	0	0	0	0	0	30	35	Fair	Fair		Preserve	N/A	-117.848597	33.960933
315	*Quercus agrifolia*	Coast live oak	2	18.35756	16	9	0	0	0	0	0	0	0	0	30	35	Fair	Fair		Preserve	N/A	-117.848656	33.960865
316	*Quercus agrifolia*	Coast live oak	3	27.147744	16	16	15	0	0	0	0	0	0	0	35	35	Fair	Fair		Preserve	N/A	-117.848737	33.960903
317	*Quercus agrifolia*	Coast live oak	1	11	11	0	0	0	0	0	0	0	0	0	25	20	Fair	Fair		Preserve	N/A	-117.848629	33.960784
318	*Juglans californica*	California black walnut	2	8.485281	6	6	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.84862	33.960781
319	*Juglans californica*	California black walnut	1	15	15	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Preserve	N/A	-117.848694	33.960752
320	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	30	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.848709	33.960771
321	*Quercus agrifolia*	Coast live oak	4	19.131126	11	8	10	9	0	0	0	0	0	0	30	25	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.848748	33.960766
322	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	35	25	Poor	Poor		Preserve	N/A	-117.848725	33.960723
323	*Quercus agrifolia*	Coast live oak	1	18	18	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Preserve	N/A	-117.848662	33.960645
324	*Quercus agrifolia*	Coast live oak	2	24.596748	22	11	0	0	0	0	0	0	0	0	35	35	Fair	Fair		Preserve	N/A	-117.848896	33.960756
325	*Quercus agrifolia*	Coast live oak	3	20.832667	13	11	12	0	0	0	0	0	0	0	35	35	Fair	Fair		Preserve	N/A	-117.848846	33.960823
326	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	30	Fair	Poor		Preserve	N/A	-117.848872	33.960852

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Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
327	*Quercus agrifolia*	Coast live oak	2	13.928388	13	5	0	0	0	0	0	0	0	0	30	20	Fair	Fair		Preserve	N/A	-117.848861	33.960872
328	*Quercus agrifolia*	Coast live oak	3	20.615528	16	13	0	0	0	0	0	0	0	0	30	20	Fair	Fair		Preserve	N/A	-117.848736	33.960897
329	*Quercus agrifolia*	Coast live oak	2	29.732137	22	20	0	0	0	0	0	0	0	0	30	30	Fair	Poor		Preserve	N/A	-117.84907	33.960723
330	*Quercus agrifolia*	Coast live oak	2	29.732137	22	20	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Preserve	N/A	-117.849136	33.960736
331	*Quercus agrifolia*	Coast live oak	1	33	33	0	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Preserve	N/A	-117.849263	33.960823
332	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Preserve	N/A	-117.849147	33.960946
333	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	35	30	Poor	Poor		Preserve	N/A	-117.848998	33.960942
334	*Quercus agrifolia*	Coast live oak	1	18	18	0	0	0	0	0	0	0	0	0	50	35	Good	Fair		Preserve	N/A	-117.848977	33.960988
335	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	30	25	Fair	Fair		Preserve	N/A	-117.848999	33.960992
336	*Quercus agrifolia*	Coast live oak	1	19	19	0	0	0	0	0	0	0	0	0	30	25	Fair	Poor		Preserve	N/A	-117.849017	33.961071
337	*Quercus agrifolia*	Coast live oak	2	12.369317	12	3	0	0	0	0	0	0	0	0	20	25	Fair	Fair		Preserve	N/A	-117.849066	33.960967
338	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	25	Fair	Fair		Preserve	N/A	-117.849136	33.961
339	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Fair	Fair		Preserve	N/A	-117.849192	33.960956
340	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	20	20	Fair	Fair		Preserve	N/A	-117.849212	33.960981
341	*Quercus agrifolia*	Coast live oak	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Fair	Fair		Preserve	N/A	-117.849244	33.960947
342	*Quercus agrifolia*	Coast live oak	1	18	18	0	0	0	0	0	0	0	0	0	30	20	Fair	Poor		Preserve	N/A	-117.849219	33.960993
343	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	30	15	Fair	Fair		Preserve	N/A	-117.84929	33.96098
344	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	45	Fair	Fair		Preserve	N/A	-117.849336	33.960997
345	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	30	30	Fair	Fair		Preserve	N/A	-117.849243	33.961053
346	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	15	15	Fair	Poor		Preserve	N/A	-117.849201	33.961043
347	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	15	15	Fair	Poor		Preserve	N/A	-117.849193	33.961102
348	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	35	20	Fair	Fair		Preserve	N/A	-117.849397	33.961187
349	*Quercus agrifolia*	Coast live oak	1	10	10	0	0	0	0	0	0	0	0	0	35	20	Fair	Fair		Indirect	N/A	-117.849406	33.961193
350	*Quercus agrifolia*	Coast live oak	1	14	14	0	0	0	0	0	0	0	0	0	40	30	Fair	Fair		Preserve	N/A	-117.849261	33.961234
351	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	15	20	Poor	Poor		Remove - Grading	3:1	-117.849735	33.961919
352	*Juglans californica*	California black walnut	3	21.563859	13	10	14	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.849701	33.961912
353	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	20	15	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.8497	33.961934
354	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.849683	33.961907
355	*Juglans californica*	California black walnut	4	10.198039	6	4	4	6	0	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.849707	33.961987
356	*Juglans californica*	California black walnut	2	16.970563	12	12	0	0	0	0	0	0	0	0	35	40	Poor	Poor		Remove - Grading	3:1	-117.849438	33.961993
357	*Juglans californica*	California black walnut	2	18.439089	14	12	0	0	0	0	0	0	0	0	35	40	Poor	Poor		Remove - Grading	3:1	-117.849497	33.962032
358	*Juglans californica*	California black walnut	2	14.866069	11	10	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849593	33.962091
359	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Poor	Poor		Remove - Grading	3:1	-117.849546	33.962102
360	*Juglans californica*	California black walnut	5	22.135944	8	13	8	7	12	0	0	0	0	0	20	15	Poor	Poor		Remove - Grading	3:1	-117.849566	33.962142
361	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	25	10	Poor	Very Poor		Remove - Grading	3:1	-117.849518	33.962161
362	*Juglans californica*	California black walnut	2	16.970563	12	12	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.84951	33.962163
363	*Juglans californica*	California black walnut	2	15.652476	14	7	0	0	0	0	0	0	0	0	30	25	Poor	Poor		Remove - Grading	3:1	-117.849547	33.962202
364	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.849568	33.962188
365	*Juglans californica*	California black walnut	4	18.138357	12	10	6	7	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849521	33.962257
366	*Juglans californica*	California black walnut	2	13.453624	10	9	0	0	0	0	0	0	0	0	15	20	Poor	Very Poor		Remove - Grading	3:1	-117.849412	33.962175
367	*Juglans californica*	California black walnut	3	8.602325	7	4	3	0	0	0	0	0	0	0	15	20	Poor	Very Poor		Remove - Grading	3:1	-117.849411	33.962219
368	*Juglans californica*	California black walnut	3	10.049876	7	6	4	0	0	0	0	0	0	0	20	25	Poor	Very Poor		Remove - Grading	3:1	-117.849388	33.962259
369	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	20	25	Poor	Very Poor		Remove - Grading	3:1	-117.849365	33.962201

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Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
370	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	30	30	Poor	Very Poor		Remove - Grading	3:1	-117.84934	33.962212
371	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	30	30	Poor	Poor		Remove - Grading	3:1	-117.849353	33.962194
372	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	30	30	Poor	Very Poor		Remove - Grading	3:1	-117.849373	33.962166
373	*Juglans californica*	California black walnut	5	9.055385	5	4	5	4	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.84946	33.96211
374	*Juglans californica*	California black walnut	2	8.485281	6	6	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Remove - Grading	3:1	-117.849289	33.962086
375	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849258	33.962078
376	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849248	33.96206
377	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849252	33.962048
378	*Juglans californica*	California black walnut	4	11.18034	8	6	3	4	0	0	0	0	0	0	15	20	Poor	Poor		Remove - Grading	3:1	-117.849261	33.962023
379	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849306	33.962022
380	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	15	20	Dead	Dead		Remove - Grading/Dead	None - Dead	-117.849299	33.961995
381	*Juglans californica*	California black walnut	3	8.124038	5	4	5	0	0	0	0	0	0	0	15	20	Poor	Poor		Remove - Grading	3:1	-117.849252	33.96194
382	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	30	25	Poor	Very Poor		Remove - Grading	3:1	-117.849312	33.961755
383	*Juglans californica*	California black walnut	3	19.849433	13	9	12	0	0	0	0	0	0	0	30	25	Poor	Very Poor		Indirect	N/A	-117.849322	33.961671
384	*Juglans californica*	California black walnut	5	14.59452	8	7	6	8	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.849128	33.962058
385	*Juglans californica*	California black walnut	3	12.206556	8	7	6	0	0	0	0	0	0	0	20	25	Poor	Very Poor		Remove - Grading	3:1	-117.849104	33.962119
386	*Juglans californica*	California black walnut	3	16.733201	12	10	6	0	0	0	0	0	0	0	25	25	Poor	Very Poor		Remove - Grading	3:1	-117.849158	33.96211
387	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.84905	33.962147
388	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	30	Good	Good		Remove - Grading	3:1	-117.849058	33.962183
389	*Juglans californica*	California black walnut	2	10	8	6	0	0	0	0	0	0	0	0	15	10	Poor	Very Poor		Remove - Grading	3:1	-117.849095	33.96219
390	*Quercus agrifolia*	Coast live oak	1	19	19	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Remove - Grading	3:1	-117.849027	33.962021
391	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Indirect	N/A	-117.849065	33.961891
392	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Indirect	N/A	-117.849044	33.96186
393	*Juglans californica*	California black walnut	6	18.788294	8	8	10	8	5	6	0	0	0	0	20	30	Poor	Very Poor		Remove - Grading	3:1	-117.848853	33.961961
394	*Quercus agrifolia*	Coast live oak	1	9	9	0	0	0	0	0	0	0	0	0	30	30	Fair	Fair		Remove - Grading	3:1	-117.848823	33.961955
395	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	20	Poor	Very Poor		Preserve	N/A	-117.848807	33.961879
396	*Juglans californica*	California black walnut	2	9.848858	9	4	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Preserve	N/A	-117.848841	33.961844
397	*Juglans californica*	California black walnut	4	7.071068	3	4	4	3	0	0	0	0	0	0	20	15	Poor	Very Poor		Preserve	N/A	-117.848823	33.961842
398	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Preserve	N/A	-117.848796	33.961789
399	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Preserve	N/A	-117.848768	33.961759
400	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Preserve	N/A	-117.848791	33.961752
401	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Preserve	N/A	-117.848807	33.961762
402	*Juglans californica*	California black walnut	2	13.601471	11	8	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Preserve	N/A	-117.848772	33.961693
403	*Juglans californica*	California black walnut	4	15.684387	11	8	6	5	0	0	0	0	0	0	30	20	Poor	Very Poor		Preserve	N/A	-117.848809	33.961571
404	*Juglans californica*	California black walnut	10	6.324555	2	2	2	2	2	2	2	2	2	2	20	15	Poor	Very poor		Preserve	N/A	-117.848749	33.961479
405	*Juglans californica*	California black walnut	3	17.916473	10	11	10	0	0	0	0	0	0	0	20	30	Poor	Very Poor		Preserve	N/A	-117.848714	33.961412
406	*Juglans californica*	California black walnut	3	15.362291	10	6	10	0	0	0	0	0	0	0	20	30	Poor	Very Poor		Preserve	N/A	-117.848832	33.961434
407	*Juglans californica*	California black walnut	2	10	8	6	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Indirect	N/A	-117.848937	33.961419
408	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848902	33.961473
409	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.849009	33.961681
410	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.849004	33.961666
411	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848986	33.961677

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
412	*Juglans californica*	California black walnut	1	10	10	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848986	33.961674
413	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848987	33.961693
414	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848991	33.961698
415	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848956	33.961723
416	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848935	33.961712
417	*Juglans californica*	California black walnut	2	10	8	6	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848934	33.961734
418	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Preserve	N/A	-117.848958	33.961738
419	*Juglans californica*	California black walnut	1	12	12	0	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Indirect	N/A	-117.849062	33.961863
420	*Juglans californica*	California black walnut	2	8.485281	6	6	0	0	0	0	0	0	0	0	20	15	Poor	Poor		Indirect	N/A	-117.849068	33.961789
421	*Juglans californica*	California black walnut	2	10.816654	9	6	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Preserve	N/A	-117.849156	33.961729
422	*Quercus agrifolia*	Coast live oak	1	16	16	0	0	0	0	0	0	0	0	0	35	30	Fair	Fair		Preserve	N/A	-117.849098	33.961671
423	*Quercus agrifolia*	Coast live oak	1	12	12	0	0	0	0	0	0	0	0	0	35	20	Fair	Fair		Preserve	N/A	-117.849189	33.96166
424	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Fair	Fair		Preserve	N/A	-117.849239	33.96162
425	*Juglans californica*	California black walnut	2	13.453624	9	10	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.849283	33.961601
426	*Juglans californica*	California black walnut	2	13.453624	9	10	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor	old 440	Remove - Grading	3:1	-117.849235	33.961581
427	*Juglans californica*	California black walnut	2	14.866069	11	10	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849232	33.961568
428	*Juglans californica*	California black walnut	2	17.691806	12	13	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Preserve	N/A	-117.848669	33.961609
429	*Juglans californica*	California black walnut	3	20.832667	12	13	11	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Preserve	N/A	-117.848665	33.961625
430	*Juglans californica*	California black walnut	1	10	10	0	0	0	0	0	0	0	0	0	15	15	Poor	Poor		Preserve	N/A	-117.848678	33.961632
431	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.848672	33.96165
432	*Juglans californica*	California black walnut	2	18.384776	13	13	0	0	0	0	0	0	0	0	25	20	Poor	Poor		Preserve	N/A	-117.848678	33.961657
433	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Poor		Preserve	N/A	-117.848576	33.961575
434	*Juglans californica*	California black walnut	2	15.620499	10	12	0	0	0	0	0	0	0	0	15	15	Poor	Poor		Preserve	N/A	-117.848573	33.961559
435	*Juglans californica*	California black walnut	2	11.313708	8	8	0	0	0	0	0	0	0	0	15	15	Poor	Poor		Preserve	N/A	-117.848576	33.961561
436	*Juglans californica*	California black walnut	4	14.59452	8	8	7	6	0	0	0	0	0	0	25	20	Poor	Very Poor		Preserve	N/A	-117.84859	33.961765
437	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Poor	Very Poor		Preserve	N/A	-117.84855	33.9618
438	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	10	Poor	Very Poor		Preserve	N/A	-117.848546	33.96181
439	*Juglans californica*	California black walnut	3	12.206556	8	7	6	0	0	0	0	0	0	0	15	10	Poor	Very Poor		Preserve	N/A	-117.848554	33.961832
440	*Juglans californica*	California black walnut	2	13.601471	8	11	0	0	0	0	0	0	0	0	20	20	Dead	Dead		Dead - Ouside Grading Limits - Remove	None - Dead	-117.84858	33.961894
441	*Juglans californica*	California black walnut	2	21.931712	16	15	0	0	0	0	0	0	0	0	30	30	Poor	Very Poor		Encroachment	3:1	-117.848631	33.962019
442	*Juglans californica*	California black walnut	2	12.806248	10	8	0	0	0	0	0	0	0	0	30	30	Poor	Very Poor		Encroachment	3:1	-117.848644	33.962054
443	*Juglans californica*	California black walnut	6	11.661904	6	6	4	4	4	4	0	0	0	0	20	30	Poor	Very Poor		Remove - Grading	3:1	-117.848608	33.96214
444	*Juglans californica*	California black walnut	6	11.661904	6	6	4	4	4	4	0	0	0	0	20	30	Poor	Very Poor		Encroachment	3:1	-117.848554	33.962183
445	*Juglans californica*	California black walnut	2	14.142136	10	10	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Preserve	N/A	-117.848469	33.962178
446	*Juglans californica*	California black walnut	2	7.81025	6	5	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Encroachment	3:1	-117.848529	33.96223
447	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	15	15	Poor	Very Poor		Remove - Grading	3:1	-117.848682	33.962226
448	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.848698	33.962227
449	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.848716	33.962225
450	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.84873	33.962232
451	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.84874	33.962251
452	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.848755	33.962249
453	*Juglans californica*	California black walnut	1	9	9	0	0	0	0	0	0	0	0	0	10	15	Poor	Very Poor		Remove - Grading	3:1	-117.84875	33.962255
454	*Juglans californica*	California black walnut	2	10.816654	9	6	0	0	0	0	0	0	0	0	20	15	Poor	Very Poor		Remove - Grading	3:1	-117.848759	33.962312

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
455	*Juglans californica*	California black walnut	4	8.544004	5	4	4	4	0	0	0	0	0	0	20	35	Poor	Very Poor		Remove - Grading	3:1	-117.848679	33.962293
456	*Juglans californica*	California black walnut	5	16.186414	8	8	7	7	6	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.848746	33.962337
457	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	25	15	Poor	Very Poor		Remove - Grading	3:1	-117.848784	33.962346
458	*Juglans californica*	California black walnut	4	12.328828	8	6	6	4	0	0	0	0	0	0	25	25	Poor	Very Poor		Remove - Grading	3:1	-117.848847	33.962294
459	*Juglans californica*	California black walnut	4	9.055385	5	4	5	4	0	0	0	0	0	0	20	25	Poor	Very Poor		Remove - Grading	3:1	-117.848871	33.962312
460	*Juglans californica*	California black walnut	6	13.96424	5	4	5	4	7	8	0	0	0	0	20	25	Poor	Very Poor		Remove - Grading	3:1	-117.848825	33.962372
461	*Juglans californica*	California black walnut	6	13.96424	5	4	5	4	7	8	0	0	0	0	20	25	Poor	Very Poor		Remove - Grading	3:1	-117.848574	33.962372
462	*Juglans californica*	California black walnut	2	9.219544	7	6	0	0	0	0	0	0	0	0	25	25	Poor	Very Poor		Encroachment	3:1	-117.848504	33.962318
463	*Juglans californica*	California black walnut	3	18.027756	12	9	10	0	0	0	0	0	0	0	25	25	Poor	Very Poor		Remove - Grading	3:1	-117.848718	33.962703
464	*Juglans californica*	California black walnut	3	18.814888	13	8	11	0	0	0	0	0	0	0	20	25	Poor	Poor		Remove - Grading	3:1	-117.849096	33.962453
465	*Juglans californica*	California black walnut	3	23.769729	15	12	14	0	0	0	0	0	0	0	20	30	Poor	Very Poor		Remove - Grading	3:1	-117.848956	33.962486
466	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	5	10	Poor	Very Poor		Remove - Grading	3:1	-117.848949	33.962548
467	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	10	10	Poor	Very Poor		Remove - Grading	3:1	-117.848936	33.962549
468	*Juglans californica*	California black walnut	2	14.142136	10	10	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.848913	33.962532
469	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.848879	33.962525
470	*Quercus agrifolia*	Coast live oak	1	13	13	0	0	0	0	0	0	0	0	0	35	25	Fair	Fair		Remove - Grading	3:1	-117.848856	33.962522
471	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	35	25	Poor	Very Poor		Remove - Grading	3:1	-117.84895	33.962733
472	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.848949	33.962752
473	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.84893	33.96277
474	*Juglans californica*	California black walnut	2	8.485281	6	6	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.84901	33.96273
475	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.849029	33.962781
476	*Juglans californica*	California black walnut	2	9.433981	8	5	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.849008	33.962769
477	*Juglans californica*	California black walnut	2	9.433981	8	5	0	0	0	0	0	0	0	0	20	10	Poor	Very Poor		Remove - Grading	3:1	-117.849016	33.962778
478	*Juglans californica*	California black walnut	1	8	8	0	0	0	0	0	0	0	0	0	30	20	Poor	Poor		Remove - Grading	3:1	-117.849053	33.962796
479	*Juglans californica*	California black walnut	2	11.313708	8	8	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.849124	33.962843
480	*Juglans californica*	California black walnut	2	12.806248	10	8	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.849075	33.962847
481	*Juglans californica*	California black walnut	2	12.806248	10	8	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.849057	33.962896
482	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.848999	33.962823
483	*Juglans californica*	California black walnut	2	8.944272	8	4	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.849059	33.962956
484	*Juglans californica*	California black walnut	4	11	8	4	4	5	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.849017	33.96296
485	*Juglans californica*	California black walnut	2	14.56022	14	4	0	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.848953	33.962932
486	*Juglans californica*	California black walnut	3	16.309506	11	8	9	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.84892	33.962863
487	*Juglans californica*	California black walnut	4	15.297059	8	8	9	5	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.848897	33.962849
488	*Juglans californica*	California black walnut	3	12.806248	8	8	6	0	0	0	0	0	0	0	30	20	Poor	Very Poor		Remove - Grading	3:1	-117.848913	33.962785
489	*Juglans californica*	California black walnut	1	14	14	0	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849195	33.962568
490	*Juglans californica*	California black walnut	2	19.79899	14	14	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849196	33.962592
491	*Juglans californica*	California black walnut	6	11.74734	5	4	6	6	4	3	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849189	33.962608
492	*Juglans californica*	California black walnut	1	13	13	0	0	0	0	0	0	0	0	0	25	20	Poor	Very Poor		Remove - Grading	3:1	-117.849233	33.962598
493	*Juglans californica*	California black walnut	1	10	10	0	0	0	0	0	0	0	0	0	25	15	Poor	Very Poor		Remove - Grading	3:1	-117.849288	33.962635
494	*Juglans californica*	California black walnut	10	30.397368	11	8	7	13	14	15	10	0	0	0	25	35	Poor	Very poor		Remove - Grading	3:1	-117.849321	33.962628
495	*Juglans californica*	California black walnut	5	24.474477	11	8	7	13	14	0	0	0	0	0	25	35	Poor	Very Poor		Remove - Grading	3:1	-117.849307	33.962539
496	*Juglans californica*	California black walnut	3	16.401219	13	6	8	0	0	0	0	0	0	0	25	30	Poor	Very Poor		Remove - Grading	3:1	-117.849383	33.962539
497	*Juglans californica*	California black walnut	2	12.727922	9	9	0	0	0	0	0	0	0	0	25	30	Poor	Very Poor		Remove - Grading	3:1	-117.849364	33.962298

Appendix B - Tree Information Matrices - Crooked Creek Arborist Report

Tree No.	Botanical Name	Common Name	Stems	Diameter (in.) *	Individual Stem Diameter (in.)										Height (ft.)	Canopy (ft.)	Health	Structure	Notes	Disposition	Replacement	X	Y
					1	2	3	4	5	6	7	8	9	10									
498	*Juglans californica*	California black walnut	1	11	11	0	0	0	0	0	0	0	0	0	25	30	Poor	Very Poor		Remove - Grading	3:1	-117.849333	33.962254
499	*Juglans californica*	California black walnut	4	24.124676	11	11	12	14	0	0	0	0	0	0	25	30	Poor	Very Poor		Remove - Grading	3:1	-117.849487	33.962285

* Cumulative Diameter based on the sum of the squares.

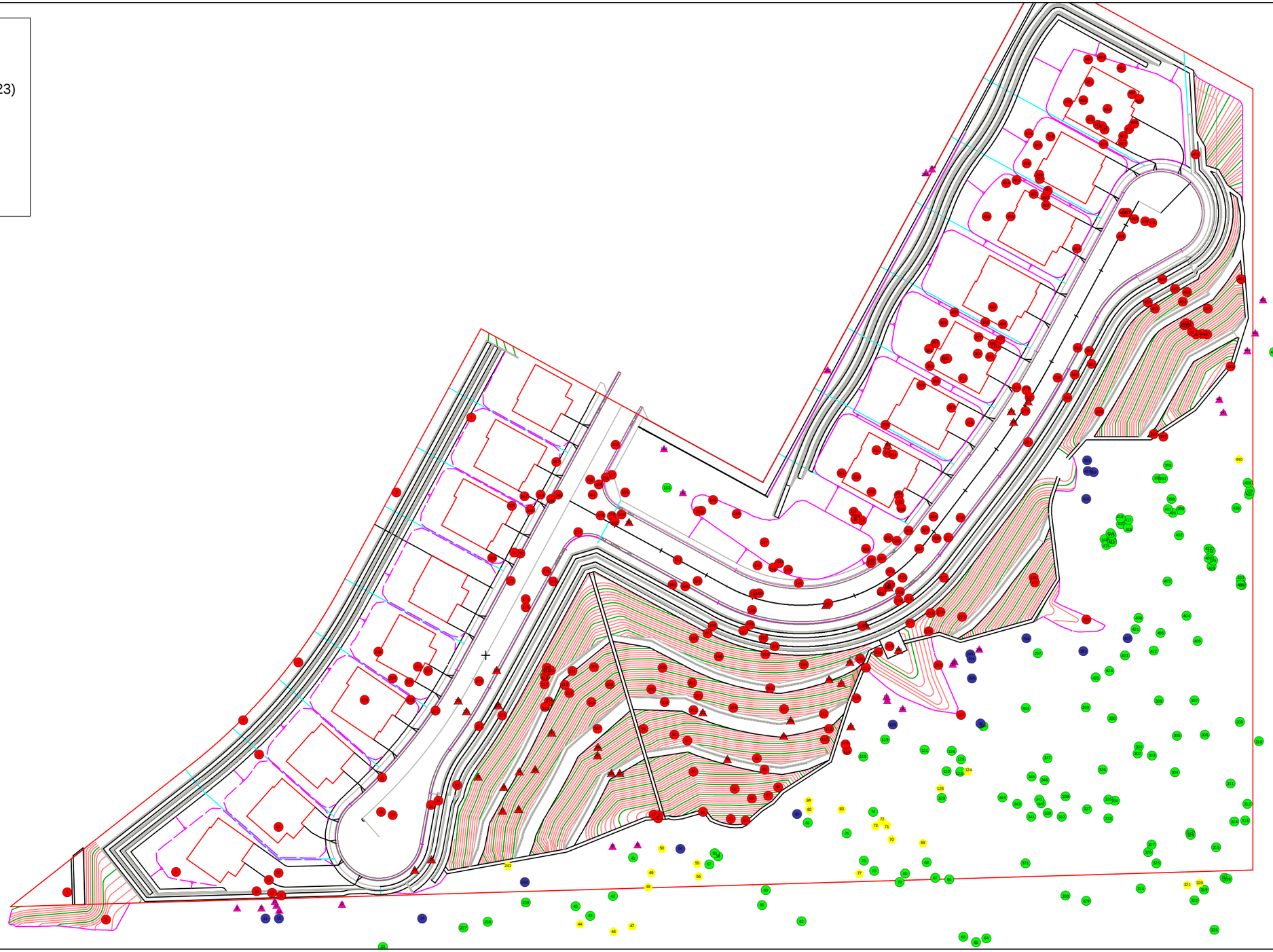
APPENDIX C

Tree Impact Exhibit

Legend

Tree Dispostions

- Dead - Ouside Grading Limits - Remove (23)
- Encroachment (24)
- Indirect (18)
- Preserve (127)
- Remove (273)
- Remove - Grading/Dead (34)



0 110 220 Feet

DUDEK

Appendix C

Tree Impact Exhibit

D-3 Supplemental Information for Biological Resources Assessment and Arborist Report

ESA

2121 Alton Parkway
Suite 100
Irvine, CA 92606
949.753.7001 phone
949.753.7002 fax

esassoc.com

October 28, 2021

City of Diamond Bar
Planning Division
Contact: Ms. Mayuko Nakajima, Associate Planner
21810 Copley Drive
Diamond Bar, CA 91765
909.839.7033

Subject: Peer Review of Crooked Creek Residential Development Biological Resources Assessment and the Crooked Creek (Vesting Tentative Tract Map No. 54081) Arborist Report

Dear Ms. Mayuko Nakajima:

As requested, Environmental Science Associates (ESA) has conducted a peer review of the Biological Resources Assessment for the proposed Crooked Creek Residential Development Project prepared by LSA and dated July 2019. ESA has also conducted updated measurements for the native trees documented within the Crooked Creek (Vesting Tentative Tract Map No. 54081) Arborist Report prepared by Dudek and dated January, 2017.

The purpose of our peer review is to provide our best professional judgment regarding biological resources associated with the proposed Crooked Creek Residential Subdivision Project (herein referred to as the Project) by supplementing information in the LSA report with observations made by ESA biologists and, where our best professional judgment differs with the contents of the LSA report, indicating the reasons for the variance. The City of Diamond Bar may use both the LSA report and this ESA letter report as the technical basis on which to prepare the biological resources section of the California Environmental Quality Act (CEQA) document for the Project. Project site in this letter report refers to all areas within the Project parcel boundary (12.9 acres). Grading limit refers to all areas within the Project site where temporary and permanent ground disturbance would occur under the current site plans. Fuel modification is the area within zones that have been developed based on the proposed improvements. Zone A includes areas within 30 feet of the proposed residential structures. Zone B includes areas that vary in width and extend beyond Zone A for up to 100 feet. Zone C includes areas with a width of 100 feet beyond Zone B. Project vicinity refers to the Project site plus an approximately five-mile buffer.

ESA biologists reviewed existing information and conducted three site visits. Because the City of Diamond Bar indicated that the LSA report would form the basis of the CEQA evaluation, ESA considered the LSA report as a baseline for the Project site biological resources. ESA also included the Dudek Arborist Report as a baseline for the status of the native trees onsite.

After reviewing the LSA and Dudek reports, ESA biologists conducted a biological reconnaissance survey of the Project site on May 26, 2020, and subsequently conducted native tree surveys on the Project site on August 18 and September 11, 2020. During the biological reconnaissance survey, the ESA biologists walked the entire Project site making observations of existing habitat conditions, presence of suitable habitat for special-status species, and presence of potentially regulated jurisdictional resources, and comparing these observations with the

information in the LSA report, noting where professional judgment differed from the LSA report determinations. The May site visit was also conducted to determine the presence of special-status plant species. A primary objective was the assessment for special status plant species to occur onsite. ESA biologists also included a survey of the reference populations of intermediate mariposa lily (*Calochortus weedii* var. *intemedius*) mentioned in the LSA report. Intermediate mariposa lily is the only special-status plant species known to occur within the immediate vicinity of the Project site. Surveys were timed to conduct observations during the peak blooming period of intermediate mariposa lily, and the reference site population (located 0.10 mile to the southeast).

During the native tree surveys, an ESA arborist conducted assessments of each tree recorded by Dudek located within the most current proposed grading limits, within Zone B and outside of the proposed grading limits, and within Zone C and outside of the proposed grading limits. Trunk location, trunk diameter, height, and notes about tree condition were recorded. The Dudek report did not document tree canopy diameters in multiple cardinal directions, so those measurements were also recorded by ESA.

In addition, ESA biologists reviewed relevant background information on biological resources in the vicinity of the Project site, including previous reports prepared for other projects in the area. These included reports for the Canyon Loop Trail Improvement Project, the Brea Canyon Business Park Project, and others. As a result of our review, the following comments are provided, in the same order as in the LSA report.

Biological Assessment Report

Project Location

The Project site consists of Assessor's Parcel Number (APN) 8714-028-003 in the northwestern quarter of the United States Geological Survey (USGS) Yorba Linda, California, 7.5-minute topographic quadrangle map within Section 29, Township 2 South, Range 9 West. Regional access to the Project site is via SR-57; refer to **Figure 1,** *Regional Map* and **Figure 2**, *Local Vicinity Map*. Local access to the Project site is from the existing Crooked Creek Drive within the City of Diamond Bar.

Environmental Setting

The Project site consists of approximately 12.9 acres of undeveloped area, which supports nonnative grassland (categorized in this letter report as either *Avena-Bromus* herbaceous semi-natural alliance or *Brassica*-Forb ruderal area; described as annual brome grassland in the LSA report) as well as coast live oak (*Quercus agrifolia*) and southern California black walnut (*Juglans californica*) woodland. Elevations within the Project site range from approximately 645 feet in the southwest corner to 835 feet above mean sea level in the southeast corner. The eastern portion of the Project site consists of natural steep hillside terrain with gently rolling terrain on the northern portion. The western portion of the Project site, including much of the proposed grading limit, are relatively flat and have elevations ranging from 645 feet to 720 feet above mean sea level.

SOURCE: ESRI

Crooked Creek Residential Subdivision Project

Figure 1
Regional Map

ESA

SOURCE: Mapbox, 2020.

Crooked Creek Residential Subdivision Project

Figure 2
Local Vicinity Map

ESA

Project Description

The proposed Project includes the development of seven single-family residences, five attached accessory dwelling units, and associated infrastructure including a southward extension of the existing Crooked Creek Drive within the proposed grading limit of the undeveloped Project site. The Project consists of nine total lots: seven residential lots; one lot designated for the private roadway (i.e., southward expansion of Crooked Creek Drive); and one lot of approximately 10.4 acres of retained undeveloped area; refer to **Figure 3,** *Site Plan and Project Cross Sections Index,* and **Figure 4**, *Project Cross Sections*. **Figure 5**, *Vesting Tentative Tract Map,* illustrates the dimensions of each lot and proposed elevations. Approximately 3.1 acres of the Project site will be disturbed for development of the Project. Of the 3.1 acres, approximately 2.5 acres (the Proposed Development Area) includes grading for the proposed seven single-family residences with the five attached accessory dwelling units, and the southward expansion of the existing Crooked Creek Drive. The remaining 0.6 acre will include hillside grading with 8-foot terrace drains and retaining walls. The remaining 10.4 acres of retained undeveloped area is located within the eastern portion of the Project site.

Regulatory Setting

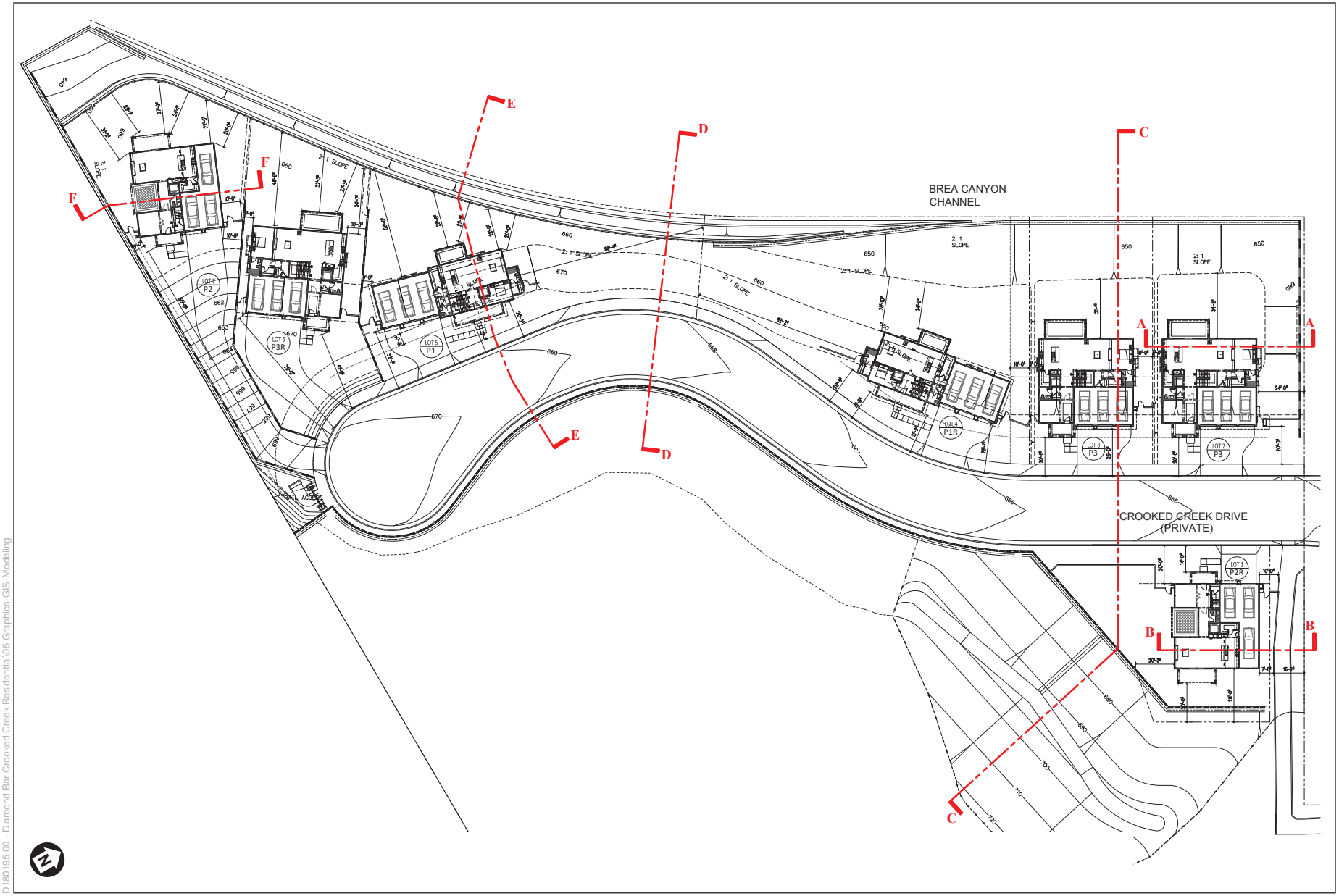
Federal and State Endangered Species Acts

The Federal Endangered Species Act (FESA) provides guidance for conserving federally listed species and the ecosystems upon which they depend. Section 9 of the FESA and its implementing regulations prohibit the "take" of any federally-listed endangered or threatened plant or animal species, unless otherwise authorized by federal regulations. "Take" includes the destruction of a listed species' habitat. Section 9 also prohibits a number of specified activities with respect to endangered and threatened plants.

The California Endangered Species Act (CESA) mandates that state agencies not approve a project that would jeopardize the continued existence of species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. CESA also prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under CESA. Similar to the FESA, CESA contains a procedure for the California Department of Fish and Wildlife (CDFW) to issue an incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of native birds "by any means or manner to pursue, hunt, take, capture (or) kill" any migratory birds except as permitted by regulations issued by the U.S. Fish and Wildlife Service (USFWS). The term "take" is defined by USFWS regulation to mean to "pursue, hunt, shoot, wound, kill, trap, capture or collect" any migratory bird or any part, nest or egg of any migratory bird covered by the conventions, or to attempt those activities.



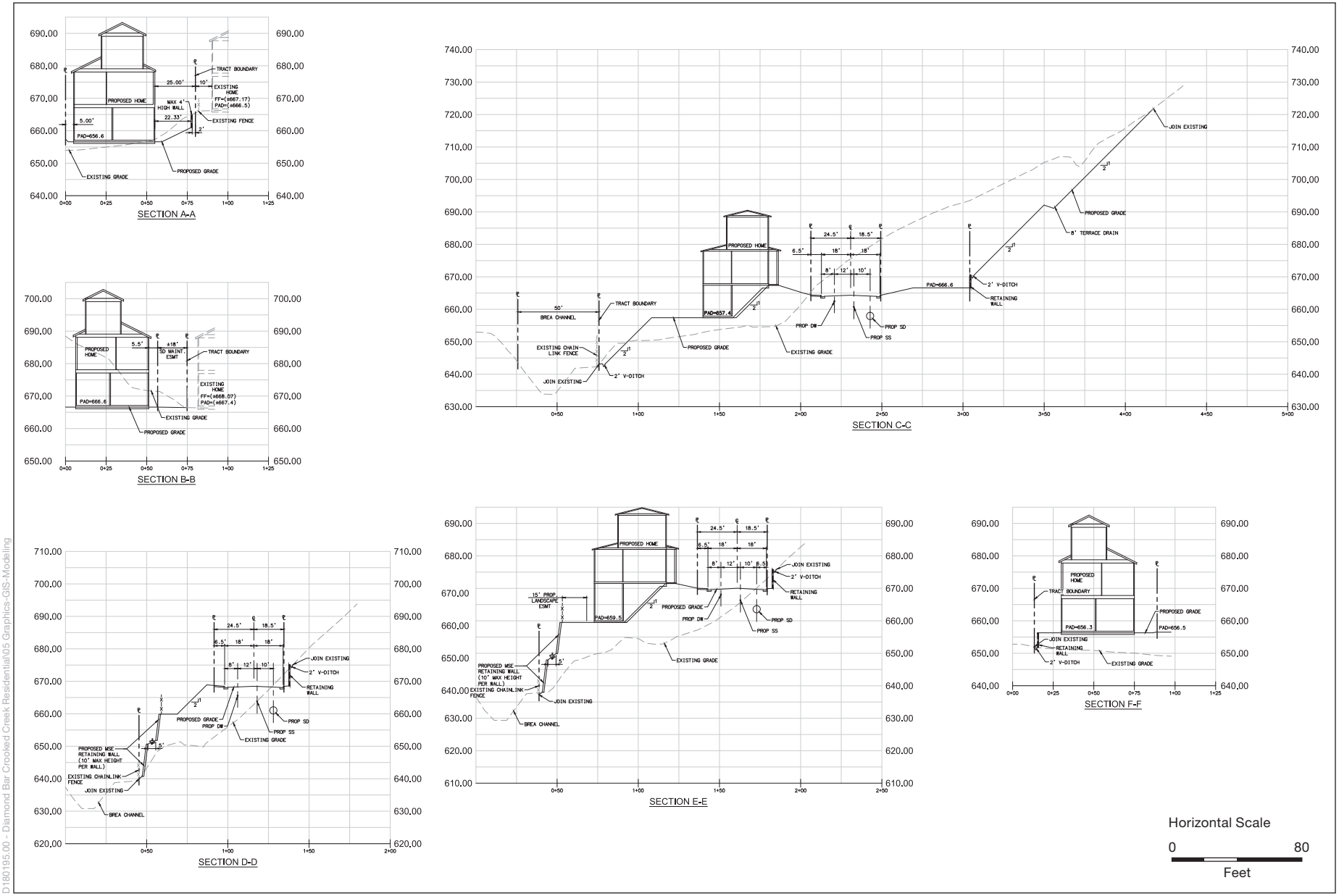
D180195.00 - Diamond Bar Crooked Creek Residential\05 Graphics-GIS-Modeling

SOURCE: Bucilla Group Architecture, 2021

Crooked Creek Residential Subdivision Project

Figure 3
Site Plan and Project Cross Sections Index

ESA



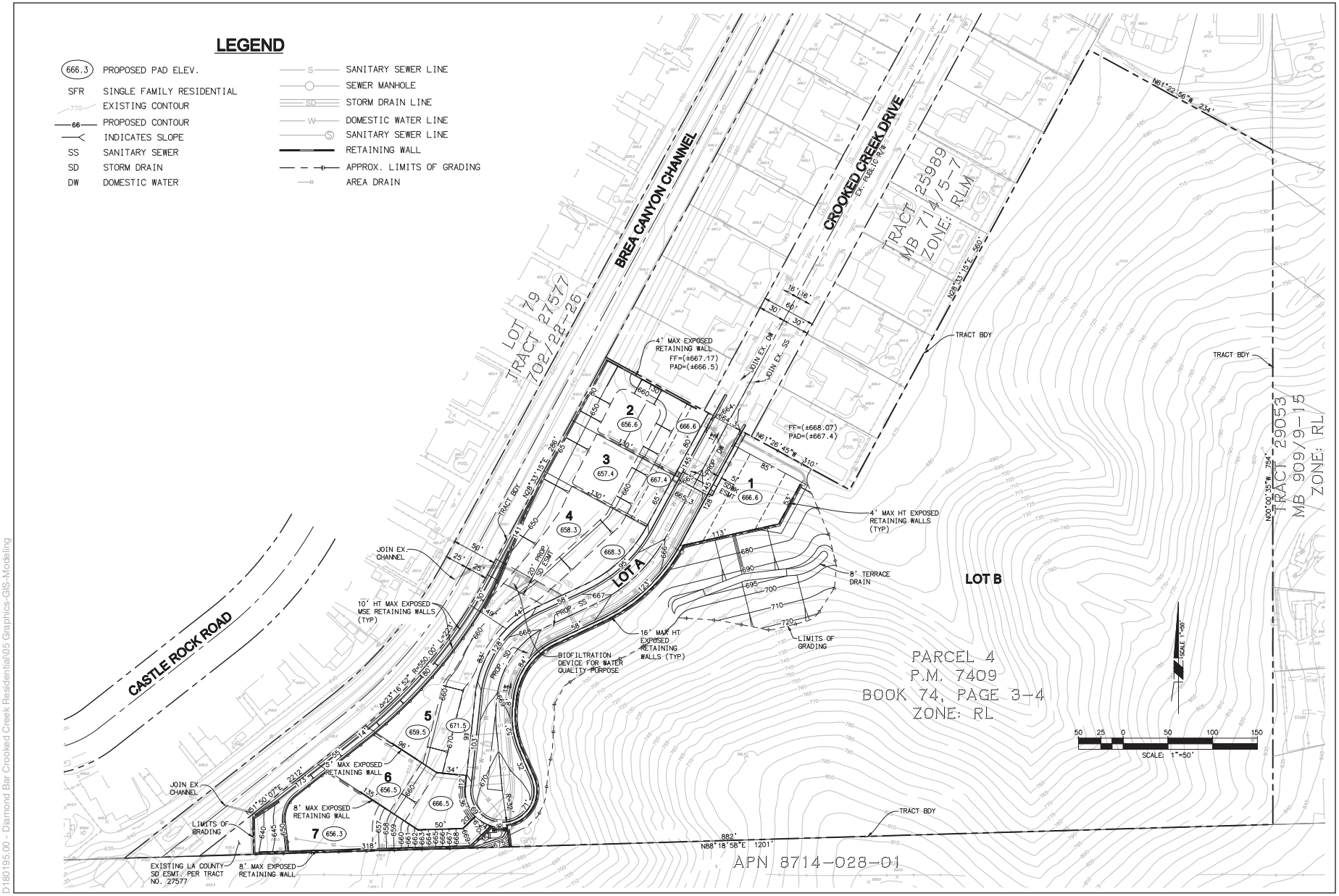
D180195.00 - Diamond Bar Crooked Creek Residential\05 Graphics-GIS-Modeling

SOURCE: Bucilla Group Architecture, 2021

Crooked Creek Residential Subdivision Project

Figure 4
Project Cross Sections

ESA



SOURCE: Michael Baker International, 2021

Crooked Creek Residential Subdivision Project

Figure 5
Vesting Tentative Tract Map

ESA

D180195.00 - Diamond Bar Crooked Creek Residential\05 Graphics-GIS-Modeling

Sections 3503, 3503.5 and 3513 of the California Fish and Game Code

Section 3503 of the California Fish and Game Code (CFGC) prohibits the killing of birds or the destruction of bird nests. Birds of prey are protected under Section 3503.5 of the CFGC, which provides that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3513 of the CFGC prohibits any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. Migratory birds include all native birds in the United States, except those non-migratory game species such as quail and turkey that are managed by individual states.

Clean Water Act

In accordance with Section 404 of the Clean Water Act (CWA), the US Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the U.S. are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB) indicating that the proposed project would uphold State of California water quality standards.

Section 1602 of the California Fish and Game Code

Section 1602 of the CFGC requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include, but are not limited to, excavation or fill placed within a channel, vegetation clearing, installation of culverts and bridge supports, and bank reinforcement. As part of the notification process, the CDFW requires documentation of any trees to be removed as part of the project. Trees that have a trunk diameter at breast height (DBH) of greater than two inches are subject to regulation by the CDFW via the Streambed Alteration Agreement.

City of Diamond Bar Tree Protection Ordinance

The City of Diamond Bar's Tree Preservation and Protection Ordinance under Title 22, Article III, Chapter 22.38 of the City's Municipal Code provides protection for the following trees, broadly defined as "protected tree(s)":

1. Native oak, walnut, sycamore and willow trees with a diameter at breast height (DBH) of eight inches or greater;

2. Trees of significant historical or value as designated by the council;

3. Any tree required to be preserved or relocated as a condition of approval for a discretionary permit;

4. Any tree required to be planted as a condition of approval for a discretionary permit; and

5. A stand of trees, the nature of which makes each tree dependent on the others for survival.

The City's tree ordinance requires an arborist report to be prepared for the removal of protected tree species. In the section **Dudek Tree Report and Updated ESA Findings**, below, total quantities of impacted trees as compared to the 2017 Dudek report are included. After Project discretionary approval, a comprehensive tree report will need to be prepared that will describe methodology for replacement plantings, and tree protection for established and mitigation trees (before, during, and after planting).

Impact Analysis and Thresholds of Significance

The following Appendix G of the State CEQA Guidelines serve as thresholds of significance for determining the potential impacts to the biological resources identified in the LSA report and ESA's findings:

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

   The literature review conducted by LSA identified 34 special-status plants species and 42 special-status wildlife species with the potential to occur within the Project area. LSA determined only one special-status wildlife species with a moderate potential to occur in the Project area, red diamond rattlesnake (*Crotalus ruber*). As noted in Appendix C-1 of the LSA report, this species has been observed in the immediate Project vicinity. LSA also found one special-status plant species with a high potential to occur in the Project area, intermediate mariposa lily (*Calochortus weedii* var. *intermedius*). During the three site

visits conducted by ESA in May, August and September of 2020, no observation of either special-status species or suitable habitat was observed to be present within the Project site.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Habitat mapping conducted by LSA and ESA did not identify any riparian habitat within the proposed grading limit. LSA determined that both the coast live oak woodland and the California walnut groves are considered sensitive natural communities. LSA explained that CDFW often considered coast live oak woodland as a special-status plant community due to the historical loss of oak trees throughout southern California. However, a strict assessment of sensitive natural communities as having a conservation rank of S3 or lower, coast live oak woodland would not be designated as a sensitive natural community because CDFW has designated nearly all coast live oak woodland associations with a conservation rank of S4. ESA concurs with LSA in identifying both coast live oak woodland and California walnut groves (walnut woodland) and determined that 4.8 acres of coast live oak woodland and 3.0 acres of California walnut groves (walnut woodland) are present on the Project site. ESA found that the proposed Project includes a grading area that would remove approximately 0.9 acre of coast live oak woodland and no California walnut groves; refer to **Figure 6**, *Vegetation Map* and **Table 1,** *Vegetation Impacts*. LSA recommended **MM BIO-1 - Tree preservation and protection** to provide mitigation for impacts to sensitive natural communities; however, the measure only includes a discussion of replacement of removed trees. Because the proposed Project has been revised since the preparation of the LSA report, the proposed grading would not result in direct impacts on the onsite sensitive natural community of California walnut woodland. However, within Project Fuel Modification Zones B and C, there will be 1.2 acres of coast live oak woodland and 0.1 acre of walnut woodland that would be indirectly impacted due to the fuel management activities of possible lower limb removal and routine pruning and thinning understory vegetation. Although these fuel modification activities would result in indirect impacts to the onsite sensitive natural community of California walnut groves, the impacts would be considered less than significant because the California black walnut trees would remain and still constitute a walnut woodland. Therefore, MM BIO-1 Tree Preservation and protection is not required to reduce impacts to sensitive natural communities.

Path: U:\GIS\GIS\Projects\18xxxx\D180195_Diamond_Bar_Crooked_Creek\03_MXDs_Projects\2020_Bio.aprx, sgeissler 10/28/2021

SOURCE: ESA, 2019.

Crooked Creek Residential Subdivision Project

Figure 6

Vegetation Map

ESA

TABLE 1
VEGETATION IMPACTS

Vegetation Community	Total within Project Site (acres)	Within Grading Limit	Within Project Fuel Modification Zone B Beyond Grading Limit	Within Project Fuel Modification Zone C Beyond Grading Limit
Avena - Bromus Herbaceous Semi-Natural Alliance	3.3	1.3	0.1	0.2
Coast Live Oak Woodland	4.8	0.9	0.3	0.9
Juglans californica Stand	0.4	0.0	0.0	0.0
Brassica-Forb Ruderal Area	1.4	0.9	0.0	0.3
Walnut Woodland	3.0	0.0	0.0	0.1
Totals	**12.9**	**3.1**	**0.4**	**1.5**

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

LSA and ESA found no state or federally protected wetlands within the proposed grading limit. The Project site is located adjacent to the Brea Canyon Channel, a concrete lined riverine feature, however, Project site storm water drainage will connect to the Brea Canyon Channel, which would be a direct impact to the channel wall. A jurisdictional drainage feature occurs within the Project site but possess no direct connection to the Brea Canyon Channel. No direct impacts will occur to the drainage feature as a result of the Project, as the jurisdictional area is not within the proposed grading limit. Indirect Project impacts associated with Brea Canyon Channel are possible through attraction of predators and increased levels of noise, vibration, lighting, and dust during construction activities. LSA recommends MM BIO-2 – Construction Site Housekeeping and MM BIO-3, which is not described in the LSA recommended mitigation and minimization measures. Page 12 of the LSA report discusses MM BIO-3 as a water quality management plan (WQMP) and/or a storm water pollution and prevention plan (SWPPP). ESA recommends implementation of a WQMP/SWPPP, because construction would occur adjacent to the Brea Canyon Channel. A CDFW streambed alteration agreement will be required for direct connection of the Project storm drain system to the Brea Canyon Channel.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

As noted within the LSA report, the proposed grading limit is located entirely outside of jurisdictional aquatic resources and any regional or local wildlife movement corridor. ESA concurs with LSA's findings that it is "unlikely that the site serves as an important corridor for animals moving locally, regionally, or in broader migrations". The City of Diamond Bar recognizes the Puente-Chino Hills Wildlife Corridor to the south of the Project site. The Project site is restricted to movement through fencing and barbed wire associated with the adjacent ranching activities that may hinder large mammal movement throughout the area. However, evidence of large mammals (such as mule deer and coyote) were included within the faunal compendium within Appendix D of the LSA report, and ESA also observed evidence of coyote presence within the Project site. No increase or decrease in the potential for movement across the site is anticipated as a result of the Project, as existing boundaries will remain in place throughout the duration of the Project.

The proposed Project has the potential for the disruption of migratory birds nesting on the Project site. LSA states that avoidance of direct and indirect disturbance to nesting birds during construction would ensure compliance with applicable provisions of the California Fish and Game Code and the Migratory Bird Treaty Act with implementation of MM-BIO 4. With successful mitigation implementation, impacts associated with migratory and nesting birds would be considered to be less than significant. ESA recommends inclusion of the MM-BIO 4 to prevent harm to nesting birds.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

City of Diamond Bar Municipal Tree Code states that replacement ratios for tree removals on residential lots greater than 20,000 square feet be replaced at a 3:1 ratio, and that tree sizes and planting location will be determined by the director (of Public Works). LSA recommended **MM BIO-1 - Tree preservation and protection**, which states:

> *A minimum 1-to-1 planting-to-impact ratio is recommended for all native trees greater than or equal to 8 inches DBH, or as otherwise required by the City. A 3-to-1 planting-to impact ratio is recommended for protected trees greater than or equal to 36 inches DBH. Compensatory planting should be conducted within the portion of the project area that would remain undeveloped under the approved plans, or at an off-site location as approved by the City. Existing oak and walnut woodland habitat located within the undeveloped portions of the project area should be preserved.*

LSA states that with implementation of MM-BIO 1, impacts associated with the removal of walnut woodland and coast live oak woodland trees would be considered less than significant under CEQA with the replanting of walnut and oak trees within the Project area. However, the City of Diamond Bar Municipal Tree Code requires replacement ratios for tree removals at a 3:1 ratio, with tree sizes and planting location determined by the director (of Public Works). ESA recommends adherence to this

policy and recommends that smaller replacement tress be considered because smaller-sized trees have a better chance for quicker establishment after planting. Further discussion of the tree resources on site is included below in the Tree Report and updated Findings section.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

As noted within the LSA report, the Project area is not located within lands covered under an existing Natural Communities Conservation Plan, Habitat Conservation Plan, or any areas mapped as Critical Habitats by the USFWS.

Peer Review Comments on the LSA Biological Resources Assessment

After review of the LSA Biological Assessment Report, ESA offers the following comments on the LSA report.

Critical Habitat

- Page 9: No mention of nearest critical habitat is included. The nearest critical habitat is coastal California gnatcatcher critical habitat 0.8 miles to the south-southwest of the Project site, and associated with the ridgelines above Brea and Tonner Canyons. No coastal California gnatcatcher suitable habitat is present within the Project area.

Wildlife Movement and Habitat Connectivity

- Page 10: Although ESA concurs with LSA's findings that it is "unlikely that the site serves as an important corridor for animals moving locally, regionally, or in broader migrations", the Puente-Chino Hills Wildlife Corridor is a nearby regional wildlife corridor and regional movement of wildlife species through Tonner and Brea Canyons is possible. Furthermore, barbed wire fences associated with the adjacent ranching activities hinder large mammal movement throughout the area, even though evidence of large mammals (such as mule deer and coyote) was observed by both LSA and ESA.

Regional Habitat Conservation Plans and Local Policies

- Page 10: The Diamond Bar General Plan (DBGP) goals and policies should be adhered to with any Project application approval.

Impact Findings and Recommended Avoidance and Mitigation Measures

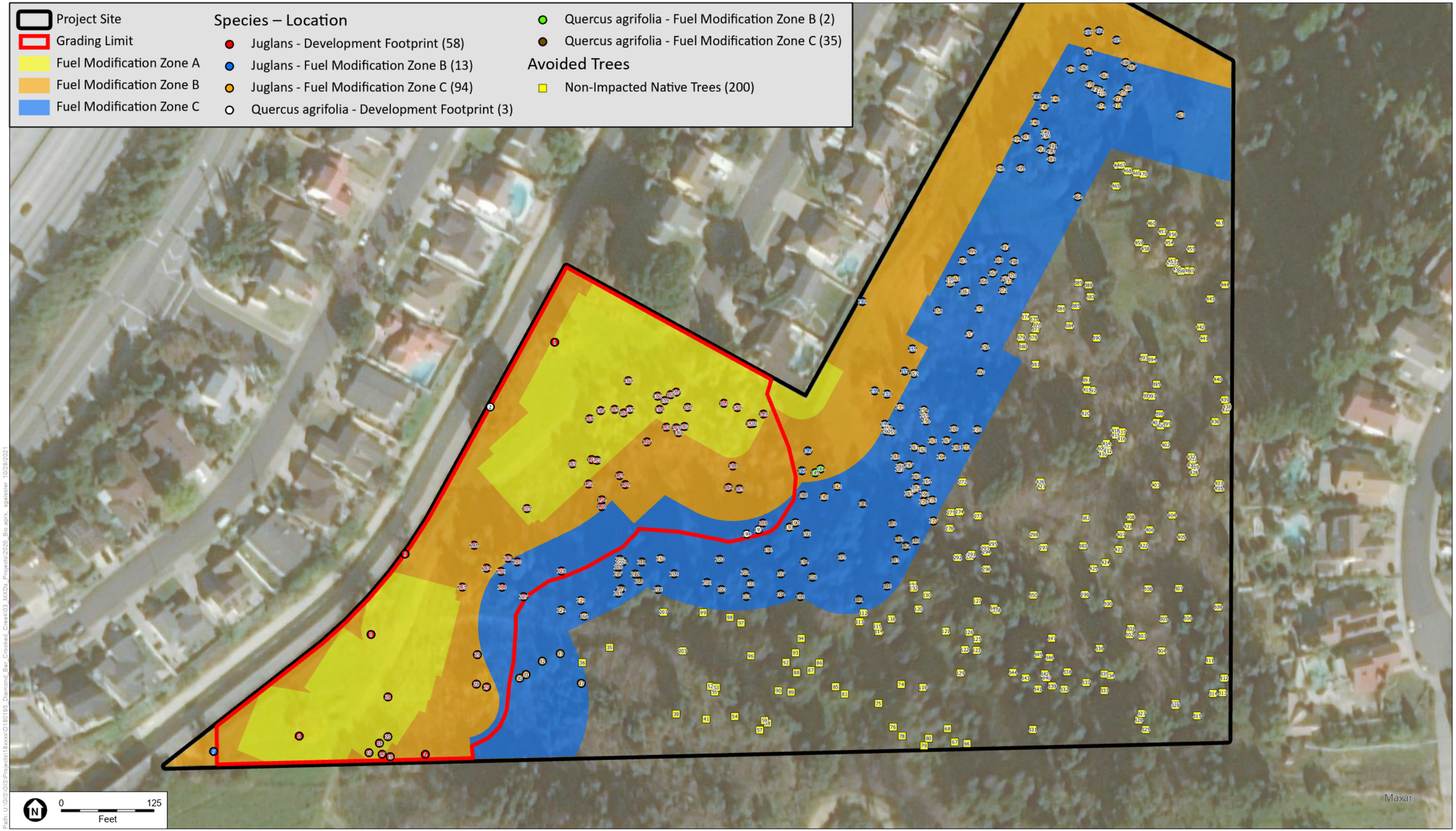
- Page 12-13, 15: MM BIO-3 is mentioned several times in the LSA but no discussion or mitigation details are included. As discussed on Page 12 and within the summary of impacts on Page 13, MM BIO-3 was intended to be a WQMP/SWPPP measure to be included at the discretion of the lead agency. ESA recommends a WQMP/SWPPP measure to mitigate indirect impacts to the Brea Canyon Channel because Project construction would occur adjacent to that channel.

Dudek Tree Report and Updated ESA Findings

ESA Arborist Douglas Gordon-Blackwood and Biologist Karl Fairchild conducted the initial update native tree survey on August 8, 2020 and Douglas Gordon-Blackwood conducted a follow up native tree survey on September 11, 2020. During the field survey, the area identified as the grading limits, Project Fuel Modification Zone B outside of the grading limits and Project Fuel Modification Zone C outside of the grading limits were walked and a Global Positioning System (Bad Elf GNSS GPS) unit used in conjunction with ESRI's Collector for Arc GIS (Classic) application to collect location and tree survey data; refer to **Figure 7**, *Tree Survey* and **Table 2,** *Protected Tree Species Impacts Summary*. To maintain consistency and maintain ease of tree reference, previously affixed tree tags and numbering were utilized in order to remain consistent with previous tree inventories conducted by Dudek (2017).

A total of 457 trees occur within the Project site. Sixty-two (62) trees (58 southern California black walnut, 4 coast live oak) were recorded that will be removed as a result of the Project. Twenty-four (24) southern California black walnuts (walnuts) and two (2) coast live oaks (oaks) occur within the Project Fuel Modification Zone B but outside the grading limit. Although these 24 walnuts and 2 oaks in Zone B will not be removed, they will be subject to indirect impacts associated with possible lower limb removal and routine fuel modification. In addition, thirty-one (31) walnuts and thirty-four (34) oaks occur within Project Fuel Modification Zone C and outside the grading limit. These walnuts and oaks will also be subject to indirect impacts associated with possible lower limb removal and routine fuel modification. Fifty-one dead trees were observed, either previously recorded in the Dudek report or during the most recent ESA update survey. Also of note are four (4) large non-native Persian walnut trees that were incorrectly identified as southern California black walnuts in the Dudek report. These non-native trees are not protected tree species and are not provided the same protections as native walnuts. Their presence should be considered deleterious to the health of the walnut woodlands on the Project site because of the potential for hybridization. Previous Dudek measurements were utilized for 15 closely grouped walnut trees because the arborist was unable to access these trees during the site visits.

The Dudek report calculated a total of 297 native trees as being encroached or removed, based on an earlier project design. The current proposed grading limits and associated fuel modifications would require the removal of 4 coast live oak trees and 58 southern California black walnut trees. The removal of these native trees would require 12 replacement coast live oak trees and 174 replacement southern California black walnut trees. The Project would result in the encroachment of 93 protected tree species. The encroached trees will be indirectly impacted from routine Project fuel modification within the Project Fuel Modification Zones B and C. In the Dudek report, replacement native trees were included within the proposed landscaping plan. The plan that illustrates the removal of the protected trees and the proposed replacement is provided in **Figure 8** – *Protected Tree Removal and Replacement Plan.* This plan incorporates 12 coast live oak trees and 201 southern California black walnut trees which is 27 more walnut trees than required.



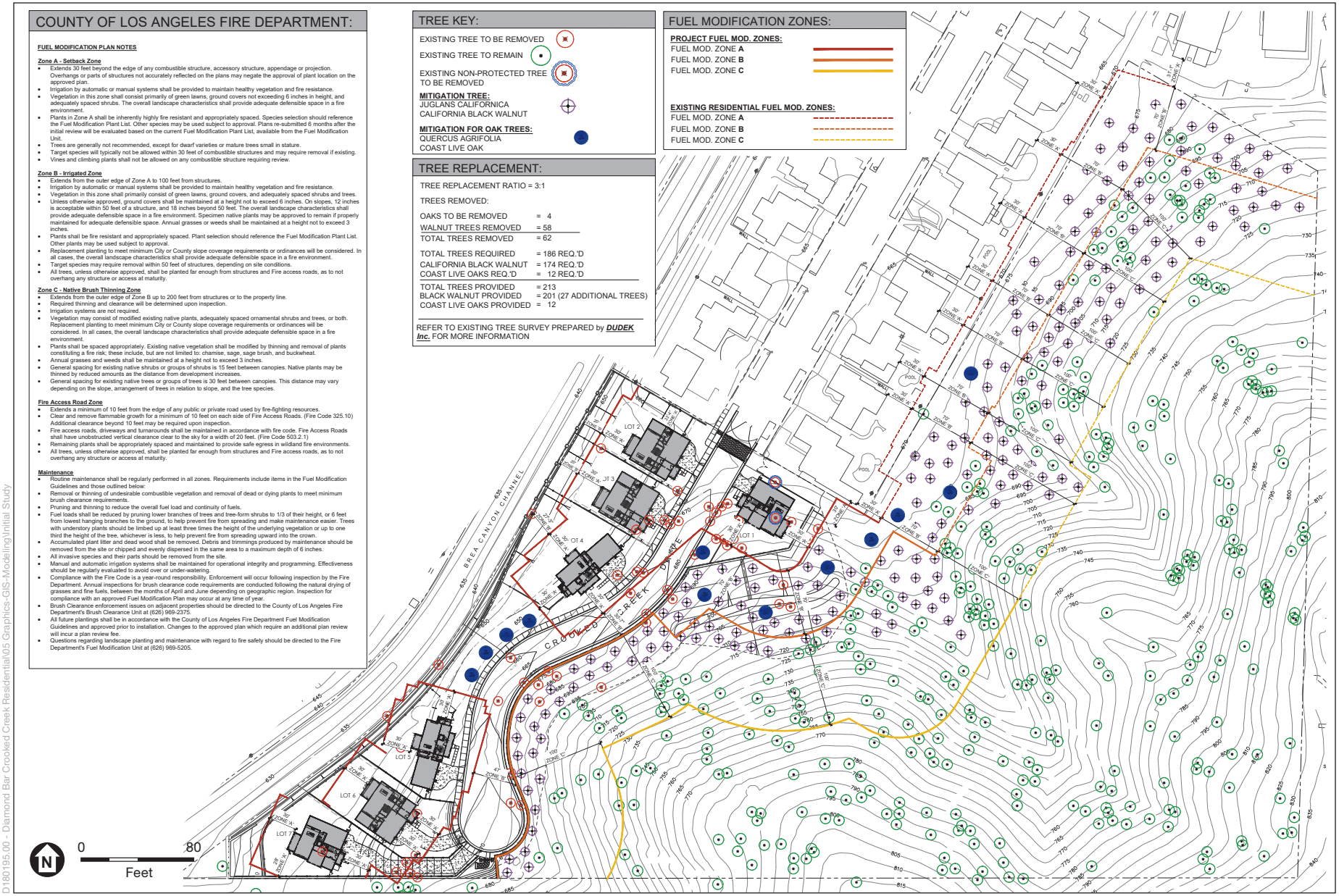
SOURCE: ESA, 2021.

Crooked Creek Residential Subdivision Project

Figure 7

Tree Survey

ESA



SOURCE: Studio H Landscape Architecture, 2021

Crooked Creek Residential Subdivision Project

Figure 8
Protected Tree Removal and Replacement Plan

ESA

D180195.00 - Diamond Bar Crooked Creek Residential\05 Graphics-GIS-Modeling\Initial Study

TABLE 2
PROTECTED TREE SPECIES IMPACT SUMMARY

Species	Trees within the proposed grading limit (Tree ID's)	Trees within Project Fuel Modification Zone B but outside the proposed grading limit	Trees within Project Fuel Modification Zone C and outside of the proposed grading limit	Avoided (Within Previous Development Footprint)	Total Required Replacement Tree Plantings
Coast live oak	**4** (Trees 2, 188, 197, and 199)	**2** (Trees 144 and 145)	**34** (Trees 100, 101, 103, 104, 107, 108, 111, 118, 133, 134, 135, 136, 139, 141, 192, 193, 194, 195, 196, 200, 201, 202, 208, 209, 211, 212, 213, 214, 215, 217, 218, and 219, 220, and 221,)	**33** (Trees 39, 41, 51, 52, 53, 54, 57, 58, 59, 81, 85, 87, 88, 89, 90, 93, 94, 96, 97, 98 ,99, 112, 113, 114, 115, 116, 119, 120, 121, 130, 131, 132, and 207)	**12** 24" box (or smaller) trees
Southern California black walnut	**58** (Trees 1, 3, 4, 5, 6, 16, 17, 18, 19, 20, 21, 27, 28, 29, 149, 150, 151, 152, , 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 182, 183, 184, 185, 198, 227, 228, 230, 231, 232, 233, 234, 235, and 236)	**24** (Trees 3, 4, 7, 16, 27, 28, 29, 146, 147, 172, 173, 174, 175, 176, 177, 178, 182, 183, 184, 185, 231, 234, 235, and 236)[1]	**31** (Trees 30, 31, 32, 33, 37, 142, 143, 190, 191, 210, 223, 224, 258, 259, 260, 261, 262, 264, 265, 266, 277, 278, 279, 280, 281, 282, 283, 285, 286, 287, and 288)	**1** (Tree 203)	**174** 24" box (or smaller) trees

As noted in the Dudek report, planting seeds and seedlings has long been considered the simplest, economical, and successful way to establish healthy trees. Trees in 24" boxes are more likely to be root bound and tend to do poorly when compared to acorns, walnuts or seedlings planted in the ground. ESA recommends the combination of some boxed trees within the landscaped areas, and seedlings and smaller sized container trees in the undisturbed woodland areas of the remaining Project undeveloped area, as recommended within the Dudek report. ESA also concurs with Dudek on the recommendations for tree mitigation, tree protection measures, tree maintenance and follow-up monitoring contained in that report. ESA also recommends the control of non-native species within the preserved coast live oak woodland and the California walnut groves, which will improve the quality of these retained natural communities.

Sincerely

Douglas Gordon-Blackwood
Senior Biologist and Arborist

[1] These tree occur outside the proposed development footprint, but within either the Project Fuel Modification Zone B or C and will not be removed. These trees will be subject to indirect impacts associated with possible lower limb removal and routine fuel modification.

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