

City of Calabasas

BSVERCOM, LLC Three Lot Housing Project

Draft
**Initial Study -
Mitigated
Negative
Declaration**



November 2012

**BSVERCOM, LLC
THREE LOT HOUSING PROJECT**

Draft
Initial Study - Mitigated Negative Declaration

Prepared for:

City of Calabasas
100 Civic Center Way
Calabasas, California 91302
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November 2012

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Appendix C	Oak Tree Report
Appendix D	Geologic and Geotechnical Engineering Study
Appendix E	Hydrology Study
Appendix F	View Simulations



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INITIAL STUDY

Project Title: BSVERCOM, LLC Three Lot Housing Project

Lead Agency: City of Calabasas
100 Civic Center Ways
Calabasas, California 91302
Phone: (818) 224-1600/Fax: (818) 225-7329

Contact Person: Isidro Figueroa, Planner
Andrew Cohen-Cutler, Associate Planner

Project Location: The project site is located along Mulholland Highway approximately 0.45 miles east of the Old Topanga Canyon Road/Mulholland Highway intersection. The project site and the surrounding areas are generally characterized as undeveloped lands intermixed with low density single-family residential land uses, institutional and neighborhood serving commercial land uses, and supporting infrastructure. Figure 2 shows the location of the project site and immediately surrounding areas. The project site includes three parcels, Assessor's Parcel Numbers 2069-065-001, -002, and -003 totaling approximately 16.25 acres. These parcels are located along the north side of Mulholland Highway at 23401-23421 Mulholland Highway, between Park South Street and Old Topanga Canyon Road. Regional access to the site from the eastern portions of the City is provided from the Ventura Freeway via the Mulholland Drive Interchange. Regional access to the site from the western portion of the City of Calabasas is provided from the Ventura Freeway via the Las Virgenes Road Interchange.

Project Sponsor's Name and Address: BSVERCOM, LLC
24007 Ventura Boulevard, Suite 102
Calabasas, California 91302

Existing Land Use: The project site is vacant and contains undisturbed hillsides, native, and non-native vegetation. Small portions of the site closest to Mulholland Highway have been previously graded.

General Plan and Zoning: The project site is zoned and designated as Rural Residential (RR). The project site is also within the Mulholland Highway Scenic Corridor (SC) overlay zone.

Surrounding Land Uses: The project site is surrounded by a mix of rural and suburban residential dwellings, Viewpoint School, and undeveloped hillsides. A partially undeveloped hillside landform is located directly west of the project site.



The Park South residential neighborhood is located at the base of this hillside landform, approximately 0.12 miles southwest of the project site. The Calabasas Ridge single-family neighborhood is located directly north of the project site, with the nearest single-family residence located approximately 100 feet north of proposed Residence No. 2. The Clairridge residential tract is located directly east of the project site, with the nearest single-family residence located approximately 190 feet east of proposed Residence No.3. Viewpoint School is located directly across Mulholland Highway, with the proposed residences located approximately 300 feet north of the school facilities.

Figures 1 and 2 show the project's site location and surrounding land uses. Figures 3a through 3c include photographs of the project site and immediately surrounding areas.

Description of Project:

The proposed project involves the construction of three two-story single-family residences on three parcels located along Mulholland Drive. Three private driveways, retaining walls, two entry gates, three swimming pools and associated equipment, appurtenant structures, drainage infrastructure, and landscaping are also proposed. Each proposed single-family residence would take access directly from Mulholland Highway. Two driveway access points are proposed to intersect with Mulholland Highway and are located near the western and eastern property boundaries. The western driveway entrance would be shared by Residence No. 1 and No. 2, and the eastern driveway entrance would provide access for Residence No. 3. Approximately 490 feet separate each driveway. The proposed driveways traverse north over the project site's hillside terrain, where they ultimately terminate at each building pad location. The building pad locations have setbacks from Mulholland Highway ranging from approximately 360 feet to over 500 feet.

In order to create the desired configuration between Lots 1 and 2, a lot line adjustment is proposed. The lot line adjustment would move the eastern property line of Parcel No. 1 a maximum of 132 feet to the east. The resulting lot lines would add approximately 1.194 acres to Parcel No. 1 and remove 1.194 acres from Parcel No. 2. The configuration of Parcel 3 would remain unchanged.

The individual details of each proposed single-family residence are provided below.

Residence No. 1

Residence No. 1 is proposed on APN No. 2069-065-001, which is located in the western portion of the project site. Residence No. 1 would be two-stories with approximately 6,727 square feet of livable space, an 850 square foot, three-car attached garage, and a swimming pool and pool cabana on a 270,437 square foot lot (about 6.20-acres). The size of the proposed building pad would be 24,500 square feet and would require the construction of retaining walls to achieve the desired pad elevations. Pursuant to Calabasas Municipal Code (CMC) Section 17.20.140(b), the proposed building pad for Lot 1 would require approval of a building height variance to allow a maximum building height of 35 feet measured from finished grade.



The driveway proposed for Residence No. 1 would extend approximately 690 feet north from Mulholland Highway within an existing ephemeral drainage feature. The driveway would terminate at a drop-off/turnaround area. Surface parking is proposed on either side of the garage. Retaining walls of varying heights are proposed to run along the east and west sides of the proposed private driveway. An entry gate is proposed at the beginning of the driveway near Mulholland Highway. Landscaping is proposed around the perimeter of the building pad, throughout the pool area, and along the private driveway. The proposed landscaping consists of native and non-native vegetation. A stormwater detention area is proposed along the northern edge of the proposed grading envelope, within the parcel owned by the Calabasas Ridge Homeowner's Association. From this basin, stormwater conveyance infrastructure would be constructed beneath the building pad and beneath the proposed driveway, where it ultimately would discharge into an existing culvert adjacent to Mulholland Highway (PM 28.91). Sewer and water pipelines would be extended from the residence beneath the proposed driveway alignment where they would connect to the existing sewer and water main lines located in Mulholland Highway.

Residence No. 2

Residence No. 2 is proposed on APN No. 2069-065-002, which is located in the central portion of the project site. Residence No. 2 would be two stories with approximately 9,881 square feet of livable space, a 1,897 square foot basement, an 886 square foot three-car attached garage, a swimming pool, and a 530 square foot pool cabana on a 217,693 square foot lot (about 5-acres). The size of the proposed building pad would be 37,500 square feet and would require the construction of retaining walls to achieve the desired pad elevations. The height of the proposed residential structure would be 28 feet. The driveway proposed for Residence No. 2 would traverse up the existing hillside terrain and would extend approximately 780-feet north from Mulholland Highway where it would terminate at a drop-off/turnaround area. Surface parking is proposed in front of the garage. An entry gate is proposed at the beginning of the driveway near Mulholland Highway. Retaining walls of variable height are proposed to run along the upslope sides of the proposed private driveway. Landscaping is proposed around the perimeter of the building pad, throughout the pool area, and along the private driveway. The proposed landscaping consists of native and non-native vegetation. Drainage for Residence No. 2 would be conveyed via overland flow to storm drain inlets proposed within the driveway. These storm drain inlets would ultimately connect to the existing culvert adjacent to Mulholland Highway (PM 28.91). Sewer and water pipelines would be extended from the residence and buried beneath the existing natural slopes where they would ultimately connect to the existing sewer and water main lines.

Residence No. 3

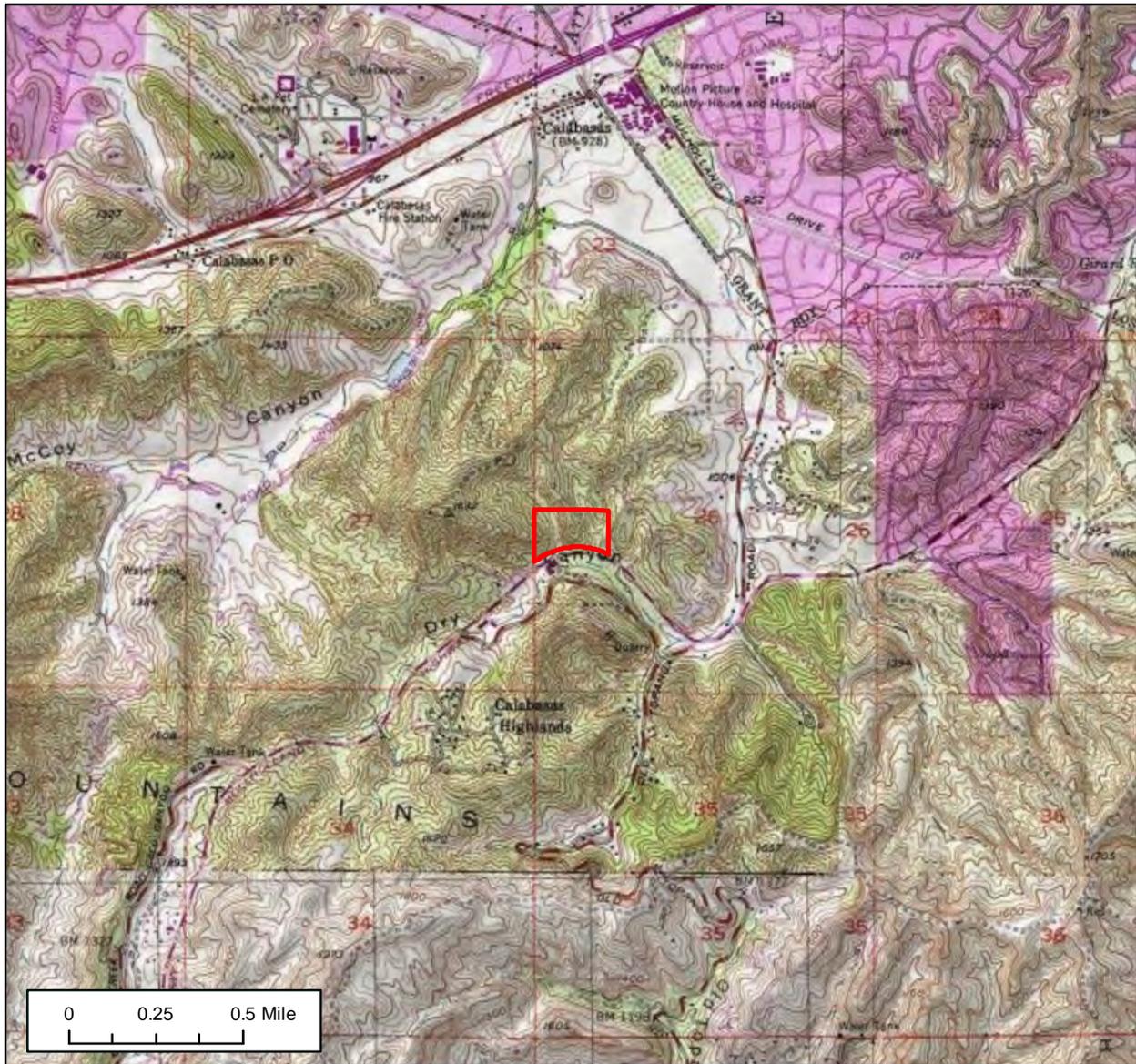
Residence No. 3 is proposed on APN No. 2069-065-003, which is located in the eastern portion of the project site. Residence No. 3 would be two stories with approximately 7,027 square feet of livable space, an 835 square foot three-car attached garage, and a swimming pool on a 220,637 square foot lot (about 6.065-acres). The size of the proposed building pad would be 21,400 square feet and would require the construction of retaining walls to achieve the desired pad elevations. The height of the proposed residential structure would be 28 feet. The driveway proposed for Residence No. 3 would extend approximately 380-feet north from Mulholland Highway within an existing ephemeral drainage feature, where it would terminate



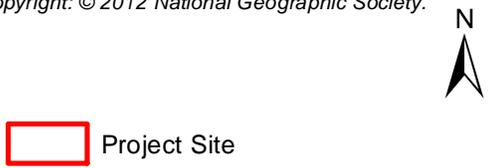
at a drop-off/turnaround area. Surface parking is proposed on either side of the garage. An entry gate is proposed at the beginning of the driveway near Mulholland Highway. Retaining walls of variable height are proposed to run along the east and west sides of the proposed private driveway. Landscaping is proposed around the perimeter of the building pad, throughout the pool area, and along the private driveway. The proposed landscaping consists of native and non-native vegetation. Drainage for Residence No. 3 would be conveyed via overland flow to storm drain inlets proposed within the driveway. A small informal detention basin is also proposed to convey flows beneath the proposed driveway. The drainage features would ultimately connect to the existing culvert adjacent to Mulholland Highway (PM 28.99). Sewer and water pipelines would be extended from the residence beneath the proposed driveway alignment where they would connect to the existing sewer and water main lines located in Mulholland Highway.

The project's conceptual grading plan is shown on Figure 4.





Imagery provided by ESRI and its licensors, 2012. USGS
Topo, Copyright: © 2012 National Geographic Society.



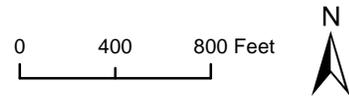
Regional Location

Figure 1



Imagery provided by ESRI and its licensors, 2012. Additional basemap layer from Los Angeles County Assessor, August, 2010.

-  Project Site
-  Drainage



Site Location

Figure 2
City of Calabasas



Photo 1 - Overview of Parcel 3 looking north from Dry Canyon Cold Creek Rd.

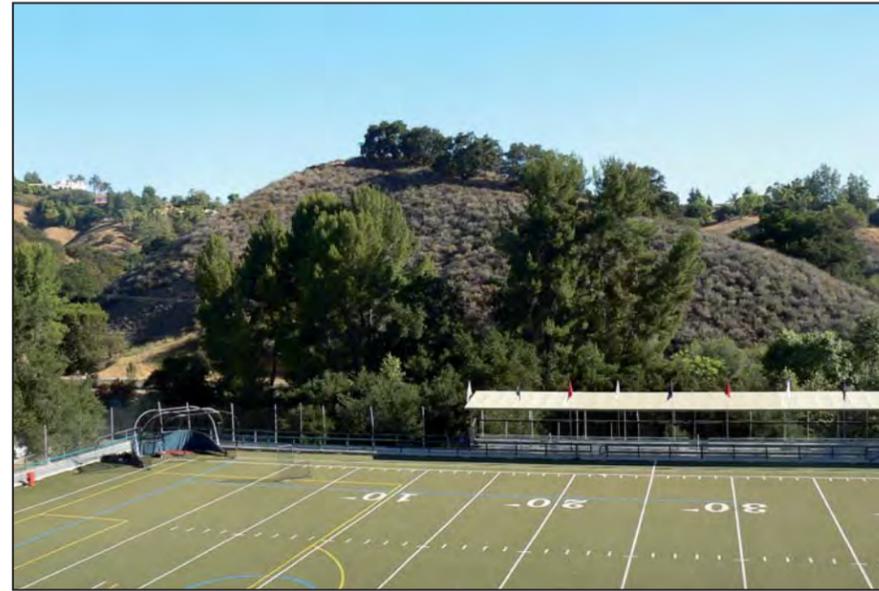


Photo 2 - Overview of Parcel 2 looking north from Dry Canyon Cold Creek Rd.



Photo 3 - Overview of Parcel 1 looking north from Dry Canyon Cold Creek Rd.



Photo 4 - Overview of adjacent ridgeline looking northwest from Dry Canyon Cold Creek Rd.



Photo 5 - View of eastern property boundary looking north from Mulholland Highway.



Photo 6 - View of proposed Parcel 3 driveway entrance from Mulholland Highway.

Site Photographs

Figure 3a

City of Calabasas





Photo 1 - View of Mulholland Highway frontage looking west from Parcel 2.



Photo 2 - View of Mulholland Highway frontage looking northwest from Parcel 2.



Photo 3 - View of approximate residence location for Parcel 2 looking east from Parcel 1.



Photo 4 - View of existing drainage/proposed driveway location for Parcel 1 and 2.



Photo 5 - View of Calabasas Ridge single-family residence behind proposed Parcel 2 residence.



Photo 6 - View of Calabasas Ridge single-family homes behind Parcels 1 and 2.

Site Photographs

Figure 3b

City of Calabasas





Photo 1 - View of Calabasas Ridge single-family homes behind Parcel 1.



Photo 2 - View of Calabasas Ridge single-family homes behind Parcel 1.



Photo 3 - View of ridgelines looking south from Parcel 1.

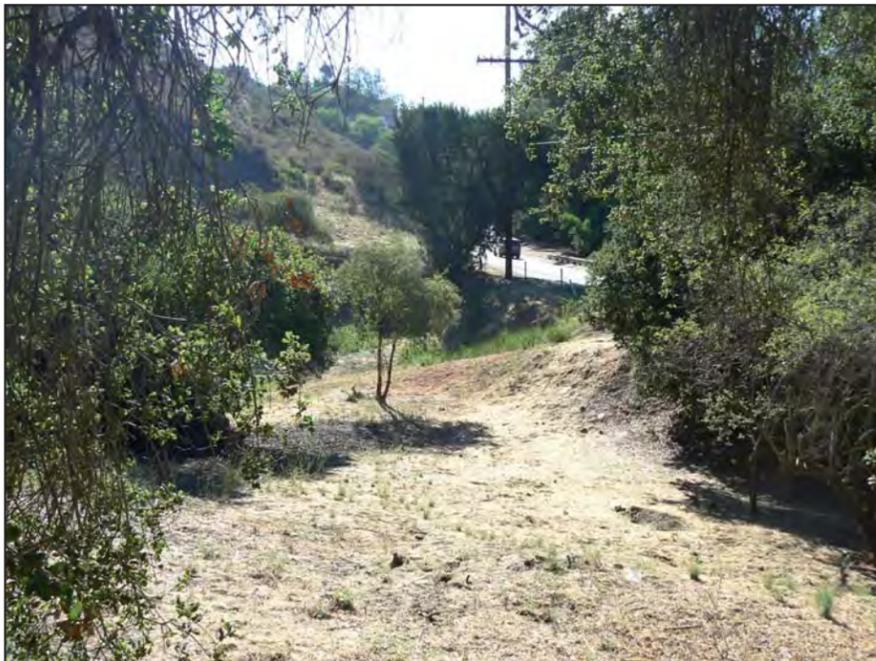


Photo 4 - View of proposed driveway entrance along Mulholland Highway for Parcels 1 and 2.



Photo 5 - View of Existing Culvert (MP 28.91) on Parcel 1.



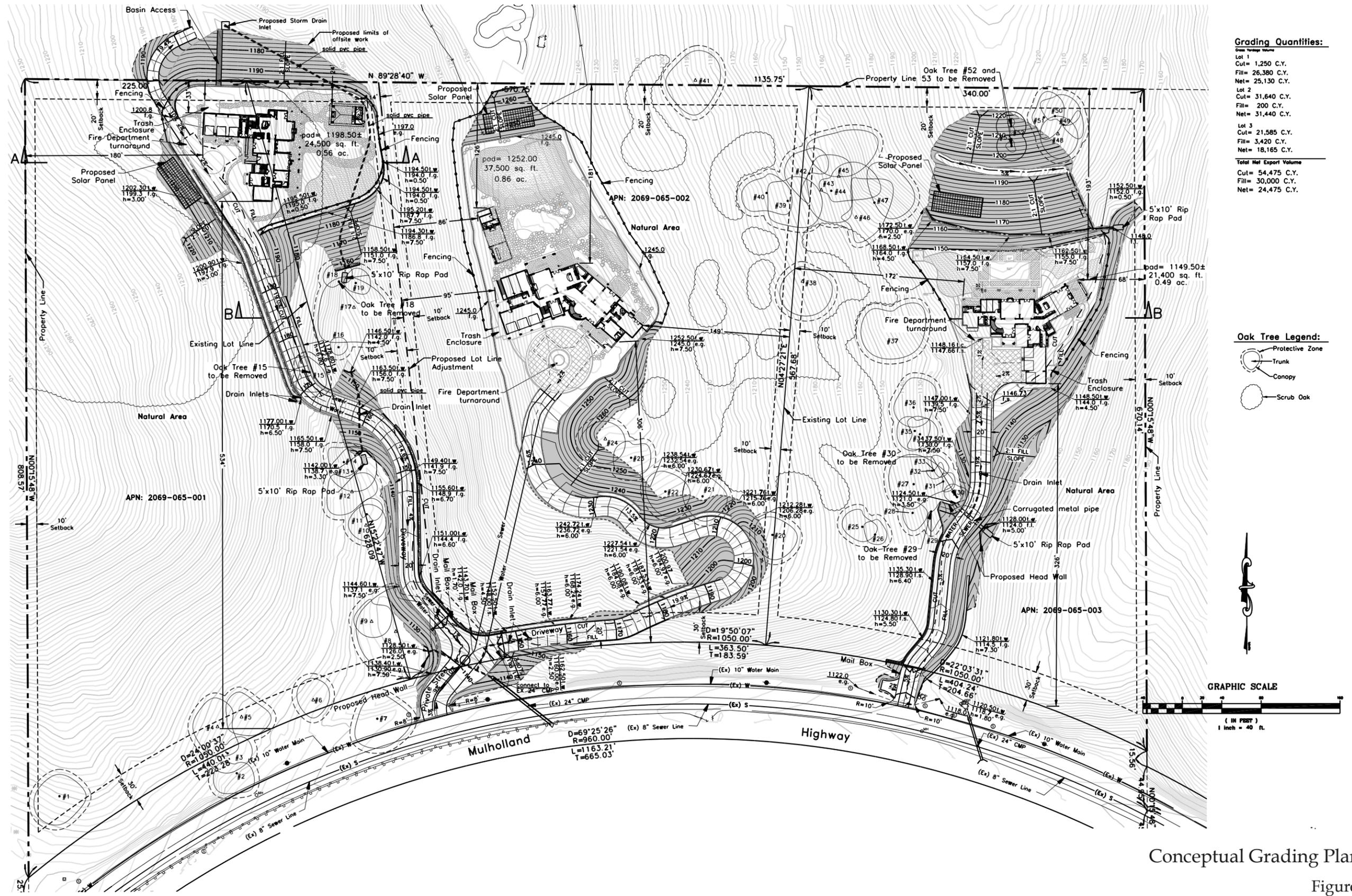
Photo 6 - View of Existing Culvert (MP 28.99) on Parcel 3.

Site Photographs

Figure 3c

City of Calabasas





Conceptual Grading Plan

Figure 4

Other Public Agencies whose Approval May Be Required for Subsequent Action:

Department of Fish and Game
Regional Water Quality Control Board
Army Corps of Engineers

ENVIRONMENTAL FACTORS AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

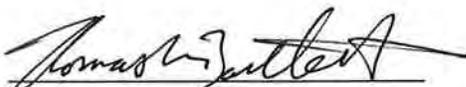
- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forest Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input checked="" type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |



DETERMINATION:

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Tom Bartlett, AICP
City Planner
City of Calabasas

11-17-12

Date



ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a,c) The project site does not contain any significant ridgelines, as delineated on Figure 4.1-1 of the City’s 2030 General Plan Final Environmental Impact Report (FEIR). However, the proposed project would require hillside grading (approximately 54,475 cubic yards of cut and 30,000 cubic yards of fill) in order to establish acceptable driveway access, and relatively flat building pads for the proposed single-family residences. The proposed finish pad elevations would be lower in elevation when compared to the surrounding residential development located north, east, and west of the project site. The proposed project’s finish pad elevations would range from approximately 1,149 feet above sea level (asl) to 1,252 feet asl. The residential pad elevations surrounding the project site range from 1,265 feet asl (Calabasas Ridge) to the north, 1,250 feet asl to the east (Clairridge), and 1,370 feet asl to the west (Park South). As a result, the proposed project would not substantially alter the existing views through the site from the existing residential dwellings. In addition, the proposed project would not substantially degrade views of the ridgeline located immediately west of the project site, which has an elevation of approximately 1,630 feet asl. Views of scenic vistas from the nearby parks (Creekside Park and Wild Walnut Park) also would not be altered by the proposed project, as the intervening topography between the project site and these locations eliminates any potential viewing opportunity. **Therefore, impacts to scenic vistas would be less than significant.**

The proposed grading and the construction of three two-story single-family residential structures would alter the visual character of the site, as the project would construct retaining walls, graded cut and fill slopes, drainage infrastructure, and private driveways in close proximity to Mulholland Highway. However, the proposed driveways would be comparable in appearance to the existing driveways constructed as part of Viewpoint School (immediately south of the project site) and the Park South residential development (immediately west of the project site). Residences 1 through 3 would be set back from Mulholland Highway



approximately 570 feet, 400 feet, and 375 feet, respectively. The proposed setbacks plus the intervening topographic relief and the proposed perimeter landscaping would further limit visibility of the proposed residential structures from Mulholland Highway. Finally, the proposed project would be required to comply with the all applicable provisions of the Performance Standards for Hillside Development and Urban Design Standards (Chapter 17.20 of the City's Land Use and Development Code), the Scenic Corridor Development Guidelines, and the City's Hillside and Ridgeline Development Standards (Section 17.20.150). **Therefore, impacts to the visual character of the project site and its surroundings would be less than significant.**

b) There is no state designated scenic highway within the vicinity of the project site, but the site is located within the City's scenic corridor (SC) overlay zone, as it can be seen from the Mulholland Highway, a City-designated scenic corridor (City of Calabasas General Plan FEIR, 2008). The purpose of the SC overlay zoning district is to protect an important economic and cultural base of the city by preventing the destruction of the natural beauty and environment of the city; to safeguard and enhance property values; to protect public and private investment, buildings and open spaces; and to protect and enhance the public health, safety, and welfare. In addition, the City's 2030 General Plan Community Design Element contains objectives and policies intended to enhance the appearance of the community. Listed below are the Community Design Element's overall objectives applicable to the proposed project:

- *Focus new development in and near areas that already contain existing development.*
- *Preserve significant natural features, designated open space, and biological habitats.*
- *Preserve and enhance a pleasant visual experience for residents and visitors, emphasizing prominent and distinctive vistas, view corridors, and natural features.*
- *Promote high quality design for structures and building sites.*

The proposed building plans indicate that the proposed project would generally comply with the above referenced General Plan objectives. However, the building plans could be considered in conflict with some of the applicable policies. For example, the scale of long, steep slopes and retaining walls may not be adequately offset without the arrangement of trees and/or shrubs in informal masses surrounding the project's residential dwellings. The random placement of trees and/or shrubs in masses surrounding the proposed driveways is also necessary to ensure they adequately blend into the natural landscape. The proposed removal of 6 coast live oak trees, approximately 0.42 acres of scrub oak habitat, native coastal sage scrub habitat, and exposed bedrock formations along Mulholland Highway would also contribute to the degradation of scenic resources. Therefore, impacts would be **potentially significant unless mitigation is incorporated.**

d) The proposed project would introduce lighting where none currently exists. In addition, surfaces, such as windows and roofs, could be a source of glare. Consequently, light and glare associated with the proposed project has the potential to adversely affect views in the area. Impacts would be **potentially significant unless mitigation is incorporated.**



Mitigation Measures

The following measures, along with Mitigation Measures contained within Section IV, *Biological Resources*, would reduce impacts to scenic resources to a less than significant level.

- AES-1 Plant Screening.** Plant materials shall screen at least 50% of all buildings. Wall surfaces facing viewsheds shall be screened to the maximum extent feasible. Prior to issuance of a certificate of occupancy for each residential dwelling, the City of Calabasas Community Development Department shall confirm that the appropriate level of screening has been achieved.
- AES-2 Tree Plantings.** Trees shall be arranged in informal masses and shall be placed in such a way that they reduce the scale of long, steep slopes. Trees that grow close to the height of buildings shall be planted between buildings. Prior to issuance of a certificate of occupancy for each residential dwelling, the City of Calabasas Community Development Department shall confirm that the appropriate level of planting has been achieved.
- AES-3 Slope Plantings.** Slope plantings shall create a gradual transition from developed slope areas into natural areas. Landscaping shall include fingers of plantings that extend into existing and sculptured slopes. Prior to issuance of a certificate of occupancy for each residential dwelling, the City of Calabasas Community Development Department shall confirm that the appropriate level of planting has been achieved.
- AES-5 Perimeter, Driveway, and Retaining Wall Landscape Plantings.** Landscaping shall be planted along the perimeter of all residential structures and along the edge of re-contoured hilltop grading to create a continuous vegetative screen of the proposed residential structures from Mulholland Highway. Landscaping shall also be planted so as to shield retaining walls and driveways in order to preserve natural appearance of hillside from Mulholland Highway. Prior to issuance of a certificate of occupancy for each residential dwelling, the City of Calabasas Community Development Department shall confirm that the appropriate level of screening has been achieved.
- AES-6 Natural Building Colors.** All of the colors, textures, materials and forms of the proposed buildings shall be compatible with the natural setting. Medium to dark colors, which blend with the surrounding environment, shall be used for building elevations and roof materials. Prior to issuance of a building permit for each residential dwelling, the City of Calabasas Community Development Department shall verify that the appropriate colors, textures, materials, and forms have been utilized as part of the proposed plans.



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES				
<p>-- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



a) According to the California Department of Conservation Farmland Mapping and Monitoring Program (2002), the project site is designated as Other Land. **Therefore, no impact to important farmland would occur.**

b) The project area is not zoned for agricultural use; the project area is zoned as Rural Residential (RR). The project site is not under a Williamson Act contract. **Therefore, no impact would occur.**

c-e) No farming activity occurs at or adjacent to the site (City of Calabasas, 2006). **Therefore, no impacts related to the conversion of farmland to non-agricultural use would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
III. <u>AIR QUALITY</u> -- Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The project site is located within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the ozone standard by releasing emissions that equal or exceed the established long term quantitative thresholds for pollutants, or causes an exceedance of a state or federal ambient air quality standard for any criteria pollutant. Table 1 shows the significance thresholds that have been recommended by the SCAQMD for projects within the South Coast Air Basin:



**Table 1
 SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds		
Pollutant	Construction	Operation
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden >0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants ^a		
NO ₂ 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM ₁₀ 24-hour average annual average	10.4 µg/m ³ (recommended for construction) ^b & 2.5 µg/m ³ (operation) 1.0 µg/m ³	
SO ₂ 1-hr average 24-hr average	0.25 ppm (state) & 0.075 ppm (federal – 99 th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 ug/m ³ (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)	
Lead 30-day average Rolling 3-month average Quarterly average	1.5 ug/m ³ (state) 0.15 ug/m ³ (federal) 1.5 ug/m ³ (federal)	

^a Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, unless otherwise stated.

^b Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million ug/m³ = microgram per cubic meter ≥ greater than or equal to

Source: SCAQMD, March 2011, <http://www.aqmd.gov/ceqa/hdbk.html>



In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board’s Environmental Justice Enhancement Initiative (1-4), which was prepared to update the CEQA Air Quality Handbook. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that would not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size, and distance to the sensitive receptor. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have been developed for NO_x, CO, PM₁₀, and PM_{2.5}. LSTs are not applicable to mobile sources, such as cars on a roadway (SCAQMD, June 2003). As such, LSTs for operational emissions do not apply to on-site development, as the majority of operational emissions would be generated by cars on the roadways.

LSTs have been developed for emissions within construction areas up to five acres in size. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The three parcels encompassing project site total approximately 16 acres. However, the proposed grading boundary is approximately 4.7 acres in size. Therefore, this analysis assumes that there would be no more than five acres under active construction at any time, and relies on the five-acre LSTs to determine the significance of construction related emissions. The five-acre LSTs provide a more stringent threshold for construction emissions compared to the analysis of emissions over a larger area. According to the SCAQMD’s publication, *Final Localized Significant Thresholds Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies. LSTs for construction on a five-acre site in are shown in Table 2 at various distances from sensitive receptors. The City of Calabasas falls under Source Receptor Area (SRA) 6, West San Fernando Valley; therefore, the LSTs shown in Table 2 apply.

Table 2
SCAQMD LSTs for Construction

Pollutant	Allowable emissions as a function of receptor distance in feet from a five-acre site (lbs/day)				
	25 Meters	50 Meters	100 Meters	200 Meters	500 Meters
Gradual conversion of NO _x to NO ₂	221	212	226	250	313
CO	1,158	1,537	2,438	3,871	9,271
PM ₁₀	11	35	51	84	181
PM _{2.5}	6	8	13	26	96

Source: SCAQMD, October 2009, <http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf>, accessed online June 2012.

a) The proposed project involves the construction of three single family residences along with private access driveways. Although the proposed project includes the construction of new housing units, the increase in City’s population would not exceed population forecasts of the



South Coast Air Quality Management Plan (AQMP) for Calabasas. Regional population projections are made through the Southern California Association of Governments' (SCAG's) Regional Transportation Plan (RTP) and are the basis of SCAG Regional Comprehensive Plan (RCP) growth projections. SCAG's growth forecast projects a population of 27,600 for Calabasas in 2030, an increase of 3,812 from the estimated 2012 population of 23,683 (California Department of Finance, 2012). The population increase associated with the proposed three residences is within these growth forecasts and thus would be consistent with the AQMP. **No impact would occur.**

b,c) Project construction would generate temporary air pollutant emissions during construction and permanent air pollutant emissions due to vehicle traffic and energy use. Therefore, the pollutant emissions for each phase of project construction and operations were estimated using the California Emissions Estimator Model (CalEEMod).

Construction Emissions

Construction vehicles and equipment traveling along unpaved roads, grading, trenching, and stockpiled soils have the potential to generate fugitive dust (PM₁₀ and PM_{2.5}) through the exposure of soil to wind erosion and dust entrainment. In addition, exhaust emissions associated with the temporary operation of heavy construction equipment have the potential to degrade air quality.

Construction activities associated with the proposed project would also emit ozone precursors (oxides of nitrogen (NO_x), reactive organic gases (ROG)) as well as carbon monoxide (CO). The majority of temporary construction-related emissions would result from site preparation and grading due to the use of heavy duty construction equipment. Other temporary emissions would result from building construction and the evaporation of ROGs from architectural coatings (paint).

The California Emissions Estimator Model (CalEEMod) calculates temporary construction emissions based on demolition, building construction, site preparation, grading, paving, and architectural coating. As indicated in Table 3, maximum daily emissions from construction activities would exceed SCAQMD construction thresholds for NO_x during grading activities primarily as a result of heavy equipment operation. Maximum daily emissions would not occur every day, but the worst day of NO_x emissions during grading would exceed SCAQMD thresholds by 33.08 lbs per day. No other construction-related emission thresholds would be exceeded. **Therefore, temporary construction NO_x emissions would be potentially significant unless mitigation is incorporated.**



**Table 3
 Estimated Maximum Unmitigated Construction Emissions (lbs/day)**

	Unmitigated Emissions (lbs/day) ²				
	ROG	NOx	CO	PM ₁₀	PM _{2.5}
Demolition	N/A	N/A	N/A	N/A	N/A
Site Preparation	10.07	80.18	47.12	22.40	13.89
Grading	15.63	133.08	75.62	69.88	9.62
Building	5.18	34.67	23.55	2.30	2.28
Paving	5.33	32.23	22.06	3.07	2.76
Architectural Coating	9.69	2.77	1.92	0.24	2.74
Total Maximum lbs/day¹	15.63	133.08	75.62	69.88	13.89
SCAQMD Thresholds	75	100	550	150	55
Threshold Exceeded?	No	Yes	No	No	No

Source: CalEEMod calculations, see Appendix A.

1. Maximum daily emissions account for the overlap of construction phases. These values represent the worse-case scenario. Maximum daily emissions would not occur each day of the construction period.
2. The season with the highest emissions calculated for each pollutant was used. Winter emissions were used for all pollutants except CO, which had slightly higher emissions in the summer.

On-site construction emissions were also compared to SCAQMD’s LSTs shown in Table 4. The sensitive receptors nearest to the proposed project site are the existing single-family residences approximately 100 feet north of the proposed grading boundary. Therefore, the LSTs were applied to construction activities operating at a distance of 25 meters, or 82 feet. It is important to note that the thresholds apply only to those emissions that occur within a five-acre area, such as onsite grading emissions or stationary source emissions, and do not apply to offsite mobile emissions (vehicle traffic). Based upon the emission estimates provided by the CalEEMOD computer model, the estimated daily construction emissions exceed the LSTs for PM₁₀ and PM_{2.5}. **Therefore, temporary emissions of PM₁₀ and PM_{2.5} would be potentially significant unless mitigation is incorporated.**



Table 4
Total Unmitigated On-Site Construction Emissions
Compared to LSTs (lbs/day)

	CO	NOx	PM10	PM2.5
Demolition	N/A	N/A	N/A	N/A
Site Preparation	45.35	79.99	22.00	13.86
Grading	52.85	97.47	10.81	7.91
Building	2345	34.66	2.02	2.28
Paving	20.70	32.09	2.28	2.74
Architectural Coating	1.92	2.77	0.24	0.24
Localized Significance Threshold	1,157	221	11	6
Threshold Exceeded?	No	No	Yes	Yes

Source: SCAQMD, October 2009, <http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf>, accessed online June 2012, and CalEEMod calculations, see Appendix A.

Operational Emissions

Long-term operational emissions associated with the proposed project would be attributed to vehicle trips (mobile emissions), the use of natural gas (energy emissions), and consumer products, area architectural coatings, and landscaping equipment (area emissions). CalEEMod was used to calculate emissions based on the project’s proposed land use (residential) and the project’s estimated number of vehicle trips. As shown in Table 5, overall operational emissions would not exceed SCAQMD thresholds. **Therefore, operational emissions associated with the proposed project would be less than significant.**

Table 5
Operational Emissions (lbs/day)

Emission Source	ROG	NO_x	CO	PM₁₀	PM_{2.5}
Area	0.85	0.02	1.25	0.16	0.16
Energy	0	0.01	0.01	0	0
Mobile	0.28	0.75	2.68	0.53	0.05
Total Emissions	1.13	0.78	3.94	0.69	0.21
<i>SCAQMD Thresholds</i>	<i>55</i>	<i>55</i>	<i>550</i>	<i>150</i>	<i>55</i>
Exceeds Threshold?	No	No	No	No	No

Source: CalEEMod calculations, see Appendix A.

d) Certain population groups are considered more sensitive to air pollution than others. Children, the elderly and chronically ill persons, especially those with cardio-respiratory diseases, are particularly vulnerable. Sensitive land uses include those locations where such



individuals are concentrated, such as hospitals, schools, and residences. Sensitive receptors in the vicinity of the proposed site include the private residences located approximately 100 feet north of the site boundary and Viewpoint School located approximately 100 feet south of the project site. As shown in Tables 3 and 4, the emissions generated by the proposed project would temporarily exceed the SCAQMD's daily construction thresholds and LSTs for NO_x, PM₁₀, and PM_{2.5}. **Therefore, impacts to sensitive receptors would potentially significant unless mitigated.**

Mitigation Measures

The following mitigation measures are required to reduce emissions of NO_x, PM₁₀, and PM_{2.5} during construction.

- AQ-1 Construction Equipment Controls.** The following shall be implemented during construction to minimize emissions of PM_{2.5} associated with diesel construction equipment.
1. *All diesel construction equipment shall meet Tier 3 EPA emission standards.*
 2. *Construction contractors shall minimize equipment idling time throughout construction. Engines shall be turned off if idling would be for more than five minutes.*
 2. *Equipment engines shall be maintained in good condition and in proper tune as per manufacturers' specifications.*
 3. *The number of pieces of equipment operating simultaneously shall be minimized.*
 4. *Construction contractors shall use alternatively fueled construction equipment (such as compressed natural gas, liquefied natural gas, or electric) when feasible.*
 5. *The engine size of construction equipment shall be the minimum practical size.*
 6. *Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) shall be utilized wherever feasible.*
 7. *During the smog season (May through October), the construction period should be lengthened so as to minimize the number of vehicles and equipment operating at the same time.*
- AQ-2 Fugitive Dust Control Measures.** The following shall be implemented during construction to minimize fugitive dust emissions:
1. *Water trucks must be used during construction to keep all areas of vehicle movements damp enough to prevent dust from leaving the site. At a minimum, this will require three daily applications (once in the morning, once at midday and once at the end of the workday). The construction site watering frequency shall be increased whenever the sustained wind speed exceeds 15 mph. All clearing, grading, earth moving, or excavation activities must cease during periods of high winds*



- (i.e., greater than 25 mph averaged over one hour) so as to prevent excessive amounts of dust.*
- 2. Soil with 5% or greater silt content that is stockpiled for more than two days must be covered, kept moist, or treated with soil binders to prevent dust generation.*
 - 3. Trucks transporting material must be tarped from the point of origin or must maintain at least two feet of freeboard.*
 - 4. Soil stabilizers must be applied to unpaved roads to prevent excess amounts of dust.*
 - 5. All material excavated or graded must be treated with soil binders or must be sufficiently watered at least three times daily with complete coverage, preferably in the morning, midday and after work is done for the day.*
 - 6. Ground cover must be replaced in disturbed areas as quickly as possible.*
 - 7. The contractor must provide adequate loading/unloading areas that limit track-out onto adjacent roadways through the utilization of wheel washing, rumble plates, or another method achieving the same intent.*
 - 8. All material transported off-site must be securely covered to prevent excessive amounts of dust.*
 - 9. All property owners and building occupants located within 500 feet of the construction footprint must be sent a notice regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet must also be posted in a prominent and visible location at the construction site, and must be maintained throughout the construction process. All notices and the signs must indicate the dates and duration of construction activities, as well as provide a telephone number where interested parties can inquire about the construction process and register complaints.*
 - 10. These control techniques must be indicated in project specifications. Compliance with the measure must be subject to periodic site inspections by the City.*

Implementation of the above mitigation measures would reduce construction-related air emissions to below SCAQMD thresholds, including LSTs, as demonstrated in tables 6 and 7.



**Table 6
 Estimated Maximum Mitigated Construction Emissions (lbs/day)**

	Unmitigated Emissions (lbs/day) ²				
	ROG	NOx	CO	PM ₁₀	PM _{2.5}
Demolition	N/A	N/A	N/A	N/A	N/A
Site Preparation	6.09	37.94	41.56	0.8	0.06
Grading	12.04	90.27	78.85	54.92	6.49
Building	4.68	30.83	23.22	2.07	2.05
Paving	5.33	32.33	22.06	3.07	2.76
Architectural Coating	9.69	2.77	1.92	0.24	0.24
Total Maximum lbs/day¹	12.04	90.27	78.85	54.92	6.49
SCAQMD Thresholds	75	100	550	150	55
Threshold Exceeded?	No	No	No	No	No

Source: CalEEMod calculations, see Appendix A

1. Maximum daily emissions account for the overlap of construction phases. These values represent the worse-case scenario. Maximum daily emissions would not occur each day of the construction period.
2. The season with the highest emissions calculated for each pollutant was used. Winter emissions were used for all pollutants except CO, which had slightly higher emissions in the summer.

**Table 7
 Total Mitigated On-Site Construction Emissions Compared to LSTs
 (lbs/day)**

	CO	NOx	PM10	PM2.5
Demolition	N/A	N/A	N/A	N/A
Site Preparation	39.79	37.75	9.24	3.68
Grading	56.08	54.66	5.85	4.78
Building	24.38	3.12	0.11	2.05
Paving	19.00	1.54	0.08	2.74
Architectural Coating	1.83	0.15	0.01	0.24
Localized Significance Threshold	1,158	221	11	6
Threshold Exceeded?	No	No	No	No

Source: SCAQMD, October 2009, <http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf>, accessed online June 2012, and CalEEMod calculations, see Appendix A.

e) The proposed project would not generate objectionable odors during construction or throughout the period of residential occupancy. **No impact would occur.**



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IV. <u>BIOLOGICAL RESOURCES</u> --				
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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Literature Search and Survey Methods

The biological resources within the study area were analyzed through a review of relevant literature followed by a field reconnaissance survey and rare plant survey. The literature review included information on sensitive resource occurrences from the California Department of Fish and Game (CDFG) California Natural Diversity Data Base (CNDDDB) RareFind3 (CDFG 2012), as well as other pertinent sources. Rincon Consultants Senior Ecologist, Steven Hongola, and Biologist, Alison Brown, conducted a field reconnaissance survey of the study area on foot on January 13, 2012. The purpose of the survey was to document the existing biological conditions within the study area, including plant and wildlife species, vegetation communities, and the potential presence of sensitive species and/or habitats. Waters and wetlands potentially subject to U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFG jurisdiction were also delineated onsite during this January visit. On April 27, 2012 Rincon Senior Botanist, Cher Batchelor, conducted a rare plant survey on foot to determine the presence or absence of special status plant species and/or listed plant or animal species.

Based on the literature search and field surveys, Rincon Consultants prepared a Biological Resources Assessment (BRA) (dated June 27, 2012) for the proposed project. The information provided in the BRA is summarized below. The BRA is provided in its entirety as Appendix B.

The “study area” for this project is defined as the 16.25-acre property plus additional areas outside of, and adjacent to, the property proposed for development. The total study area encompassed 17.05 acres.

Biological Resources Setting

The rare plant survey was conducted in the spring season (April 27, 2012) and found a total of 63 vascular plant species (the BRA provided as Appendix B includes the rare plant survey in its entirety, and a list of all plant species observed within the study area during the rare plant survey). Of the 63 species, 45 (71%) are native species and 18 (29%) are introduced (non-native) plant species.

The study area contains seven natural plant communities, including Purple Sage Scrub, Purple Sage Scrub – Disturbed, Coast Live Oak Woodland, Scrub Oak Scrub, Chamise Scrub, Arroyo Willow Thicket, and Annual Brome Grassland. These plant communities are described according to *A Manual of California Vegetation, second edition* (Sawyer et al. 2009) vegetation alliance descriptions. The study area also includes 0.29 acre of areas mapped as Access Road, and 0.09 acre of areas mapped as Landscaped/Ornamental.

The study area offers moderate to high quality habitat for common wildlife species by providing foraging grounds and refugia. During the reconnaissance survey, 19 wildlife species were detected through direct observation, auditory cues, or sign. Of the 19 species, 1 is a reptile, 12 are birds, and 3 are mammals. A complete wildlife species compendium is provided in the attached BRA.

Special Status Biological Resources

Rincon’s literature search of the CNDDDB RareFind3 identified nine *special status plant species* as being tracked within five miles of the study area. Three of the nine special status plant species identified in the literature search have moderate to high potential to occur onsite.



Slender mariposa-lily (*Calochortus clavatus* var. *gracilis*) and Plummer's mariposa-lily (*Calochortus plummerae*), both CNPS ranked 1B.2, have a moderate to high potential to occur onsite in the Purple Sage Scrub habitat. San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), a candidate for federal listing and state listed and CNPS ranked 1B.2, has a moderate potential to occur onsite due to the presence of Purple Sage Scrub habitat. Because the reconnaissance level survey was conducted outside of the blooming period for these species (January 2012), a follow-up botanical rare plant survey was conducted on April 27, 2012 to determine the presence or absence of these or other special status plant species. None of the species expected to occur onsite were observed during the rare plant survey. However, one special-status plant species was observed onsite: southern California black walnut (*Juglans californica* var. *californica*; CRPR 4.2). Approximately 12 of these walnut trees occur in the eastern portion of the property.

While no *special status wildlife species* were observed during the reconnaissance survey, Rincon's literature search of the CNDDDB RareFind3 identified 16 wildlife species as being tracked within a five-mile radius of the project site. Of those 16 species tracked by CNDDDB, three are federally listed including: Arroyo Toad (*Anaxyrus californicus*), California red-legged frog (*Rana draytonii*), and coastal California gnatcatcher (*Polioptila californica californica*). The following four special status wildlife species have a moderate to high potential to occur onsite.

- Woodlands and open patches of ground found onsite could provide suitable habitat for the coastal whiptail (*Aspidoscelis tigris*), with a subnational ranking of vulnerable/imperiled under the NatureServe Conservation Status ranking system.
- Purple Sage Scrub habitat with sandy patches of ground could also provide suitable habitat for the coast horned lizard (*Phrynosoma blainvillii*), a California species of special concern.
- The western mastiff bat (*Eumops perotis californicus*), a California species of special concern, prefers open habitats including woodlands and coastal sage scrub which are both present onsite, and could utilize the oaks and other tree species onsite for roosting while the relatively open upper canopy allows for foraging.
- The western red bat (*Lasiurus blossevillii*), a California species of special concern, preferentially uses habitats providing a mosaic of protected trees such as those found in the woodlands onsite.

The potential presence of coastal California gnatcatcher (*Polioptila californica californica*) was also evaluated. It was determined to have a low potential for occurrence on the site due to several factors: (1) this species has not been documented to occur within this portion of the Santa Monica Mountains; (2) potential habitat onsite is dominated by purple sage and the site topography is steep which reduces habitat suitability for gnatcatchers; and (3) the coastal sage scrub habitat is generally isolated from larger, more contiguous stands of habitat in the local vicinity and surrounded by residential development, chaparral, and woodland land cover types that are not expected to support occupation and breeding by the species. In addition, no gnatcatchers were observed or detected during any of the biological surveys completed on the site.

No nesting birds were observed during the reconnaissance survey, which was conducted outside of the nesting bird season which typically runs from March 1st through August 15th.



Regardless, the property contains suitable habitat for protected nesting birds, and nesting by protected native birds is expected onsite. *Native bird species and their nests* are protected by the California Fish and Game Code 3503 and the federal Migratory Bird Treaty Act.

Three *sensitive plant communities* (not tracked by CNDDDB, but considered a significant biotic habitat under the Calabasas General Plan Conservation Element, are present onsite including the following:

- Scrub Oak Scrub
- Coast Live Oak Woodland
- Arroyo Willow Thickets

While *federally designated critical habitat* for one federally listed species, California red-legged frog, is present within five miles of the study area, no critical habitat is present onsite.

Two *jurisdictional drainage features* traverse north to south in the western and eastern portions of the site, the western-most drainage will hereafter be referred to as Drainage 1 and the eastern-most drainage will hereafter be referred to as Drainage 2. Both drainages have defined bed bank and channel features, and natural depression areas that ultimately direct flows off of the property to the south through a culvert underneath Mulholland Highway and into a concrete channel that runs along Mulholland Highway to the west and south. The improved channel ultimately flows into Cold Creek to the south and either dissipates to the east or flows west into Malibu Creek and to the Pacific Ocean near Malibu Lagoon State Beach.

Because of the potential connectivity to the Pacific Ocean and the presence of hydrologic indicators, the drainages and topographically low depression areas onsite are all considered waters of the U.S. as defined in Section 404 of the Clean Water Act, which are regulated by the USACE (0.21 total acres within the study area). They are also waters of the State pursuant to Section 401 of the Clean Water Act as regulated by the RWQCB (0.21 total acres within the study area). The CDFG would regulate the entire riparian corridor and basin (0.37 total acres within the study area), which includes plants that are dependent upon the drainage for survival. Table 8 summarizes the jurisdictional areas of the drainages for each jurisdiction within the study area.

**TABLE 8
EXISTING JURISDICTIONAL AREAS WITHIN THE PROJECT SITE**

Feature	Jurisdiction		
	USACE	RWQCB	CDFG
Drainage 1 (including depression)	0.10	0.10	0.17
Drainage 2a (including depression)	0.09	0.09	0.17
Drainage 2b	0.02	0.02	0.03
Total	0.21	0.21	0.37

Source: Rincon Consultants Inc., 2012



At a local scale, the project site contains features conducive to promote *wildlife movement* through the site including drainage features, vegetative cover, and appropriate habitat. Wildlife would likely use the ridge tops and drainage corridors onsite to move through the area and wildlife would use the oak woodland for cover. However, the site is largely isolated from larger habitat patches due to presence of institutional and residential development in the immediate vicinity. On a regional scale, the site is located directly south of the highly developed floor of the San Fernando Valley, which impedes wildlife movement directed to the north. Ultimately, the study area does not lie within a mapped linkage or corridor per the City of Calabasas 2030 General Plan. The study area does not lie within any Los Angeles County Significant Ecological Areas (SEAs). The study area also does not lie within a regional wildlife connectivity area as identified by the *California Essential Habitat Connectivity Project* (Spencer et al. February 2010).

A ground-level, GPS-based *oak tree inventory and assessment* was conducted by the L. Newman Design Group, Inc. in October 2011. Diameter at breast height (DBH), height, canopy spread, crown, trunk, overall growth, presence of insect and disease, and general health were recorded based upon the existing presentation of each oak tree within the site. Based on the data provided in the Oak Tree Report, 53 oak trees were assessed and 80,000 square feet of scrub oak chaparral on lot 1 was assessed. Of the 53 trees assessed, 51 are coast live oak (*Quercus agrifolia*) and 2 are scrub oak (*Quercus berberidifolia*). Per the City's Oak Tree Preservation and Protection Guidelines, heritage trees are considered oak trees with a diameter of 24 inches or greater at 4 ½ feet above natural grade. Based on these criteria, 21 of the 53 oak trees are considered heritage trees. The Oak Tree Report is included as an appendix to the BRA (the BRA is provided as Appendix B herein).

a) No federally or state listed wildlife species were detected during a field reconnaissance survey or other follow-up biological surveys. There is a low potential for coastal California gnatcatcher to occur onsite. No records for this species exist in the Santa Monica Mountains and no evidence of the presence of this species was noted during any of the biological surveys conducted onsite. No federally designated critical habitat for any listed wildlife species occurs within the study area. **Due to the low potential for the presence of federally or state listed wildlife species onsite, the potential for impacts to listed species would be less than significant.**

Locally sensitive animals (including California coastal whiptail, coast horned lizard, western mastiff bat, and western red bat) are expected to occur within the site during the construction period and may potentially be affected by construction activity. Although there is a low potential to impact an entire population of one or more of these species onsite, injury to individuals of these species could result from the proposed project. **As such, potential impacts to locally important wildlife species would be potentially significant unless mitigation is incorporated.**

Individuals of locally sensitive avian species (Nuttall's woodpecker, and oak titmouse) were observed onsite and may potentially be impacted by construction activity. Native birds protected by the California Fish and Game Code and the federal Migratory Bird Treaty Act are expected to nest onsite. Potential direct impacts (loss of individuals) could occur to birds nesting onsite if the removal of any vegetation occurs during the nesting/breeding season. In addition, indirect impacts such as construction noise, dust, and other human disturbances may



deter breeding/nesting behaviors if construction occurs during the breeding/nesting season. **If construction occurs during the nesting season, potential direct and indirect impacts to protected nesting birds would be potentially significant unless mitigation is incorporated.**

One locally sensitive plant species, southern California black walnut (*Juglans californica* var. *californica*; CRPR 4.2) was observed onsite during the rare plant survey. Approximately 12 individuals are present in the eastern parcel. The CRPR Rank of 4.2 indicates that the species is not “rare” from a statewide perspective, but is uncommon enough that in the CDFG’s opinion its status should be monitored regularly (CDFG 2006). **While the potential loss of approximately five California black walnut individuals is considered an adverse effect, the impact to the species would be less than significant due to the relative abundance of this species within the region.** No further action is necessary, though it is recommended that any California black walnuts outside the development footprint be preserved and protected from disturbance.

b) Three sensitive plant communities (not tracked by CNDDDB, but considered a significant biotic habitat under the Calabasas General Plan Conservation Element) are present onsite. The overall construction footprint associated with the proposed project totals 7.27 acres, including 4.73 acres of proposed grading and roads, and 2.54 acres of associated fuel modification (fuel modification that extends beyond the limits of grading). Of the 7.27-acre construction footprint, 1.71 acres contain sensitive habitats, of which 0.96 acres of sensitive habitat would be removed as a result of the proposed grading limits and 0.75 acres of sensitive habitat would be affected by fuel modification. **Out of 5.46 total acres of sensitive habitat within the study area, approximately 1.71 acres of sensitive habitat (31%) would be removed as a result of the project. This impact would be potentially significant unless mitigation is incorporated.** The acreage of impacts to sensitive plant communities resulting from project development is provided in Table 9.

Table 9
Impacts to Sensitive Vegetation Communities within the Project Site

Plant Community	Acres within Property	Acres Impacted (within grading limits)	Acres Impacted (within fuel modification zone outside of the grading limits)
Scrub Oak Scrub	3.26	0.72	0.53
Coast Live Oak Woodland	2.19	0.24	0.22
Arroyo Willow Thicket	0.01	0.00	0.00
Total	5.46	0.96	0.75
		1.71	

Source: Rincon Consultants, Inc., 2012

Implementation of BIO-4(a) (Agency Coordination [below]), BIO-4(b) (Restore Jurisdictional Waters and Riparian Habitats [below]) and BIO-6 (Oak Tree Permit [below]) would sufficiently mitigate the impacts to the three sensitive plant communities affected by the proposed project.



c) Because of the potential connectivity to the Pacific Ocean and the presence of hydrologic indicators, the drainages and topographically low detention basins onsite are all considered waters of the U.S. as defined in Section 404 of the Clean Water Act, which are regulated by the USACE. They are also waters of the State pursuant to Section 401 of the Clean Water Act, which are regulated by the RWQCB. The CDFG would regulate the entire riparian corridor and basin, which includes plants that are dependent upon the drainage for survival. Table 10 summarizes the potential impacts to jurisdictional areas per drainage feature, per jurisdiction.

Table 10
Impacts to Jurisdictional Waters and Wetlands within the Project Site

Feature	Impact Type	Jurisdiction		
		USACE	RWQCB	CDFG
Drainage 1	CFP	0.08	0.08	0.13
	FMZ	0.00	0.00	0.01
Drainage 2a	CFP	0.02	0.02	0.03
	FMZ	0.02	0.02	0.03
Drainage 2b	CFP	0.02	0.02	0.03
	FMZ	0.00	0.00	0.00
Total		0.14	0.14	0.23

Source: Rincon Consultants, Inc., 2012

Approximately 0.14 acre of USACE and RWQCB jurisdictional area onsite would be impacted within the study area, including 0.12 acre resulting from grading and 0.02 acre resulting from fuel modification. Approximately 0.23 acre of CDFG jurisdiction would be impacted as a result of the proposed project, including 0.19 acre resulting from grading and 0.04 acre resulting from fuel modification. **Impacts to jurisdictional areas would be potentially significant unless mitigation is incorporated.**

d) The project site does not lie within a mapped wildlife linkage or corridor per the City of Calabasas General Plan. The site does not lie within any Los Angeles County Significant Ecological Areas (SEAs). The site also does not lie within a wildlife connectivity area as defined by the California Essential Habitat Connectivity Project (Spencer et al. February 2010). The area immediately surrounding the study area to the north, west, and east is developed by residential uses and the Viewpoint school campus and Mulholland Drive lie to the south of the property. The proposed project would not restrict or cut off access to any local habitat or connectivity feature. **As such, the impacts to regional and local wildlife movement and connectivity associated with the proposed project would be less than significant.**

e) Based on the data provided in the L. Newman Design Group, Inc. 2011 Oak Tree Report for the Mulholland property (included as Appendix C), 53 oak trees were evaluated, including 51



coast live oak (*Quercus agrifolia*) and 2 scrub oak (*Quercus berberidifolia*). Of the 53 oak trees assessed:

- 6 coast live oak trees would be removed
- 17 oaks would be encroached upon, including
 - 16 coast live oaks (8 of which are heritage trees)
 - 1 scrub oak
- 18,400 square feet (0.42 acre and 23%) of the 80,000 square feet (1.84 acres) of scrub oak on lot 1 would be removed
- No heritage trees would be removed as a result of the proposed project

The City of Calabasas's Oak Tree Ordinance requires procurement of an oak tree permit prior to the removal, altering, etc. of oak trees conforming to the criteria described in the ordinance. The goal of the ordinance is to protect oak trees within the City and avoid their removal unless replacement is granted in conjunction with the oak tree permit conditions. The ordinance also provides for the establishment of an oak tree habitat restoration program. Additionally, and per the City's Oak Tree Preservation and Protection Guidelines, heritage trees are considered oak trees with a diameter of 24 inches or greater at 4 ½ feet above natural grade. Based on these criteria, 21 of the oak trees are considered heritage trees. Of the 21 heritage trees, 8 would be encroached upon (as mentioned above) by the proposed construction activities. **As such, the proposed project potentially conflicts with the City of Calabasas Oak Tree Ordinance, and impacts to oaks (removal of 6 oaks, encroachment upon 17 oaks, and removal of 0.42 acre of scrub oak chaparral) would be potentially significant unless mitigation is incorporated.**

f. No adopted habitat preservation or conservation plans govern the project site. **Therefore, the project would have no impact with respect to adopted plans governing biological resources in this area.**

Mitigation Measures

Mitigation Measure BIO-1 is provided to avoid and minimize impacts to special status wildlife species, and BIO-2 requires either avoidance of the bird nesting season or requires nesting bird surveys and avoidance buffers to mitigate for potential impacts to nesting birds.

- BIO-1 Preconstruction Special Status Wildlife Surveys and Construction Monitoring.** No more than one week prior to vegetation clearing and construction within the project site, two preconstruction surveys for special status wildlife species shall be conducted one week apart by qualified biologists within the construction footprint and within a 200-foot survey buffer area. The surveys shall include mapping current locations of special status wildlife species for avoidance and relocation efforts and to assist construction monitoring efforts. In addition, during any construction activities involving vegetation clearing, or initial modification of natural habitat, applicant shall contract with a biological monitor to conduct construction monitoring to avoid and minimize impacts to special status wildlife in the path of construction. Locally important wildlife species or wildlife Species of Special Concern, which are not formally listed, shall be captured by qualified biologists, when possible, and relocated to adjacent appropriate habitat



within the open space onsite or in suitable habitat adjacent to the project area. CDFG shall be notified and consulted regarding the presence of a special status wildlife species found onsite. If a federally listed species is found prior to or during grading of the site, the USFWS shall be notified. Only a USFWS approved biologist shall be allowed to capture and relocate listed species.

Preconstruction surveys shall be conducted no more than one week prior to construction within the project site. Construction monitoring shall be conducted during any construction activities involving vegetation clearing, or initial modification of natural habitat. The results of the preconstruction survey(s) and any relocation efforts during those surveys shall be documented in a brief letter report and submitted to the City no later than two weeks following the survey(s). The results of the construction monitoring and any relocation efforts shall be documented in a brief letter report and submitted to the City upon completion of vegetation clearance and initial natural habitat alteration.

BIO -2 Avoid Bird Nesting Season or Conduct Nesting Bird Surveys and Provide Buffers. Tree removals, grading, and the initiation of construction shall either: a) occur outside of the bird nesting season (February 1 to August 31); or b) be subject to bird survey requirements. If vegetation clearing occurs during the breeding season, pre-construction bird nesting surveys shall be conducted to determine the locations of nesting birds. Bird surveys shall include a minimum of two nesting bird surveys to be conducted by a qualified biologist no more than one week prior to the start of vegetation clearing or construction. Bird nesting surveys shall be reinitiated if construction is halted for more than three days. The nesting bird surveys shall include a survey buffer around the project site of up to 500 feet (where feasible) to accommodate raptors. If a nesting bird or special status species is located, a maximum 300-foot buffer (depending on noise and site conditions) would be established surrounding the nest(s) and shall be flagged for avoidance. If any active raptor nests are found, typically a suitable buffer area of 250-500 feet from the nest shall be established until the nest becomes inactive (vacated). These avoidance buffers can be reduced based upon the recommendation the qualified biologist conducting the surveys. Disturbance can occur within the buffer area only after the birds are no longer reliant on the nest, as determined by the qualified biologist. If any special status bird species nests are found, consultation with the local CDFG representative or USFWS representative is recommended to determine what avoidance actions should be taken. The results of the nesting bird survey(s) and any buffer efforts as a result of those surveys shall be documented in a brief letter report and submitted to the City no later than two weeks following the final survey.



Any proposed development in areas identified as jurisdictional waters and/or wetlands may be subject to the permit requirements of the USACE, under Section 404 of the Clean Water Act (CWA), RWQCB, under Section 401 of the CWA and the Porter-Cologne Water Quality Act, a Streambed Alteration Agreement from the CDFG pursuant to Section 1600 et. seq. of the California Fish and Game Code, and a Water Course Permit from the VCWPD. BIO-3 and BIO-4 are provided to mitigate impacts to jurisdictional areas and riparian habitat associated with the proposed project.

- BIO-3 Agency Coordination.** Permits, agreements, and/or water quality certifications from all applicable state and federal agencies regarding compliance with state and federal laws governing work within jurisdictional waters are required for submission to the City of Calabasas with the grading permit application for the project. The applicant shall provide such permits and/or agreements to the City prior to the granting of a grading permit.
- BIO-4 Restore Jurisdictional Waters and Riparian Habitats.** In-kind restoration of riparian and wetland habitats and waters shall occur for all impacted jurisdictional areas resulting from project development. All restoration of jurisdictional waters and riparian habitats shall be installed prior to issuance of a certificate of occupancy for the first residential dwelling. The applicant shall provide as much in-kind wetlands and riparian creation within the property boundaries as feasible at a 1:1 mitigation ratio (for every 1 acre impacted, 1 acre shall be restored), or as otherwise indicated by the regulatory agencies during the permitting process, whichever is greater. As such, at least 0.23 acre of jurisdictional area including riparian habitat shall be created/restored as much as feasible onsite. Native seeds and plant material (cuttings) can be salvaged from the areas of impact prior to construction and used for the onsite restoration/creation effort. Supplemental seed/plantings may be purchased, but shall be sourced from a site within the same watershed as the project site to maintain genetic integrity.

If all mitigation cannot be conducted onsite, the balance shall be mitigated for by providing adequate funding to a third party organization for the creation or restoration of riparian and wetlands habitat within appropriate jurisdictional areas at a 2:1 mitigation ratio, or can consist of the payment of in lieu fees (i.e., Santa Monica Mountains Conservancy, Mountains Restoration Trust, or Ojai Valley Land Conservancy). If mitigation is implemented offsite, mitigation lands shall be located as close to the project site as feasible. Offsite land shall be preserved through a conservation easement and a habitat mitigation and monitoring plan (HMMP) that shall identify an approach for funding assurance for the long-term management of the conserved land.



If determined to be necessary, the required HMMP shall be prepared by a qualified biologist/restoration ecologist that outlines the compensatory mitigation in coordination with the regulatory agencies. As part of the HMMP, a final mitigation implementation plan detailing the proposed mitigation shall be submitted to and approved by the City prior to issuance of a grading plan. Specifically, the HMMP and implementation plan shall include:

- Detailed mitigation site location for all aspects of the jurisdictional areas restoration.
- Native plant palette, planting plan, time of year planting will occur, irrigation plan.
- Maintenance program and invasive species control program.
- Success criteria for monitoring the restoration effort over five years.
- Remedial measures in the event that the performance criteria are not met for a particular year.
- Monitoring and reporting program with measurable success criteria.

Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist familiar with the restoration of native habitats. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as up or downstream of the restoration site). Annual monitoring reports shall include at a minimum results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation. Ultimately, the mitigation provided within the HMMP shall be consistent with the requirements pursuant to permits obtained by all regulating agencies.

Mitigation Measure BIO-5 is required to mitigate potentially significant impacts relating to oak species present onsite.

BIO-5 Oak Tree Replacement. An Oak Tree Permit shall be obtained from the City of Calabasas prior to any oak species removal. A copy of the approved oak tree permit, the associated conditions of approval, and the oak tree report shall be kept onsite during all construction.

In order to meet the City of Calabasas Oak Tree Ordinance minimum replacement requirements, removed oak trees shall be replaced onsite at a 1:1 ratio and an Oak Tree Habitat Restoration Program shall be prepared and submitted to the City. A minimum of 23 oaks shall be planted onsite to replace those removed and encroached upon, and 0.42 acre of scrub oak chaparral shall be replaced onsite for this proposed project. If all oak mitigation required herein cannot be implemented all onsite, then the balance shall be mitigated for at an offsite location. All



oak tree mitigation, whether on-site or offsite shall be completed prior to the issuance of a certificate of occupancy for the first residential unit.

The Oak Tree Habitat Restoration Program shall include a monitoring schedule, and the maintenance and care program outlined in the Oak Tree Report. The maintenance and care program shall be carried out by qualified professionals approved by the City of Calabasas. In addition, Final Landscape Plans shall be submitted to the City and these plans shall also include the oak tree mitigation requirements as discussed above and any oak tree restoration required by state and federal resource agencies (e.g. CDFG, RWQCB, and USACE).

The Oak Tree Habitat Restoration Program shall also include the mapped location of restoration areas onsite, an implementation plan (detailing site preparation and planting irrigation, and fertilization practices), detailed maintenance program practices, and success criteria. The success criteria shall consider survivorship of oak trees under natural conditions sufficient to meet the City’s canopy retention standards. These standards include: 75% or more retention of the baseline canopy of the property, or survivorship of a sufficient number of oaks to replace those oak trees/scrub oak chaparral removed or encroached upon within the property at a 1:1 ratio at the end of 5 years.

The applicant shall submit mitigation status reports prepared by a certified oak tree consultant. The reports shall include, but not be limited to, a summary of conditions at the conclusion of grading and construction, and annually for the next five years based on quarterly or bi-annual site visits and including monitoring observations. The reports shall certify compliance with all conditions of the permit, establishment goals and the health of all replaced, remaining or relocated trees.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
V. <u>CULTURAL RESOURCES</u> --				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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V. CULTURAL RESOURCES --

Would the project:

d) Disturb any human remains, including those interred outside of formal cemeteries?

a) The project site is vacant and therefore lacking known historical resources (Rincon Consultants, Inc. site visit, June 28, 2012). **No impact to historical resources would occur.**

b,d) The project site is not known to contain any archaeological resources or human remains (City of Calabasas 2030 General Plan, 2008). Although no archaeological resources are known to be present onsite, site grading has the potential to disturb undiscovered archaeological resources during grading. **Impacts would be potentially significant unless mitigation is incorporated.**

c) In the City of Calabasas, significant fossils are typically found in the marine and non-marine Miocene-age sedimentary deposits and in the later Quaternary deposits and within the lower and upper Modelo formations (Historic Context Statement of Calabasas, 2009). On-site soils consist generally of marine sedimentary rocks or Miocene time, which are covered by Holocene earth materials. These materials consist generally of colluvial deposits at the toe of most natural slopes, Quaternary alluvium within the on-site drainage courses, and bedrock consistent with the Modelo Formation (GeoConcepts, Inc., 2011). Therefore, paleontological resources could potentially be present onsite. **However, the likelihood of encountering resources is low and the proposed grading would impact less than five acres of the 16.25-acre project site; therefore, impacts to paleontological resources would be less than significant.**

Mitigation Measures

Mitigation Measures CR-1 and CR-2 are required to reduce potential impacts to cultural resources to below a level of significance.

CR-1 Monitoring. A qualified archaeologist shall monitor any grading, trenching, excavation, or other subsurface work that occurs in undisturbed soil. If artifacts are discovered, the developer shall notify the City of Calabasas Planning Department immediately and construction activities shall cease until the archaeologist has documented and recovered the resources. Equipment stoppages prescribed by the archaeologist shall only involve those pieces of equipment that have actually encountered significant or potentially significant resources, and should not be construed to require stoppage of all equipment on the site unless the resources are thought by the archaeologist to be distributed throughout the entire site. The purpose



of stopping the equipment is to protect cultural/scientific resources that would otherwise be impacted and said equipment may undertake work in other areas of the site away from the discovered resources. If the find is determined by the archaeologist to be a unique archaeological resource, as defined by Section 2103.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2 of the Public Resources Code with mitigation as appropriate. If the find is determined not to be a unique archaeological resource, no further action is necessary and construction may continue.

CR-2 Should unique archaeological resources be discovered and avoidance proves infeasible, the importance of the site shall be evaluated by a qualified archaeologist. In general the following guidelines shall be followed:

- Preservation of sites in-place is the preferred manner of avoiding damage to historic and prehistoric archaeological resources.
- In the event of discovery of human remains, work shall stop until the coroner has determined that no investigation of the cause of death is required; or, if descendants have made a recommendation of the property owner regarding proper disposal of the remains, or until descendants have failed to make a recommendation within 24 hours of notification. If no recommendation is received, remains shall be interred with appropriate dignity on the property in a location not subject to future development.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS –

Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
 - ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VI. <u>GEOLOGY AND SOILS</u> – Would the project:				
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

GeoConcepts, Inc. prepared a Geotechnical Engineering Report for the site. The report, dated September 13, 2011, was reviewed by Wildan Geotechnical on April 18, 2012. The letter from Wildan dated April 18, 2012 is included as Appendix D. The GeoConcepts, Inc. Geotechnical Engineering Report for the site is on file and is available for public review at the City of Calabasas.

Topographically, the project site consists of a southerly trending intermittent drainage course with ascending slopes to the north, west, and east located within the central portion of the Santa Monica Mountains. The maximum topographic relief on-site is approximately 100 feet. The on-site ascending slopes have a general gradient of 2:1 or less (horizontal to vertical).

a(i-iii) The project site does not lie within an Earthquake Fault Studies Zone and the site is not known to be underlain by active or potentially active faults. Therefore, the potential for substantial adverse effects related to fault rupture is low. Like most of Southern California however, the proximity of active faults is such that the site has experienced and could continue to experience strong seismically induced ground motion. However, development would be subject to the California Building Code (CBC), and would be required to adhere to the site specific recommendations in the approved site-specific geologic and geotechnical engineering report. As such, the design and construction of new structures would be engineered to withstand the expected ground acceleration and seismic shaking that may occur on-site.

Therefore, impacts would be less than significant.



Liquefaction describes the phenomenon in which ground shaking works cohesionless soil particles into a tighter packing which induces excess pore pressure. These soils may acquire a high degree of mobility that can lead to structurally damaging deformations. Liquefaction begins below the water table, but after liquefaction has developed, the groundwater table rises and causes the overlying soil to mobilize. Liquefaction typically occurs in areas where the groundwater is less than 30 feet from the surface and where the soils are composed of poorly consolidated fine to medium sand. Based upon a review of the State of California Seismic Hazard Maps, the project site is not located within a liquefaction hazard zone. According to the geotechnical study prepared for the proposed project, groundwater was not encountered during on-site soil exploration, which analyzed the soil profile to a depth of 55 feet. Bedrock was encountered at approximately 10 feet below the ground surface. **Therefore, liquefaction hazards would be less than significant.**

(iv) The “Seismic Hazards Zones” map of the Calabasas Quadrangle by the California Department of Conservation Division of Mining and Geology (DMG) shows that the building sites are located in an area designated as a “seismically-induced landslide hazard”. Therefore, impacts would be potentially significant. However, evidence of ancient or recent landslides was not observed on or near the project site and examination of the slopes did not reveal the presence of landslides or soil slips. The geotechnical study prepared by GeoConcepts, Inc. included a slope stability analysis for the ascending slopes. This analysis determined that the static and pseudo-static factor of safety for the on-site slopes were 2.35 and 1.68, respectively. GeoConcepts, Inc. determined that, based on the prevailing geologic structure, as well as laboratory test results from the site specific soil study, the slopes have adequate static and pseudo-static factors of safety against sliding under the interpreted conditions. GeoConcepts, Inc. also concluded that the proposed project is suitable for intended use provided that the project adhere to the site specific recommendations in the geologic and geotechnical engineering report. The City’s Geotechnical Consultant (Wildan Geotechnical) concurred with these findings in a letter dated April 18, 2012 (included as Appendix D). As such, the design and construction of new structures would be engineered to reduce any potential landslide hazards. **Therefore, impacts would be less than significant.**

b) Construction activities would include the excavation and grading of the hillsides present on-site, which would cause the disruption and displacement of on-site soils and the overlying vegetation. Therefore, the potential for on-site erosion during construction is high and construction activities completed during rain events could create increased erosion and offsite sedimentation. **Impacts would be potentially significant unless mitigation is incorporated.**

c,d) The project site is entirely underlain by the Modelo Formation bedrock. Artificial fill and colluvium occurs throughout the site and these soils consisted of silty sand to clayey silt. The soil thickness across the site ranges from a few inches to about 7.5 feet. The soils are poorly consolidated and were not considered expansive. **As discussed above, soil related site stability impacts would be less than significant.**

e) The proposed project would connect to the City’s sewer system. A septic system would not be installed in association with the proposed project. **Therefore, no impact would occur.**



Mitigation Measures

Mitigation Measures GEO-1 is required to reduce potential impacts from substantial soil erosion or the loss of topsoil to below a level of significance.

GEO-1 Erosion Control. A site-specific erosion control plan that incorporates best management practices shall be prepared by the project applicant and approved by the City prior to the granting of any grading permits. All measures identified in the erosion control plans shall be implemented and monitored for continued compliance by the City of Calabasas Public Works Department. Such measures may include slope protection measures, netting and sandbagging, landscaping and possibly hydroseeding, temporary drainage control facilities such as retention areas, etc. All slopes involved with the development shall be constructed using an erosion control mat and a thorough vegetation and landscape plan. A landscaping plan and a landscape maintenance plan shall be designed by a licensed landscape architect. These plans shall be reviewed and approved by the City of Calabasas Public Works Department prior issuance of grading permits.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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VII. GREENHOUSE GAS EMISSIONS -

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), analogous to the way in which a greenhouse retains heat. Common GHG include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O_x), fluorinated gases, and ozone. GHGs are emitted by both natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆) (Cal EPA, 2006b).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (CAT, 2006). However, it is believed that emissions from human activities, particularly the consumption of



fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond naturally occurring concentrations.

a, b) Project-level operational emissions were studied based on contributions for both stationary and mobile emissions sources. Temporary construction-generated emissions were also quantified.

Temporary Construction Emissions

The California Emissions Estimator Model (CalEEMod) was used to calculate emissions associated with project construction. Based on the modeling results (see Appendix A), the proposed project would generate estimated maximum of 919 metric tons of Carbon Dioxide Equivalent (CDE)¹ per year during construction. Amortized over a 30-year period (the assumed life of the project), the proposed project would generate an estimated 30.6 metric tons of CDE per year.

Operational Indirect and Stationary Direct Emissions

CalEEMod was used to calculate GHG emissions resulting from operation of the proposed project (see Appendix A for calculations). Table 11 shows the estimated operational emissions of GHGs from the proposed residential development.

Table 11
Estimated Annual Project Related
Operational GHG Emissions

Emission Category	Annual Emissions (CDE)
Area	2.27 metric tons/year
Energy	12.63 metric tons/year
Mobile	72.07 metric tons/year
Waste	1.68 metric tons/year
Water	1.32 metric tons/year
Project Total	89.97 metric tons/year

Source: CalEEMod v.2011.1. See Appendix A for GHG emission factor assumptions.

¹ Carbon dioxide equivalent (CDE or CO₂E) is a quantity that describes, for a given mixture and amount of GHGs, the amount of CO₂ (usually in metric tons) that would have the same global warming potential (GWP) when measured over a specified timescale (generally, 100 years).



Combined Construction, Stationary and Mobile Source Emissions

Table 12 combines the construction, operational, and mobile GHG emissions associated with the project. The combined annual emissions would total approximately 192.64 metric tons per year in CDE units. This total is substantially below California's total 2004 emissions of 492 million metric tons. These emission projections indicate that the majority of the project's GHG emissions are associated with vehicular travel (38%).

Table 12
Estimated Annual Combined GHG Emissions from Project

Emission Source	Annual Emissions (Carbon Dioxide Equivalent (CDE))
Operational	89.97 metric tons
Mobile	72.07 metric tons
Construction	30.6 metric tons
Project Total	192.64 metric tons

Sources: See Appendix A for calculations and for GHG emission factor assumptions.

The City of Calabasas has not adopted any GHG emissions thresholds that apply to land use projects and has not adopted a GHG emissions reduction plan. Therefore, the proposed project is evaluated based on the SCAQMD's recommended/preferred threshold for residential projects of 3,000 metric tons CO₂e per year (SCAQMD, "Proposed Tier 3 Screening Levels - Industrial Projects", September 2010). **Although the project would generate additional GHG emissions beyond existing conditions, because the total amount of GHG emissions would be lower than the threshold of 3,000 metric tons per year, impacts from GHG emissions would be less than significant.**

GHG emissions reduction strategies that were prepared by California Environmental Protection Agency (CalEPA) Climate Action Team (CAT) and measures suggested by the Attorney General have been used as a benchmark for significance and qualitative consideration. The CAT strategies are recommended to reduce GHG emissions at a statewide level to meet the goals of the Executive Order S-3-05 (<http://www.climatechange.ca.gov>).

The Attorney General's Greenhouse Gas Reduction Report was prepared in 2008 by the California Attorney General's Office. This report specifies measures that may reduce global warming related impacts at the individual project level. As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees).

Consistency with CAT strategies and measures suggested in the Attorney General's Greenhouse Gas Reduction Report are discussed in tables 13 and 14. Several of the actions



identified in the tables below are already required by California regulations. Tables 13 and 14 illustrate that onsite development would be consistent with the GHG reduction strategies set forth by the 2006 CAT Report and the 2008 Attorney General’s Greenhouse Gas Reduction Report.

**Table 13
 Project Consistency with 2006 CAT Report
 Greenhouse Gas Emission Reduction Strategies**

Strategy	Project Consistency
California Air Resources Board	
<u>Vehicle Climate Change Standards</u> AB 143 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB I September 2004.	Consistent The vehicles that travel to and from the project site on public roadways would be in compliance with ARB vehicle standards that are in effect at the time of vehicle purchase.
<u>Diesel Anti-Idling</u> In July 2004, the ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling	Consistent Current state law restricts diesel truck idling to five minutes or less. Diesel trucks operating from the project site are subject to this statewide law.
<u>Alternative Fuels: Biodiesel Blends</u> ARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	Consistent The ARB is in the process of developing regulations that would increase the use of biodiesel for transportation uses. Currently, it is unknown when such regulations would be implemented; however, it is expected that upon implementation of such a regulation that would require increase biodiesel blends, the diesel fuel used vehicles that travel to and from the project site would be correspondingly displaced by biodiesel.
<u>Alternative Fuels: Ethanol</u> Increased use of E-85 fuel.	Consistent As data becomes available on the impacts of fuel specifications on the current and future vehicle fleets, the ARB will review and update motor vehicle fuel specifications as appropriate. In reviewing the specifications, the ARB will consider the emissions performance, fuel supply consequences, potential greenhouse gas reduction benefits, and cost issues surrounding E85. Future tenants of the project could purchase flex-fuel vehicles and utilize this fuel, once it is commercially available.
<u>Heavy-Duty Vehicle Emission Reduction Measures</u> Increased efficiency in the design of heavy duty vehicles and an education program for the heavy-duty vehicle sector.	Consistent The heavy-duty vehicles that travel to and from the project site on public roadways would be subject to all applicable ARB efficiency standards that are in effect at the time of vehicle manufacture.
<u>Achieving 50% Statewide Recycling Goal</u> Achieving the State’s 50% waste reduction mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions, associated with energy intensive material extraction and production, as well as methane emission from landfills. A diversion rate of 48% has been achieved on a statewide basis. Therefore, a 2% additional reduction is needed.	Consistent The City has completed a comprehensive waste reduction and recycling plan in compliance with State Law AB 939, which requires every city in California to reduce the waste it sends to landfills by 50% by the year 2000. Calabasas has achieved the 50% diversion rate established by the State and, on January 16, 2007.
<u>Zero Waste – High Recycling</u> Efforts to exceed the 50% goal would allow for additional reductions in climate change emissions	Consistent As discussed above, currently, the City requires that at least 50% of all solid waste, including construction/demolition waste, be diverted from landfills. Calabasas has achieved the 50% diversion rate established by the State and, on January 16, 2007. The City also adopted resolution #2008-1111 requiring the City to achieve a goal of 75% diversion by 2012.
Department of Forestry	
<u>Urban Forestry</u> A new statewide goal of planning 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Consistent The landscaping proposed for the project would include planting of multiple oak trees and would therefore help move toward this statewide goal.



**Table 13
 Project Consistency with 2006 CAT Report
 Greenhouse Gas Emission Reduction Strategies**

Strategy	Project Consistency
<i>Department of Water Resources</i>	
<i>Water Use Efficiency</i> Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	Consistent The proposed project would be required to comply with Part 2, Division 8 of the City's Municipal Code that requires onsite landscaping to implement water conservation measures.
<i>Energy Commission (CEC)</i>	
<i>Building Energy Efficiency Standards in Place and in Progress</i> Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and alterations to existing buildings).	Consistent The project would be required to meet or exceed the standards of Title 24 that are in effect at the time of development.
<i>Appliance Energy Efficiency Standards in Place and in Progress</i> Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	Consistent Under State law, appliances that are purchased for the project – both pre- and post-development – would be required to be consistent with energy efficiency standards that are in effect at the time of manufacture.
<i>Business, Transportation and Housing</i>	
<i>Measures to Improve Transportation Energy Efficiency</i> Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools and information that advance cleaner transportation and reduce climate change emissions.	Consistent The project would be in close proximity to existing commercial, residential, and recreational development, which would encourage alternative modes of transportation to be utilized.
<i>Smart Land Use and Intelligent Transportation Systems (ITS)</i> Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors.	Consistent The project site would be in close proximity to residential, recreational, and commercial developments. The Los Angeles County Metro Bus makes regular stops near the project site.

**Table 14
 Project Consistency with Applicable Attorney General
 Greenhouse Gas Reduction Measures**

Strategy	Project Consistency
Transportation-Related Emissions	
<i>Diesel Anti-Idling</i> Set specific limits on idling time for commercial vehicles, including delivery vehicles.	Consistent Currently, the California Air Resources Board's (CARB) Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling restricts diesel truck idling to five minutes or less. Diesel trucks operating from and making deliveries to the project site are subject to this state-wide law. Construction vehicles are also subject to this regulation.
<i>Transportation Emissions Reduction</i> Incorporate bike lanes into the project circulation system.	Onsite development would not preclude the addition of bike lanes to the project's proposed street improvements or on additional City streets.
<i>Transportation Emissions Reduction</i>	Consistent



Table 14
Project Consistency with Applicable Attorney General
Greenhouse Gas Reduction Measures

Strategy	Project Consistency
Provide onsite bicycle and pedestrian facilities (showers, bicycle parking, etc.) for commercial uses, to encourage employees to bicycle or walk to work.	No commercial uses are proposed as part of the project.
Solid Waste and Energy Emissions	
<p>Solid Waste Reduction Strategy</p> <p>Project construction shall require reuse and recycling of construction and demolition waste.</p>	<p>Consistent</p> <p>Construction in the City of Calabasas is required to comply with the City's Construction & Demolition Debris Recycling Program. Applicants must complete a Pre-Construction Waste Reduction/Recycling Plan (WRRP) to demonstrate how materials will be recycled. Upon completion of work, applicants must submit a Post Construction Waste Reduction/Recycling Summary Report, indicating whether the goals for recycling and reuse were met.</p>
<p>Water Use Efficiency</p> <p>Require measures that reduce the amount of water sent to the sewer system – see examples in CAT standard above. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.</p>	<p>Consistent</p> <p>The proposed project would be required to comply with the City's Water Efficient Landscape Criteria.</p>

The California Office of Planning and Research (OPR) *CEQA Guidelines* also include recommended mitigation strategies to reduce GHG impacts. According to this document, mitigation measures may include:

1. *Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal.*
2. *The potential of siting, orientation, and design to minimize energy consumption, including transportation energy, water conservation and solid-waste reduction.*
3. *The potential for reducing peak energy demand.*
4. *Alternate fuels (particularly renewable ones) or energy systems.*
5. *Energy conservation which could result from recycling efforts.*

Consistent with OPR mitigation strategies, onsite development would reduce wasteful, inefficient and unnecessary consumption of energy and utilize alternative fuels by complying with requirements of Part 6, Title 24 of the California Building Standards Code – California Energy Code. The City of Calabasas has instituted a residential recycling program in conformance with California Assembly Bill 939. All residential uses are required to have recycling programs. Therefore, recycling efforts would also comply with OPR strategies.



The proposed project would be consistent with CAT and Attorney General Strategies, as demonstrated in Tables 13 and 14, as well as OPR strategies, as discussed above.

GHG emissions generated by the proposed project would not have a significant adverse impact on the environment. The project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. **Therefore, the contribution of onsite development to cumulative global climate change impacts would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VIII. <u>HAZARDS AND HAZARDOUS MATERIALS</u> - Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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VIII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:

plan?

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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a-c) The proposed project involves the construction of three single-family residences that would not involve the storage, use, or disposal of any hazardous substances or materials. The project would not create a significant hazard to the public or the environment. The nearest school, Viewpoint School, is located approximately 100 feet south of the project site but it would not be adversely affected by any emissions, materials, substances or waste from the project. **No impacts related to the use, storage, transportation, storage or emissions of hazardous materials would occur.**

d) The following databases were checked for known hazardous materials contamination at the project site:

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database
- Geotracker search for leaking underground fuel tanks, Spills-Leaks-Investigations-Cleanups (SLIC) and Landfill sites
- Cortese list of Hazardous Waste and Substances Sites
- The Department of Toxic Substances Control’s Site Mitigation and Brownfields Database

The project site does not appear on any of the above referenced databases. In addition, the site and surrounding properties do not appear to, and historically are not known to have supported industrial or other uses that are likely to have resulted in soil or groundwater contamination. **No impact would occur.**

e, f) The project site is not in the vicinity of an airstrip. The closest airport is the Van Nuys Airport, located approximately 9 miles northeast of the site. **No impact would occur.**

g) The proposed project would construct individual driveways to each of the three single-family residences. These driveways would need to comply with the City’s applicable private driveway design standards which would ensure adequate emergency access. Therefore, the



project would not interfere with an emergency response/evacuation plan. **No impact would occur.**

h) The entire City of Calabasas is located in a high fire hazard zone. New development would be required to comply with any additional project-specific requirements set forth by the Los Angeles County Fire Department and/or the City's applicable Land Use and Development Code (LUDC) Sections, including, but not limited to, the provision of adequate water pressure and water for fire flows (LUDC Section 17.46.120), adequate site access (LUDC Section 17.28.080), adequate fuel modification (LUDC Section 17.20.150E.3), and any other applicable requirements. **Nevertheless, since the project site is surrounded by native vegetation, located in a high fire hazard zone, and may not be within the Los Angeles County Fire Department's 5-minute emergency response time, impacts related to wildland fire would be potentially significant unless mitigation is incorporated.**

Mitigation Measures

Mitigation Measures HAZ-1 through HAZ-5 would reduce impacts associated with wildland fire to a less than significant level.

- HAZ-1 Fuel Management Zone.** All structures proposed on-site shall be surrounded by a fuel management zone which shall extend at least 100 feet from all on-site structures. This fuel management zone shall include a combination of native vegetation thinning and the planting of fire sensitive landscaping which shall be irrigated. Prior to issuance of a building permit for each residence, the Los Angeles County Fire Department shall review and approve fuel modification plans for Residence No. 1, 2, and 3.
- HAZ-2 Fire District Access Standards.** Roadways and internal circulation systems shall be designed to accommodate fire suppression equipment with adequate turn-around areas as determined by the Los Angeles Fire Department. Prior to issuance of building permits, the Los Angeles County Fire Department shall review and approve all roadway design and fire suppression equipment specifications for Residence No. 1, 2, and 3.
- HAZ-3 Water Facilities.** All new development shall be provided with the water facilities needed to meet fire flow requirements as determined necessary by the Los Angeles County Fire Department. Prior to issuance of building permits, the Los Angeles County Fire Department shall review and approve all water service infrastructure proposed for Residence No. 1, 2, and 3.
- HAZ-4 Fire Hydrants.** Fire hydrants and "blue dots" to identify fire hydrant locations are to be provided as required by the Los Angeles County Fire Department. Prior to issuance of building permits, the Los Angeles County Fire Department shall review and approve all on-site and/or off-site locations of fire hydrants.
- HAZ-5 Building Plan Review.** Prior to approval of a building permit for any new structure intended for human occupancy, the Los Angeles County Consolidated Fire District shall review and approve the project's construction



plans to ensure that all appropriate fire prevention measures have been integrated into the project design.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IX. <u>HYDROLOGY AND WATER QUALITY</u>				
– Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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IX. HYDROLOGY AND WATER QUALITY

– Would the project:

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Section 303 of the federal Clean Water Act requires states to develop water quality standards to protect the beneficial uses of receiving waters. In accordance with California’s Porter/ Cologne Act, the Regional Water Quality Control Boards (RWQCBs) of the State Water Resources Control Board (SWRCB) are required to develop water quality objectives that ensure their region meets the requirements of Section 303 of the Clean Water Act. Calabasas is within the jurisdiction of the Los Angeles RWQCB. The Los Angeles RWQCB adopted water quality objectives in its Stormwater Quality Management Plan (SQMP). This SQMP is designed to ensure that stormwater generated by a development does not exceed the limitations of receiving waters, and thus does not exceed water quality standards. Section 402 of the Clean Water Act ensures compliance with the SQMP. Under this section, municipalities are required to obtain permits for the water pollution generated by stormwater in their jurisdiction. These permits are part of the National Pollutant Discharge Elimination System (NPDES) permit program, and are known as Municipal Separate Storm Sewer Systems (MS4) permits. Under this MS4, each permitted municipality is required to implement the SQMP. In accordance with the County-wide MS4 permit, all new developments must comply with the SQMP. In addition, as required by the MS4 permit, the City of Calabasas has adopted a City Runoff Mitigation Plan (RMP) ordinance to ensure new developments comply with SQMP. The City’s RMP ordinance requires new developments to implement Best Management Practices (BMPs) that reduce water quality impacts, including erosion and siltation, to the maximum extent practicable. This ordinance also requires new developments to submit a plan to the City Engineer that demonstrates how the project would comply with the City’s RMP and confirm which project specific BMPs would be implemented during construction and operation of the project. **Compliance with the City’s stormwater management requirements would reduce impacts to surface water quality to a less than significant level.**

b) The City of Calabasas does not contain any groundwater recharge areas (City of Calabasas General Plan FEIR 2008). Impervious surfaces would cover approximately 66,367 square feet, or about 9% of the 708,767 square foot project site. The areas on-site that would be covered with impervious surfaces would impede groundwater recharge. **No impact would occur**

c-e) The project site currently drains in a southerly direction towards Mulholland Highway, within two separate watersheds (West and East) encompassing 53.5 total acres. The watersheds include the project site and upstream areas off-site primarily to the northwest and the north.



Each of these watersheds drains into separate culverts (MP 28.91 and 29.99, respectively) along the site frontage. Ultimately, these culverts convey runoff beneath and across Mulholland Highway. Diamond West Engineering, Inc. prepared a Draft Hydrology Study (dated March 28, 2012) (included as Appendix E) to determine the project’s potential effect on existing drainage patterns. The report analyzed drainage impacts associated with 10-year, and 50-year 24-hour storm events.

Generally speaking, the project’s proposed drainage improvements collect and convey drainage north to south through the site via a combination of overland flow, storm drain inlets, and detention areas. The flows are then conveyed beneath Mulholland Highway via the two existing culverts referenced above. The project would involve the construction of debris/detention basins and storm drain inlets at strategic locations within Parcel No. 1 and Parcel No.3. The northern basin for Parcel No. 1 is located approximately 50 feet north of Parcel No. 1 grading boundary, at the base of the slope within the adjacent Calabasas Ridge HOA maintained open space. An informal drainage collection is also proposed adjacent to Parcel No. 1’s proposed driveway entrance, just upstream of culvert no. MP 28.91. An informal drainage collection area is also proposed within Parcel No. 3. This drainage improvement is located in the central portion of the site, just west of the proposed private driveway and approximately 200 north of culvert no. MP 29.99. The pre- and post-development flow volumes calculated for the western (MP 28.91) and eastern (29.99) culverts are shown in Table 15. **As shown in this table, the post development flow rates within the existing culverts would be less than the existing flow rates; therefore, the project impacts on existing drainage conditions would be less than significant.**

Table 15
Pre- and Post-Development Runoff Volumes at Western and Eastern Culverts

24-hour, design storm event	Existing Flow (cfs)	Proposed Flow (cfs)	Existing Volume (Acre-Feet)	Proposed Volume (Acre-Feet)
<i>Western Culvert (No. MP 28.91)</i>				
3/4" (Qpm)	0.77	0.25	0.165	0.081
10-year	36.40	19.37	3.34	2.52
50-year	53.60	28.88	5.57	4.59
50-year burned	57.52	30.89	8.73	6.81
50-year bulked	95.5	51.3	--	--
<i>Eastern Culvert (No. MP 29.99)</i>				
3/4" (Qpm)	0.38	0.44	0.016	0.143
10-year	22.3	21.04	1.54	1.68
50-year	48.55	46.40	2.57	2.76
50-year burned	54.59	46.69	4.08	2.82
50-year bulked	90.5	77.55	--	--

Source: 23401-23421 Mulholland Highway Hydrology Study Prepared by Diamond West Engineering, Inc. 2012.

f) As previously mentioned, the proposed project would convert approximately 9% percent of the site from natural to impervious surfaces. This increase in impervious surface area could incrementally increase the volume of stormwater runoff. However, the proposed project would



be subject to the requirements of the Los Angeles County Stormwater Ordinance and the City's RMP ordinance and, as shown, in Table 15, the proposed drainage system would reduce peak flows as compared to current conditions. The proposed project would control runoff and hazards of potential flooding through adherence to the above-required measures and would provide a sufficient drainage system. **Therefore, flood-related impacts from the project would be less than significant.**

g-i) The project site is not located within a 100-year flood hazard area (FEMA Flood Insurance Rate Map Panel No. 06037C1269F, 2008). According to the FEMA map, the northern portion of the project site is located in Zone X, which is defined as an area determined to have less than a 0.2% annual chance of flooding. The southern portion of the project site is located in Zone D, which is defined as an area in which flood hazards are undetermined, but possible. The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding. **No impact would occur.**

j) Inundation by a seiche or tsunami is not expected to occur, as there are no major bodies of water in the vicinity of the project site. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
X. <u>LAND USE AND PLANNING</u> --				
Would the proposal:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with an applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) The project site is currently vacant and undeveloped. The proposed project involves the construction of three single family residences, private pool facilities, and the associated infrastructure improvements that would not physically divide an established community. However, it is important to note that the project would require approximately 6,730 square feet of off-site grading as part of Parcel No.1 development. While this off-site grading would require acquisition of an easement from the adjacent Calabasas Ridge Homeowner's Association prior to issuance of grading permits, it would occur within an undeveloped area and would therefore not divide an established community. **No impact would occur.**



b) All three parcels encompassing the project site are zoned and designated Rural Residential (RR). The project site is also Scenic Corridor (SC) overlay zone (City of Calabasas 2030 General Plan, 2008). Therefore, the proposed project would need to comply with all applicable provisions of the Performance Standards for Hillside Development and Urban Design Standards of Chapter 17.20, the Scenic Corridor Development Guidelines adopted by the council, and all applicable provisions of the City’s Development Code. This would ensure that the proposed project would be consistent with all applicable goals and policies contained within the City’s 2030 General Plan adopted for the purposes of avoiding or mitigating an environment effect.

The project’s proposed lot line adjustment would not impact the overall acreage proposed for development and would not expand or reduce the total acreage designated/zoned as Rural Residential. The proposed lot line adjustment would not expand or reduce the total acreage located within the City’s SC overlay zone. Although the lot line adjustment would increase the total acreage of Parcel No. 1 by 1.194 acres and proportionally reduce the total acreage of Parcel 2, the land use regulations and/or policies applicable to the project site would not change. Furthermore, the proposed building pad for Lot 1 would require approval of a building height variance to allow a maximum building height of 35 feet measured from finished grade (pursuant to (CMC) Section 17.20.140(b)). Approval of the height variance would not result in a building height substantially out of character with the surrounding residential development and therefore it would not conflict with existing policies and/or standards designed to reduce environmental impacts. Therefore, **impacts would be less than significant.**

c. The proposed project would not conflict with any habitat conservation plan or natural community conservation plan as the project site is not located in an area covered under any such plans. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XI. MINERAL RESOURCES --

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-b) Calabasas contains areas identified as MRZ-3, which are areas that contain mineral deposits for which the significance cannot be evaluated. However, the project site is surrounded by residential development, Viewpoint School, and undeveloped open space. Therefore, resource extraction would not be compatible with existing and planned land uses in the City. Furthermore, Policy IV-45 of the General Plan Conservation Element prohibits the



extraction of mineral extraction operations that could result in significant environmental impacts. **Therefore, no impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XII. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, libraries, and parks are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than commercial or industrial uses that are not subject to impacts such as sleep disturbance. Sensitive land uses generally should not be subjected to noise levels that would be considered intrusive in character. Therefore, the location, hours of operation, type of use, and extent of development warrant close analysis in an effort to ensure that noise sensitive receptors are not substantially affected by noise.

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies



around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Noise is often reported as a noise equivalent level (Leq), which is essentially the average sound level over a given time period. Other indices often used to gauge noise include the Day-Night Level (Ldn) and the Community Noise Equivalent Level (CNEL). CNEL is similar to the Ldn except that it adds 5 additional dB to evening noise levels (7:00 p.m. to 10:00 p.m.). The City of Calabasas utilizes the CNEL for measuring noise levels. For the most sensitive uses, such as churches and schools, 60 dBA CNEL is the maximum normally acceptable exterior level.

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Ground-borne vibration related to human annoyance is generally related to root mean square (RMS) velocity levels expressed in vibration decibels (VdB). However, construction-related groundborne vibration in relation to its potential for building damage can also be measured in inches per second (in/sec) peak particle velocity (PPV) (Federal Transit Administration, May 2006). Based on the FTA's *Transit Noise and Vibration Impact Assessment* and the California Department of Transportation's 1992 *Transportation-Related Earthborne Vibration, Technical Advisory*, vibration levels decrease by 6 VdB with every doubling of distance.

City of Calabasas Noise Policies

Section 17.20.160(D) and (E) of the City of Calabasas Land Use and Development Code contain the City's applicable noise performance standards. These code sections establish standards for acceptable exterior and interior noise levels. These standards are intended to protect persons from excessive noise levels, which are detrimental to the public health, welfare and safety since they have the potential to: (i) interfere with sleep, communication, relaxation and the full enjoyment of property; (ii) contribute to hearing impairment and a wide range of adverse physiological stress conditions; and (iii) adversely affect the value of real property. Tables 16 and 17 show the City's exterior and interior noise standards. Section 17.20.160(C) provides a list of exemptions to the exterior noise standards. The exemptions applicable to the project site include:

1. Noise sources associated with construction, including the idling of construction vehicles, provided such activities do not take place before seven a.m. or after six p.m. on any day except Saturday in which no construction is allowed before eight a.m. or after five p.m. No construction is allowed on Sunday's or Federal holidays.
2. Noise sources associated with work performed by private or public utilities in the maintenance or modification of their facilities;
3. Noise sources associated with the collection of waste or garbage from property devoted to other than residential uses.
4. Traffic on public roads and any other activity to the extent regulation thereof has been preempted by state or federal law.



**Table 16
 Exterior Noise Level Standards**

Zone	Time Interval	Hourly Equivalent Sound Level (Leq, dBA)
Residential Zones	Monday—Friday	
RS, RM, RMH, RR, RC, HM, OS	10 p.m. to 7 a.m.	50 dBA
RR, RC, HM, OS	7 a.m. to 10 p.m.	60 dBA
	Saturday and Sunday	
RS, RM, RMH, RR, RC, HM, OS	10 p.m. to 8 a.m.	50 dBA
	8 a.m. to 10 p.m.	60 dBA

Source: City of Calabasas Land Use and Development Code.

**Table 17
 Interior Noise Level Standards**

	Daytime (7a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (Leq, dBA)	45	40
Maximum Level (dBA)	60	55

Source: City of Calabasas Land Use and Development Code.

Vibration Policies

The Federal Transit Administration’s (FTA’s) Transit Noise and Vibration Impact Assessment (May 2006) were used to determine whether or not groundborne vibration would cause damage to nearby structures. Damage criteria vary depending on the type of building adjacent to the vibration source. For example, for a building that is constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up to 102 velocity decibels (VdB) (an equivalent to 0.5 inches per second (in/sec) PPV) (FTA, May 2006) is considered safe and would not result in any construction vibration damage.

a,d) Construction activity associated with the proposed project would temporarily increase ambient noise levels in the project area. Construction of the proposed project would occur over an estimated 12-month period. Grading of the site would take approximately 6 months and would consist of a cut/fill operation to create level building pads, driveways and associated features. The noisiest activities associated with construction typically occur during the site preparation and grading stage. This phase of project construction tends to create the highest noise levels because of the use of heavy equipment, including trucks, bulldozers, graders, and scrapers.

Existing sensitive receptors most likely to be affected by the project include the nearest single-family residential units, which are located approximately 100 feet north of Parcel No. 2 and



approximately 190 feet east of Parcel No. 3. Table 18 shows typical noise levels associated with conventional construction equipment at distances of 100 feet, and 200 feet from the noise source.

Table 18
Typical Construction Noise Levels (in dBA)

Equipment	Typical Level 100 Feet from the Source	Typical level 200 Feet from the Source
Air Compressor	75	69
Backhoe	74	68
Concrete Mixer	79	73
Grader	79	73
Paver	83	76
Saw	70	64
Scraper	83	77
Truck	82	76

As shown in Table 18, noise levels experienced at the closest sensitive receptor (100 feet away) could reach noise levels of up to 89 dBA. For the majority of the construction period, construction activities would occur farther than 100 feet away from the above-referenced sensitive receptors. While the majority of construction activities would occur at distances greater than 100 feet away, these residences would likely be exposed to periodic noise that exceeds normally acceptable noise levels. As described above, the project's construction activities would be exempt from the City's exterior noise standards (City of Calabasas Municipal Code § 17.20.160(C)), as long as construction would be limited to the hours of 7:00 a.m. to 6:00 p.m. on weekdays, 8:00 a.m to 5:00 p.m. on Saturdays, and prohibited on Sundays and federal holidays. This would reduce temporary noise impacts by prohibiting construction noise during the hours when people normally sleep, as well as during the early morning and evening when people are typically within their homes and more sensitive to noise. Furthermore, construction noise levels would be temporary and intermittent. **Despite the temporary nature of construction related noise and its exemption from the City's noise performance standards, the increase in noise during construction is considered potentially significant unless mitigation is incorporated.**

b) Typical groundborne vibration levels during the operation of typical construction equipment is shown in Table 19. These vibration levels experienced at a distance of 100 feet from the vibration source is based on the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (May 2006).



Table 19
Vibration Source Levels for Construction Equipment

Equipment		Approximate VdB
		100 Feet
Pile Driver (impact)	upper range	100
	typical	92
Pile Driver (sonic)	upper range	93
	typical	81
Large Bulldozer		75
Loaded Trucks		74
Jackhammer		67
Small Bulldozer		46

Source: Federal Transit Administration, 2006

The existing residential uses located immediately east and north of the project site are located within 100 feet of where construction would occur. The project’s proposed construction activities were not presumed to require the use of pile drivers and therefore the closest adjacent residence could be exposed to groundborne vibration reaching approximately 75 VdB (large bulldozer at 100 feet). This anticipated vibration level would be below the 102 VdB threshold considered to be safe for buildings constructed with current building standards (Federal Transit Administration, 2006). Additionally, groundborne vibration during construction activity would be temporary and would be limited to the hours of 7:00 AM to 6:00 PM on weekdays, and 8:00 a.m to 5:00 p.m. on Saturdays. This restriction would prevent construction vibration impacts from disturbing the sleep of nearby residents, the closest of which are located approximately 100 feet north the proposed project. **Therefore, impacts would be less than significant.**

c) The proposed single-family residences are located outside of the 60 dBA noise contour for Mulholland Highway (Figure 4.9-3 of Calabasas 2030 General Plan EIR, 2008). A noise level exposure below 60 dBA would fall within the “normally acceptable” range for the proposed single-family residences. Furthermore, the topographic environment between the proposed residential pads and Mulholland Highway would further attenuate roadway noise from Mulholland Highway. Therefore, noise generated along Mulholland Highway, would not significantly affect the proposed project. Furthermore, the incremental increase in noise associated with the proposed single-family residences would not substantially alter noise conditions in the project site vicinity. **Therefore, Impacts would be less than significant.**

e, f) The proposed project would not expose people to excessive noise levels generated by air traffic as there is no airport or private airstrip in the City of Calabasas. The closest airport is the Van Nuys Airport, located approximately 9 miles northeast of the project site. **No impact would occur.**



Mitigation Measures

Project related construction activities would require implementation of Mitigation Measures N-1 through N-4 to reduce construction-related noise impacts. Adherence to Mitigation Measure AQ-2 under either project option, requiring that surrounding properties receive notification of construction times and a construction information inquiry telephone number, would also contribute to the reduction of construction noise impacts to less than significant levels.

- N-1 Mufflers.** During all project site excavation and grading, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers’ standards.

- N-2 Stationary Equipment and Equipment Staging.** All equipment staging and stationary construction equipment shall be located at least 100 feet away from any of the adjacent occupied residential properties.

- N-3 Electrically-Powered Tools and Facilities.** To the extent practical, electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.

- N-4 City Enforcement - Noise.** The Building Official of the City of Calabasas shall enforce noise-attenuating construction requirements, including, but not limited to:
 - *Excavation, grading, and other construction activities related to the proposed project shall comply with City restrictions on hours of construction activity.*
 - *All construction vehicles, such as bulldozers and haul trucks, shall be prohibited from idling in excess of 5 minutes.*
 - *The contractor shall inspect construction equipment to ensure that such equipment is in proper operating condition and fitted with standard factory silencing features. Construction equipment shall utilize all standard factory silencing features, such as equipment mufflers, enclosures, and barriers.*

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XIII. POPULATION AND HOUSING —

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XIII. POPULATION AND HOUSING —

Would the project:

proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

a) The proposed project involves the construction of three single-family residences on three vacant lots that are zoned/designated Rural Residential (RR). The project would not require substantial infrastructure improvements or generate new permanent employment opportunities that would induce population growth. **No impact would occur.**

b-c) The project site is currently vacant and undeveloped. The proposed project would not displace housing or people. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- | | | | | |
|------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| i) Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii) Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XIV. PUBLIC SERVICES

iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a (i) The fire station closest to the project site is Station #68 which is located at 24130 Calabasas Road. Station #68 is part of the Los Angeles County Fire Department. According to the Consolidated Fire Protection District of Los Angeles County (CFPD), a new fire station would need to be constructed when there is an increase of 11.6 million square feet of new development within Calabasas (2030 General Plan Final EIR, 2008). According to the 2030 General Plan, at buildout there would be a net increase of approximately 6,429,145 square feet of development. Given the project’s consistency with 2030 General Plan buildout projections, it would not create the need for a new fire station in Calabasas. However, Calabasas is located in a high fire hazard zone. Thus, new development would be required to comply with any additional project-specific requirements set forth by the Los Angeles County Fire Department, including, but not limited to, the provision of adequate water pressure and water for fire flows (LUDC Section 17.46.120), adequate site access (LUDC Section 17.28.080), adequate fuel modification (LUDC Section 17.20.150E.3), and any other applicable requirements. **Compliance with the code sections listed above and compliance with Mitigation Measures HAZ-1 through HAZ-5 under Section VIII, Hazards and Hazardous Materials, would ensure that impacts related to fire protection service would be less than significant.**

a (ii) The Los Angeles County Sheriff’s Department provides police service to residents of Calabasas. An increase in population incrementally creates the need for more police services. According to the California Department of Finance (2011), the average household density in Calabasas is 2.75 residents per unit. Based on this average, the project would add approximately 8 residents to the City’s population. This population increase is not substantial and is within the City’s General Plan population growth estimates. The project would not create the need for new or expanded police protection facilities. In addition, the applicant would be required to pay standard development impact mitigation fees. **Therefore, impacts related to police protection service would be less than significant.**

a (iii) The proposed project involves the development of three single-family residences and therefore could be expected to generate approximately four students based upon student generation rates published by the Las Virgenes Unified School District. Therefore, the project would not directly or indirectly generate a substantial increase in new students in the area, result in any adverse physical impacts, or impede performance objectives for any of local schools. Nevertheless, the project applicant would be required to pay the applicable statutory school mitigation fees prior to the issuance of building permits. Section 65995(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998) states that payment of



statutory fees“ ...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization.” **Impacts would be less than significant.**

a (iv) Development of the proposed project would add three new dwelling units. According to the California Department of Finance (2011), the average household density in Calabasas is 2.75 residents per unit. Based on this average, the project would add approximately eight residents to the City’s population. The City of Calabasas maintains a parkland target ratio of three acres per 1,000 residents. Thus, the eight residents would result in a demand of 0.024 acres of parkland. To offset this incremental increase in demand, each proposed residence includes the construction of private recreational space (pool, pool house, and other private landscaping areas). The project would not require the construction of additional parks within the City or impede the performance objectives for any of local parks. **Impacts would be less than significant.**

a (v) The project site would be served by the Calabasas Library, which opened in July 2008. The library is expected to meet the City’s library needs through 2030 (2030 General Plan FEIR, 2008). Therefore, because the proposed project would not add population beyond that anticipated in the 2030 General Plan projections, significant impacts related to libraries are not anticipated. **Impacts relating to other services would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XV. RECREATION --

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,b) Please see the discussion above under Section XIII.a(iv). **No impact would occur.**



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVI. TRANSPORTATION / TRAFFIC --				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,b) The proposed project involves the construction of three single-family residences on three vacant parcels. Access to the project site would be provided via Mulholland Highway. Based on average trip generation rates for single-family detached residences, as reported by the Institute of Transportation Engineers (ITE), the proposed project would generate approximately 29 daily vehicle trips on weekdays, including 2 trips during the AM peak hour and 3 trips during the PM peak hour (ITE, Trip Generation, 7th Edition, 2003). **Project related impacts to levels of service at area intersections or on area roadways would be less than significant.**



c) The airport closest to the project site is Van Nuys Airport, located approximately 9 miles to the northeast. **No impact would occur.**

d-e) The project does not include any design features or incompatible uses that would increase traffic hazards. Although the proposed projects involves the construction of two private driveway entrances along Mulholland Highway, the project would be required to provide adequate emergency access in accordance with the City’s Land Use and Development Code Access, Circulation, and Transportation Development Standards and the Hillside and Ridgeline Development Standards (Sections 17.20.020 and 17.20.150, respectively) as a condition of project approval. In addition, the project’s construction plans would be reviewed and approved by LACFD and LASD prior to the issuance of building permits, to ensure that access needs are met. **Therefore, impacts relating to traffic hazards and emergency access would be less than significant.**

f) Each of three proposed single-family residences includes a three-car garage with additional surface parking areas and a drop-off/turnaround area. The length of the driveway along with their required improvements would also be reviewed and approved by the LACFD and LASD prior to issuance of building permits. The portion of Mulholland Highway does not include any existing pedestrian facilities and is not identified by the City of Calabasas as a roadway in need of pedestrian improvements. **No impact related to parking or other transportation policies would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XVII. UTILITIES AND SERVICE SYSTEMS --

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XVII. UTILITIES AND SERVICE SYSTEMS --

Would the project:

serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a,b,e) Wastewater generated in Calabasas is treated at the Tapia Water Reclamation Facility (TWRf), operated by Las Virgenes Municipal Water District (LVMWD). The TWRf has a capacity of 16 million gallons per day (mgd) and currently treats an average of 9.5 mgd (LVMWD, 2011). Therefore, there is a surplus capacity of 6.5 mgd. Wastewater generation factors from the County Sanitation Districts of Los Angeles County were used to determine the proposed project's wastewater generation. Based upon the Los Angeles County Sanitation District's single-family residential wastewater generation rate of 230 gallons per day/unit, the the proposed project would generate an estimated 690 gallons of wastewater per day (gpd). Wastewater generated by the proposed project would account for approximately 0.01% of the Tapia Water Reclamation Facility's available treatment capacity. The project would not require new or expanded wastewater treatment facilities. **Therefore, impacts would be less than significant.**

c) Project development would convert a total 7.27 acres for residential use, including 4.73 acres of proposed grading, roads, infrastructure, and landscaping, and 2.54 acres of associated fuel modification (fuel modification that extends beyond the limits of grading). This conversion would increase the amount of impervious surface when compared to existing conditions. However, as discussed in Section VIII e., *Hydrology and Water Quality*, the proposed on-site drainage improvements would reduce the volume of runoff leaving the site and would not require expansion of existing or downstream drainage infrastructure. **The proposed drainage improvements, along with implementation of the requirements of the Los Angeles County Stormwater Ordinance and the City's RMP (Runoff Mitigation Plan), would ensure drainage infrastructure impacts would remain less than significant.**

d) Water supply within the City of Calabasas is provided by the Las Virgenes Municipal Water District. Neither the City of Calabasas nor other areas served by the Las Virgenes Municipal Water District (LVWMD) have local sources of drinking water to serve the community or surrounding areas. All supplies are imported. The LVWMD obtains its water from the Metropolitan Water District of Southern California (MWD), a water wholesaler that serves



communities throughout the southern California region. The LVMWD’s potable water system currently operates with a storage deficit in the Jed Smith Zone and pumping deficits at the Twin Lakes, Mulwood, and Seminole zones (LVMWD Urban Water Management Plan, 2011). The proposed project would incrementally increase water demand in the City of Calabasas. The residential development water use factor is 625 gpd per single family residential unit (City of Calabasas 2030 General Plan FEIR 2008). Therefore, the proposed project would increase water demand by approximately 1,875 gpd (2.1 AFY). As shown in Table 20, LVMWD total surplus water supply is anticipated to be 147 AFY in 2017 (during the Multiple Dry Year No. 3 scenario) and is anticipated to increase to 2,755 AFY in 2022 and increase to 2,823AFY in 2027. The proposed project would represent a demand of approximately 1.43 percent of the total 2017 regional surplus water supply. The project’s demand, as a percentage of overall 2022 supply would be approximately 0.08 percent.

Table 20
Current and Projected LVMWD Water Supply – Multiple Dry Year No. 3

Water Sources	2017	2022	2027	2032	2037
Imported – MWD	27,474	29,081	30,020	29,465	29,037
Recycled	6,366	7,907	9,488	10,496	10,808
Groundwater	0	0	0	0	0
<i>Total Water Supply</i>	<i>33,839</i>	<i>36,988</i>	<i>39,468</i>	<i>39,961</i>	<i>39,864</i>
<i>Total Water Demand</i>	<i>33,639</i>	<i>34,233</i>	<i>36,645</i>	<i>38,523</i>	<i>39,653</i>
Difference	147	2,755	2,823	1,438	192

Source: 2010 Urban Water Management Plan, LVMWD, 2011.

The proposed project would be consistent with the level of development that was anticipated by the 2030 General Plan for this project area. The 2030 General Plan Final EIR determined that water supplies are sufficient to serve development facilitated by the 2030 General Plan. Therefore, water supplies would be sufficient to serve the proposed development. **Impacts to water supply would be less than significant.**

f,g) The Calabasas Sanitary Landfill, located adjacent to U.S. Highway 101 on Lost Hills Road, would receive solid waste generated by the proposed project. The total capacity of the Calabasas Landfill is 69.7 million cubic yards and its remaining capacity is approximately 8.1 million tons (Los Angeles County Sanitation District, 2011). An average of 1,164 tons of waste is deposited in the landfill daily, with a permitted maximum daily tonnage of 3,500 tons per day. Thus, the landfill can accommodate an average of about 2,336 additional tons of solid waste per day. According to CalRecycle (<http://www.calrecycle.ca.gov/wastechar/wastegenrates/Residential.htm>), single-family residential dwellings would generate 10 lbs./day/unit and thus the proposed project would generate approximately 30 lbs. of solid waste per day (5.475 tons/year) before mandated diversion. The proposed project would be subject to state and local regulations related to solid waste, recycling, and water conservation, including the City’s 75% waste diversion rate by 2012.



Therefore, the project’s estimated annual amount of solid waste generated would be 7.5 lbs./day or 1.37 tons per year. This is within the landfill’s 2,336 tons of remaining daily capacity. **Impacts would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
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XVIII. MANDATORY FINDINGS OF SIGNIFICANCE —

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

a) Construction activities would occur within three vacant parcels, which include significant biological resources. However, mitigation measures for the project have been identified (**Mitigation Measures BIO-1 through BIO-5** to reduce potential impacts to biological resources to a less than significant level. Although the project area is not anticipated to contain any known paleontological or archaeological resources, it may contain previously undetected subsurface paleontological or archaeological resources. Mitigation measures have been identified (**Mitigation Measures CR-1 and CR-2**) to mitigate impacts associated with the discovery of previously undetected subsurface cultural resources during excavation activities. Adherence to this measure would reduce cultural resource impacts to a less than significant level. **With implementation of these measures, potential impacts of the project on these resources would be less than significant. Impacts would be potentially significant unless mitigation is incorporated.**



b) The proposed project involves the construction of three single-family residences on three exiting parcels in an area that the City of Calabasas has designated and zoned as Rural Residential, which allows residential uses. The project would incrementally contribute to cumulative impacts in such areas as transportation, air quality, and noise. However, in all cases, the impacts associated with the three residences would be less than significant or could be reduced to a less than significant level with mitigation measures. **As such, the project's contribution to cumulative impacts would not be considerable and cumulative impacts would be less than significant.**

c) In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. The South Coast Air Basin is currently designated as a non-attainment area for ozone, PM₁₀, and PM_{2.5}. The development of the proposed project would contribute to air pollutant emissions on a short-term basis. Adherence to Mitigation Measures AQ-1 and AQ-2 would reduce short-term construction air quality impacts to a less than significant level. As detailed in the preceding sections, development of the project would not result, either directly or indirectly, in adverse hazards and/or noise effects after adherence to Mitigation Measures HAZ-1 through HAZ-5 and N-1 through N-4. **Therefore, with mitigation, impacts on human beings related to the proposed project would be less than significant. Impacts would be potentially significant unless mitigation is incorporated.**



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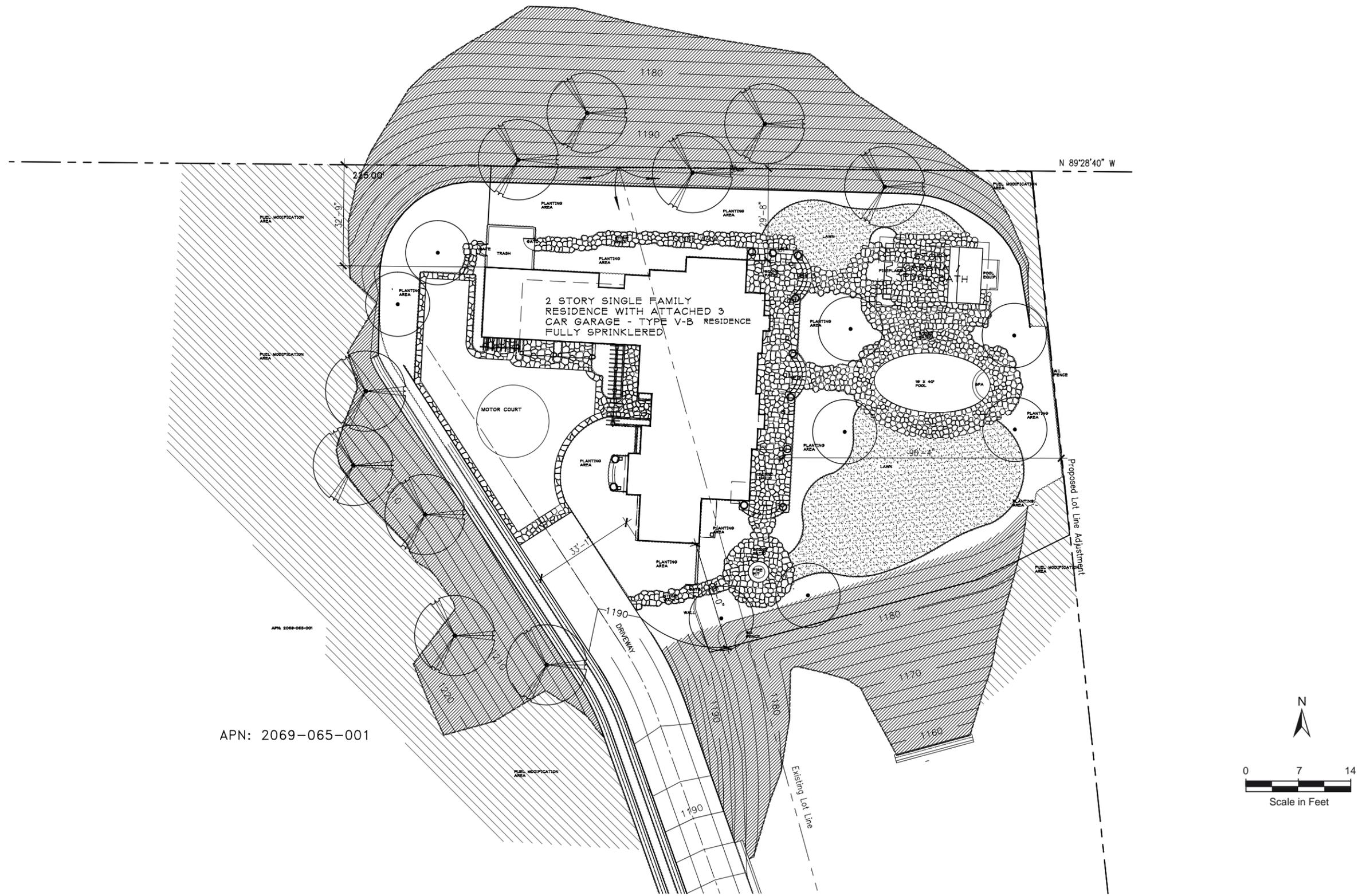
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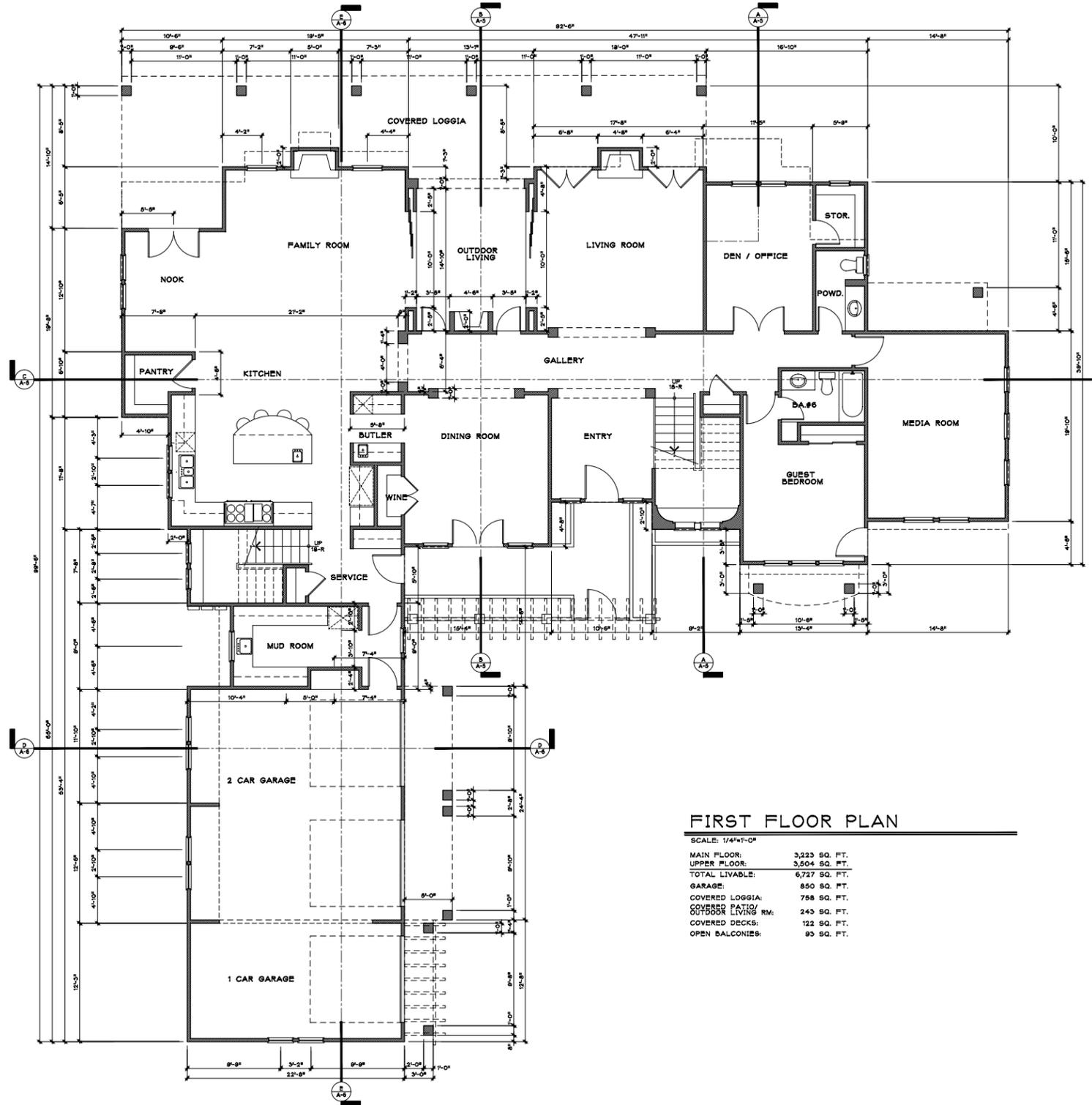




Parcel 1 - Site Plan

FLOOR PLAN KEYNOTES:

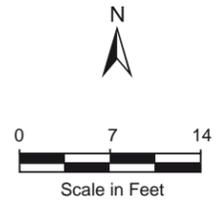
- 1 30" WIDE MINI REFRIGERATOR UNDER CABINET @ BAR OR KITCHENETTE UNIT.
- 2 32" WIDE SIT DOWN VANITY @ MASTER BATH CAB'S.
- 3 12" SQ. SINK W/ FAUCET
- 4 2X6 JAMBS (TYP.)
- 5 W/H ON 20" HIGH WOOD PLATFORM, STRAP TO WALL. VENT TO OUTSIDE AIR THRU EXT. WALL OR ROOF
- 6 LAVATORY SINK & FAUCET
- 7 5/8" TYPE "X" GYP. BD. TAPE AND STAGGER JOINTS
A. FROM FLOOR TO ROOF SHEATHING AT ALL WALLS ADJACENT TO HOUSE
B. ALL WALLS, CLG JST'S, & DROPPED BEAMS SUPPORTING 2ND FLOOR OVER GARAGE
C. CEILING AND WALL OF FLOOR ABOVE CONT. TO ROOF SHEATHING
- 8 MEDICINE CABINET- RECESSED UNIT (VERIFY SIZE)
- 9 SHATTER RESISTANT SHOWER ENCLOSURE
- 10 TUB 42" x 72" OVAL SPA TUB AS SELECTED BY OWNER
- 11 TUB/SHOWER : 32" x 60" TUB W/ CERAMIC TILE WAINSCOT 70" MIN. HEIGHT ABOVE TUB
- 12 LOWER CABINETS W/ COUNTER TOP AS SELECTED BY OWNER-UPPER CABINETS ABOVE.
- 13 SHOWER/HOT MOPPED SHOWER PAN VERIFY SIZE PER PLAN CERAMIC TILE TO CEILING-VERIFY W/ OWNER
- 14 TUB DECK: GRANITE OR MARBLE FINISH AS PER OWNERS SELECTION - 22" HIGH PLATFORM (VERIFY)
- 15 16" SEAT. TILE AT 22" OVER CEMENT FLOAT
- 16 PANTRY W/ SHELVING (6 SHELVES)
- 17 DISHWASHER UNIT
- 18 KITCHEN SINK W/ GARBAGE DISPOSAL
- 19 LOWER CABINETS ONLY WITH WOOD TOP
- 20 60" RANGE UNIT W/ DBL. OVENS BELOW AND HOOD ABOVE
- 21 48" BUILT-IN REFRIGERATOR / FREEZER COMBO W/ RECESSED S OUT FOR WATER.
- 22 FIREPLACE: FACTORY BUILT 36" & 42" & 50" METAL. ISOKERN MODEL #XXXXX
- 23 42" GAS FIREPLACE UNIT W/ CEMENT LOG INSERT AND GLASS D. UL APPROVED UNIT.
- 24 DRYER SPACE
- 25 WASHER SPACE
- 26 DRYER VENT
- 27 CONCRETE STOOP (36"x36" MIN) 2" BELOW WEEP SCREED.
- 28
- 29 ARCHED OPENING W/ GYP. BD. OVER (SEE INTERIOR ELEV.)
- 30 5/8" TYPE "X" GYP. BD. WALLS & CEILING AT USEABLE SPACE UNDER STAIRS
- 31 SHELF & POLE- 2/3 DBL. POLE & SHELF @ BEDROOM CLOSETS
- 32 DUCT CHASE
- 33 F.A.U. UNIT: PROVIDE PLATFORM, F.G. LIGHT & SWITCH. VENT TO OUTSIDE AIR THRU ROOF- SEE DETAILS
- 34 LOW WALL 3'-0" A.P.F. W/ ARCH OPENING ABOVE
- 35 WROUGHT IRON GUARDRAIL 3'-6" A.P.F.
- 36 SHELF 8'-0" A.P.F. 1/2" GYP. BD. O/ 3/8" PLYWOOD.
- 37 ATTIC ACCESS: 30" x 22" WHERE NO HVAC EQUIPT. IS IN ATTIC; 30" x 30" WHERE ATTIC CONTAINS HVAC
- 38 2X6 STUD WALL
- 39 LINEN-UPPERS & LOWER CABINETS
- 40 FULL HEIGHT LINEN
- 41 LAUNDRY SINK SET IN COUNTER TOP @ LOWER CABINET
- 42 CABINETS ABOVE
- 43 FIREPLACE FLUE FROM BELOW
- 44 NICHE- SEE DETAIL
- 45 HANDRAIL AT STAIR (1 AD)
- 46 WATER CLOSET, LOW CONSUMPTION PER ORDINANCE 166004
- 47 18" WIDE TRASH COMPACTOR
- 48 PREP SINK IN ISLAND COUNTERTOP W/ GARBAGE DISPOSAL
- 49 MICROWAVE BUILT IN UPPER CABINETS ABOVE COUNTERTOP
- 50 SMOKE DETECTOR HAND-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL
- 51 EXHAUST FAN- MIN. 5-AIR CHANGES PER HOUR.
- 52 2880 SOLID CORE, SELF- CLOSING 20 MIN RATED DOOR.
- 53 WATERPROOF DECKING SURFACE BY "PLUDECK" IC804 ER 3732
- 54 42" HIGH LOW WALL W/ GYP. BD. OVER
- 55 36" HIGH x 4" DIA. CONC. FILLED PIPE GUARD
- 56 36" WIDE REFRIDGERATOR OR FREEZER SPACE
- 57 CARBON MONOXIDE DETECTOR
- 58



FIRST FLOOR PLAN

SCALE: 1/4"=1'-0"

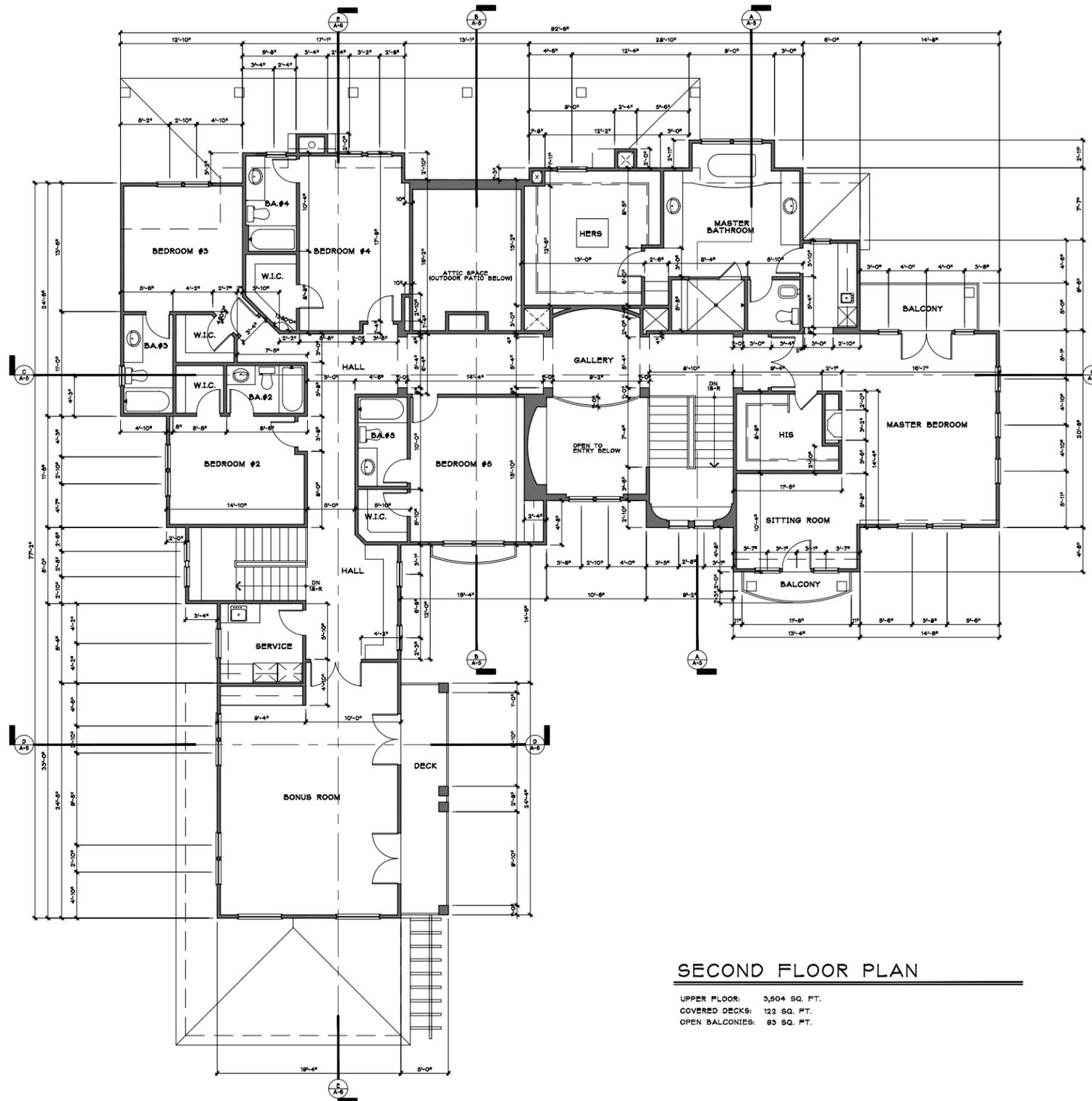
MAIN FLOOR:	3,223 SQ. FT.
UPPER FLOOR:	3,504 SQ. FT.
TOTAL LIVABLE:	6,727 SQ. FT.
GARAGE:	850 SQ. FT.
COVERED LOGGIA:	758 SQ. FT.
COVERED PATIO/ OUTDOOR LIVING RM:	245 SQ. FT.
COVERED DECKS:	122 SQ. FT.
OPEN BALCONIES:	93 SQ. FT.



Parcel 1 - First Floor Plan

FLOOR PLAN KEYNOTES:

- 1 30" WIDE MINI REFRIGERATOR UNDER CABINET @ BAR OR KITCHENETTE UNIT.
- 2 32" WIDE SIT DOWN VANITY @ MASTER BATH CABINETS.
- 3 12" SQ. SINK W/ FAUCET
- 4 2X6 JAMBS (TYP.)
- 5 WH ON 20" HIGH WOOD PLATFORM, STRAP TO WALL VENT TO OUTSIDE AIR THRU EXT. WALL OR ROOF
- 6 LAVATORY SINK & FAUCET
- 7 5/8" TYPE "X" GYP. BD. TAPE AND STAGGER JOINTS
A. FROM FLOOR TO ROOF SHEATHING AT ALL WALLS ADJACENT TO HOUSE
B. ALL WALLS, CLG. JST'S, & DROPPED BEAMS SUPPORTING 2ND FLOOR OVER GARAGE
C. CEILING AND WALL OF FLOOR ABOVE CONT. TO ROOF SHEATHING
- 8 MEDICINE CABINET- RECESSED UNIT (VERIFY SIZE)
- 9 SHATTER RESISTANT SHOWER ENCLOSURE
- 10 TUB 42" x 72" OVAL SPA TUB AS SELECTED BY OWNER
- 11 TUB/SHOWER : 32" x 60" TUB W/ CERAMIC TILE WAINSCOT 70" MIN. HEIGHT ABOVE TUB
- 12 LOWER CABINETS W/ COUNTER TOP AS SELECTED BY OWNER-UPPER CABINETS ABOVE.
- 13 SHOWER-HOT MOPPED SHOWER PAN VERIFY SIZE PER PLAN CERAMIC TILE TO CEILING-VERIFY W/ OWNER
- 14 TUB DECK, GRANITE OR MARBLE FINISH AS PER OWNERS SELECTION - 22" HIGH PLATFORM (VERIFY)
- 15 16" SEAT: TILE AT 22" OVER CEMENT FLOAT
- 16 PANTRY W/ SHELVING (6 SHELVES)
- 17 DISHWASHER UNIT
- 18 KITCHEN SINK W/ GARBAGE DISPOSAL
- 19 LOWER CABINETS ONLY WITH WOOD TOP
- 20 60" RANGE UNIT W/ DBL. OVENS BELOW AND HOOD ABOVE
- 21 48" BUILT-IN REFRIGERATOR / FREEZER COMBO W/ RECESSED 5" OUT FOR WATER.
- 22 FIREPLACE: FACTORY BUILT 36" & 42" & 50" METAL. BROOKLYN MODEL #XXXXX
- 23 42" GAS FIREPLACE UNIT W/ CEMENT LOG INSERT AND GLASS DR. UL APPROVED UNIT.
- 24 DRYER SPACE
- 25 WASHER SPACE
- 26 DRYER VENT
- 27 CONCRETE STOOOP (36"x36" MIN) 2" BELOW WEEP SCREED.
- 28
- 29 ARCHED OPENING W/ GYP. BD. OVER (SEE INTERIOR ELEV.)
- 30 5/8" TYPE "X" GYP. BD. WALLS & CEILING AT USEABLE SPACE UNDER STAIRS
- 31 SHELF: POLE, 2/3 DBL. POLE & SHELF @ BEDROOM CLOSETS
- 32 DUCT CHASE
- 33 FALL UNIT: PROVIDE PLATFORM, F.G. LIGHT & SWITCH. VENT TO OUTSIDE AIR THRU ROOF SEE DETAILS
- 34 LOW WALL 3'-0" A.F.F. W/ ARCH OPENING ABOVE
- 35 WROUGHT IRON GUARDRAIL 3'-6" A.F.F.
- 36 SHELF 8'-0" A.F.F. 1/2" GYP. BD. 0/ 3/8" PLYWOOD
- 37 ATTIC ACCESS, 30" x 22" WHERE NO HVAC EQUIPT. IS IN ATTIC- 30"x30" WHERE ATTIC CONTAINS HVAC
- 38 2X6 STUD WALL
- 39 LINEN-UPPERS & LOWER CABINETS
- 40 FULL HEIGHT LINEN
- 41 LAUNDRY SINK SET IN COUNTER TOP @ LOWER CABINET CABINETS ABOVE
- 42 FIREPLACE FLUE FROM BELOW
- 43 NICHE- SEE DETAIL
- 44 HANDRAIL AT STAIR (1/2")
- 45 WATER CLOSET, LOW CONSUMPTION PER ORDINANCE 165.004
- 46 18" WIDE TRASH COMPACTOR
- 47 PREP SINK IN ISLAND COUNTERTOP W/ GARBAGE DISPOSAL
- 48 MICROWAVE BUILT IN UPPER CABINETS ABOVE COUNTERTOP
- 49 SMOKE DETECTOR HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL
- 50 EXHAUST FAN- MIN. 5-AIR CHANGES PER HOUR.
- 51 2880 SOLID CORE, SELF- CLOSING 20 MIN RATED DOOR.
- 52 WATERPROOF DECKING SURFACE BY "PLIDECK" ICBO# ER 3752
- 53 42" HIGH LOW WALL W/ GYP. BD. OVER
- 54 36" HIGH x 4" DIA. CONC. FILLED PIPE GUARD
- 55 36" WIDE REFRIDGERATOR OR FREEZER SPACE
- 56 CARBON MONOXIDE DETECTOR
- 58



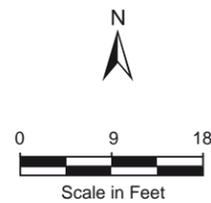
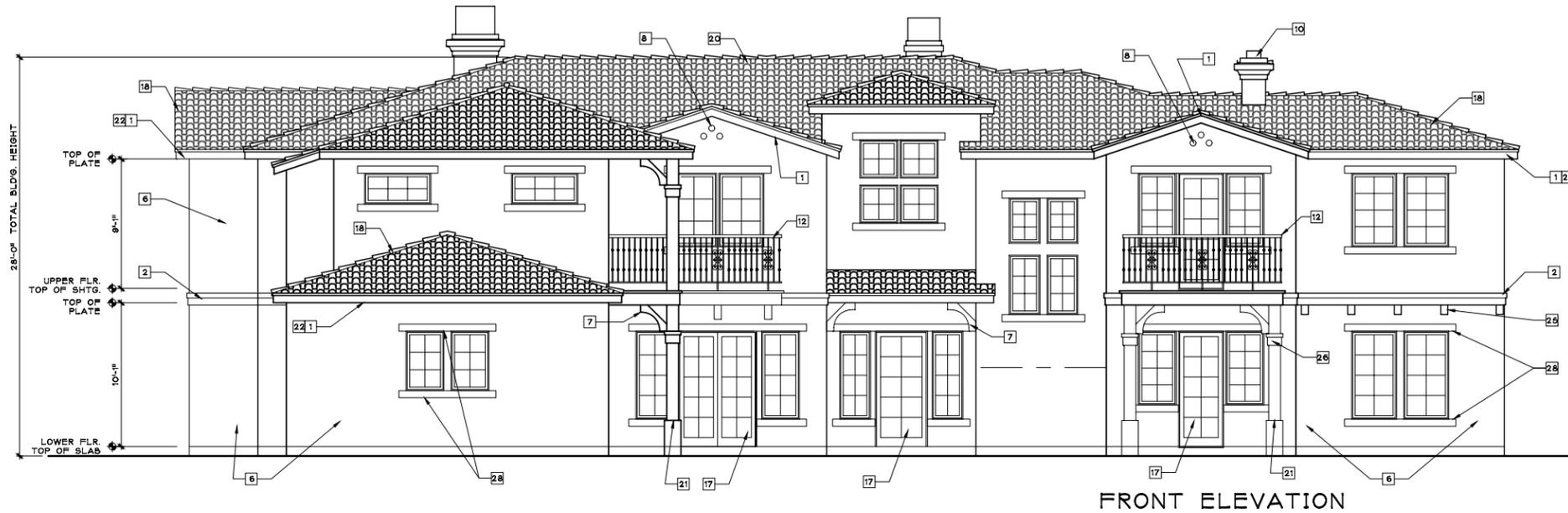
SECOND FLOOR PLAN

UPPER FLOOR: 3,504 SQ. FT.
COVERED DECKS: 122 SQ. FT.
OPEN BALCONIES: 83 SQ. FT.

Parcel 1 - Second Floor Plan

ELEVATION KEYNOTES:

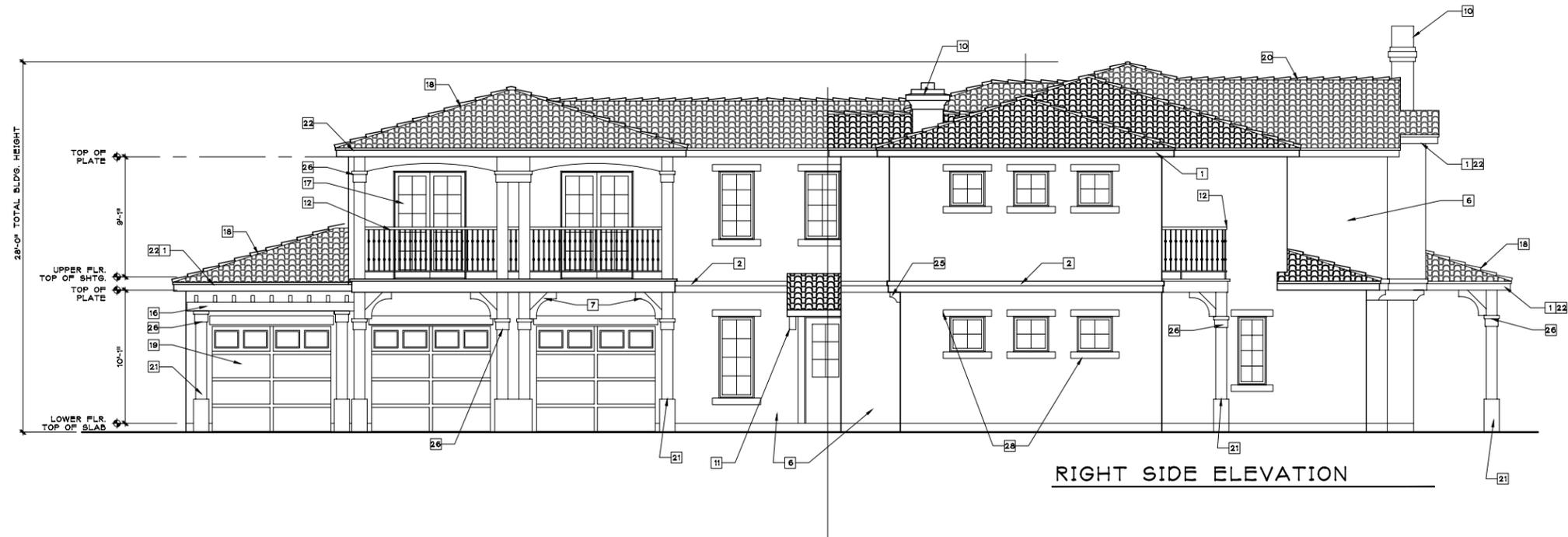
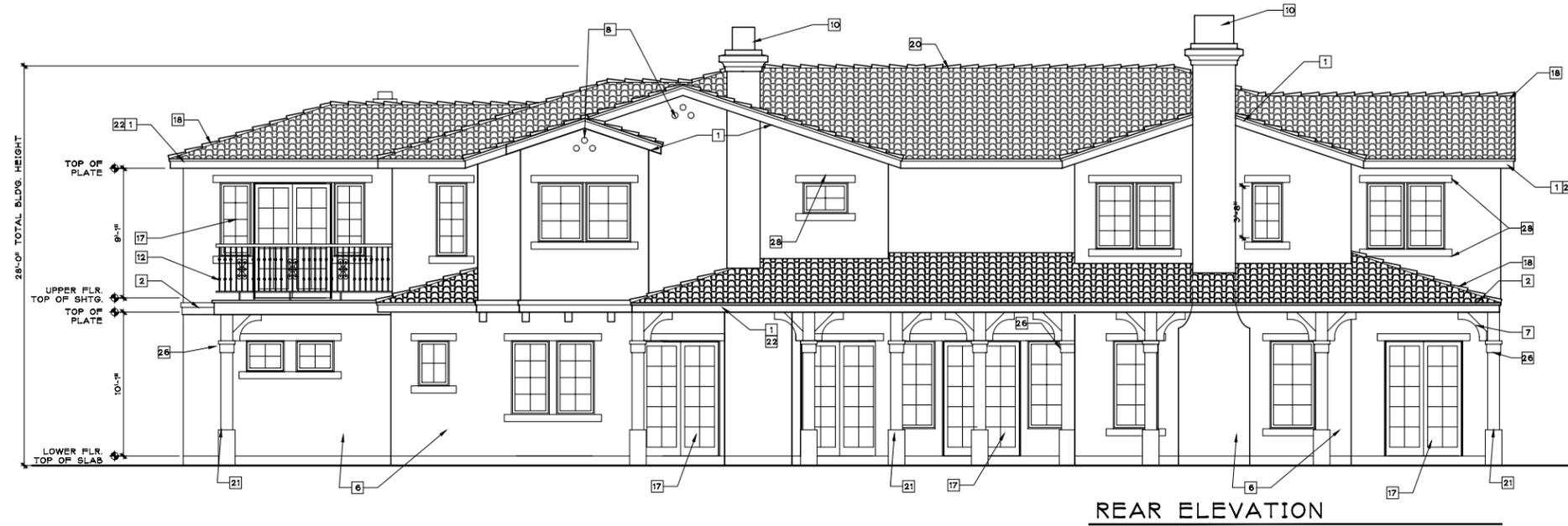
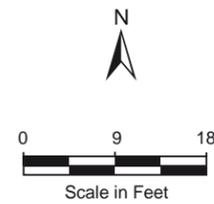
- 1 2X10 FASCIA & BARGE BOARDS @ ALL EAVES (XX/AD1/AD3)
- 2 DECORATIVE FOAM PLANT ON @ FLOOR LINE WITH STUCCO OVER (XX/AD1)
- 3 2X6 FASCIA W/ STUCCO OVER AND STUCCO BOXED EAVE (XX/AD1)
- 4 GABLE END VENT: 18"X 24" G.I. SCREENED & LOUVERED (XX/AD3)
- 5 G.I. FLASHING AT ALL ROOF TO WALL INTERSECTIONS (XX/AD1)
- 6a EXTERIOR STUCCO OVER METAL LATH (1-HOUR @ SIDES) MAIN STUCCO COLOR (XX/AD2)
- 6b EXTERIOR STUCCO OVER METAL LATH (1-HOUR @ SIDES) ACCENT PAINT COLOR (XX/AD2)
- 7 DECORATIVE FOAM KNEE BRACES W/ STUCCO OVER @ COLUMNS (XX/AD2)
- 8 FOAM PIPES @ GABLE END (4" MAX. PROJECTIONS)
- 9 EXPOSED WOOD BEAMS (FALSE TRUSS) AT EXT. LIVING ROOM
- 10 APPROVED CHIMNEY CAP & SPARK ARRESTOR - PROVIDE DECORATIVE FOAM PLANT ON PER DET. (XX/AD3)
- 11 WOOD OUTLOOKER BEAM @ CANOPY ROOF (XX/AD3)
- 12 42" HIGH DECORATIVE WROUGHT IRON GUARDRAIL (XX/AD3)
- 13 CONCRETE STOOP (36"x36" MIN)- VERIFY SIZE W/ FLR PLN
- 14 1/2" G.I. EXPANSION SCREEDS (XX/AD3/AD3)
- 15 G.I. WEEP SCREED- 8" MIN. ABOVE GRADE (2" MIN ABOVE CONC.) (XX/AD2)
- 16 DECORATIVE WOOD BEAM TRELLIS STRUCTURE WALL MOUNTED (XX/AD2)
- 17 EXTERIOR FRENCH DOORS W/ TEMPERED GLASS AS PER SCHEDULE
- 18 CLASS "A" RATED CONCRETE 1/2" TILE ROOFING (ICBO# ER-4660 OR APPROVED EQUAL)
- 19 SECTIONAL OVERHEAD GARAGE DOOR PER OWNER'S SELECTION
- 20 CONCRETE TILE CAP @ RIDGE CONDITION (XX/AD1)
- 21 BOXED STUCCO COLUMNS W FOAM PLANT ON AT TOP & WOOD FURR OUT AT THE BASE (XX/AD1)
- 22 G.I. GUTTERS TYPICAL
- 23 WALL MOUNTED G.I. DOWNSPOUTS
- 24 24" HALF ROUND G.I. DORMER
- 25 6" x 8" FOAM CORBELS W/ EXT. STUCCO OVER @ FLOOR CANTILEVER (XX/AD3)
- 26 DECORATIVE FOAM PLANT ON @ STUCCO BOXED COLUMNS - TYP. (XX/AD3)
- 27 G.I. VENT CAP FOR DRYER VENT THRU ROOF
- 28 2" THICK FOAM PLANT ON @ WINDOW HEAD & SILLS - STUCCO OVER - SEE ELEVATION (XX/AD3/AD3)



Parcel 1 - Front and Left Elevation Plans

ELEVATION KEYNOTES:

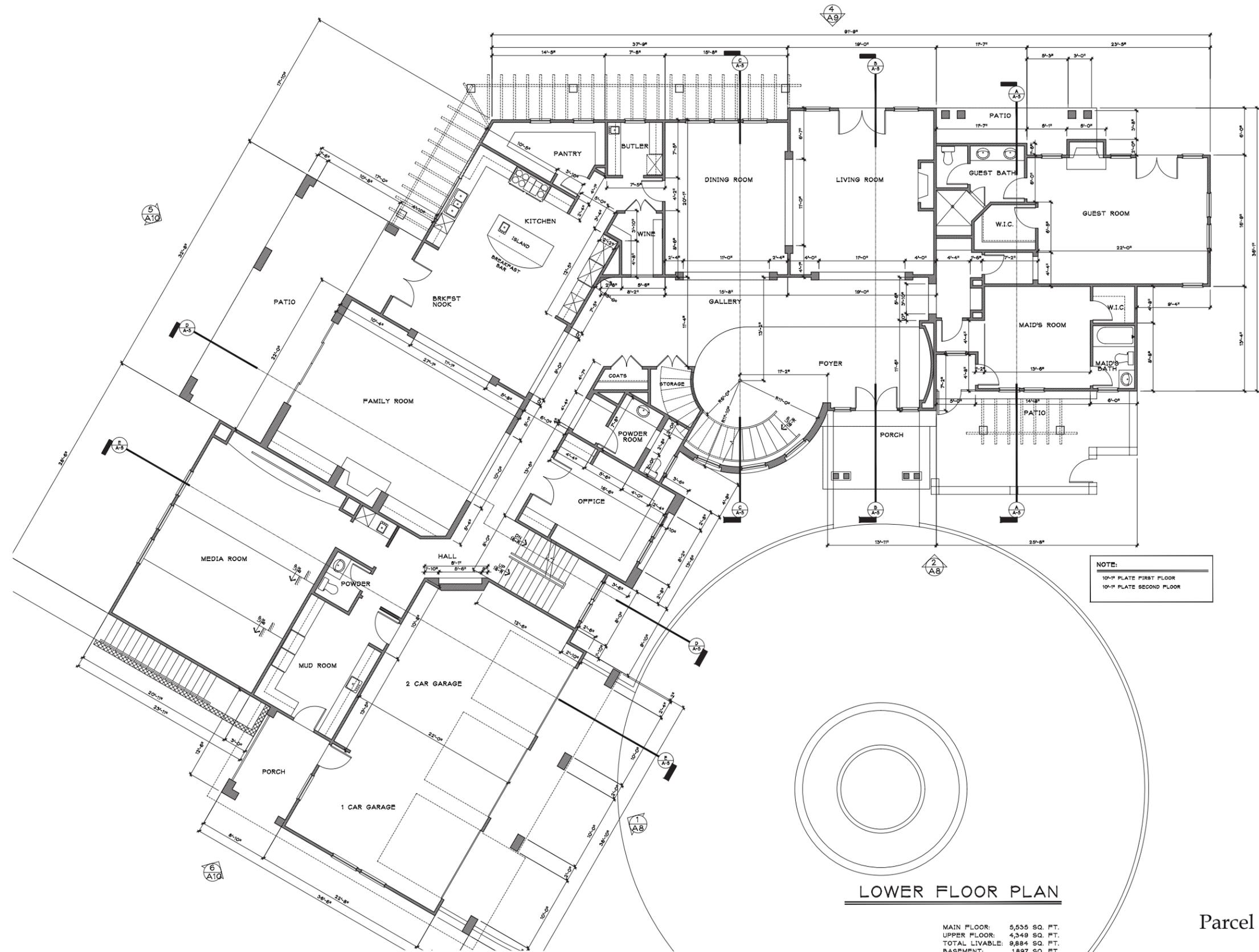
- 1 2X10 FASCIA & BARGE BOARDS @ ALL EAVES (XX) (AD) (AS)
- 2 DECORATIVE FOAM PLANT ON @ FLOOR LINE WITH STUCCO OVER (XX) (AD) (AS)
- 3 2X6 FASCIA W/ STUCCO OVER AND STUCCO BOXED EAVE (XX) (AD) (AS)
- 4 GABLE END VENT: 18"X 24" G.L. SCREENED & LOUVERED (XX) (AD) (AS)
- 6 G.I. FLASHING AT ALL ROOF TO WALL INTERSECTIONS (XX) (AD) (AS)
- 6a EXTERIOR STUCCO OVER METAL LATH (1/2-HOUR @ SIDES) MAIN STUCCO COLOR (XX) (AD) (AS)
- 6b EXTERIOR STUCCO OVER METAL LATH (1/2-HOUR @ SIDES) ACCENT PAINT COLOR (XX) (AD) (AS)
- 7 DECORATIVE FOAM KNEE BRACES W/ STUCCO OVER @ COLUMNS (XX) (AD) (AS)
- 8 FOAM PIPES @ GABLE END (1/2" MAX. PROJECTIONS) (XX) (AD) (AS)
- 9 EXPOSED WOOD BEAMS (FALSE TRUSS) AT EXT. LIVING ROOM (XX) (AD) (AS)
- 10 APPROVED CHIMNEY CAP & SPARK ARRESTOR - PROVIDE DECORATIVE FOAM PLANT ON PER DET. (XX) (AD) (AS)
- 11 WOOD OUTLOOKER BEAM @ CANOPY ROOF (XX) (AD) (AS)
- 12 42" HIGH DECORATIVE WROUGHT IRON GUARDRAIL (XX) (AD) (AS)
- 13 CONCRETE STOOP (3/4"x6" MIN. VERIFY SIZE W/ FLR PLN) (XX) (AD) (AS)
- 14 1/2" G.I. EXPANSION SCREEDS (XX) (AD) (AS)
- 15 G.I. WEEP SCREED- 1/2" MIN. ABOVE GRADE 1" MIN. ABOVE CONCI (XX) (AD) (AS)
- 16 DECORATIVE WOOD BEAM TRELLIS STRUCTURE WALL MOUNTED (XX) (AD) (AS)
- 17 EXTERIOR FRENCH DOORS W/ TEMPERED GLASS AS PER SCHEDULE (XX) (AD) (AS)
- 18 GLASS 1/2" RATED CONCRETE 1/2" TILE ROOFING (250# EN-4660 OR APPROVED EQUAL) (XX) (AD) (AS)
- 19 SECTIONAL OVERHEAD GARAGE DOOR PER OWNERS SELECTION (XX) (AD) (AS)
- 20 CONCRETE TILE CAP @ RIDGE CONDITION (XX) (AD) (AS)
- 21 BOXED STUCCO COLUMNS W FOAM PLANT ON AT TOP & WOOD PURR OUT AT THE BASE (XX) (AD) (AS)
- 22 G.I. GUTTERS TYPICAL (XX) (AD) (AS)
- 23 WALL MOUNTED G.I. DOWNSPOUTS (XX) (AD) (AS)
- 24 24" HALF ROUND G.I. DORMER (XX) (AD) (AS)
- 25 1/2" x 1/2" FOAM CORBELS W/ EXT. STUCCO OVER @ FLOOR CANTILEVER (XX) (AD) (AS)
- 26 DECORATIVE FOAM PLANT ON @ STUCCO BOXED COLUMNS - TYP. (XX) (AD) (AS)
- 27 G.I. VENT CAP FOR DRYER VENT THRU ROOF (XX) (AD) (AS)
- 28 1/2" THICK FOAM PLANT ON @ WINDOW HEAD & SILLS - STUCCO OVER - SEE ELEVATION (XX) (AD) (AS)



Parcel 1 - Rear and Right Elevation Plans



Parcel 2 - Site Plan



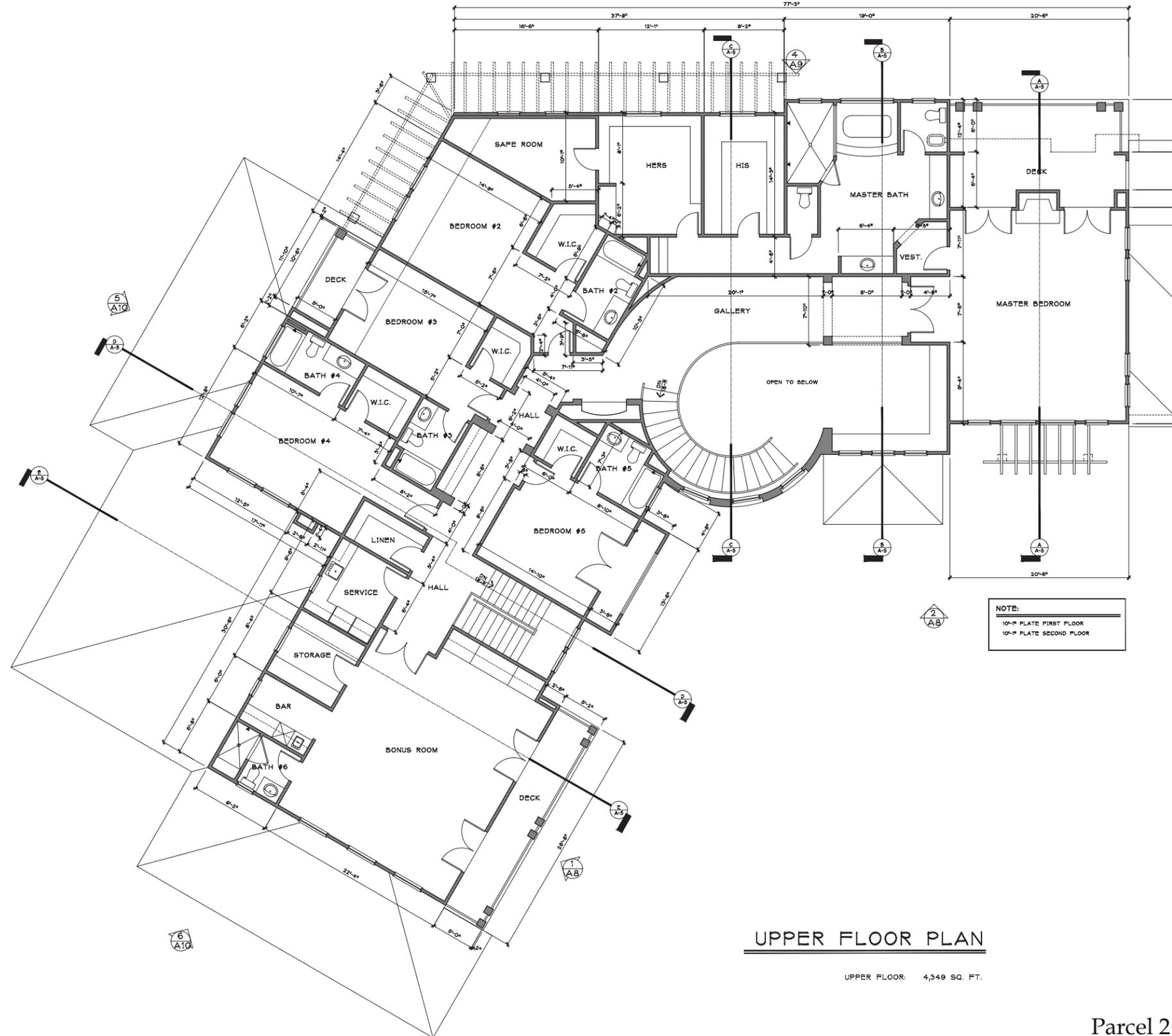
LOWER FLOOR PLAN

MAIN FLOOR: 5,535 SQ. FT.
 UPPER FLOOR: 4,349 SQ. FT.
 TOTAL LIVABLE: 9,884 SQ. FT.
 BASEMENT: 1,897 SQ. FT.

Parcel 2 - First Floor Plan

FLOOR PLAN KEYNOTES:

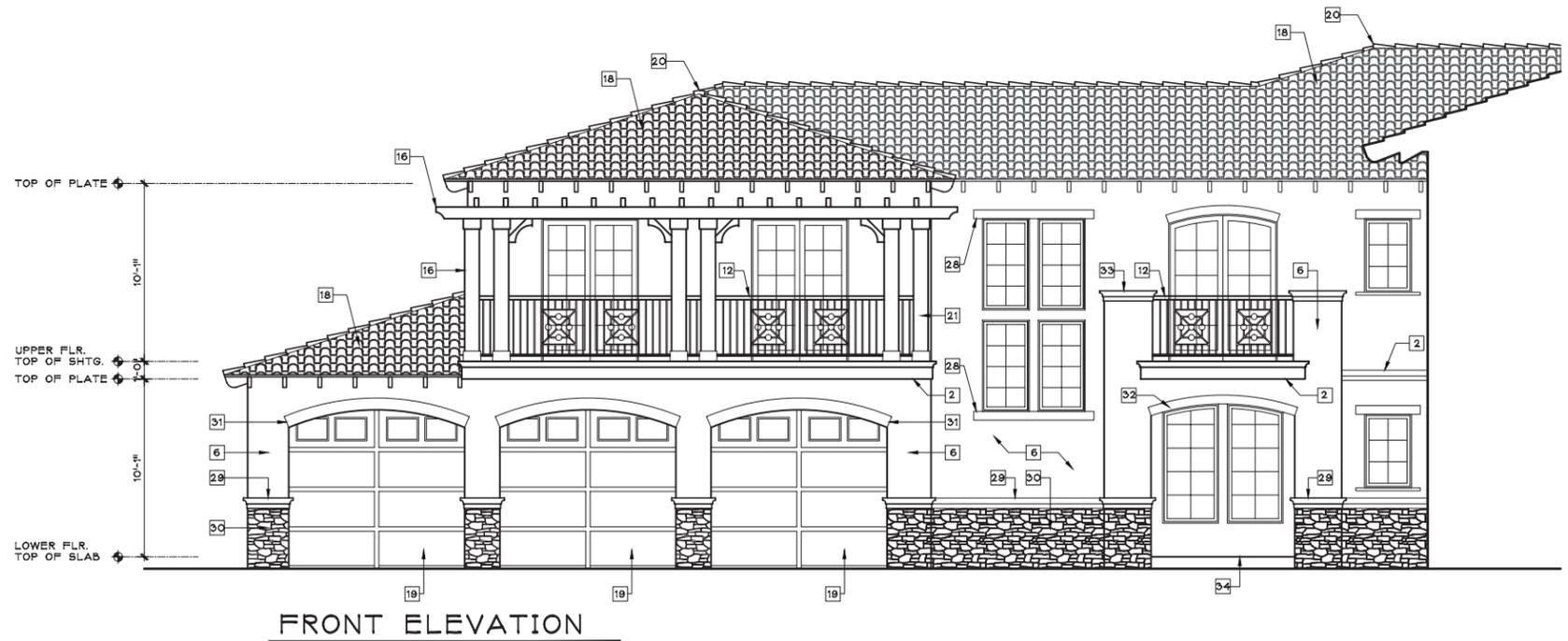
- 1 30" WIDE MINI REFRIGERATOR UNDER CABINET @ BAR OR KITCHENETTE UNIT.
- 2 32" WIDE SIT DOWN VANITY @ MASTER BATH CAB'S.
- 3 12" SQ. SINK W/ FAUCET
- 4 2X6 JAMBS (TYP.)
- 5 W/H ON 20" HIGH WOOD PLATFORM, STRAP TO WALL. VENT TO OUTSIDE AIR THRU EXT. WALL OR ROOF
- 6 LAVATORY SINK & FAUCET
- 7 5/8" TYPE "X" GYP. BD. TAPE AND STAGGER JOINTS
A. FROM FLOOR TO ROOF SHEATHING AT ALL WALLS ADJACENT TO HOUSE
B. ALL WALLS, CL'G JST'S, & DROPPED BEAMS SUPPORTING 2ND FLOOR OVER GARAGE
C. CEILING AND WALL OF FLOOR ABOVE CONT. TO ROOF SHEATHING
- 8 MEDICINE CABINET- RECESSED UNIT (VERIFY SIZE)
- 9 SHATTER RESISTANT SHOWER ENCLOSURE
- 10 TUB 42" x 72" OVAL SPA TUB AS SELECTED BY OWNER
- 11 TUB/SHOWER : 32" x 60" TUB W/ CERAMIC TILE WAINSCOT 70" MIN. HEIGHT ABOVE TUB
- 12 LOWER CABINETS W/ COUNTER TOP AS SELECTED BY OWNER-UPPER CABINETS ABOVE.
- 13 SHOWER-HOT MOPPED SHOWER PAN VERIFY SIZE PER PLAN CERAMIC TILE TO CEILING-VERIFY W/ OWNER
- 14 TUB DECK: GRANITE OR MARBLE FINISH AS PER OWNERS SELECTION - 22" HIGH PLATFORM (VERIFY)
- 15 16" SEAT: TILE AT 22" OVER CEMENT FLOAT
- 16 PANTRY W/ SHELVING (6 SHELVES)
- 17 DISHWASHER UNIT
- 18 KITCHEN SINK W/ GARBAGE DISPOSAL
- 19 LOWER CABINETS ONLY WITH WOOD TOP
- 20 60" RANGE UNIT W/ DBL OVENS BELOW AND HOOD ABOVE
- 21 48" BUILT-IN REFRIGERATOR / FREEZER COMBO W/ RECESSED STUB-OUT FOR WATER.
- 22 FIREPLACE: FACTORY BUILT 36" & 42" & 50" METAL ISOKERN MODEL #XXXXX
- 23 42" GAS FIREPLACE UNIT W/ CEMENT LOG INSERT AND GLASS DOORS. UL APPROVED UNIT.
- 24 DRYER SPACE
- 25 WASHER SPACE
- 26 DRYER VENT
- 27 CONCRETE STOOP (36"x36" MIN.) 2" BELOW WEEP SCREED.
- 28
- 29 ARCHED OPENING W/ GYP. BD. OVER (SEE INTERIOR ELEV.) (1) XXV
- 30 5/8" TYPE "X" GYP. BD. WALLS & CEILING AT USEABLE SPACE UNDER STAIRS
- 31 SHELF & POLE- 2/3 DBL. POLE & SHELF @ BEDROOM CLOSETS
- 32 DUCT CHASE
- 33 F.A.U. UNIT: PROVIDE PLATFORM, F.G. LIGHT & SWITCH. VENT TO OUTSIDE AIR THRU ROOF SEE DETAILS
- 34 LOW WALL 3'-0" A.F.F. W/ ARCH OPENING ABOVE
- 35 WROUGHT IRON GUARDRAIL 3'-6" A.F.F.
- 36 SHELF 9'-1" A.F.F. 1/2" GYP. BD. 0/ 3/8" PLYWOOD.
- 37 ATTIC ACCESS: 30" x 22" WHERE NO HVAC EQUIP'T IS IN ATTIC- 30"x30" WHERE ATTIC CONTAINS HVAC
- 38 2X6 STUD WALL
- 39 LINEN-UPPERS & LOWER CABINETS
- 40 FULL HEIGHT LINEN
- 41 LAUNDRY SINK SET IN COUNTER TOP @ LOWER CABINET CABINETS ABOVE
- 42 CABINETS ABOVE
- 43 FIREPLACE FLUE FROM BELOW
- 44 NICHE- SEE DETAIL
- 45 HANDRAIL AT STAIR (1) ADT
- 46 WATER CLOSET: LOW CONSUMPTION PER ORDINANCE 165.004
- 47 18" WIDE TRASH COMPACTOR
- 48 PREP SINK IN ISLAND COUNTERTOP W/ GARBAGE DISPOSAL
- 49 MICROWAVE BUILT IN UPPER CABINETS ABOVE COUNTERTOP
- 50 SMOKE DETECTOR HARD-WIRED W/ BATTERY BACK-UP AND LOW BATTERY SIGNAL
- 51 EXHAUST FAN- MIN. 5-AIR CHANGES PER HOUR.
- 52 2880 SOLID CORE, SELF- CLOSING 20 MIN RATED DOOR.
- 53 WATERPROOF DECKING SURFACE BY "PLUDECK" ICBO# ER 3732
- 54 42" HIGH LOW WALL W/ GYP. BD. OVER
- 55 36" HIGH x 4" DIA. CONC. FILLED PIPE GUARD
- 56 36" WIDE REFRIDGERATOR OR FREEZER SPACE
- 57 CARBON MONOXIDE DETECTOR
- 58



Parcel 2 - Second Floor Plan

ELEVATION KEYNOTES:

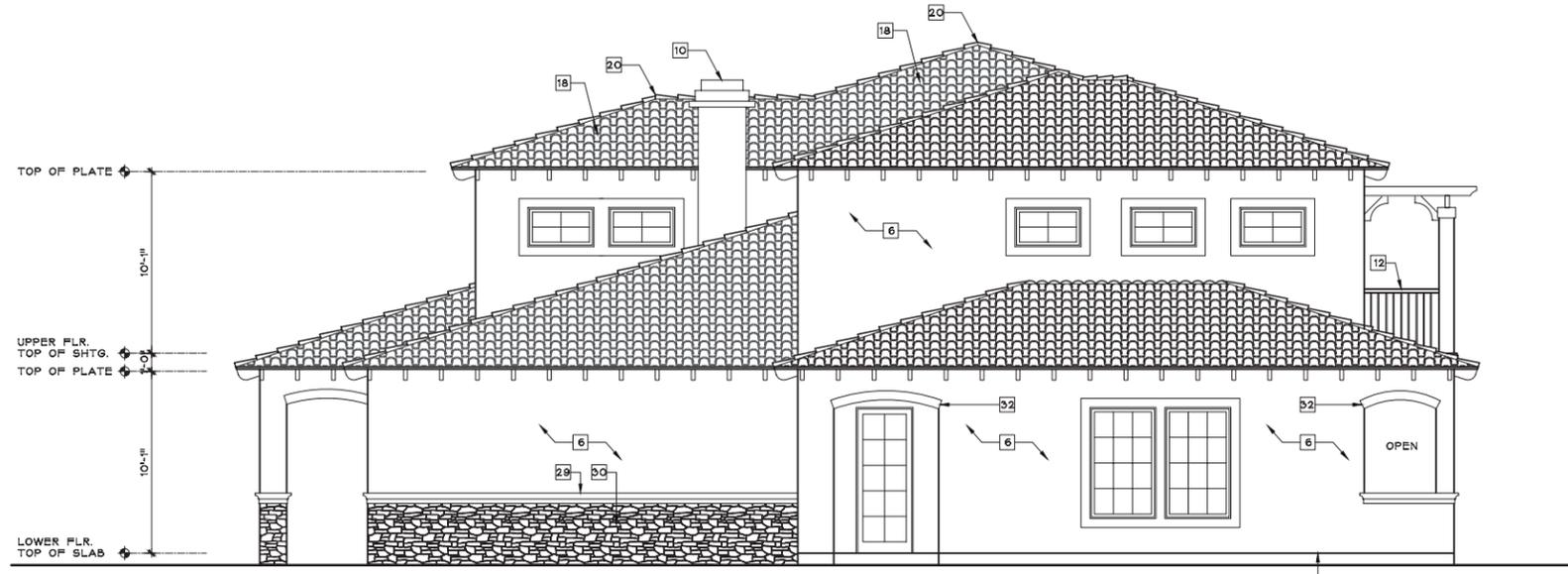
- 1 4X8 EXPOSED RAFTER TAILS @ ALL EAVES (8/AD1)
- 2 DECORATIVE FOAM PLANT ON @ FLOOR LINE WITH STUCCO OVER (4a/AD1)
- 3 NOT IN USE
- 4 NOT IN USE
- 5 G.I. FLASHING AT ALL ROOF TO WALL INTERSECTIONS (2g/AD1, 4/AD1)
- 6 EXTERIOR STUCCO OVER METAL LATH (1-HOUR @ SIDES) MAIN STUCCO COLOR (16/AD1)
- 7 DECORATIVE FOAM KNEE BRACES W/ STUCCO OVER @ COLUMNS (20/AD1)
- 8 NOT IN USE
- 9 NOT IN USE
- 10 APPROVED CHIMNEY CAP & SPARK ARRESTOR - PROVIDE DECORATIVE FOAM PLANT ON PER DET. (10/AD1)
- 11 WOOD OUTLOOKER BEAM @ CANOPY ROOF (25/AD1)
- 12 42" HIGH DECORATIVE WROUGHT IRON GUARDRAIL (21/AD1)
- 13 CONCRETE STOOP (36"x36" MIN.)- VERIFY SIZE W/ FLR PLN
- 14 1/2" G.I. EXPANSION SCREEDS (15/AD1, 15a/AD1)
- 15 G.I. WEEP SCREED- 8" MIN. ABOVE GRADE (2" MIN ABOVE CONC.) (16/AD1, 23/AD1)
- 16 DECORATIVE WOOD BEAM TRELLIS STRUCTURE WALL MOUNTED
- 17 EXTERIOR FRENCH DOORS W/ TEMPERED GLASS AS PER SCHEDULE
- 18 CLASS "A" RATED CONCRETE #5" TILE ROOFING ICBO# ER-4660 OR APPROVED EQUAL
- 19 SECTIONAL OVERHEAD GARAGE DOOR PER OWNER'S SELECTION
- 20 CONCRETE TILE CAP @ RIDGE CONDITION (3/AD1)
- 21 BOXED STUCCO COLUMNS W FOAM PLANT ON AT TOP & WOOD FURR OUT AT THE BASE (6/AD1)
- 22 G.I. GUTTERS TYPICAL
- 23 WALL MOUNTED G.I. DOWNSPOUTS
- 24 24" HALF ROUND G.I. DORMER
- 25 6" x 8" FOAM CORBELS W/ EXT. STUCCO OVER @ FLOOR CANTILEVER (8/AD1)
- 26 DECORATIVE FOAM PLANT ON @ STUCCO BOXED COLUMNS - TYP. (20/AD1)
- 27 G.I. VENT CAP FOR DRYER VENT THRU ROOF
- 28 2" THICK FOAM PLANT ON @ WINDOW HEAD & SILLS - STUCCO OVER - SEE ELEVATION (17/AD1, 19/AD1)
- 29 PRE-CAST STONE WATERTABLE (26/AD1)
- 30 ADHERED STONE VENEER OVER APPROVED METAL LATH AND STUCCO BROWNCOAT
- 31 DECORATIVE FOAM PLANT ON @ GARAGE DOOR HEADER
- 32 DECORATIVE FOAM PLANT ON @ ARCHED OPENINGS
- 33 DECORATIVE FOAM PLANT ON @ LOW WALL
- 34 CONCRETE PORCH



Parcel 2 - Front Elevation Plans

ELEVATION KEYNOTES:

- 1 4x8 EXPOSED RAFTER TAILS @ ALL EAVES (8/AD1)
- 2 DECORATIVE FOAM PLANT ON @ FLOOR LINE WITH STUCCO OVER (4a/AD1)
- 3 NOT IN USE
- 4 NOT IN USE
- 5 G.I. FLASHING AT ALL ROOF TO WALL INTERSECTIONS (2a/AD1, 4/AD1)
- 6 EXTERIOR STUCCO OVER METAL LATH (1-HOUR @ SIDES) MAIN STUCCO COLOR (16/AD1)
- 7 DECORATIVE FOAM KNEE BRACES W/ STUCCO OVER @ COLUMNS (20/AD1)
- 8 NOT IN USE
- 9 NOT IN USE
- 10 APPROVED CHIMNEY CAP & SPARK ARRESTOR - PROVIDE DECORATIVE FOAM PLANT ON PER DET. (10/AD1)
- 11 WOOD OUTLOOKER BEAM @ CANOPY ROOF (25/AD1)
- 12 42" HIGH DECORATIVE WROUGHT IRON GUARDRAIL (21/AD1)
- 13 CONCRETE STOOP (36"x36" MIN.)- VERIFY SIZE W/ FLR PLN
- 14 1/2" G.I. EXPANSION SCREEDS (15/AD1, 15a/AD1)
- 15 G.I. WEEP SCREED- 8" MIN. ABOVE GRADE (2" MIN ABOVE CONC.) (16/AD1, 23/AD1)
- 16 DECORATIVE WOOD BEAM TRELLIS STRUCTURE WALL MOUNTED
- 17 EXTERIOR FRENCH DOORS W/ TEMPERED GLASS AS PER SCHEDULE
- 18 CLASS "A" RATED CONCRETE "S" TILE ROOFING ICBO# ER-4660 OR APPROVED EQUAL
- 19 SECTIONAL OVERHEAD GARAGE DOOR PER OWNER'S SELECTION
- 20 CONCRETE TILE CAP @ RIDGE CONDITION (3/AD1)
- 21 BOXED STUCCO COLUMNS W FOAM PLANT ON AT TOP & WOOD FURR OUT AT THE BASE (6/AD1)
- 22 G.I. GUTTERS TYPICAL
- 23 WALL MOUNTED G.I. DOWNSPOUTS
- 24 24" HALF ROUND G.I. DORMER
- 25 6" x 8" FOAM CORBELS W/ EXT. STUCCO OVER @ FLOOR CANTILEVER (8/AD1, 25/AD1)
- 26 DECORATIVE FOAM PLANT ON @ STUCCO BOXED COLUMNS - TYP. (20/AD1)
- 27 G.I. VENT CAP FOR DRYER VENT THRU ROOF
- 28 2" THICK FOAM PLANT ON @ WINDOW HEAD & SILLS - STUCCO OVER - SEE ELEVATION (17/AD1, 19/AD1)
- 29 PRE-CAST STONE WATERTABLE (26/AD1)
- 30 ADHERED STONE VENEER OVER APPROVED METAL LATH AND STUCCO BROWNCOAT
- 31 DECORATIVE FOAM PLANT ON @ GARAGE DOOR HEADER
- 32 DECORATIVE FOAM PLANT ON @ ARCHED OPENINGS
- 33 DECORATIVE FOAM PLANT ON @ LOW WALL
- 34 CONCRETE PORCH



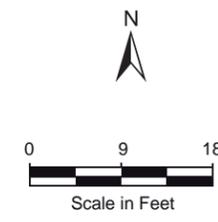
SIDE ELEVATION



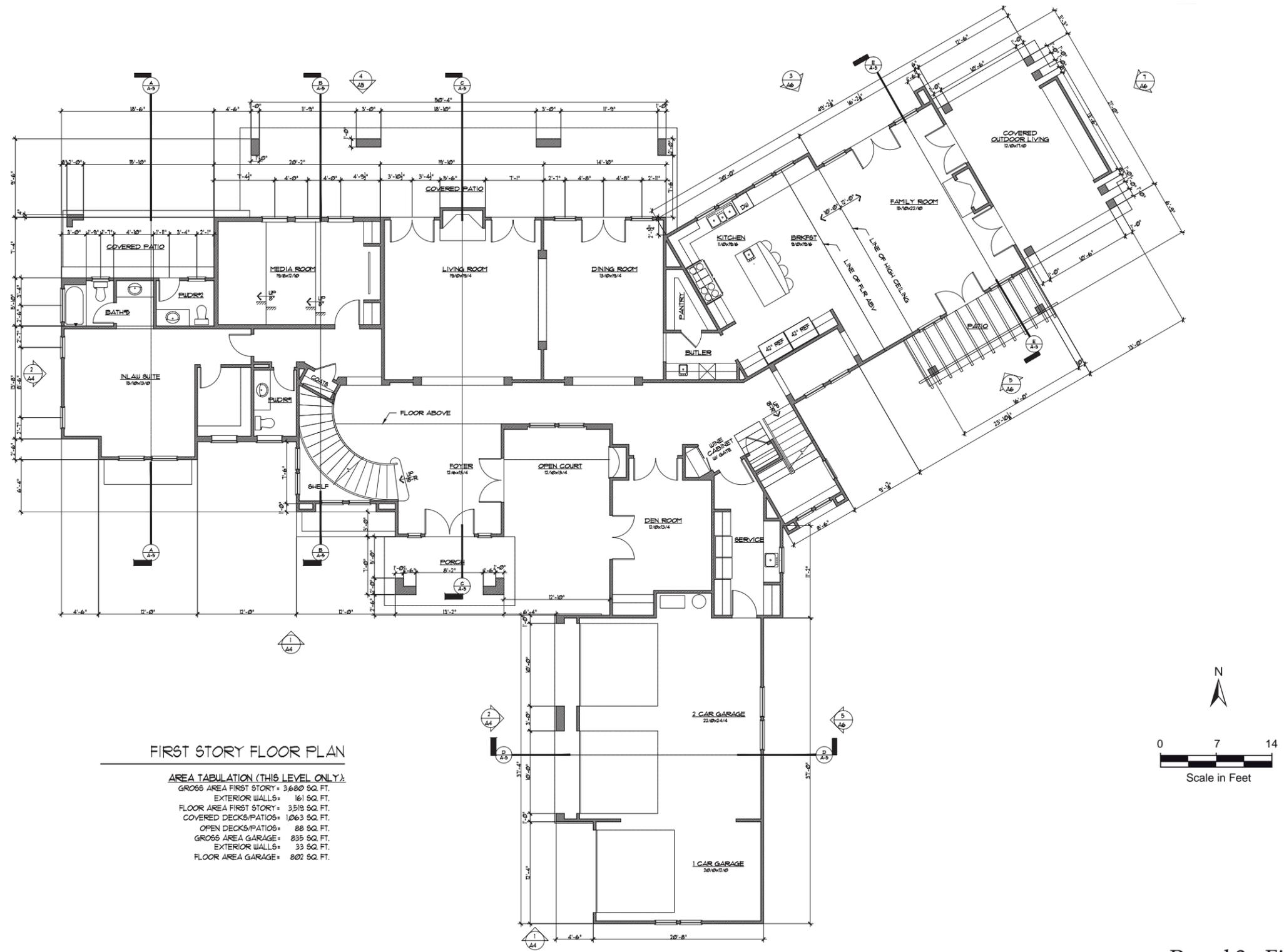
REAR ELEVATION



Parcel 2 - Side and Rear Elevation Plans



Parcel 3 - Site Plan

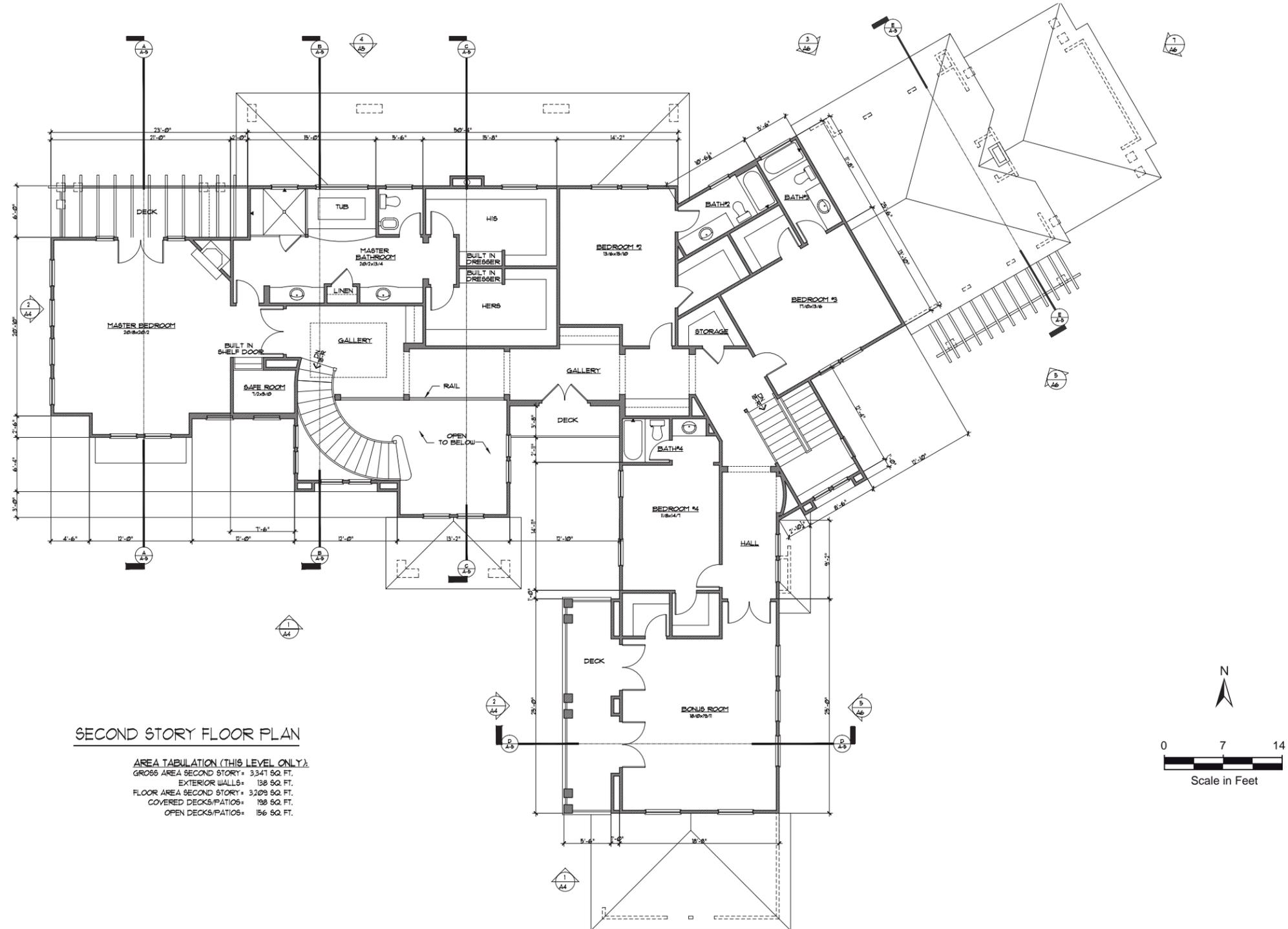


FIRST STORY FLOOR PLAN

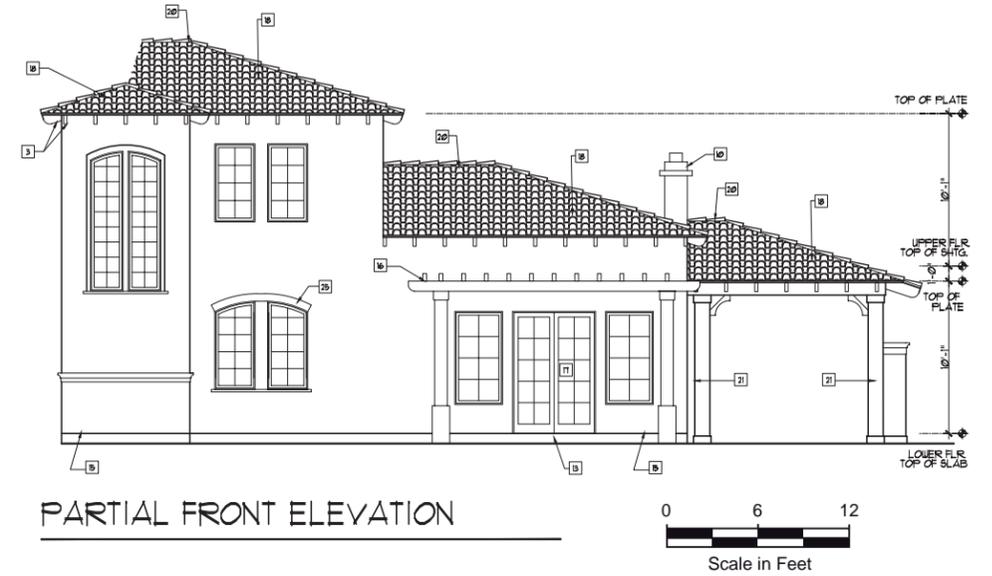
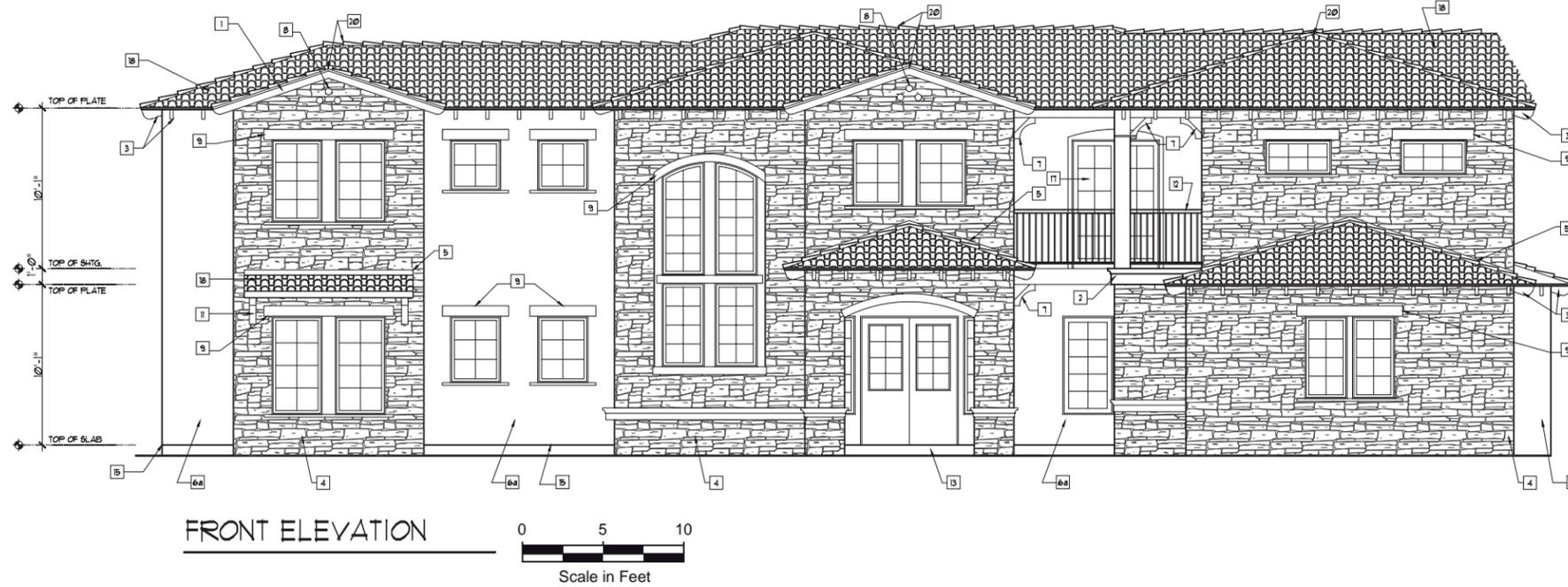
AREA TABULATION (THIS LEVEL ONLY):

GROSS AREA FIRST STORY	= 3,680 SQ. FT.
EXTERIOR WALLS	= 161 SQ. FT.
FLOOR AREA FIRST STORY	= 3,519 SQ. FT.
COVERED DECKS/PATIOS	= 1,063 SQ. FT.
OPEN DECKS/PATIOS	= 88 SQ. FT.
GROSS AREA GARAGE	= 835 SQ. FT.
EXTERIOR WALLS	= 33 SQ. FT.
FLOOR AREA GARAGE	= 802 SQ. FT.

Parcel 3 - First Floor Plan

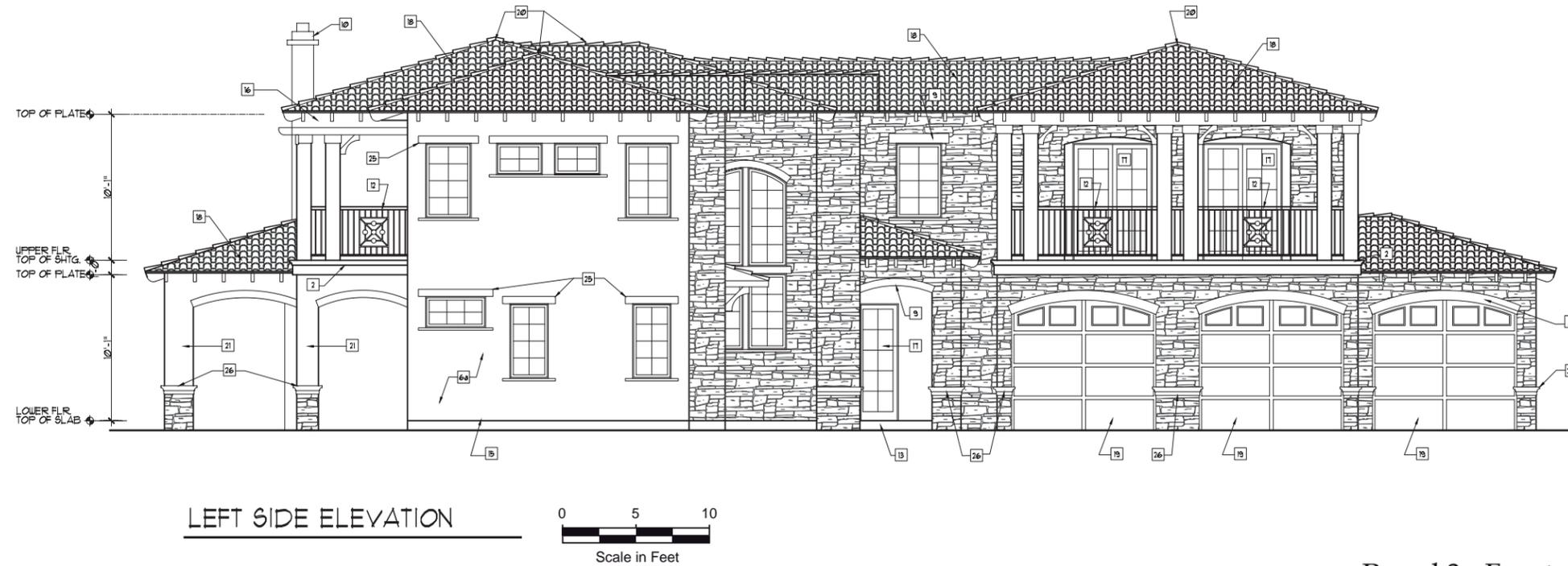


Parcel 3 - Second Floor Plan

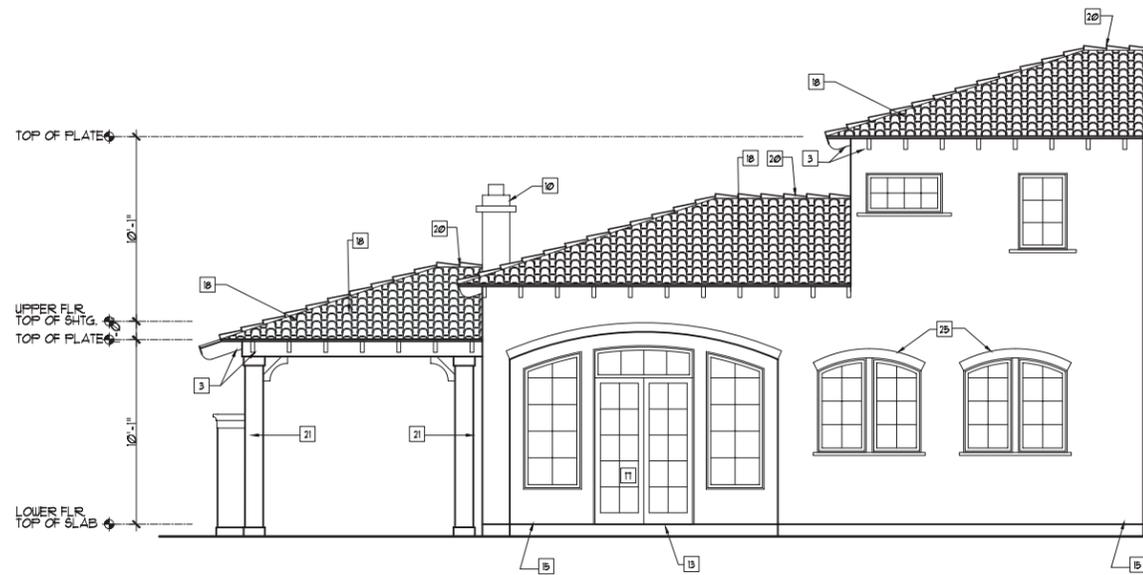


ELEVATION KEYNOTES:

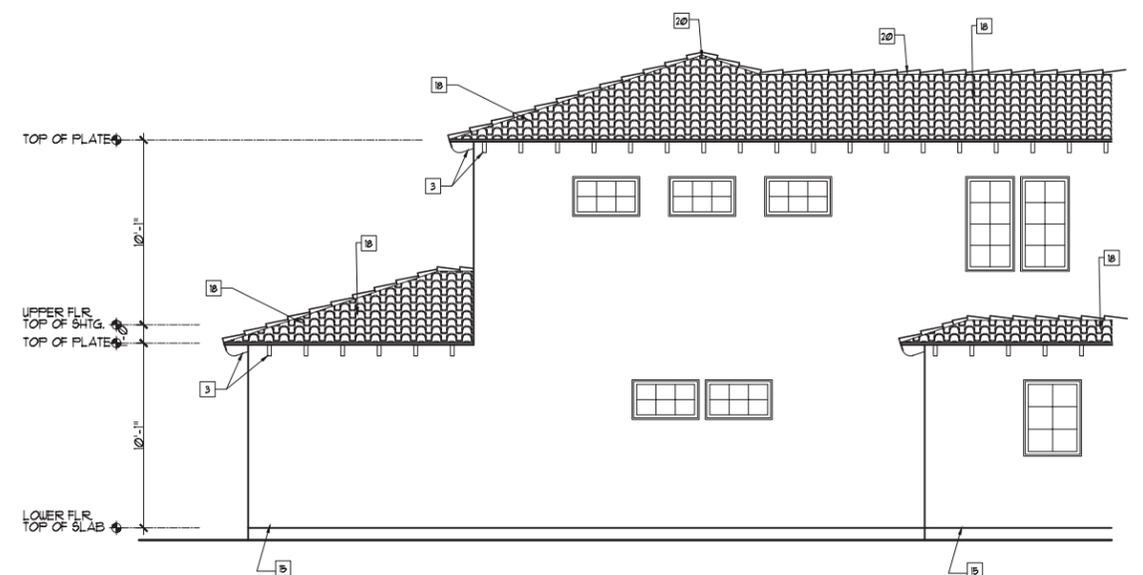
- 1 3x8 BARGE BOARDS • ALL RAKE WALLS (XX/AD3)
- 2 DECORATIVE FOAM PLANT ON • FLOOR LINE WITH STUCCO OVER (XX/AD1)
- 3 3x8 RAFTER TAILS • EXPOSED EAVE (XX/AD1)
- 4 ADHERED STONE VENEER OVER STUCCO BROWN COAT BY "EL DORADO" STONE ICC-ES® ESR-215 OR EQUAL (XX/AD3)
- 5 G.I. FLASHING AT ALL ROOF TO WALL INTERSECTIONS (XX/AD1)
- 6a EXTERIOR STUCCO OVER METAL LATH (1-HOUR • SIDES) MAIN STUCCO COLOR (XX/AD2)
- 6b EXTERIOR STUCCO OVER METAL LATH (1-HOUR • SIDES) ACCENT PAINT COLOR (XX/AD2)
- 7 DECORATIVE FOAM KNEE BRACES W/ STUCCO OVER • COLUMNS (XX/AD2)
- 8 FOAM PIPES • GABLE END (4" MAX. PROJECTIONS)
- 9 2x8 FOAM PLANT-ON W/ STUCCO OVER • WINDOW HEAD (3x8 • VENEER CONDITION) (XX/AD2)
- 10 APPROVED CHIMNEY CAP & SPARK ARRESTOR - PROVIDE DECORATIVE FOAM PLANT ON PER DET. (XX/AD3)
- 11 WOOD OUTLOOKER BEAM & BRACE • CANOPY ROOF (XX/AD3)
- 12 42" HIGH DECORATIVE WROUGHT IRON GUARDRAIL (XX/AD3)
- 13 CONCRETE STOOP (36"x36" MIN.) - VERIFY SIZE W/ FLR PLN
- 14 1/2" G.I. EXPANSION SCREEDS (XX/AD3)
- 15 G.I. WEEP SCREED - 8" MIN. ABOVE GRADE (6" MIN ABOVE CONC.) (XX/AD2)
- 16 DECORATIVE WOOD BEAM TRELLIS STRUCTURE WALL MOUNTED (XX/AD2)
- 17 EXTERIOR FRENCH DOORS W/ TEMPERED GLASS AS PER SCHEDULE
- 18 CLASS "A" RATED CONCRETE 19" TILE ROOFING (ICBO® ER-4660 OR APPROVED EQUAL)
- 19 SECTIONAL OVERHEAD GARAGE DOOR PER OWNER'S SELECTION
- 20 CONCRETE TILE CAP • RIDGE CONDITION (XX/AD1)
- 21 BOXED STUCCO COLUMNS W/ FOAM PLANT ON AT TOP & WOOD FURR OUT AT THE BASE (XX/AD1)
- 22 G.I. GUTTERS TYPICAL
- 23 WALL MOUNTED G.I. DOWNSPOUTS
- 24 24" HALF ROUND G.I. DORMER
- 25 2x6 FOAM PLANT-ONS W/ STUCCO OVER • WINDOWS
- 26 STONE WATERTABLE • VENEER (SLOPE TO DRAIN- TYP) (XX/AD3)
- 27 G.I. VENT CAP FOR DRYER VENT THRU ROOF
- 28 2" THICK FOAM PLANT ON • WINDOW HEAD & SILLIS - STUCCO OVER - SEE ELEVATION (XX/AD3)



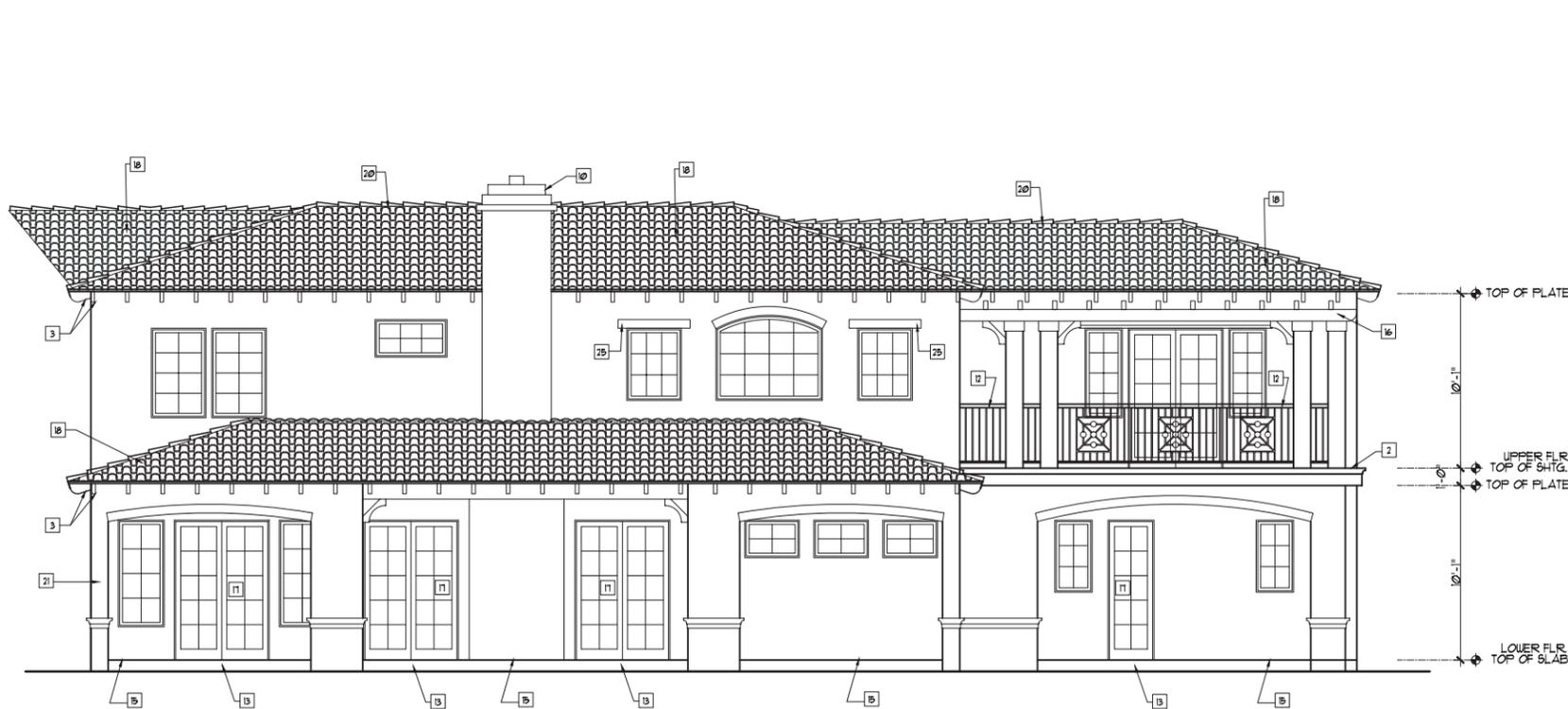
Parcel 3 - Front and Left Side Elevation Plans



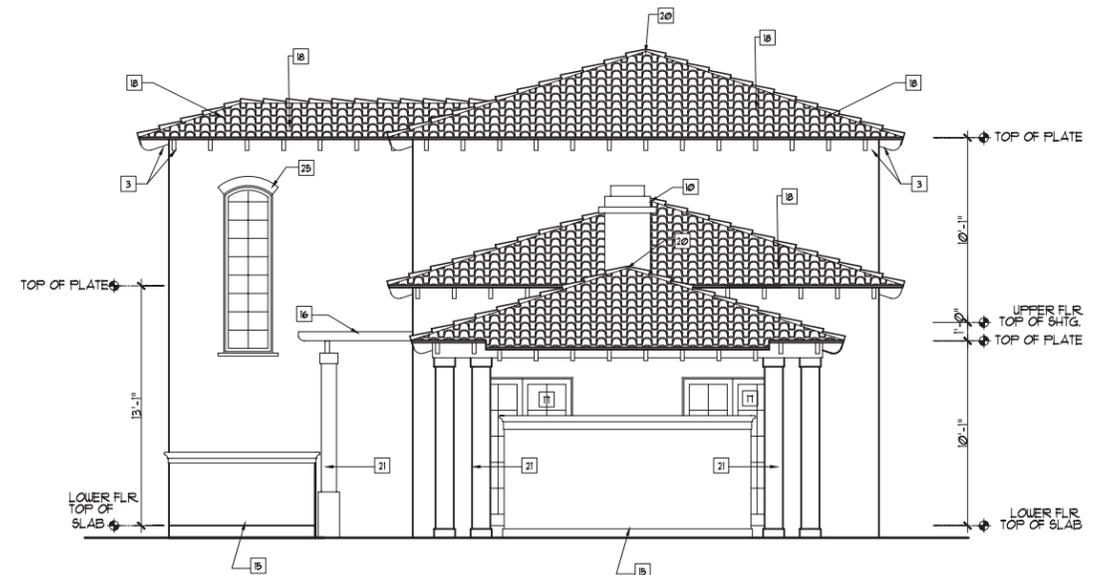
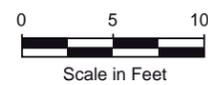
PARTIAL REAR ELEVATION



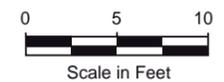
RIGHT SIDE ELEVATION



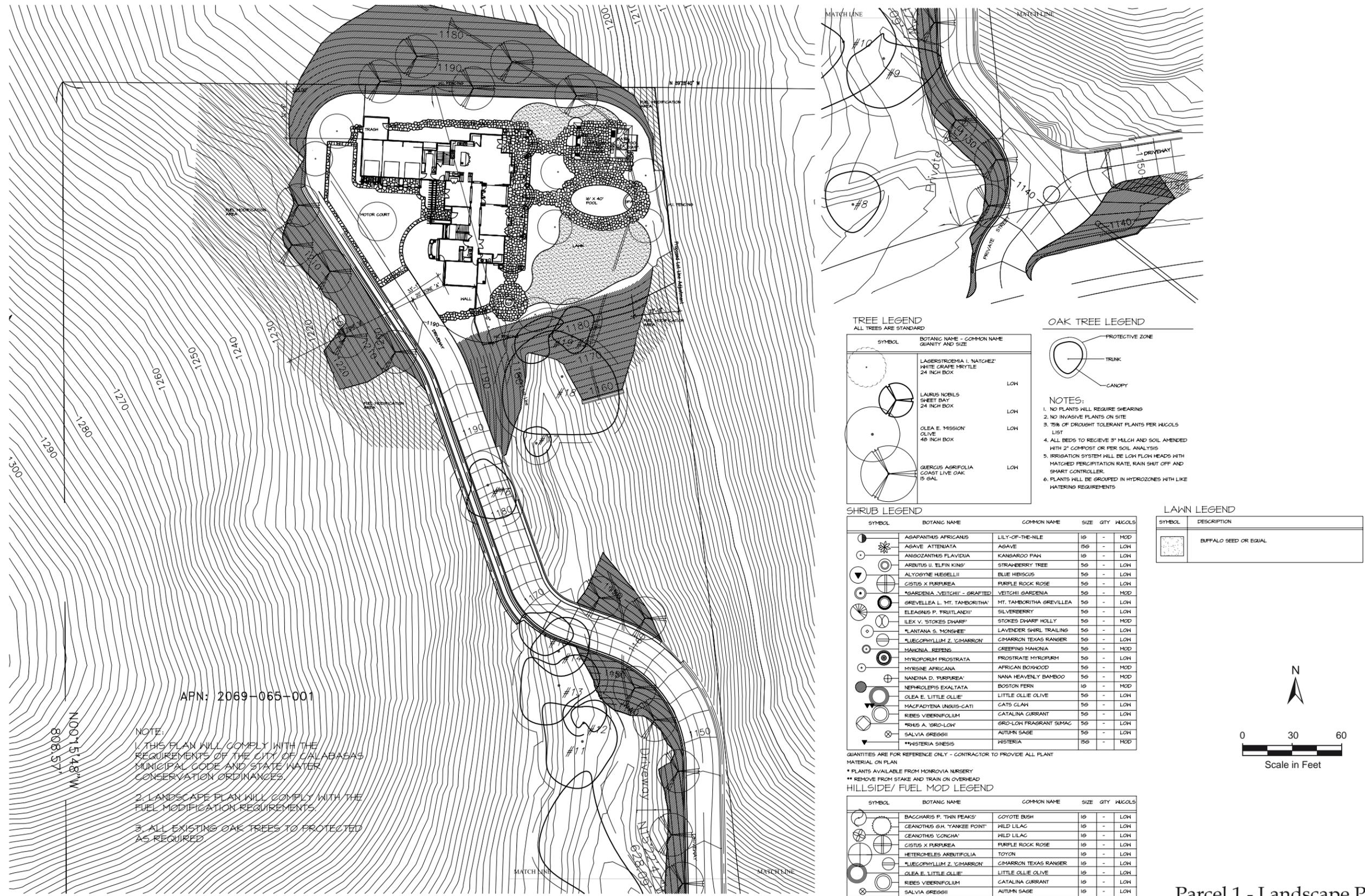
REAR ELEVATION

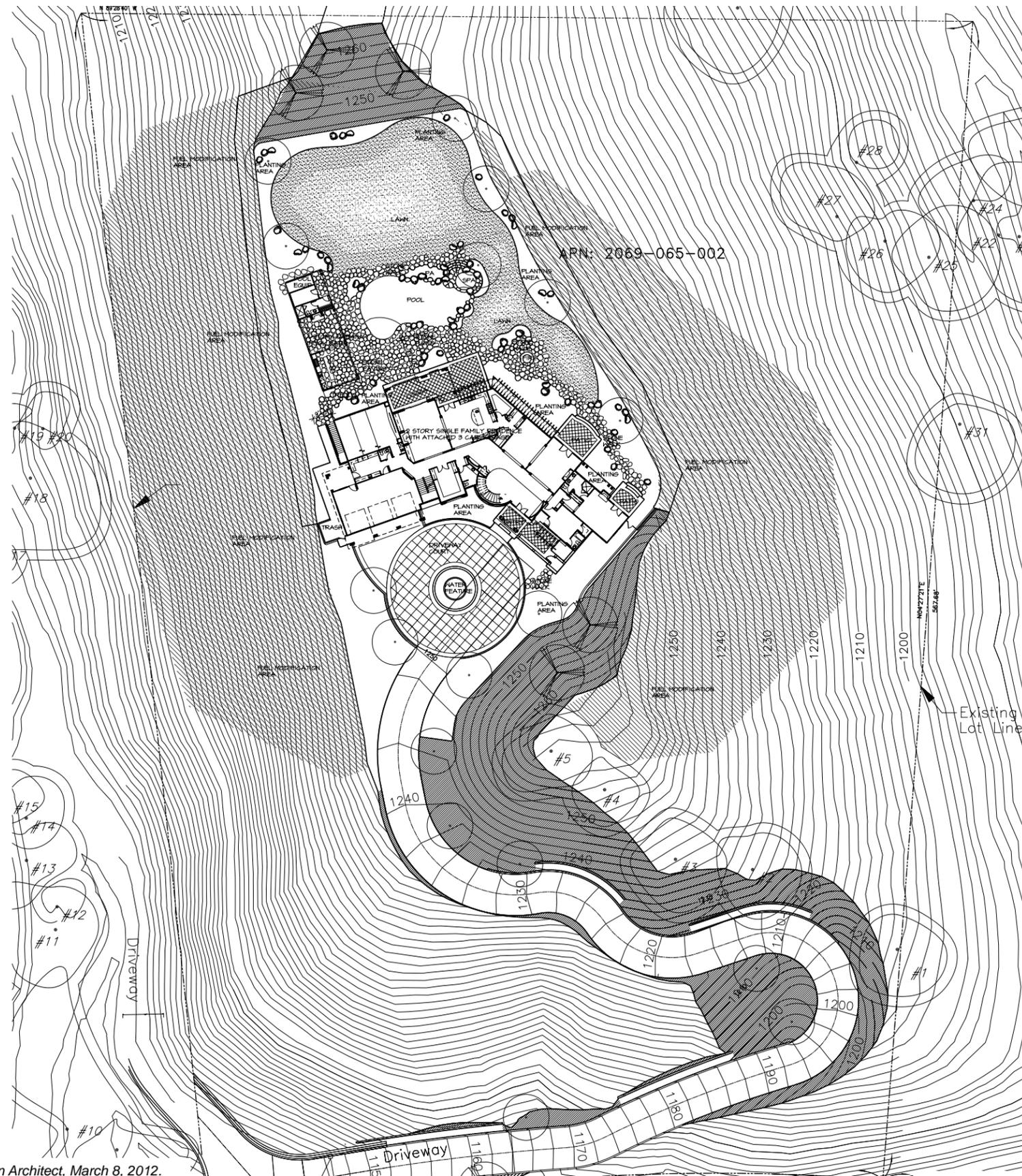


PARTIAL ELEVATION



Parcel 3 - Rear and Right Side
 Elevation Plans

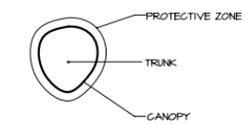




TREE LEGEND
ALL TREES ARE STANDARD

SYMBOL	BOTANIC NAME - COMMON NAME QUANTITY AND SIZE	
	LAGERSTROEMIA I. 'NATCHEZ' WHITE GRAPE NYRTLE 24 INCH BOX	LOW
	LAURUS NOBILIS SWEET BAY 24 INCH BOX	LOW
	OLEA E. 'MISSION' OLIVE 48 INCH BOX	LOW
	QUERCUS AGRIFOLIA COAST LIVE OAK 15 GAL	LOW

OAK TREE LEGEND



- NOTES:**
1. NO PLANTS WILL REQUIRE SHEARING
 2. NO INVASIVE PLANTS ON SITE
 3. 75% OF DROUGHT TOLERANT PLANTS PER HUCOLS LIST
 4. ALL BEDS TO RECEIVE 3" MULCH AND SOIL AMENDED WITH 2" COMPOST OR PER SOIL ANALYSIS
 5. IRRIGATION SYSTEM WILL BE LOW FLOW HEADS WITH MATCHED PERCIPITATION RATE, RAIN SHUT OFF AND SMART CONTROLLER.
 6. PLANTS WILL BE GROUPED IN HYDROZONES WITH LIKE WATERING REQUIREMENTS

SHRUB LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	SIZE	QTY	HUCOLS
	AGAPANTHUS AFRICANUS	LILY-OF-THE-NILE	16	-	MOD
	AGAVE ATTENUATA	AGAVE	15G	-	LOW
	ANIGOZANTHUS FLAVIDUA	KANGAROO PAH	16	-	LOW
	ARBUTUS U. 'ELFIN KING'	STRAWBERRY TREE	56	-	LOW
	ALYOGYNE HUEGELII	BLUE HIBISCUS	56	-	LOW
	CISTUS X PURPUREA	PURPLE ROCK ROSE	56	-	LOW
	*GARDENIA 'VEITCHII' - GRAFTED	VEITCHII GARDENIA	56	-	MOD
	GREVILLEA L. 'MT. TAMBORITHA'	MT. TAMBORITHA GREVILLEA	56	-	LOW
	ELEANUS P. 'FRUITLANDII'	SILVERBERRY	56	-	LOW
	ILEX V. 'STOKES DWARF'	STOKES DWARF HOLLY	56	-	MOD
	*LANTANA S. 'MONGHEE'	LAVENDER SHIRL TRAILING	56	-	LOW
	*LIGOPHYLLUM Z. 'CIMARRON'	CIMARRON TEXAS RANGER	56	-	LOW
	MAHONIA REPENS	CREEPING MAHONIA	56	-	MOD
	MYRSINE AFRICANA	AFRICAN BOXWOOD	56	-	MOD
	NANDINA D. 'PURPUREA'	NANA HEAVENLY BAMBOO	56	-	MOD
	NEPHROLEPIS EXALTATA	BOSTON FERN	16	-	MOD
	OLEA E. 'LITTLE OLLIE'	LITTLE OLLIE OLIVE	56	-	LOW
	MACFADYENA UNGUIS-CATI	CATS CLAW	56	-	LOW
	RIBES VIBERNIFOLIUM	CATALINA CURRANT	56	-	LOW
	*RHUS A. 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	56	-	LOW
	SALVIA GREGGII	AUTUMN SAGE	56	-	LOW
	**WISTERIA SINENSIS	WISTERIA	156	-	MOD

QUANTITIES ARE FOR REFERENCE ONLY - CONTRACTOR TO PROVIDE ALL PLANT MATERIAL ON PLAN

* PLANTS AVAILABLE FROM MONROVIA NURSERY

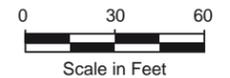
** REMOVE FROM STAKE AND TRAIN ON OVERHEAD

HILLSIDE/ FUEL MOD LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	SIZE	QTY	HUCOLS
	BACCHARIS P. 'THIN PEAKS'	COYOTE BUSH	16	-	LOW
	CEANOTHUS G.H. 'YANKEE POINT'	WILD LILAC	16	-	LOW
	CEANOTHUS 'CONCHA'	WILD LILAC	16	-	LOW
	CISTUS X PURPUREA	PURPLE ROCK ROSE	16	-	LOW
	HETEROMELES ARBUTIFOLIA	TOYON	16	-	LOW
	*LIGOPHYLLUM Z. 'CIMARRON'	CIMARRON TEXAS RANGER	16	-	LOW
	OLEA E. 'LITTLE OLLIE'	LITTLE OLLIE OLIVE	16	-	LOW
	RIBES VIBERNIFOLIUM	CATALINA CURRANT	16	-	LOW
	SALVIA GREGGII	AUTUMN SAGE	16	-	LOW

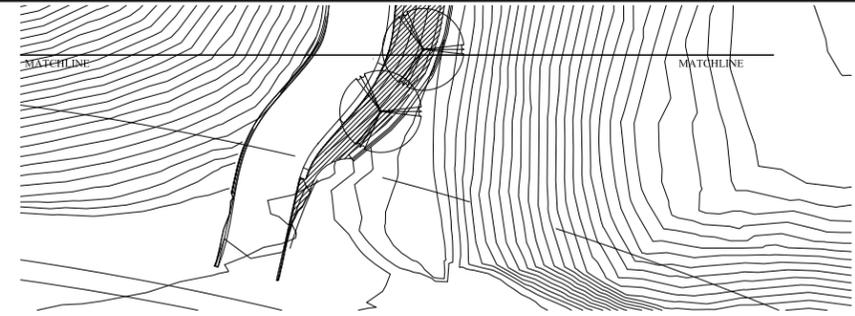
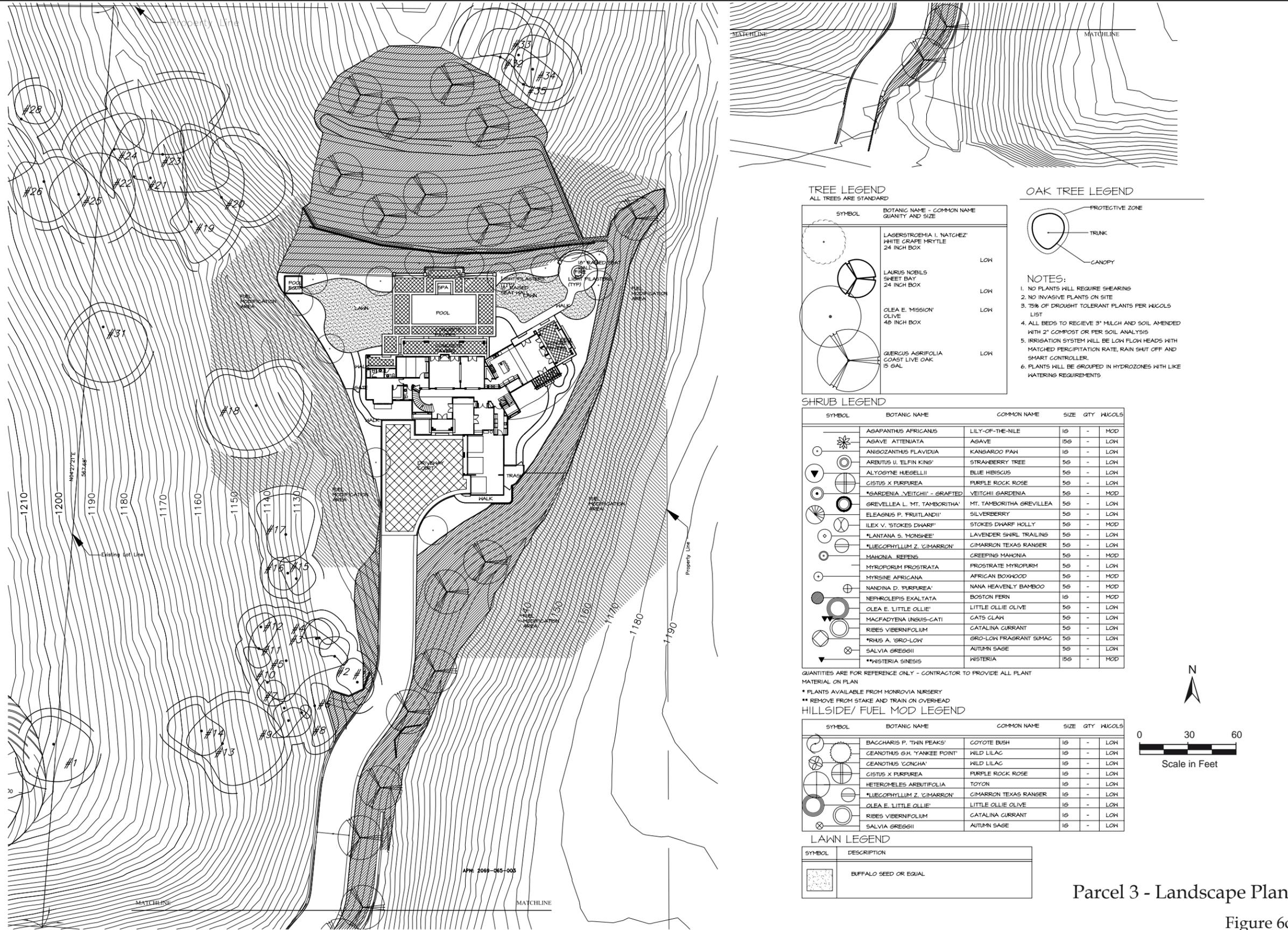
LAWN LEGEND

SYMBOL	DESCRIPTION
	BUFFALO SEED OR EQUAL



Parcel 2 - Landscape Plan

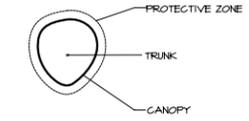
Figure 6b



TREE LEGEND
ALL TREES ARE STANDARD

SYMBOL	BOTANIC NAME - COMMON NAME QUANTITY AND SIZE	
	LAGERSTROEMIA L. 'NATCHEZ' WHITE Crape Myrtle 24 INCH BOX	LOW
	LAURUS NOBILIS SWEET BAY 24 INCH BOX	LOW
	OLEA E. 'MISSION' OLIVE 48 INCH BOX	LOW
	QUERCUS AGRIFOLIA COAST LIVE OAK 15 GAL	LOW

OAK TREE LEGEND



- NOTES:**
1. NO PLANTS WILL REQUIRE SHEARING
 2. NO INVASIVE PLANTS ON SITE
 3. 75% OF DROUGHT TOLERANT PLANTS PER MUCOLS LIST
 4. ALL BEDS TO RECEIVE 3" MULCH AND SOIL AMENDED WITH 2" COMPOST OR PER SOIL ANALYSIS
 5. IRRIGATION SYSTEM WILL BE LOW FLOW HEADS WITH MATCHED PERCIPITATION RATE, RAIN SHUT OFF AND SMART CONTROLLER.
 6. PLANTS WILL BE GROUPED IN HYDROZONES WITH LIKE WATERING REQUIREMENTS

SHRUB LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	SIZE	QTY	MUCOLS
	AGAPANTHUS AFRICANUS	LILY-OF-THE-NILE	16	-	MOD
	AGAVE ATTENUATA	AGAVE	156	-	LOW
	ANIGOZANTHUS FLAVIDIA	KANGAROO PAN	16	-	LOW
	ARBUTUS U. 'ELFIN KING'	STRAWBERRY TREE	56	-	LOW
	ALYOSYNE HUEGELLII	BLUE HIBISCUS	56	-	LOW
	CISTUS X PURPUREA	PURPLE ROCK ROSE	56	-	LOW
	*GARDENIA 'VEITCHII' - GRAFTED	VEITCHII GARDENIA	56	-	MOD
	GREVILLEA L. MT. TAMBORITHA'	MT. TAMBORITHA GREVILLEA	56	-	LOW
	ELEAGNUS P. 'FRUITLANDII'	SILVERBERRY	56	-	LOW
	ILEX V. 'STOKES DWARF'	STOKES DWARF HOLLY	56	-	MOD
	*LANTANA S. 'MONSNEE'	LAVENDER SHIRL TRAILING	56	-	LOW
	*LUECOPHYLLUM Z. 'CIMARRON'	CIMARRON TEXAS RANGER	56	-	LOW
	MAHONIA REPENS	CREeping MAHONIA	56	-	MOD
	MYRSINE AFRICANA	AFRICAN BOXWOOD	56	-	MOD
	MYRSINE AFRICANA	AFRICAN BOXWOOD	56	-	MOD
	NANDINA D. 'PURPUREA'	NANA HEAVENLY BAMBOO	56	-	MOD
	NEPHROLEPIS EXALTATA	BOSTON FERN	16	-	MOD
	OLEA E. 'LITTLE OLLIE'	LITTLE OLLIE OLIVE	56	-	LOW
	MACFADYENA UNGUIS-CATI	CATS CLAW	56	-	LOW
	RIBES VIBERNIFOLIUM	CATALINA CURRANT	56	-	LOW
	*RHUS A. 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	56	-	LOW
	SALVIA GREGGII	AUTUMN SAGE	56	-	LOW
	**WISTERIA SINENSIS	WISTERIA	156	-	MOD

QUANTITIES ARE FOR REFERENCE ONLY - CONTRACTOR TO PROVIDE ALL PLANT MATERIAL ON PLAN

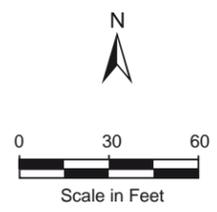
* PLANTS AVAILABLE FROM MONROVIA NURSERY
** REMOVE FROM STAKE AND TRAIN ON OVERHEAD

HILLSIDE/ FUEL MOD LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	SIZE	QTY	MUCOLS
	BACCHARIS P. 'THIN PEAKS'	COYOTE BUSH	16	-	LOW
	CEANOTHUS S.H. 'YANKEE POINT'	WILD LILAC	16	-	LOW
	CEANOTHUS 'CONCHA'	WILD LILAC	16	-	LOW
	CISTUS X PURPUREA	PURPLE ROCK ROSE	16	-	LOW
	HETEROMELES ARBUTIFOLIA	TOYON	16	-	LOW
	*LUECOPHYLLUM Z. 'CIMARRON'	CIMARRON TEXAS RANGER	16	-	LOW
	OLEA E. 'LITTLE OLLIE'	LITTLE OLLIE OLIVE	16	-	LOW
	RIBES VIBERNIFOLIUM	CATALINA CURRANT	16	-	LOW
	SALVIA GREGGII	AUTUMN SAGE	16	-	LOW

LAWN LEGEND

SYMBOL	DESCRIPTION
	BUFFALO SEED OR EQUAL



Source Drawing: Susan E. McEowen, Architect, March 8, 2012.

Parcel 3 - Landscape Plan

Figure 6c

Appendix A

Air Quality Modeling Results



**BSVERCOM Mulholland
Los Angeles-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Single Family Housing	3	Dwelling Unit

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Utility Company** Southern California Edison
Climate Zone 9 **Precipitation Freq (Days)** 33

1.3 User Entered Comments

Project Characteristics -
 Land Use - 16.2 lot acres - 4.2 acres disturbed
 Construction Phase - Grading - 54,475 cy cut, 30,000 cy of fill = 24,475 cy of export
 Trips and VMT - 20 cubic yard haul trucks
 Grading - 24,475 cubic yards to export offsite
 Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.91	6.68	4.22	0.01	1.24	0.38	1.63	0.12	0.38	0.50	0.00	722.16	722.16	0.07	0.00	723.66
2014	0.36	1.78	1.28	0.00	0.00	0.12	0.12	0.00	0.12	0.12	0.00	195.01	195.01	0.02	0.00	195.46
Total	1.27	8.46	5.50	0.01	1.24	0.50	1.75	0.12	0.50	0.62	0.00	917.17	917.17	0.09	0.00	919.12

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.76	5.21	4.22	0.01	1.11	0.33	1.44	0.05	0.33	0.38	0.00	722.16	722.16	0.07	0.00	723.66
2014	0.34	1.63	1.26	0.00	0.00	0.11	0.12	0.00	0.11	0.11	0.00	195.01	195.01	0.02	0.00	195.46
Total	1.10	6.84	5.48	0.01	1.11	0.44	1.56	0.05	0.44	0.49	0.00	917.17	917.17	0.09	0.00	919.12

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.11	0.00	0.07	0.00		0.00	0.00		0.00	0.00	0.32	1.91	2.23	0.00	0.00	2.27
Energy	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	12.55	12.55	0.00	0.00	12.63
Mobile	0.04	0.12	0.47	0.00	0.08	0.01	0.08	0.00	0.01	0.01	0.00	72.00	72.00	0.00	0.00	72.07
Waste						0.00	0.00		0.00	0.00	0.75	0.00	0.75	0.04	0.00	1.68
Water						0.00	0.00		0.00	0.00	0.00	1.14	1.14	0.01	0.00	1.32
Total	0.15	0.13	0.54	0.00	0.08	0.01	0.08	0.00	0.01	0.01	1.07	87.60	88.67	0.05	0.00	89.97

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.11	0.00	0.07	0.00		0.00	0.00		0.00	0.00	0.32	1.91	2.23	0.00	0.00	2.27
Energy	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	12.55	12.55	0.00	0.00	12.63
Mobile	0.04	0.12	0.47	0.00	0.08	0.01	0.08	0.00	0.01	0.01	0.00	72.00	72.00	0.00	0.00	72.07
Waste						0.00	0.00		0.00	0.00	0.75	0.00	0.75	0.04	0.00	1.68
Water						0.00	0.00		0.00	0.00	0.00	1.14	1.14	0.01	0.00	1.32
Total	0.15	0.13	0.54	0.00	0.08	0.01	0.08	0.00	0.01	0.01	1.07	87.60	88.67	0.05	0.00	89.97

3.0 Construction Detail

3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Use DPF for Construction Equipment
- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.09	0.00	0.09	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.40	0.23	0.00		0.02	0.02		0.02	0.02	0.00	36.27	36.27	0.00	0.00	36.35
Total	0.05	0.40	0.23	0.00	0.09	0.02	0.11	0.05	0.02	0.07	0.00	36.27	36.27	0.00	0.00	36.35

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38

3.2 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.19	0.20	0.00		0.01	0.01		0.01	0.01	0.00	36.27	36.27	0.00	0.00	36.35
Total	0.03	0.19	0.20	0.00	0.03	0.01	0.04	0.02	0.01	0.03	0.00	36.27	36.27	0.00	0.00	36.35

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.12	0.00	0.12	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.24	1.95	1.06	0.00		0.09	0.09		0.09	0.09	0.00	196.93	196.93	0.02	0.00	197.33
Total	0.24	1.95	1.06	0.00	0.12	0.09	0.21	0.07	0.09	0.16	0.00	196.93	196.93	0.02	0.00	197.33

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.07	0.67	0.41	0.00	1.02	0.03	1.05	0.00	0.03	0.03	0.00	93.27	93.27	0.00	0.00	93.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.10	6.10	0.00	0.00	6.11
Total	0.07	0.67	0.45	0.00	1.03	0.03	1.06	0.00	0.03	0.03	0.00	99.37	99.37	0.00	0.00	99.44

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.05	0.00	0.05	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.17	1.09	1.12	0.00		0.07	0.07		0.07	0.07	0.00	196.93	196.93	0.02	0.00	197.33
Total	0.17	1.09	1.12	0.00	0.05	0.07	0.12	0.02	0.07	0.09	0.00	196.93	196.93	0.02	0.00	197.33

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.07	0.67	0.41	0.00	1.02	0.03	1.05	0.00	0.03	0.03	0.00	93.27	93.27	0.00	0.00	93.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.10	6.10	0.00	0.00	6.11
Total	0.07	0.67	0.45	0.00	1.03	0.03	1.06	0.00	0.03	0.03	0.00	99.37	99.37	0.00	0.00	99.44

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.55	3.66	2.47	0.00		0.24	0.24		0.24	0.24	0.00	386.61	386.61	0.04	0.00	387.54
Total	0.55	3.66	2.47	0.00		0.24	0.24		0.24	0.24	0.00	386.61	386.61	0.04	0.00	387.54

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	1.61	0.00	0.00	1.61
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	1.61	0.00	0.00	1.61

3.4 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.49	3.25	2.44	0.00		0.22	0.22		0.22	0.22	0.00	386.61	386.61	0.04	0.00	387.54
Total	0.49	3.25	2.44	0.00		0.22	0.22		0.22	0.22	0.00	386.61	386.61	0.04	0.00	387.54

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	1.61	0.00	0.00	1.61
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	1.61	0.00	0.00	1.61

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.21	1.43	1.03	0.00		0.09	0.09		0.09	0.09	0.00	163.07	163.07	0.02	0.00	163.43
Total	0.21	1.43	1.03	0.00		0.09	0.09		0.09	0.09	0.00	163.07	163.07	0.02	0.00	163.43

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.67
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.67

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.19	1.28	1.02	0.00		0.08	0.08		0.08	0.08	0.00	163.07	163.07	0.02	0.00	163.43
Total	0.19	1.28	1.02	0.00		0.08	0.08		0.08	0.08	0.00	163.07	163.07	0.02	0.00	163.43

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.67
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.67

3.5 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.32	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.55
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.05	0.32	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.55

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	2.25	0.00	0.00	2.25
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	2.25	0.00	0.00	2.25

3.5 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.32	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.55
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.05	0.32	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.55

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	2.25	0.00	0.00	2.25
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	2.25	0.00	0.00	2.25

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56
Total	0.09	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6 Architectural Coating - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56
Total	0.09	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.04	0.12	0.47	0.00	0.08	0.01	0.08	0.00	0.01	0.01	0.00	72.00	72.00	0.00	0.00	72.07
Unmitigated	0.04	0.12	0.47	0.00	0.08	0.01	0.08	0.00	0.01	0.01	0.00	72.00	72.00	0.00	0.00	72.07
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	28.71	30.24	26.31	142,686	142,686
Total	28.71	30.24	26.31	142,686	142,686

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Single Family Housing	17.60	12.10	14.90	40.20	19.20	40.60

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	5.92	5.92	0.00	0.00	5.96
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	5.92	5.92	0.00	0.00	5.96
NaturalGas Mitigated	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.63	6.63	0.00	0.00	6.67
NaturalGas Unmitigated	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.63	6.63	0.00	0.00	6.67
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Single Family Housing	124206	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.63	6.63	0.00	0.00	6.67
Total		0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.63	6.63	0.00	0.00	6.67

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Single Family Housing	124206	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.63	6.63	0.00	0.00	6.67
Total		0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.63	6.63	0.00	0.00	6.67

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Single Family Housing	20360.3					5.92	0.00	0.00	5.96
Total						5.92	0.00	0.00	5.96

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Single Family Housing	20360.3					5.92	0.00	0.00	5.96
Total						5.92	0.00	0.00	5.96

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.11	0.00	0.07	0.00		0.00	0.00		0.00	0.00	0.32	1.91	2.23	0.00	0.00	2.27
Unmitigated	0.11	0.00	0.07	0.00		0.00	0.00		0.00	0.00	0.32	1.91	2.23	0.00	0.00	2.27
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	tons/yr										MT/yr						
Architectural Coating	0.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.01	0.00	0.02	0.00		0.00	0.00		0.00	0.00	0.32	1.84	2.16	0.00	0.00	2.19	
Landscaping	0.00	0.00	0.05	0.00		0.00	0.00		0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.08	
Total	0.11	0.00	0.07	0.00		0.00	0.00		0.00	0.00	0.32	1.91	2.23	0.00	0.00	2.27	

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.01	0.00	0.02	0.00		0.00	0.00		0.00	0.00	0.32	1.84	2.16	0.00	0.00	2.19
Landscaping	0.00	0.00	0.05	0.00		0.00	0.00		0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.08
Total	0.11	0.00	0.07	0.00		0.00	0.00		0.00	0.00	0.32	1.91	2.23	0.00	0.00	2.27

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					1.14	0.01	0.00	1.32
Unmitigated					1.14	0.01	0.00	1.32
Total	NA							

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Single Family Housing	0.195462 / 0.123226					1.14	0.01	0.00	1.32
Total						1.14	0.01	0.00	1.32

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Single Family Housing	0.195462 / 0.123226					1.14	0.01	0.00	1.32
Total						1.14	0.01	0.00	1.32

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.75	0.04	0.00	1.68
Unmitigated					0.75	0.04	0.00	1.68
Total	NA							

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Single Family Housing	3.69					0.75	0.04	0.00	1.68
Total						0.75	0.04	0.00	1.68

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Single Family Housing	3.69					0.75	0.04	0.00	1.68
Total						0.75	0.04	0.00	1.68

9.0 Vegetation

**BSVERCOM Mulholland
Los Angeles-South Coast County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Single Family Housing	3	Dwelling Unit

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Utility Company** Southern California Edison
Climate Zone 9 **Precipitation Freq (Days)** 33

1.3 User Entered Comments

Project Characteristics -
 Land Use - 16.2 lot acres - 4.2 acres disturbed
 Construction Phase - Grading - 54,475 cy cut, 30,000 cy of fill = 24,475 cy of export
 Trips and VMT - 20 cubic yard haul trucks
 Grading - 24,475 cubic yards to export offsite
 Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	15.54	131.21	74.31	0.15	63.76	6.10	69.86	9.94	6.10	13.89	0.00	16,361.97	0.00	1.25	0.00	16,388.23
2014	9.68	32.22	23.30	0.04	0.32	2.75	3.07	0.01	2.75	2.76	0.00	4,058.07	0.00	0.48	0.00	4,068.21
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	11.95	88.40	77.54	0.15	59.85	5.06	64.91	3.69	5.06	6.48	0.00	16,361.97	0.00	1.25	0.00	16,388.23
2014	9.68	32.22	23.01	0.04	0.32	2.75	3.07	0.01	2.75	2.76	0.00	4,058.07	0.00	0.48	0.00	4,068.21
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Energy	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Mobile	0.26	0.68	2.78	0.00	0.50	0.03	0.53	0.02	0.03	0.05		482.07		0.03		482.61
Total	1.11	0.73	4.04	0.00	0.50	0.03	0.69	0.02	0.03	0.21	21.17	576.55		0.11	0.00	600.68

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Energy	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Mobile	0.26	0.68	2.78	0.00	0.50	0.03	0.53	0.02	0.03	0.05		482.07		0.03		482.61
Total	1.11	0.73	4.04	0.00	0.50	0.03	0.69	0.02	0.03	0.21	21.17	576.55		0.11	0.00	600.68

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93							0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93		7,997.69		0.89			8,016.38
Total	9.90	79.99	45.35	0.07	18.07	3.93	22.00	9.93	3.93	13.86		7,997.69		0.89			8,016.38

3.2 Site Preparation - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.16	0.16	1.89	0.00	0.38	0.01	0.40	0.01	0.01	0.03		319.31		0.02		319.71
Total	0.16	0.16	1.89	0.00	0.38	0.01	0.40	0.01	0.01	0.03		319.31		0.02		319.71

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.69	0.00	6.69	3.68	0.00	3.68						0.00
Off-Road	5.92	37.75	39.79	0.07		2.55	2.55		2.55	2.55	0.00	7,997.69		0.89		8,016.38
Total	5.92	37.75	39.79	0.07	6.69	2.55	9.24	3.68	2.55	6.23	0.00	7,997.69		0.89		8,016.38

3.2 Site Preparation - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.16	0.16	1.89	0.00	0.38	0.01	0.40	0.01	0.01	0.03		319.31		0.02		319.71
Total	0.16	0.16	1.89	0.00	0.38	0.01	0.40	0.01	0.01	0.03		319.31		0.02		319.71

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.22	0.00	6.22	3.32	0.00	3.32						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59		10,856.66		1.06		10,878.90
Total	11.85	97.47	52.85	0.10	6.22	4.59	10.81	3.32	4.59	7.91		10,856.66		1.06		10,878.90

3.3 Grading - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.51	33.56	19.36	0.05	57.12	1.50	58.62	0.17	1.50	1.67		5,150.52		0.17		5,154.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.18	2.10	0.00	0.43	0.01	0.44	0.02	0.01	0.03		354.79		0.02		355.23
Total	3.68	33.74	21.46	0.05	57.55	1.51	59.06	0.19	1.51	1.70		5,505.31		0.19		5,509.33

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.30	0.00	2.30	1.23	0.00	1.23						0.00
Off-Road	8.26	54.66	56.08	0.10		3.55	3.55		3.55	3.55	0.00	10,856.66		1.06		10,878.90
Total	8.26	54.66	56.08	0.10	2.30	3.55	5.85	1.23	3.55	4.78	0.00	10,856.66		1.06		10,878.90

3.3 Grading - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.51	33.56	19.36	0.05	57.12	1.50	58.62	0.17	1.50	1.67		5,150.52		0.17		5,154.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.18	2.10	0.00	0.43	0.01	0.44	0.02	0.01	0.03		354.79		0.02		355.23
Total	3.68	33.74	21.46	0.05	57.55	1.51	59.06	0.19	1.51	1.70		5,505.31		0.19		5,509.33

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31
Total	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31

3.4 Building Construction - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.74		0.00		17.76
Total	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.74		0.00		17.76

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.67	30.82	23.12	0.04		2.05	2.05		2.05	2.05	0.00	4,040.62		0.46		4,050.31
Total	4.67	30.82	23.12	0.04		2.05	2.05		2.05	2.05	0.00	4,040.62		0.46		4,050.31

3.4 Building Construction - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.74		0.00		17.76
Total	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.74		0.00		17.76

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.45		0.00		17.47
Total	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.45		0.00		17.47

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.36	28.88	22.92	0.04		1.89	1.89		1.89	1.89	0.00	4,040.61		0.42		4,049.51
Total	4.36	28.88	22.92	0.04		1.89	1.89		1.89	1.89	0.00	4,040.61		0.42		4,049.51

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.45		0.00		17.47
Total	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		17.45		0.00		17.47

3.5 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48

3.5 Paving - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.12	1.45	0.00	0.32	0.01	0.33	0.01	0.01	0.02		261.79		0.01		262.10
Total	0.12	0.12	1.45	0.00	0.32	0.01	0.33	0.01	0.01	0.02		261.79		0.01		262.10

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48

3.5 Paving - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.12	1.45	0.00	0.32	0.01	0.33	0.01	0.01	0.02		261.79		0.01		262.10
Total	0.12	0.12	1.45	0.00	0.32	0.01	0.33	0.01	0.01	0.02		261.79		0.01		262.10

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.24					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03
Total	9.69	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03

3.6 Architectural Coating - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.24					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03
Total	9.69	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03

3.6 Architectural Coating - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.26	0.68	2.78	0.00	0.50	0.03	0.53	0.02	0.03	0.05		482.07		0.03		482.61
Unmitigated	0.26	0.68	2.78	0.00	0.50	0.03	0.53	0.02	0.03	0.05		482.07		0.03		482.61
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	28.71	30.24	26.31	142,686	142,686
Total	28.71	30.24	26.31	142,686	142,686

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Single Family Housing	17.60	12.10	14.90	40.20	19.20	40.60

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
NaturalGas Unmitigated	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Single Family Housing	340.29	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Total		0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Single Family Housing	0.34029	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Total		0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Unmitigated	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.05					0.00	0.00		0.00	0.00							0.00
Consumer Products	0.47					0.00	0.00		0.00	0.00							0.00
Hearth	0.32	0.01	0.99	0.00		0.00	0.16		0.00	0.16	21.17	54.00		0.08	0.00		77.33
Landscaping	0.01	0.00	0.26	0.00		0.00	0.00		0.00	0.00		0.45		0.00			0.46
Total	0.85	0.01	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00		77.79

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.05					0.00	0.00		0.00	0.00							0.00
Consumer Products	0.47					0.00	0.00		0.00	0.00							0.00
Hearth	0.32	0.01	0.99	0.00		0.00	0.16		0.00	0.16	21.17	54.00		0.08	0.00		77.33
Landscaping	0.01	0.00	0.26	0.00		0.00	0.00		0.00	0.00		0.45		0.00			0.46
Total	0.85	0.01	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00		77.79

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

**BSVERCOM Mulholland
Los Angeles-South Coast County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Single Family Housing	3	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Utility Company	Southern California Edison
Climate Zone	9	Precipitation Freq (Days)	33		

1.3 User Entered Comments

- Project Characteristics -
- Land Use - 16.2 lot acres - 4.2 acres disturbed
- Construction Phase - Grading - 54,475 cy cut, 30,000 cy of fill = 24,475 cy of export
- Trips and VMT - 20 cubic yard haul trucks
- Grading - 24,475 cubic yards to export offsite
- Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	15.64	133.07	75.61	0.15	63.76	6.11	69.87	9.94	6.11	13.89	0.00	16,311.80	0.00	1.25	0.00	16,338.14
2014	9.68	32.24	23.29	0.04	0.32	2.75	3.07	0.01	2.75	2.76	0.00	4,056.78	0.00	0.48	0.00	4,066.91
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	12.04	90.27	78.84	0.15	59.85	5.07	64.92	3.69	5.07	6.49	0.00	16,311.80	0.00	1.25	0.00	16,338.14
2014	9.68	32.24	23.01	0.04	0.32	2.75	3.07	0.01	2.75	2.76	0.00	4,056.78	0.00	0.48	0.00	4,066.91
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Energy	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Mobile	0.28	0.75	2.68	0.00	0.50	0.03	0.53	0.02	0.03	0.05		452.56		0.02		453.03
Total	1.13	0.80	3.94	0.00	0.50	0.03	0.69	0.02	0.03	0.21	21.17	547.04		0.10	0.00	571.10

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Energy	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Mobile	0.28	0.75	2.68	0.00	0.50	0.03	0.53	0.02	0.03	0.05		452.56		0.02		453.03
Total	1.13	0.80	3.94	0.00	0.50	0.03	0.69	0.02	0.03	0.21	21.17	547.04		0.10	0.00	571.10

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93		7,997.69		0.89		8,016.38
Total	9.90	79.99	45.35	0.07	18.07	3.93	22.00	9.93	3.93	13.86		7,997.69		0.89		8,016.38

3.2 Site Preparation - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.77	0.00	0.38	0.01	0.40	0.01	0.01	0.03		295.73		0.02		296.11
Total	0.17	0.19	1.77	0.00	0.38	0.01	0.40	0.01	0.01	0.03		295.73		0.02		296.11

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.69	0.00	6.69	3.68	0.00	3.68						0.00
Off-Road	5.92	37.75	39.79	0.07		2.55	2.55		2.55	2.55	0.00	7,997.69		0.89		8,016.38
Total	5.92	37.75	39.79	0.07	6.69	2.55	9.24	3.68	2.55	6.23	0.00	7,997.69		0.89		8,016.38

3.2 Site Preparation - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.77	0.00	0.38	0.01	0.40	0.01	0.01	0.03		295.73		0.02		296.11
Total	0.17	0.19	1.77	0.00	0.38	0.01	0.40	0.01	0.01	0.03		295.73		0.02		296.11

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.22	0.00	6.22	3.32	0.00	3.32						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59		10,856.66		1.06		10,878.90
Total	11.85	97.47	52.85	0.10	6.22	4.59	10.81	3.32	4.59	7.91		10,856.66		1.06		10,878.90

3.3 Grading - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.59	35.40	20.80	0.05	57.12	1.51	58.63	0.17	1.51	1.68		5,126.55		0.17		5,130.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.19	0.21	1.97	0.00	0.43	0.01	0.44	0.02	0.01	0.03		328.59		0.02		329.02
Total	3.78	35.61	22.77	0.05	57.55	1.52	59.07	0.19	1.52	1.71		5,455.14		0.19		5,459.24

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.30	0.00	2.30	1.23	0.00	1.23						0.00
Off-Road	8.26	54.66	56.08	0.10		3.55	3.55		3.55	3.55	0.00	10,856.66		1.06		10,878.90
Total	8.26	54.66	56.08	0.10	2.30	3.55	5.85	1.23	3.55	4.78	0.00	10,856.66		1.06		10,878.90

3.3 Grading - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.59	35.40	20.80	0.05	57.12	1.51	58.63	0.17	1.51	1.68		5,126.55		0.17		5,130.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.19	0.21	1.97	0.00	0.43	0.01	0.44	0.02	0.01	0.03		328.59		0.02		329.02
Total	3.78	35.61	22.77	0.05	57.55	1.52	59.07	0.19	1.52	1.71		5,455.14		0.19		5,459.24

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31
Total	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31

3.4 Building Construction - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.43		0.00		16.45
Total	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.43		0.00		16.45

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.67	30.82	23.12	0.04		2.05	2.05		2.05	2.05	0.00	4,040.62		0.46		4,050.31
Total	4.67	30.82	23.12	0.04		2.05	2.05		2.05	2.05	0.00	4,040.62		0.46		4,050.31

3.4 Building Construction - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.43		0.00		16.45
Total	0.01	0.01	0.10	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.43		0.00		16.45

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.16		0.00		16.18
Total	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.16		0.00		16.18

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.36	28.88	22.92	0.04		1.89	1.89		1.89	1.89	0.00	4,040.61		0.42		4,049.51
Total	4.36	28.88	22.92	0.04		1.89	1.89		1.89	1.89	0.00	4,040.61		0.42		4,049.51

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.16		0.00		16.18
Total	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00		16.16		0.00		16.18

3.5 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48

3.5 Paving - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.14	1.36	0.00	0.32	0.01	0.33	0.01	0.01	0.02		242.46		0.01		242.76
Total	0.13	0.14	1.36	0.00	0.32	0.01	0.33	0.01	0.01	0.02		242.46		0.01		242.76

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48

3.5 Paving - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.14	1.36	0.00	0.32	0.01	0.33	0.01	0.01	0.02		242.46		0.01		242.76
Total	0.13	0.14	1.36	0.00	0.32	0.01	0.33	0.01	0.01	0.02		242.46		0.01		242.76

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.24					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03
Total	9.69	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03

3.6 Architectural Coating - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.24					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03
Total	9.69	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03

3.6 Architectural Coating - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.28	0.75	2.68	0.00	0.50	0.03	0.53	0.02	0.03	0.05		452.56		0.02		453.03
Unmitigated	0.28	0.75	2.68	0.00	0.50	0.03	0.53	0.02	0.03	0.05		452.56		0.02		453.03
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	28.71	30.24	26.31	142,686	142,686
Total	28.71	30.24	26.31	142,686	142,686

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Single Family Housing	17.60	12.10	14.90	40.20	19.20	40.60

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
NaturalGas Unmitigated	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Single Family Housing	340.29	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Total		0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Single Family Housing	0.34029	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28
Total		0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		40.03		0.00	0.00	40.28

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Unmitigated	0.85	0.02	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00	77.79
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.05					0.00	0.00		0.00	0.00							0.00
Consumer Products	0.47					0.00	0.00		0.00	0.00							0.00
Hearth	0.32	0.01	0.99	0.00		0.00	0.16		0.00	0.16	21.17	54.00		0.08	0.00		77.33
Landscaping	0.01	0.00	0.26	0.00		0.00	0.00		0.00	0.00		0.45		0.00			0.46
Total	0.85	0.01	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00		77.79

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.05					0.00	0.00		0.00	0.00							0.00
Consumer Products	0.47					0.00	0.00		0.00	0.00							0.00
Hearth	0.32	0.01	0.99	0.00		0.00	0.16		0.00	0.16	21.17	54.00		0.08	0.00		77.33
Landscaping	0.01	0.00	0.26	0.00		0.00	0.00		0.00	0.00		0.45		0.00			0.46
Total	0.85	0.01	1.25	0.00		0.00	0.16		0.00	0.16	21.17	54.45		0.08	0.00		77.79

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Greenhouse Gas Emission Worksheet
N2O Mobile Emissions

BSVERCOM LLC

From CalEEMod Vehicle Fleet Mix Output:

Annual VMT: 142,686

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	48.6%	0.04	0.01944	0.04	0.01944
Light Truck < 3750 lbs	10.9%	0.05	0.00545	0.06	0.00654
Light Truck 3751-5750 lbs	21.8%	0.05	0.0109	0.06	0.01308
Med Truck 5751-8500 lbs	9.6%	0.12	0.01152	0.2	0.0192
Lite-Heavy Truck 8501-10,000 lbs	1.7%	0.12	0.00204	0.2	0.0034
Lite-Heavy Truck 10,001-14,000 lbs	0.7%	0.09	0.00063	0.125	0.000875
Med-Heavy Truck 14,001-33,000 lbs	1.0%	0.06	0.0006	0.05	0.0005
Heavy-Heavy Truck 33,001-60,000 lbs	0.9%	0.06	0.00054	0.05	0.00045
Other Bus	0.1%	0.06	0.00006	0.05	0.00005
Urban Bus	0.1%	0.06	0.00006	0.05	0.00005
Motorcycle	3.5%	0.09	0.00315	0.01	0.00035
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	1.0%	0.09	0.0009	0.125	0.00125
Total	100.0%		0.05535		0.065235

Total Emissions (metric tons) =

Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4 21 GWP
 N2O 310 GWP
 1 ton (short, US) = 0.90718474 metric ton

Annual Mobile Emissions:

Total Emissions **Total CO2e units**
 N2O Emissions: 0.0093 metric tons N2O 3 metric tons CO2e

Project Total:	3 metric tons CO2e
-----------------------	---------------------------

References

- * from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile). in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009. Assume Model year 2000-present, gasoline fueled.
- ** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
- *** From URBEMIS 2007 results for mobile sources

Appendix B

Biological Resources Assessment



BSVERCOM, LLC.

Mulholland Highway Project

Biological Resources Assessment



June 27, 2012

Biological Resources Assessment:
Mulholland Highway Project
Calabasas, California

Prepared for:

BSVERCOM, LLC.

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24007 Ventura Blvd., Suite 102
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City of Calabasas

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Contact: Isidro Figueroa, Planner

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180 North Ashwood Avenue
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June 27, 2012

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SECTION 1 – INTRODUCTION

This Biological Resources Assessment prepared by Rincon Consultants, Inc. (Rincon) presents an inventory of the biological resources for the approximate 16-acre BSVERCOM property (including three parcels), located in Calabasas, California. This report documents existing biological conditions and jurisdictional areas within the project site and adjacent areas (to accommodate grading and fuel modification), and provides an analysis of potential impacts to those resources based on current development plans (May 2012). For the purpose of this report, the three subject parcels and some adjacent areas are analyzed jointly and are referred to herein as “study area”.

This report has been prepared for BSVERCOM, LLC. (“Client”). This report may be used and relied upon by Client, any entity that has an ownership interest in Client, any of Client’s subsidiaries and/or affiliates, and any successor in interest to Client’s interest in the project.

1.1 PROJECT LOCATION

The 17.05-acre study area (the 16-acre property plus areas outside the property proposed for development as part of this project) is located in the western portion of Los Angeles County, in the City of Calabasas. Figure 1 illustrates the regional and local location of the project site. The project site includes Assessor’s Parcel Numbers 2069-065-001, 2069-065-002, and 2069-065-003 and small off-parcel sites north of the western most parcel and east of the eastern most parcel. The site is located on the north side of Mulholland Highway between Park South Street and Old Topanga Canyon Road, approximately 1.25 miles south of the Ventura Freeway (U.S. Route 101) (Figure 1). Land use in the area immediately surrounding the site includes undeveloped/natural land to the west, residential development to the north and east, and a school campus (Meadow Oaks Secondary School) to the south. On a large scale, the site is located at the rough transition between the highly developed San Fernando Valley to the north and the relatively undeveloped Santa Monica Mountains to the south. Regional access to the site is provided from the Ventura Freeway via interchanges at Las Virgenes Road to the west and Mulholland Drive to the east. It is depicted in the U.S. Geological Survey (USGS) Calabasas, California, 7.5-minute topographic quadrangle.

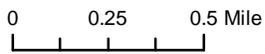
1.2 PROJECT DESCRIPTION

The project will include the construction of three new single-family residences (Figure 2). In addition to the residences, the proposed activity will include the grading of associated driveways, construction of retaining walls, entry gates, swimming pools and spas on each property. Additionally, two new pool houses, one on APN’s 2069-065-001 and 2069-065-002 will be constructed. An array of solar panels is proposed to provide power to each residence. For the purpose of this report, the project discussed herein also includes a 100-foot fuel modification zone around all habitable structures. The project also includes a request for a Lot Line Adjustment to relocate the property line between APN Nos. 2069-065-001 and 2069-065-002.

Mulholland Highway Project
Biological Resources Assessment



Imagery provided by ESRI and its licensors, 2012. USGS
Topo, Copyright: © 2012 National Geographic Society.



 Project Site



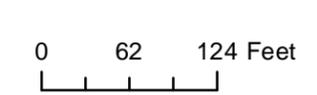
Project Location

Figure 1



Legend

- Parcel Boundary
- Construction Footprint
- - - Fuel Management Zone
- - - Temporary Trenching



Conceptual Grading Plan

Imagery provided by ESRI and its licensors, 2012. Drawing source: Diamond West Incorporated, May 2012.
 Parcel layer from Los Angeles County Assessor, August, 2010.

SECTION 2 – METHODOLOGY

2.1 REGULATORY OVERVIEW

Regulated or sensitive resources studied and analyzed herein include special status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees.

2.1.1 ENVIRONMENTAL STATUTES

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes:

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- City of Calabasas General Plan (City) (General Plan Conservation Element Goals and Policies and Oak Tree Ordinance)

2.1.2 GUIDELINES FOR DETERMINING CEQA SIGNIFICANCE

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

- Have substantial adverse effects, 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 Game or U.S. Fish and Wildlife Service.*
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.*
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc...) through direct removal, filling, hydrological interruption, or other means.*
- 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.*
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

2.2 DATABASE AND LITERATURE REVIEW

The biological resources within the study area were analyzed through a review of relevant literature followed by a field reconnaissance survey and rare plant survey. Rincon reviewed literature for baseline information on biological resources potentially occurring within the study area. The literature review included information on sensitive resource occurrences from the California Department of Fish and Game (CDFG) California Natural Diversity Data Base (CNDDDB) RareFind3 (CDFG 2012), Biogeographic Information and Observation System (BIOS, www.bios.dfg.ca.gov; 2012), and U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (<http://criticalhabitat.fws.gov>). A literature search of California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2010, and as updated on the CNPS website; http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=checkbox_9.htm#q9), CDFG's Special Animals List (CDFG January 2012), and CDFG's Special Vascular Plants, Bryophytes, and Lichens List (May 2012) was also conducted to account for other special status species not tracked by CNDDDB with potential to occur in the vicinity of the proposed project. Aerial photographs, topographic maps, soil survey maps, previous studies, and project plans were examined.

2.3 FIELD RECONNAISSANCE SURVEY

Rincon Senior Ecologist, Steven Hongola, and Biologist, Alison Brown, conducted a field reconnaissance survey of the study area on foot on January 13, 2012. The purpose of the survey was to document the existing biological conditions within the study area, including plant and wildlife species, vegetation communities, the potential presence of sensitive species and/or habitats, and jurisdictional waters and wetlands. On April 27, 2012 Rincon Senior Botanist, Cher Batchelor, conducted a rare plant survey on foot to determine the presence or absence of special status plant species. The rare plant survey can be found in Appendix A. Plant species were identified in the field based on visual characteristics and morphology. Unfamiliar species were identified offsite using *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012). Wildlife species were identified through direct observation or sign, including tracks, scat, call and/or burrows. Vegetation communities were classified according to *A Manual of California Vegetation, second edition* (Sawyer et al. 2009) and mapped on recent aerial photography.

2.5 JURISDICTIONAL WATERS AND WETLANDS DELINEATION

Waters and wetlands potentially subject to U.S Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB) jurisdiction were delineated in accordance with the USACE's *Wetlands Delineation Manual* (1987), *Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest* (2001), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008), and *Jurisdictional Determination Form Instructional Guidebook* (2007). California Department of Fish and Game (CDFG) jurisdiction was delineated in accordance with Section 1602(a) of the CFGC. All potentially jurisdictional features within the study area were inspected to delineate jurisdictional limits. The drainage feature, riparian habitat, and width measurements were mapped on recent aerial photography and using a Trimble GeoXT GPS. Where satellite coverage was poor due to thick canopy cover survey locations were estimated using an aerial photo and landmarks in the field. Width measurements for USACE and RWQCB jurisdiction were determined based on the lateral extent of the Ordinary High Water Mark (OHWM). CDFG jurisdictional limits were measured laterally from bank to bank at the top of the channel, or to the outer drip-line of associated riparian vegetation, if present. Wetland indicators (hydrophytic vegetation, hydric soils, and hydrology) were assessed within the basins at the topographically low region of the drainages onsite.

SECTION 3 – EXISTING CONDITIONS

This section discusses the current study area conditions, and provides general descriptions of the physical conditions onsite (topography, drainage features, elevation, soils, etc.), the current vegetation communities, common flora, and common wildlife observed during the field survey.

3.1 PHYSICAL CHARACTERISTICS

The study area is located within the City of Calabasas in the southwestern section of the San Fernando Valley bordered to the south by the Santa Monica Mountains. The San Fernando Valley is located in the Traverse Mountain Ranges within the Simi Valley-Santa Susana Mountains Ecological Subsection of California. It is surrounded by the Santa Susana Mountains (Northwest), San Gabriel Mountains (Northeast), Verdugo Mountains (East), Santa Monica Mountains (South), and Simi Hills (West).

The study area is within the Rural Residential zoning district and within the Mulholland Highway Scenic Corridor overlay. The area is largely undisturbed with the exception of an existing access road traversing each of the three respective parcels in generally north-south orientations. Roads in the western and easternmost parcels appear to be actively used (e.g. apparent tracks and ruts). The road in the central parcel appears to have been previously graded, terminating at a 100 x 200-foot pad that may have been graded and cleared in the past. Both the road and pad are being recolonized by species associated with Purple Sage Scrub (see Vegetation Communities section below). Some minor trash dumping has occurred on the western and eastern parcels.

The topography of the valley is relatively flat with a transition to foothills and mountains on the outer edges of the valley floor. The site is located within a hilly region in the southwestern section of the valley in the transitional zone to the foothills of the Santa Monica Mountains, at an elevation ranging from approximately 1,120 to 1,280 feet above mean sea level (msl).

The climate is hot and sub-humid and is moderately affected by maritime influence (USDA, Forest Service 1998). Annual precipitation averages 13.6 inches, summer temperatures range from the low 60's to the high 90's and winter temperatures range from the low 40's to the high 60's (City of Calabasas, 2012).

The project site is located in the Arroyo Calabasas Watershed which drains Woodland Hills, Calabasas, and Hidden Hills in the Santa Monica Mountains. The Arroyo Calabasas converges with Bell Creek in Canoga Park to form the Los Angeles River which drains into the Pacific Ocean. The City of Calabasas does not contain any groundwater recharge areas (City of Calabasas General Plan 2008).

Two soil map units mapped onsite include (1) Sumiwawa-Hipuk-Rock outcrop complex with 30 to 75 percent slopes; and (2) Balcom silty clay loam with 30 to 50 percent slopes (USDA, Natural Resources Conservation Service 2012). Sumiwawa-Hipuk-Rock outcrop complex is limited to the southwestern section of the study area. It is derived from sandstone and is well drained to somewhat excessively drained. Balcom silty clay loam characterizes the rest of the study area. It is derived from residuum or slope alluvium from sandstone and shale deposits and is well drained.

3.2 VEGETATION

The rare plant survey conducted in the spring season (April 27, 2012) within the study area found a total of 63 vascular plant species (Appendix A provides the rare plant survey in its entirety, and Appendix B provides a list of all plant species observed within the study area during the rare plant survey). Of the 63 species, 45 (71%) are native species and 18 (29%) are introduced (non-native) plant species. This ratio of native to non-native plant species is representative of what would normally be expected at similar-sized areas elsewhere in the region and in California.

The 17.05-acre study area contains seven natural plant communities (totaling approximately 16.65 acres of the study area), including Purple Sage Scrub, Purple Sage Scrub – Disturbed, Coast Live Oak Woodland, Scrub Oak Scrub, Chamise Scrub, Arroyo Willow Thicket, and Annual Brome Grassland (Figure 3). These plant communities are described according to Sawyer et al. (2009) vegetation alliance descriptions. The study area also includes 0.29 acre of areas mapped as Access Road, and 0.09 acre of areas mapped as Landscaped/Ornamental.

Purple Sage Scrub (*Salvia leucophylla* Shrubland Alliance) is dominated by purple sage and occurs on slopes of variable aspect which are steep. Soils develop over bedrock or colluvium and are fine sandy clay loam to clay and may be relatively deep. Relative cover of purple sage within this community is approximately 60%. Purple Sage Scrub is present within the central and eastern portions of the property and comprises approximately 7.12 acres of the study area. Important associate species include the following: California sagebrush (*Artemisia californica*) across all Purple Sage Scrub areas, black sage (*Salvia mellifera*), and non-native grasses (*Bromus* sp.) in the lower elevation south-central portion of the property. Small pockets of mustard (*Brassica nigra* and *Hirschfeldia incana*) are interspersed along edges of roads and other ground disturbances.

Purple Sage Scrub-Disturbed (*Salvia leucophylla* Shrubland Alliance-Disturbed) is the disturbed state of Purple Sage Scrub (see above description). This disturbed community is present onsite in the central and southwestern portion of the property and comprises approximately 0.86 acres of the study area. It is associated with past disturbance and is dominated by disturbance-following species, including both native and nonnative plant species. The succession of the vegetation community is progressing towards undisturbed Purple Sage Scrub. Important associate species include the following: California sagebrush, deerweed (*Lotus scoparius*), coastal golden bush (*Isocoma menziesii*), needlegrass (*Nassella pulchra*), and non-native grasses.

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance) is dominated by coast live oak forming an open to continuous canopy, over a sparse to intermittent shrub layer, and a sparse or grassy herbaceous layer. This plant community is typically found on alluvial terraces, canyon bottoms, stream banks and slopes. Soils are usually deep and either sandy or loamy with high levels of organic matter. Coast Live Oak Woodland is present in the eastern, central and western portions of the proposed survey area, primarily in association with ephemeral and intermittent drainages. This community comprises approximately 2.19 acres of the study area. Important associate species in the understory include the following: purple needlegrass, holly-leaf redberry (*Rhamnus ilicifolia*), western verbena (*Verbena lasiostachys*), bedstraw (*Galium aparine*), and non-native grasses.

Scrub Oak Scrub (*Quercus berberidifolia* Shrubland Alliance) is dominated by scrub oak and forms a continuous canopy of shrubs that are less than 6 meters tall and a sparse herbaceous layer. This community is typically found on north-facing, steep slopes. Soils are deep to shallow and are well to extensively drained. This plant community occurs in the northwestern and central portions of the

property and comprises approximately 3.26 acres of the study area. In the northwestern corner of the site the Scrub Oak Scrub community consists of a dense scrub oak canopy that becomes gradually interspersed with chamise at the southern end of the stand. The Scrub Oak Scrub community in the central portion of the property consists of a dense scrub oak canopy at the southern end of the stand with gradual interspersions of purple sage and California sagebrush in the northern end of the stand. Important associates of the understory include the following: sugar bush (*Rhus ovata*), chamise (*Adenostoma fasciculatum*), western verbena (*Verbena lasiostachys*), and chaparral nightshade (*Solanum xanthii*).

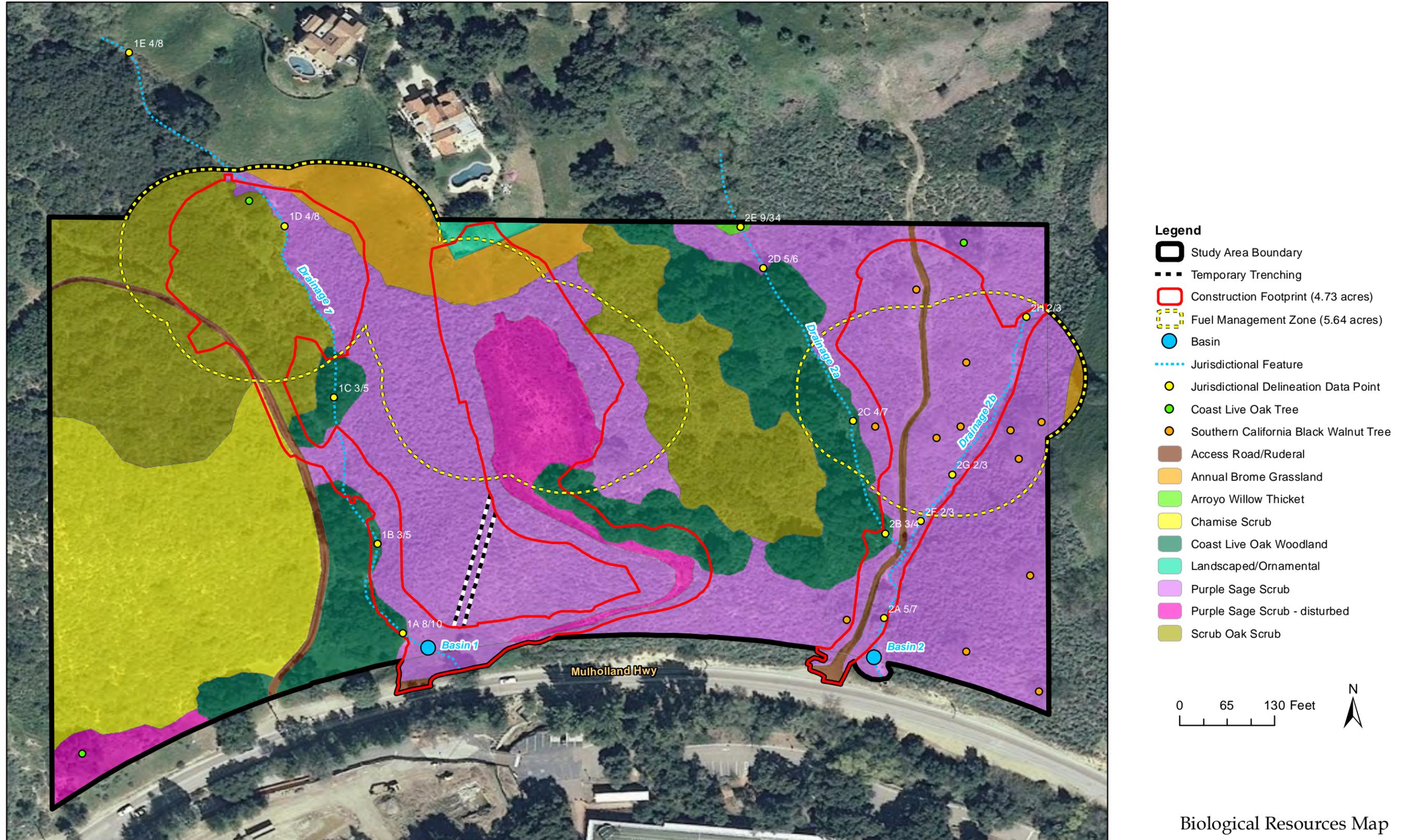
Chamise Chaparral (*Adenostoma fasciculatum* Shrubland Alliance) is dominated by chamise, an evergreen shrub, which is the most abundant species in the non-desert shrublands of California. It is adapted to California's Mediterranean climate by a dual root system that has both deep and shallow roots. It is usually associated with drier south and west-facing slopes and ridges, and occurs on xeric slopes on very shallow soils (often mafic-derived). The canopy is fairly continuous, and herbaceous species are uncommon in older stands. This plant community occurs in the southwestern portion of the study area and comprises approximately 2.46 acres. The southern end of the Chamise Chaparral community, positioned on the drier south-facing slope, is almost entirely dominated by chamise with interspersions of emergent scrub oaks and black sage apparent at the northern end of the stand where the aspect transitions to east and north-facing slopes.

Arroyo Willow Thicket (*Salix lasiolepis* Shrubland Alliance) is dominated by arroyo willow, a facultative wetland species. This community typically occurs along stream banks and benches, slope seeps, and stringers along drainages. Onsite, this plant community is located on the northern border of the property immediately north of Coast Live Oak Woodland surrounded by Purple Sage Scrub and comprises 0.01 acre of the site. An important associate species in this community onsite includes emergent western sycamores (*Platanus racemosa*) immediately north of the property boundary.

Annual Brome Grassland (*Bromus* Semi-Natural Herbaceous Stands) is dominated by ripgut grass (*Bromus diandrus*) and/or soft chess (*Bromus hordeaceus*) with other non-natives in the herbaceous layer. This alliance is predominated by herbaceous species less than thirty (30) inches tall with intermittent to continuous cover. Emergent trees and shrubs may be present at low cover. This plant community occurs in all topographic settings in foothills, waste places, and openings in woodlands. Onsite, Annual Brome Grassland is represented by a large mowed patch in the north-central portion of the site comprising approximately 0.75 acre. Non-native associate species observed include Russian thistle (*Salsola tragus*) and mustard (*Brassica nigra*).

3.3 GENERAL WILDLIFE

The study area offers moderate to high quality habitat for common wildlife species by providing foraging grounds and refugia. During the reconnaissance survey 19 wildlife species were detected through direct observation, auditory cues, or sign. Of the 19 species, 1 is a reptile, 12 are birds, and 3 are mammals. A complete wildlife species compendium is provided in Appendix B.



Imagery provided by ESRI and its licensors, 2012. Additional basemap layers from Diamond West Incorporated, May 2012 and Los Angeles County Assessor, August, 2010.

Biological Resources Map

SECTION 4 – SENSITIVE BIOLOGICAL RESOURCES

4.1 SPECIAL STATUS SPECIES

4.1.1 SPECIAL STATUS PLANT SPECIES

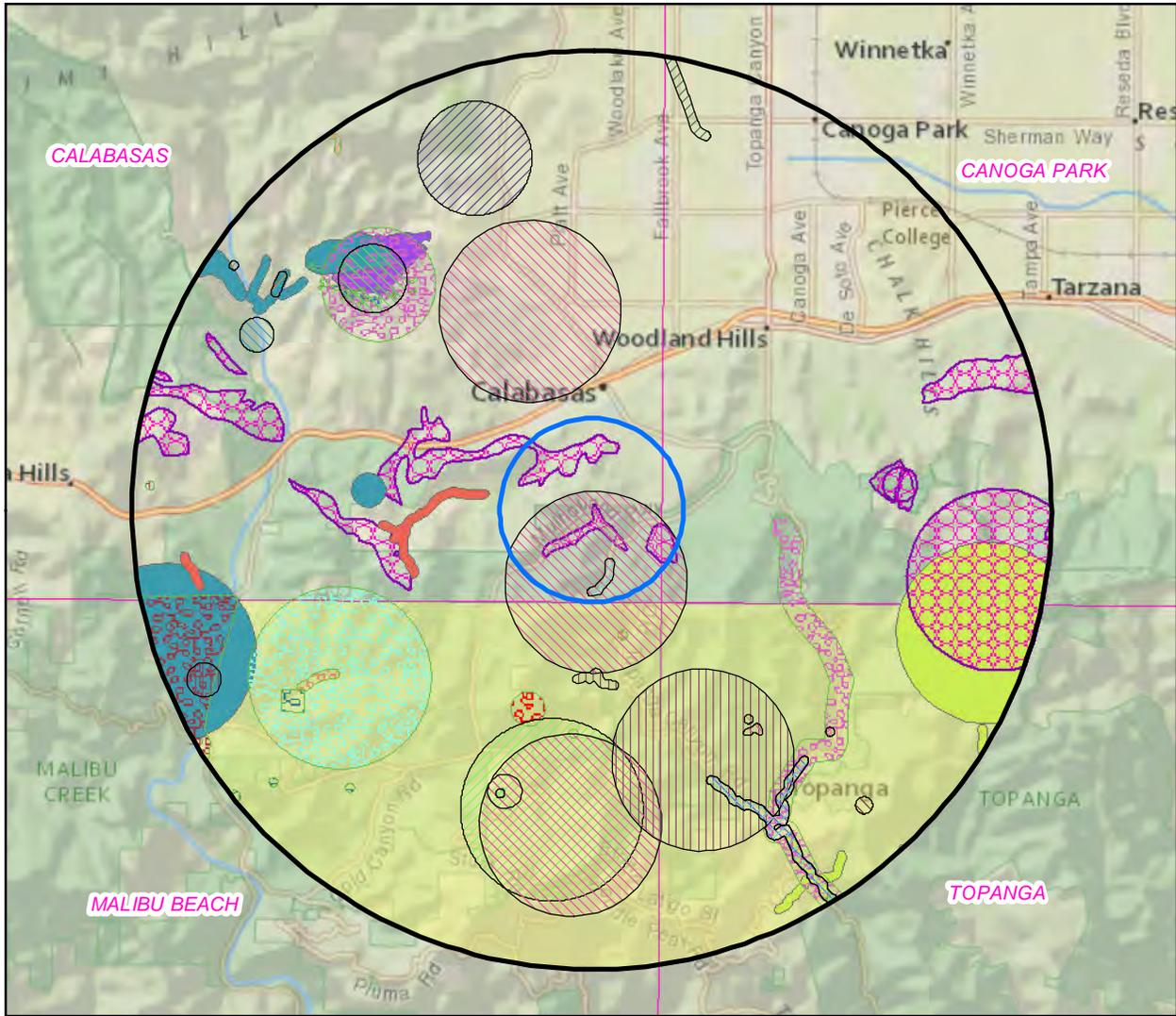
Rincon's literature search of the CNDDDB RareFind3 identified nine special status plant species as being tracked within five miles of the study area (Figure 4). Appendix C provides a table of sensitive plant species that have the potential to occur within the study area based on this literature search and provides a brief analysis of the level of potential to occur. Of those nine species tracked by CNDDDB, two species are federally and state listed: Lyon's pentachaeta is a federally and state listed species, and San Fernando Valley spineflower is a federal candidate and state listed species.

Three of the nine special status plant species identified in the literature search have moderate to high potential to occur onsite. The slender mariposa-lily (*Calochortus clavatus* var. *gracilis*) and Plummer's mariposa-lily (*Calochortus plummerae*), both CNPS ranked 1B.2, have a moderate to high potential to occur onsite in Purple Sage Scrub habitat. The San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), a candidate for federal listing, state listed and CNPS ranked 1B.2, has a moderate potential to occur onsite due to the presence of Purple Sage Scrub habitat.

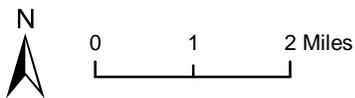
Six of the nine species identified during the literature search that have a low potential or are not expected to occur onsite include: Braunton's milk-vetch (*Astragalus brauntonii*), Malibu baccharis (*Baccharis malibuensis*), Santa Susana tarplant (*Chorizanthe parryi* var. *fernandina*), Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*), and Lyon's pentachaeta (*Pentachaeta Lyonii*), and round-leaved filaree (*California macropylla*).

Because the reconnaissance level survey was conducted outside of the blooming period for these species, a botanical rare plant survey was conducted on April 27, 2012 to determine the presence or absence of these or other special status plant species. None of the species expected to occur onsite were observed during the rare plant survey. However, one special-status plant species was observed onsite (Figure 3): southern California black walnut (*Juglans californica* var. *californica*; CRPR 4.2; refer to Appendix D for listing status definitions).

An Oak Tree Report, prepared by L. Newman Design Group on March 14, 2012 (Appendix E), was conducted but did not detail southern California black walnut locations. The walnuts were not mapped in detail during the rare plant survey; however, approximately 12 walnut trees occur on the eastern portion of the property (Figure 2). Protected trees are discussed in more detail below in Section 4.6.



Imagery provided by ESRI and its licensors, 2011. Other data layer sources: California Natural Diversity Database, January 2012. Note - Map to be printed in color, due to subtleties in symbology noticeable only on color version.



Sensitive Elements Reported by the
 California Natural Diversity Database

Figure 4
 BSVERCOM, LLC

4.1.2 SPECIAL STATUS WILDLIFE SPECIES

While no sensitive wildlife species were observed during the reconnaissance survey, Rincon's literature search of the CNDDDB RareFind3 identified 16 wildlife species as being tracked within a five-mile radius of the project site, (Figure 4 above). Appendix C provides a list of sensitive species that have the potential to occur in the study site. Of those 16 species tracked by CNDDDB, three are federally listed: Arroyo Toad (*Anaxyrus californicus*), California red-legged frog (*Rana draytonii*), and coastal California gnatcatcher (*Polioptila californica californica*).

Eleven of the 16 species have a low potential, or are not expected, to occur onsite, including: monarch butterfly (*Danaus plexippus*) roost sites, Gertsch's socalchemmis spider (*Socalchemmis gertschi*), Arroyo toad, California red-legged frog, San Bernardino ring-necked snake (*Diadophis punctatus modestus*), western pond turtle (*Emys marmorata*), two-striped garter snake (*Thamnopsis hammondii*), California mountain kingsnake (*Lampropeltis zonata*), burrowing owl (*Athene cunicularia*), coastal California gnatcatcher (*Polioptila californica californica*), and California leaf-nosed bat (*Macrotus californicus*).

The coastal California gnatcatcher (*Polioptila californica californica*) was evaluated and determined to have a low potential for occurrence on the site due to several factors. This species has not been documented to occur within this portion of the Santa Monica Mountains. Potential habitat onsite is dominated by purple sage and the site topography is steep, characteristics which reduce habitat suitability for gnatcatchers. The coastal sage scrub habitat is generally isolated from larger, more contiguous stands of habitat in the local vicinity and surrounded by residential development, chaparral, and woodland land cover types that are not expected to support occupation and breeding by the species. In addition, no gnatcatchers were observed or detected during any of the biological surveys on the site.

Woodlands and open patches of ground found onsite could provide suitable habitat for the coastal whiptail (*Aspidoscelis tigris*), with a subnational ranking of vulnerable/imperiled under the NatureServe Conservation Status ranking system. Purple Sage Scrub habitat with sandy patches of ground could also provide suitable habitat for the coast horned lizard (*Phrynosoma blainvillii*), a California species of special concern.

Two mammal species identified during the literature search have a moderate potential to occur onsite. The western mastiff bat (*Eumops perotis californicus*), a California species of special concern, prefers open habitats including woodlands and coastal sage scrub which are both present onsite. The western red bat (*Lasiurus blossevillii*), a California species of special concern, preferentially uses habitats providing a mosaic of protected trees such as those found in the woodlands onsite. Both species could utilize the oaks and other tree species onsite for roosting while the relatively open upper canopy allows for foraging.

Examination of relevant literature warranted the addition of another sensitive species: Bryant's woodrat (formerly known as San Diego desert woodrat) (*Neotoma bryanti* [formerly *Neotoma lepida intermedia*]). This study area is within this range of Bryant's woodrat; however, the findings of the field reconnaissance survey indicated that the probability of this species occurring within the study site is low due to lack of rock outcrops and prickly pear cactus. In addition, woodrat midden attributes observed onsite, including midden appearance (neater and dome-shaped), size (larger), and location (at base of shrub or tree), indicated that they were inhabited by the common big-eared woodrat (*Neotoma macrotis*) rather than Bryant's woodrat. As such, Bryant's woodrat has a low potential to occur onsite.

Native bird species and their nests are protected by CFGC 3503 and the MBTA. No nesting birds were observed during the reconnaissance survey, which was conducted outside of the nesting bird season which typically runs from March 1st through August 15th. Regardless, the property contains suitable habitat for protected nesting birds, and nesting by protected native birds is expected onsite.

4.2 SENSITIVE PLANT COMMUNITIES

Five sensitive habitats were tracked within the 5-mile search area including:

- California Walnut Woodland
- Southern Coast Live Oak Riparian Forest
- Southern Sycamore Alder Riparian Woodland
- Valley Needlegrass Grassland
- Valley Oak Woodland

None of the five sensitive plant communities tracked by the CNDDDB within a five-mile radius of the project site were observed within the project site during the field survey. However, three sensitive plant communities (not tracked by CNDDDB, but considered a significant biotic habitat under the Calabasas General Plan Conservation Element, are present onsite (Figure 3) including the following:

- Scrub Oak Scrub
- Coast Live Oak Woodland
- Arroyo Willow Thickets

Refer to section 3.2 for complete descriptions of these plant communities.

While federally designated critical habitat for one federally listed species, California red-legged frog, is present within five miles of the study area, no critical habitat is present onsite.

4.3 JURISDICTIONAL WATERS AND WETLANDS

Two jurisdictional features traverse north to south in the western and eastern portions of the site (Figure 3), the western-most drainage will hereafter be referred to as Drainage 1 and the eastern-most drainage will hereafter be referred to as Drainage 2. Both drainages have defined bed bank and channel features and flow off of the property to the south through a culvert underneath Mulholland Highway and into a concrete channel that runs along Mulholland Highway to the west and south. The channel flows into Cold Creek to the south and either dissipates to the east or flows west into Malibu Creek and to the Pacific Ocean near Malibu Lagoon State Beach.

Drainage 1 traverses the western half of the site in a south-southeasterly direction. An arroyo willow thicket with emergent western sycamores north of the property boundary indicates a consistent water source, likely from irrigation runoff originating on uphill properties. The northern portion of the drainage is located at the transition between Scrub Oak Scrub to the west and Purple Sage Scrub to the east. Traversing south, the drainage crosses through Coast Live Oak Woodland and Purple Sage Scrub. The width of the drainage ranges from 4 and 8 feet at the OHWM and top-of-bank, respectively at the northern extent of the drainage on the property, from 3 and 5 feet in the middle portion of the drainage, and from 8 and 10 feet at the southern extent of the property.

Hydrologic indicators, including drift deposits and drainage patterns, are present in the basin and adjacent drainage. No surface water, water table or saturation was observed. Vegetation is dominated primarily by non-hydrophytic species including non-native grasses, giant wild rye (*Elymus condensatus*), summer mustard (*Hirschfeldia incana*) and sugar bush (*Rhus ovata*). Soil evaluation revealed non-hydric silty clay loam soil. Due to the presence of a culvert, which drains the basin south under Mulholland Highway, and intermittent flows, the area does not experience sustained ponding necessary to support hydrophytic vegetation and create hydric soil.

Drainage 2 consists of a main stem (drainage 2a) traversing in a southeasterly direction through the eastern portion of the property, and a tributary (drainage 2b) that traverses in a southwesterly direction from the northeastern corner of the property and joining the main tributary at the access road in the southeastern portion of the property. The main stem crosses through Arroyo Willow Thicket into Purple Sage Scrub and Coast Live Oak Woodland communities. The tributary is located within Purple Sage Scrub for the duration of its course through the site. The width of the drainage ranges from 9 and 34 feet at the OHWM and canopy of riparian vegetation, respectively, in the Arroyo Willow Thicket. Measurements traversing south include 5/6, 4/7, and 3/4 (width in feet at OHWM/top-of-bank). Between the point of convergence with the tributary and the detention basin north of Mulholland Highway the drainage measured 5 feet and 7 feet at OHWM and top-of-bank, respectively. The width at the OHWM and top-of-bank remained consistent for the tributary at 2 and 3 feet, respectively.

Hydrologic indicators, including drift deposits and drainage patterns, are present in the basin and adjacent drainage. No surface water, water table or saturation was observed. Vegetation is dominated primarily by non-hydrophytic species including non-native grasses, summer mustard, milk thistle (*Silybum marianum*) and white horehound (*Marrubium vulgare*). Soil evaluation revealed non-hydric sandy loam soil. Due to the presence of a culvert, which drains the basin south under Mulholland Highway, and intermittent flows, the area does not experience sustained the ponding necessary to support hydrophytic vegetation and create hydric soil.

Because of the potential connectivity to the Pacific Ocean and the presence of hydrologic indicators, the drainages and topographically low detention basins onsite are all considered waters of the U.S. as defined in Section 404 of the Clean Water Act, which are regulated by the USACE (0.21 total acres within the study area). They are also waters of the State pursuant to Section 401 of the Clean Water Act as regulated by the RWQCB (0.21 total acres within the study area). The CDFG would regulate the entire riparian corridor and basin (0.37 total acres within the study area), which includes plants that are dependent upon the drainage for survival. Table 1 summarizes the jurisdictional areas of each drainage for each jurisdiction within the study area.

TABLE 1. JURISDICTIONAL AREAS WITHIN THE STUDY AREA

Feature	Jurisdiction		
	USACE	RWQCB	CDFG
Drainage 1 (including basin)	0.10	0.10	0.17
Drainage 2a (including basin)	0.09	0.09	0.17
Drainage 2b	0.02	0.02	0.03
Total	0.21	0.21	0.37

4.4 WILDLIFE MOVEMENT

At a local scale, the project site contains features conducive to promote wildlife movement through the site including drainage features, vegetative cover, and appropriate habitat. Game trails and a mule deer bedding area observed during the reconnaissance survey indicated regular movement of wildlife through the site. Wildlife likely use the ridgetops and drainage corridors onsite to move through the area and the oak woodland for cover. However, the site is largely isolated from larger habitat patches by surrounding development. On a regional scale, the site is located directly south of the highly developed floor of the San Fernando Valley, which impedes wildlife movement directed to the north. Although many wildlife species can utilize urbanized landscapes to some degree, developed areas generally present an inhospitable matrix in which to travel. It is more likely that wildlife movements would follow a path of less resistance from east to west through the Santa Monica Mountains and south to north through preserved open space and the Simi Hills to the west and north. Ultimately, the study area does not lie within a mapped linkage or corridor per the City of Calabasas General Plan. The study area does not lie within any Los Angeles County Significant Ecological Areas (SEAs). The study area also does not lie within a regional wildlife connectivity area as identified by the California Essential Habitat Connectivity Project (Spencer et al. February 2010).

4.5 RESOURCES PROTECTED BY LOCAL POLICIES AND ORDINANCES

4.5.1 PROTECTED TREES

Native oak trees play a significant role in the Calabasas landscape (City of Calabasas General Plan, 2008). Section 17.26.070 of the City of Calabasas Municipal Code requires that an Oak Tree Permit be obtained for the alteration of any healthy oak tree greater than 2 inches in diameter. The City of Calabasas's Oak Tree Ordinance requires procurement of an oak tree permit prior to the removal, altering, etc. of oak trees conforming to the criteria described in the ordinance. The goal of the ordinance is to protect oak trees within the City and avoid their removal unless replacement is granted in conjunction with the oak tree permit conditions. The ordinance also provides for the establishment of an oak tree habitat restoration program.

A ground level GPS-based oak tree inventory and assessment was conducted by the L. Newman Design Group, Inc. in October 2011. Diameter at breast height (DBH), height, canopy spread, crown, trunk, overall growth, presence of insect and disease, and general health were recorded based upon the existing presentation of each oak tree within the site.

Based on the data provided in the Oak Tree Report, 53 oak trees were assessed and 80,000 square feet of scrub oak chaparral on lot 1 was assessed. Of the 53 trees assessed, 51 are coast live oak (*Quercus agrifolia*) and 2 are scrub oak (*Quercus berberidifolia*). Per the City's Oak Tree Preservation and Protection Guidelines, heritage trees are considered oak trees with a diameter of 24 inches or greater at 4 ½ feet above natural grade. Based on these criteria, 21 of the 53 oak trees are considered heritage trees. The Oak Tree Report is available as Appendix E.

SECTION 5 - IMPACT ANALYSIS AND MITIGATION MEASURES

5.1 SPECIAL STATUS SPECIES

The proposed project would have a significant effect on biological resources if it would:

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 Game or U.S. Fish and Wildlife Service.

Impact BIO-1 **No federally or state listed wildlife species are known onsite. Suitable habitat occurs onsite for locally sensitive species including: coast horned lizard, western mastiff bat, and western red bat, which have a moderate potential to occur onsite. No federally designated critical habitat for listed wildlife species is mapped within the property, and no critical habitat will be affected by the project. Impacts to endangered, threatened, or rare animal species or their habitat would be *potentially significant but mitigable*.**

If construction occurs during the bird nesting season, the proposed project could directly or indirectly affect protected nesting birds, including two locally sensitive avian species observed onsite, Nuttall's woodpecker and oak titmouse. This is a *potentially significant but mitigable* impact.

No federally or state listed wildlife species were detected during a field reconnaissance survey. No federally designated critical habitat for any listed wildlife species occurs within the study area. Locally sensitive animals (including California coastal whiptail, coast horned lizard, western mastiff bat, western red bat) are expected to occur within the site during the construction period and may potentially be affected by construction activity. Although there is a low potential to impact an entire population of one or more of these species onsite, injury to individuals of these species could result from the proposed project. As such, potential impacts to locally important wildlife species are considered a potentially *significant but mitigable* impact.

Individuals of locally sensitive avian species (Nuttall's woodpecker, and oak titmouse) were observed onsite and may potentially be impacted by construction activity. Native birds protected by the California Fish and Game Code and the federal Migratory Bird Treaty Act are expected to nest onsite. Potential direct impacts (loss of individuals) could occur to birds nesting onsite if the removal of any vegetation occurs during the nesting/breeding season. In addition, indirect impacts such as construction noise, dust, and other human disturbances may deter breeding/nesting behaviors if construction occurs during the breeding/nesting season. If construction occurs during the nesting season, potential direct and indirect impacts to protected nesting birds would be a potentially *significant but mitigable* impact.

Mitigation Measures. Mitigation Measure BIO-1(a) is provided below for potential impacts to special status wildlife species, and BIO-1(b) will require either avoidance of the bird nesting season or will require nesting bird surveys and avoidance buffers to mitigate for potential impacts to nesting birds.

BIO-1(a) Preconstruction Special Status Wildlife Surveys and Construction Monitoring. No more than 14 days prior to vegetation clearing and construction within the project site, two preconstruction surveys for special status wildlife species shall be conducted one week apart by qualified biologists within the construction footprint and within a 200-foot survey buffer area. The surveys would include mapping current locations of special status wildlife species for avoidance and relocation efforts and to assist construction monitoring efforts. In addition, during any construction activities involving vegetation clearing, or initial modification of natural habitat, applicant shall contract with a biological monitor to conduct construction monitoring to avoid and minimize impacts to special status wildlife in the path of construction. Locally important wildlife species or wildlife Species of Special Concern, which are not formally listed, would be captured by qualified biologists, when possible, and relocated to adjacent appropriate habitat within the open space onsite or in suitable habitat adjacent to the project area. CDFG would be notified and consulted regarding the presence of a special status wildlife species found onsite. If a federally listed species is found prior to or during grading of the site, the USFWS would also be notified. Only a USFWS approved biologist would be allowed to capture and relocate listed species.

Preconstruction surveys shall be conducted no more than 14 days prior to construction within the project site. Construction monitoring shall be conducted during any construction activities involving vegetation clearing, or initial modification of natural habitat. The results of the preconstruction survey(s) and any relocation efforts during those surveys shall be documented in a brief letter report and submitted to the City no later than two weeks following the survey(s). The results of the construction monitoring and any relocation efforts shall be documented in a brief letter report and submitted to the City upon completion of vegetation clearance and initial natural habitat alteration.

BIO -1(b) Avoid Bird Nesting Season or Conduct Nesting Bird Surveys and Provide Buffers. Tree removals, grading, and the initiation of construction shall either: a) occur outside of the bird nesting season (February 1 to August 31); or b) be subject to bird survey requirements. If vegetation clearing occurs during the breeding season, pre-construction bird nesting surveys shall be conducted to determine the locations of nesting birds. Bird surveys shall include a minimum of two nesting bird surveys to be conducted by a qualified biologist no more than one week prior to the start of vegetation clearing or construction. Bird nesting surveys shall be reinitiated if construction is halted for more than three days. The nesting bird surveys shall include a survey buffer around the project site of up to 500 feet (where feasible) to accommodate raptors. If a nesting bird or special status species is located, a maximum 300-foot buffer (depending on noise and site conditions) would be established surrounding the nest(s) and shall be flagged for avoidance. If any active raptor nests are found, typically a suitable buffer area of 250-500 feet from the nest shall be established until the nest becomes inactive (vacated). These avoidance buffers can be

reduced based upon the recommendation the qualified biologist conducting the surveys. Disturbance can occur within the buffer area only after the birds are no longer reliant on the nest, as determined by the qualified biologist. If any special status bird species nests are found, consultation with the local CDFG representative or USFWS representative is recommended to determine what avoidance actions should be taken. The results of the nesting bird survey(s) and any buffer efforts as a result of those surveys shall be documented in a brief letter report and submitted to the City no later than two weeks following the final survey.

Significance After Mitigation. Implementation of Measure BIO-1(a), and BIO-1(b) would reduce impacts to locally important wildlife species, and protected nesting birds to a less than significant level.

Impact BIO-2 **No federally or state listed plant species are known onsite and none were observed during the rare plant survey. No impacts are expected to occur to listed plant species as a result of the proposed project. No federally designated critical habitat for listed plant species is mapped within the property, and no critical habitat will be affected by the project. One locally sensitive plant species, southern California black walnut, was observed onsite during the rare plant survey. The species is relatively abundant throughout the region and the number of trees impacted would be relatively low (the sustainability of the population would be retained). As such, impacts of the proposed project on special status plant species would be a *less than significant* impact.**

One locally sensitive plant species, southern California black walnut (*Juglans californica* var. *californica*; CRPR 4.2) was observed onsite during the rare plant survey. Approximately 12 individuals are present in the eastern parcel. The CRPR Rank of 4.2 indicates that the species is not “rare” from a statewide perspective, but is uncommon enough that in the CDFG’s opinion its status should be monitored regularly (CDFG 2006). While the potential loss of approximately five (5) California black walnut individuals is considered an adverse effect, the impact to the species would still be considered less than significant due to the relative abundance throughout the region. No further action is necessary, though it is recommended that any California black walnuts outside the development footprint be preserved and protected from disturbance.

Mitigation Measures. No mitigation is necessary or required.

5.2 SENSITIVE PLANT COMMUNITIES

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact 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 Game or US Fish and Wildlife Service.

Impact BIO-3 **Sensitive plant communities exist within the project site, and would be impacted by construction activities/development. The impact on sensitive plant communities would be a significant but *mitigable* impact.**

Three sensitive plant communities (not tracked by CNDDDB, but considered a significant biotic habitat under the Calabasas General Plan Conservation Element) are present onsite. The construction footprint associated with the proposed project totals 7.27 acres, including 4.73 acres of proposed grading and roads, and 2.54 acres of associated fuel modification for proposed structures (fuel modification that extends beyond the limits of grading). Of the 7.27-acre construction footprint, 1.71 acres are currently comprised of sensitive habitats, of which 0.96 acre of sensitive habitat would be removed as a result of the proposed grading limits and 0.75 acre of sensitive habitat would be affected by fuel modification. Of the total of 5.46 acres of sensitive habitat within the study area, approximately 1.71 acres of sensitive habitat (31%) will be removed as a result of the project, and this is considered a potentially significant but mitigable impact. The acreage of impacts to sensitive plant communities resulting from project development are provided in Table 2.

TABLE 2. IMPACTS TO SENSITIVE VEGETATION COMMUNITIES

Plant Community	Acres within Property	Acres Impacted (within grading limits)	Acres Impacted (within fuel modification zone outside of the grading limits)
Scrub Oak Scrub	3.26	0.72	0.53
Coast Live Oak Woodland	2.19	0.24	0.22
Arroyo Willow Thicket	0.01	0.00	0.00
Total	5.46	0.96	0.75
		1.71	

Mitigation Measures. Implementation of BIO-4(a) (Agency Coordination [below]), BIO-4(b) (Restore Jurisdictional Waters and Riparian Habitats [below]) and BIO-6 (Oak Tree Permit [below]) will mitigate for impacts to the three sensitive plant communities affected by the proposed project.

Significance After Mitigation. Implementation of BIO-4(a), BIO-4(b), and BIO-6 would reduce impacts to sensitive plant communities to a *less than significant* level.

5.3 JURISDICTIONAL WETLANDS AND WATERS

The proposed project would have a significant effect on biological resources if it would:

- c) Adversely impact federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means.*

Impact BIO-4

Two unnamed ephemeral drainages traverse the study area. Based upon a jurisdictional delineation of the drainages, the drainages are subject to USACE, RWQCB, and CDFG jurisdictions. The proposed project construction activities would temporarily and permanently impact regulated waters and associated riparian habitats onsite. Impacts to jurisdictional areas and riparian habitat as a result of the project would be a potentially *significant but mitigable* impact.

Because of the potential connectivity to the Pacific Ocean and the presence of hydrologic indicators, the drainages and topographically low detention basins onsite are all considered waters of the U.S. as defined in Section 404 of the Clean Water Act, which are regulated by the USACE. They are also waters of the State pursuant to Section 401 of the Clean Water Act as regulated by the RWQCB. The CDFG would regulate the entire riparian corridor and basin, which includes plants that are dependent upon the drainage for survival. Table 3 summarizes the potential impacts to jurisdictional areas per drainage feature, per jurisdiction.

TABLE 3. IMPACTS TO JURISDICTIONAL WATERS AND WETLANDS

Feature	Impact Type	Jurisdiction		
		USACE	RWQCB	CDFG
Drainage 1	CFP	0.08	0.08	0.13
	FMZ	0.00	0.00	0.01
Drainage 2a	CFP	0.02	0.02	0.03
	FMZ	0.02	0.02	0.03
Drainage 2b	CFP	0.02	0.02	0.03
	FMZ	0.00	0.00	0.00
Total		0.14	0.14	0.23

Approximately 0.14 acre of USACE and RWQCB jurisdictional area onsite will be impacted within the study area, including 0.12 acre resulting from grading and 0.02 acre resulting from fuel modification. Approximately 0.23 acre of CDFG jurisdiction will be impacted as a result of the proposed project, including 0.19 acre resulting from grading and 0.04 acre resulting from fuel modification. Impacts to jurisdictional areas are considered a significant but mitigable impact.

Mitigation Measures. Any proposed development in areas identified as jurisdictional waters and/or wetlands may be subject to the permit requirements of the USACE, under Section 404 of the Clean Water Act (CWA), RWQCB, under Section 401 of the CWA and the Porter-Cologne Water Quality Act, a Streambed Alteration Agreement from the CDFG pursuant to Section 1600 et. seq. of the California Fish and Game Code, and a Water Course Permit from the VCWPD. Actual jurisdictional areas are determined by the state and federal authorities at the time that permits are requested. BIO-4(a) and BIO-4(b) are provided to mitigate impacts to jurisdictional areas and riparian habitat associated with the proposed project.

BIO 4(a) Agency Coordination. Permits, agreements, and/or water quality certifications from all applicable state and federal agencies regarding compliance with state and federal laws governing work within jurisdictional waters are required for submission to the City of Calabasas with the grading permit application for the project. The applicant shall provide such permits and/or agreements prior to the granting of a grading permit.

BIO-4(b) Restore Jurisdictional Waters and Riparian Habitats. In-kind restoration of riparian and wetland habitats and waters shall occur for all impacted jurisdictional areas resulting from project development. The applicant shall provide as much in-kind wetlands and riparian creation within the property boundaries as feasible at a 1:1 mitigation ratio (for every 1 acre impacted, 1 acre shall be restored), or as otherwise indicated by the regulatory agencies during the permitting process, whichever is greater. As such, at least 0.23 acre of jurisdictional area including riparian habitat shall be created/restored as much as feasible onsite. Native seeds and plant material (cuttings) can be salvaged from the areas of impact prior to construction and used for the onsite restoration/creation effort. Supplemental seed/plantings may be purchased, but shall be sourced from a site within the same watershed as the project site to maintain genetic integrity.

If all mitigation cannot be conducted onsite, the balance shall be mitigated for by providing adequate funding to a third party organization for the creation or restoration of riparian and wetlands habitat within appropriate jurisdictional areas at a 2:1 mitigation ratio, or can consist of the payment of in lieu fees (i.e., Santa Monica Mountains Conservancy, Mountains Restoration Trust, or Ojai Valley Land Conservancy). If mitigation is implemented offsite, mitigation lands shall be located as close to the project site as feasible. Offsite land shall be preserved through a conservation easement and a habitat mitigation and monitoring plan (HMMP) that shall identify an approach for funding assurance for the long-term management of the conserved land.

If determined to be necessary, the required HMMP shall be prepared by a qualified biologist/restoration ecologist that outlines the compensatory mitigation in coordination with the regulatory agencies. As part of the HMMP, a final mitigation implementation plan detailing the proposed mitigation shall be submitted to and approved by the City prior to issuance of a grading plan. Specifically, the HMMP and implementation plan shall include:

- Detailed mitigation site location for all aspects of the jurisdictional areas restoration.
- Native plant palette, planting plan, time of year planting will occur, irrigation plan.
- Maintenance program and invasive species control program.
- Success criteria for monitoring the restoration effort over five years.
- Remedial measures in the event that the performance criteria are not met for a particular year.
- Monitoring and reporting program with measurable success criteria.

Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist familiar with the restoration of native habitats. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as up or downstream of the restoration site). Annual monitoring reports shall include at a minimum results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation. Ultimately, the mitigation provided within the HMMP shall be consistent with the requirements pursuant to permits obtained by all regulating agencies.

Significance After Mitigation. Obtaining appropriate regulatory permits for impacts to regulated waters/wetlands, and restoring impacted jurisdictional areas and habitat areas would reduce project and cumulative impacts to jurisdictional areas and associated riparian habitats to a less than significant level.

5.4 WILDLIFE MOVEMENT

The proposed project would have a significant effect on biological resources if it would:

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

Impact BIO-5 **No regional wildlife linkages or corridors are mapped within the subject study area. While local wildlife use the ridgelines and drainage features for local movement, the project would not eliminate access to areas or habitat that is otherwise currently accessible as development exists to the north, west and east, with Mulholland Highway to the south. Impacts to regional and local wildlife movement and connectivity are *less than significant*.**

On a regional scale, the site does not lie within a mapped wildlife linkage or corridor per the City of Calabasas General Plan. The site does not lie within any Los Angeles County Significant Ecological Areas (SEAs). The site also does not lie within a wildlife connectivity area as defined by the California Essential Habitat Connectivity Project (Spencer et al. February 2010). On a local scale, wildlife is expected to use the ridgelines and drainage corridors found onsite to move across the property and the oak trees/oak woodland for cover. The area immediately surrounding the study area to the north, west, and east is developed by residential uses and a school campus and Mulholland Drive lie to the south of the property. The proposed project will not restrict or cut off access to any habitat or connectivity feature. As such, the impacts to regional and local wildlife movement and connectivity associated with the proposed project are considered less than significant.

Mitigation Measures. No mitigation measures are necessary or required.

5.5 LOCAL POLICIES AND ORDINANCES

The proposed project would have a significant effect on biological resources if it would:

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

Impact BIO-6 Development of the proposed project would impact 33 oak trees (including 19 heritage oak trees) protected in the City of Calabasas Oak Tree Ordinance. This is considered a *significant but mitigable* impact.

A ground-level, GPS-based oak tree inventory and assessment was conducted by the L. Newman Design Group, Inc. in October 2011. Diameter at breast height (DBH), height, canopy spread, crown, trunk, overall growth, presence of insect and disease, and general health were recorded based upon the existing presentation of each oak tree within the site. The inventory identified the oak trees which will be impacted by the proposed grading and construction activities. The Oak Tree Report is provided as Appendix E.

Based on the data provided in the L. Newman Design Group, Inc. 2011 Oak Tree Report for the Mulholland property, 53 oak trees were evaluated, including 51 coast live oak (*Quercus agrifolia*) and 2 scrub oak (*Quercus berberidifolia*). Of the 53 oak trees assessed:

- 6 coast live oak trees will be removed
- 17 oaks will be encroached upon, including
 - 16 coast live oaks (8 of which are heritage trees)
 - 1 scrub oak
- 18,400 square feet (0.42 acre and 23%) of the 80,000 square feet (1.84 acres) of scrub oak on lot 1 will be removed
- No heritage trees would be removed as a result of the proposed project

The City of Calabasas's Oak Tree Ordinance requires procurement of an oak tree permit prior to the removal, altering, etc. of oak trees conforming to the criteria described in the ordinance. The goal of the ordinance is to protect oak trees within the City and avoid their removal unless replacement is granted in conjunction with the oak tree permit conditions. The ordinance also provides for the establishment of an oak tree habitat restoration program. Additionally, and per the City's Oak Tree Preservation and Protection Guidelines, heritage trees are considered oak trees with a diameter of 24 inches or greater at 4 ½ feet above natural grade. Based on these criteria, 21 of the oak trees are considered heritage trees. Of the 21 heritage trees, 8 would be encroached upon (as mentioned above) by the proposed construction activities. As such, the proposed project does conflict with the City of Calabasas Oak Tree Ordinance, and impacts to oaks (removal of 6 oaks, encroachment upon 17 oaks, and removal of 0.42 acre of scrub oak chaparral) is a potentially significant but mitigable impact.

Mitigation Measures. Mitigation Measure BIO-6 is required to mitigate potentially significant impacts relating to oak species present onsite.

BIO-6 Oak Tree Permit. An Oak Tree Permit shall be obtained from the City of Calabasas prior to any oak species removal which will include an oak tree habitat restoration program. A copy of the approved oak tree permit and

the associated oak tree report shall be kept onsite during all construction. At a minimum, and to meet the City of Calabasas Oak Tree Ordinance requirements, removed oak trees shall be replaced onsite at a 1:1 ratio and an Oak Tree Habitat Restoration Program will be prepared and submitted to the City. As such, a minimum of 23 oaks shall be planted onsite to replace those removed and encroached upon, and 0.42 acre of scrub oak chaparral shall be replaced onsite for this proposed project. If all oak mitigation required herein cannot be implemented all onsite, then the balance shall be mitigated for at an offsite location.

The Oak Tree Habitat Restoration Program will include a monitoring schedule, and the maintenance and care program outlined in the Oak Tree Report shall be carried out by qualified professionals. In addition, Final Landscape Plans shall be submitted to the City which shall also include minimum oak tree mitigation as required by the City of Calabasas and resource agencies. The Oak Tree Habitat Restoration Program will include the mapped location of restoration areas onsite, an implementation plan (detailing site preparation and planting irrigation, and fertilization practices), detailed maintenance program practices, and success criteria. Success criteria shall consider survivorship of oak trees under natural conditions sufficient to meet the City's canopy retention standards, 75% or more of the baseline canopy of the property, or survivorship of a sufficient number of oaks to replace those oak trees/ scrub oak chaparral removed or encroached upon within the property at a 1:1 ratio at the end of 5 years.

The applicant shall be responsible for periodic submission of reports by a certified oak tree consultant. The reports will include, but not be limited to, a summary of conditions at the conclusion of grading and construction, and annually for the next 5 years based on quarterly or bi-annual site visits and including monitoring observations. The reports shall certify compliance with all conditions of the permit, establishment goals and the health of all replaced, remaining or relocated trees.

Significance After Mitigation. Implementing BIO-6 (above), obtaining an oak tree permit for impacts to oak species onsite and replacing oak trees and oak habitat onsite, will reduce the impacts on protected oak species to a less than significant level.

5.6 ADOPTED OR APPROVED PLANS

The proposed project would have a significant effect on biological resources if it would:

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

Impact BIO-7 Implementation of the proposed project would not conflict with an adopted Habitat Preservation Plan or Natural Communities Conservation Plan, or other local adopted conservation plans. This is considered a *less than significant* impact.

No adopted habitat preservation or conservation plans govern the project site. Therefore, the project will have no effect on adopted plans governing biological resources in this area.

5.7 CUMULATIVE IMPACT ANALYSIS

The impact of the proposed project would be mitigable through the implementation of the measures detailed above. Regionally, the project is located at the southern edge of the developed San Fernando Valley. It is generally surrounded by urban land cover to the west, north, and east and is bordered to the south by Mulholland Highway and a school campus. It is not located within any mapped wildlife corridors or linkages, or within any sensitive habitat areas as mapped by Los Angeles County or the City of Calabasas. Overall, the proposed construction footprint associated with the proposed project would impact a total of 7.27 acres, including 4.73 acres of proposed grading and roads, and 2.54 acres of associated fuel modification for proposed structures. This 7.27 acres includes suitable wildlife habitat consisting of Purple Sage Scrub, Chamise Chaparral, Coast Live Oak Woodland, Scrub Oak Scrub, and Annual Brome Grassland. While project impacts to locally sensitive wildlife species, nesting birds, sensitive habitats, jurisdictional areas, and protected trees are potentially significant, all project impacts can be reduced to a less than significant level by the implementation of the mitigations measures prescribed herein (above). As such, there should be no net loss of these impacted resources and the cumulative effect is considered *less than significant*.

SECTION 6 - LIMITATIONS, ASSUMPTIONS, AND USER RELIANCE

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Biological surveys for the presence or absence of certain taxa have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDDB RareFind3, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDDB, may vary with regard to accuracy and completeness. In particular, the CNDDDB is compiled from research and observations reported to CDFG that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

SECTION 7 - REFERENCES

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APPENDIX A

Rare Plant Survey Report



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June 26, 2012

Project Number: 11-99290

Isidro Figueroa, Planner
City of Calabasas
100 Civic Center Way
Calabasas, California 91302

Subject: Rare Plant Survey Results Report – BSVERCOM, LLC. Mulholland Highway Project, City of Calabasas, Los Angeles County, California

Dear Mr. Figueroa:

This letter report summarizes herein the rare plant survey conducted by Rincon Consultants, Inc. (Rincon) on April 27, 2012 for the BSVERCOM, LLC. Mulholland Highway Project (project) in the City of Calabasas, Los Angeles County, California. The project site is comprised of native, intact plant communities, and the plant communities onsite have the potential to provide habitat for special-status plant species. The survey was conducted to determine presence or absence of special-status plant species and to aid in the preparation of the impact analysis for the proposed project.

PROJECT BACKGROUND

The project site is located in the western portion of Los Angeles County, in the City of Calabasas and includes Assessor's Parcel Numbers 2069-065-001, 2069-065-002, and 2069-065-003. The site is located on the north side of Mulholland Highway between Park South Street and Old Topanga Canyon Road, approximately 1.25 miles south of the Ventura Freeway (U.S. Route 101). Land use in the area immediately surrounding the site includes undeveloped/natural land to the west, residential development to the north and east, and a school campus (Meadow Oaks Secondary School) to the south. The site is located at the transition between the highly developed San Fernando Valley to the north and the relatively undeveloped Santa Monica Mountains to the south. It is depicted in the U.S. Geological Survey (USGS) Calabasas, California, 7.5-minute topographic quadrangle.

Per the preliminary conceptual grading plan, the proposed project will develop building pads for the three individual parcels including associated driveways and fuel modification.

METHODS

Literature Search

Prior to the first field survey, Rincon reviewed literature for baseline information on botanical resources potentially occurring within the study area. The literature review included information on sensitive resource occurrences from the most recent version of the California Department of Fish



and Game (CDFG) California Natural Diversity Data Base (CNDDDB) RareFind3 (2012) and the U.S. Fish and Wildlife Service (USFWS) *Critical Habitat Portal*. A literature search of California Native Plant Society’s (CNPS) *Inventory of Rare and Endangered Plants of California* (2010) and CDFG’s *Special Vascular Plants, Bryophytes, and Lichens List* (2010), was also conducted to account for other special-status species not tracked by CNDDDB with potential to occur in the vicinity of the proposed project site. The CNPS special-status plant species ranking system, called the California Rare Plant Rank (CRPR 1 – 4, Rank Extension 0.1-0.3; Table 1), is tailored specifically for plants within California. Additionally, aerial photographs, topographic maps, soil survey maps, previous biological studies, and project plans were also examined.

Table 1. California Native Plant Society Rare Plant Rank and Rank Extension Definitions

Rank	Definition
1A	Presumed Extinct in California
1B	Rare, Threatened, or Endangered in California and elsewhere
2	Rare, Threatened, or Endangered in California, but more common elsewhere
3	Need more information (a Review List)
4	Plants of Limited Distribution (a Watch List)
Rank Extension	
0.1	Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Fairly endangered in California (20-80% occurrences threatened)
0.3	Not very endangered in California (<20% of occurrences threatened)

Field Survey

The rare plant survey conducted by Rincon’s Senior Botanist, Cher Batchelor, on April 27, 2012. The entire property was surveyed during the rare plant survey and focused in and around the areas proposed for development and fuel modification. The rare plant survey followed survey guidelines developed by CDFG and CNPS. Meandering transects were traversed on foot ensuring thorough coverage of the area. The survey was conducted during a time that captured the blooming period of all special-status plant species with a moderate to high potential to occur onsite. The survey was floristic in nature; and all plant species observed were identified to a sufficient level to determine rarity using *The Jepson Manual* (Baldwin 2012) and The Jepson Online Interchange California Floristics (<http://ucjeps.berkeley.edu>).

It should be noted that 2012 rainfall from January through April was roughly 40 percent less than the same period in 2011 (2012 - 5.75 inches; 2011 – 9.5 inches; Weather Underground - <http://wunderground.com>). Low annual precipitation can initiate an early blooming period so the site was visually inspected for any remaining plant material present or in senescence that could have been a special-status species.

RESULTS

Literature Search

Table 2 lists sensitive plant species with moderate to high potential to occur within the project site including their regulatory status, habitat and ecological requirements.



Table 2. – Special Status Plant Species with Moderate to High Potential to Occur Onsite

Scientific Name	Common Name	Listing Status	Habitat	Potential to Occur
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa-lily	Federal none; State none; CDFG none; CRPR 1B.2	Chaparral, coastal scrub, shaded foothill canyons; often on grassy slopes within other habitat. 420-760 meters.	Moderate to High. Coastal sage scrub habitat and appropriate soils exist onsite.
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	Federal none; State none; CDFG none; CRPR 1B.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 90-1,610 meters.	Moderate to High. Coastal sage scrub habitat and appropriate soils exist onsite.
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	Federal candidate for listing; State endangered; CDFG none; CRPR 1B.1	Coastal scrub. Sandy soils. 3-1,035 meters.	Moderate. Coastal sage scrub habitat and sparsely vegetated soil present onsite.

Other species tracked by CNDDDB within a five-mile radius search, but that have a low to no potential to occur onsite due to lack of suitable habitat or soils, include the following:

- Braunton's milk vetch (*Astragalus brauntonii*) – Federal: endangered; CRPR 1B.1
- Malibu baccharis (*Baccharis malibuensis*) – CRPR 1B.1
- round-leaved filaree (*California macrophylla*) - CRPR 1B.1
- Santa Susana tarplant (*Deinandra minthornii*) – State: rare; CRPR 1B.2
- Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*) - CRPR 1B.2
- Lyon's pentachaeta (*Pentachaeta lyonii*) – Federal: Endangered; State: Endangered; CRPR 1B.1

Field Survey

The rare plant survey was conducted on April 27, 2012 by Rincon's Senior Botanist, Cher Batchelor. The survey was conducted from 0800 hours to 1300 hours. Weather conditions during the survey included a temperature that ranged from 71°F to 80°F, less than 1 mph winds, and a clear and sunny sky.

The following plant communities were observed onsite: Purple Sage Scrub, Coast Live Oak Woodland, Scrub Oak Chaparral, Chamise Scrub, Arroyo Willow Thicket, and Annual Brome Grassland. Purple Sage Scrub is dominated by *Salvia leucophylla* with associate species including California sagebrush (*Artemisia californica*) and emergent coast live oak (*Quercus agrifolia*). Coast Live Oak Woodland is dominated by *Quercus agrifolia* with a sparse understory of purple needlegrass (*Nassella pulchra*), holly-leaf redberry (*Rhamnus ilicifolia*), western verbena (*Verbena*



lasiolepis), bedstraw (*Galium aparine*), and non-native annual grasses (*Bromus* spp.). Scrub Oak Chaparral is dominated by *Quercus berberidifolia* with associate species being sugar bush (*Rhus ovata*), western verbena (*Verbena lasiolepis*), and chaparral nightshade (*Solanum xanthii*). Chamise Chaparral is dominated by *Adenostoma fasciculatum* with interspersed black sage (*Salvia mellifera*). Arroyo Willow Thicket is dominated by *Salix lasiolepis* and is located in the northeastern portion of the property. Annual Brome Grassland is dominated by ripgut grass (*Bromus diandrus*) and soft chess (*Bromus hordeaceus*) and includes other non-natives including Russian thistle (*Salsola tragus*) and summer mustard (*Hirschfeldia incana*). Dirt roads also intersect the property producing areas of bare ground and disturbance.

A list of all species observed onsite can be found in Table 3. None of the expected special-status plant species (slender mariposa-lily, Plummer's mariposa-lily, or San Fernando Valley spineflower) were observed onsite; however, one other special-status species was observed. Approximately 12 individual southern California black walnut (*Juglans californica* var. *californica*; CRPR 4.2) trees were identified onsite in the easternmost lot.

Table 3. – Plant Species Observed Onsite

Scientific Name	Common Name	Family
<i>Adenostoma fasciculatum</i>	Chamise	Rosaceae
<i>Artemisia californica</i>	California Sagebrush	Asteraceae
<i>Astragalus trichopodus</i> var. <i>trichopodus</i>	Three-pod Milkvetch	Fabaceae
<i>Avena barbata</i>	Slender Wild Oat	Poaceae
<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote Brush	Asteraceae
<i>Bromus diandrus</i>	Ripgut Grass	Poaceae
<i>Bromus hordeaceus</i>	Soft Chess	Poaceae
<i>Bromus madritensis</i> ssp. <i>rubens</i>	Red Brome	Poaceae
<i>Calystegia macrostegia</i> ssp. <i>intermedia</i>	Intermediate Morning-glory	Convolvulaceae
<i>Carduus pycnocephalus</i>	Italian Thistle	Asteraceae
<i>Centaurea melitensis</i>	Tocalote	Asteraceae
<i>Chenopodium californicum</i>	Soap Plant	Chenopodiaceae
<i>Erigeron canadensis</i>	Horseweed	Asteraceae
<i>Cryptantha muricata</i>	Jones Prickly Forget-Me-Not	Boraginaceae
<i>Cuscuta pacifica</i> var. <i>pacifica</i>	Saltmarsh Dodder	Convolvulaceae
<i>Encelia californica</i>	California Bush Sunflower	Asteraceae
<i>Eriogonum elongatum</i> var. <i>elongatum</i>	Long-stemmed Buckwheat	Polygonaceae
<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	Leafy California Buckwheat	Polygonaceae
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	Golden Yarrow	Asteraceae
<i>Erodium cicutarium</i>	Redstem Filaree	Geraniaceae
<i>Eucrypta chrysanthemifolia</i> var. <i>chrysanthemifolia</i>	Eucrypta	Hydrophyllaceae
<i>Galium angustifolium</i> ssp. <i>angustifolium</i>	Chaparral Bedstraw	Rubiaceae
<i>Hazardia squarrosa</i> var. <i>grindelioides</i>	Sawtooth Goldenbush	Asteraceae
<i>Hesperoyucca</i> [<i>Yucca</i>] <i>whipplei</i> ssp. <i>whipplei</i>	Our Lord's Candle	Agavaceae
<i>Hirschfeldia incana</i>	Summer Mustard	Brassicaceae
<i>Hordeum murinum</i> ssp. <i>glaucum</i>	Summer Barley	Poaceae
<i>Juglans californica</i> var. <i>californica</i>	Southern California Black Walnut	Juglandaceae
<i>Keckiella cordifolia</i>	Heart-leaved Bush Penstemon	Plantaginaceae
<i>Lactuca serriola</i>	Prickly Wild Lettuce	Asteraceae



Scientific Name	Common Name	Family
<i>Lathyrus vestitus</i> var. <i>vestitus</i>	Pacific Peavine	Fabaceae
<i>Elymus condensatus</i>	Giant Wildrye	Poaceae
<i>Acmispon maritimus</i> var. <i>maritimus</i>	Coastal Lotus	Fabaceae
<i>Acmispon glaber</i> var. <i>glaber</i>	Deerweed	Fabaceae
<i>Lupinus succulentus</i>	Fleshy Lupine	Fabaceae
<i>Malacothamnus fasciculatus</i> var. <i>fasciculatus</i>	Chaparral Bushmallow	Malvaceae
<i>Malacothrix saxatilis</i> var. <i>tenuifolia</i>	Tenuated Cliff-aster	Asteraceae
<i>Malosma laurina</i>	Laureleaf Sumac	Anacardiaceae
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	Large-fruited Man-root	Cucurbitaceae
<i>Marrubium vulgare</i>	White Horehound	Lamiaceae
<i>Melilotus indica</i>	Sourclover	Fabaceae
<i>Mimulus aurantiacus</i>	Bush Monkeyflower	Phrymaceae
<i>Stipa pulchra</i>	Purple Needlegrass	Poaceae
<i>Nicotiana glauca</i>	Tree Tobacco	Solanaceae
<i>Phacelia cicutaria</i> var. <i>cicutaria</i>	Caterpillar Phacelia	Hydrophyllaceae
<i>Phacelia grandiflora</i>	Large-flowered Phacelia	Boraginaceae
<i>Stipa miliacea</i>	Smilo Grass	Poaceae
<i>Poa secunda</i> ssp. <i>secunda</i>	One-sided Bluegrass	Poaceae
<i>Pseudognaphalium californicum</i>	Green Everlasting	Asteraceae
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast Live Oak	Fagaceae
<i>Quercus berberidifolia</i>	California Scrub Oak	Fagaceae
<i>Quercus lobata</i>	Valley Oak	Fagaceae
<i>Rhamnus ilicifolia</i>	Hollyleaf Redberry	Rhamnaceae
<i>Rhus integrifolia</i>	Lemonade Berry	Anacardiaceae
<i>Salsola tragus</i>	Tumbleweed	Chenopodiaceae
<i>Salvia leucophylla</i>	Purple Sage	Lamiaceae
<i>Salvia mellifera</i>	Black Sage	Lamiaceae
<i>Sambucus nigra</i> ssp. <i>Canadensis</i>	Blue Elderberry	Caprifoliaceae
<i>Sanicula crassicaulis</i>	Pacific Sanicle	Apiaceae
<i>Silybum marianum</i>	Milk Thistle	Asteraceae
<i>Sisymbrium irio</i>	London Rocket	Brassicaceae
<i>Solanum xantii</i> var. <i>xantii</i>	Chaparral Nightshade	Solanaceae
<i>Urtica urens</i>	Dwarf Nettle	Urticaceae
<i>Verbena lasiostachys</i> var. <i>lasiostachys</i>	Western Verbena	Verbenaceae

CONCLUSIONS

The intent of this rare plant survey was to determine the presence or absence of rare, threatened, or endangered plant species ("Special Status Plants") within the proposed project area so that measures could be taken to avoid undue impacts to the plants. One special status plant species, southern California black walnut, was identified onsite. No other special-status species were observed during the survey.



Thank you for the opportunity to support this project with botanical/biological services. Please contact the undersigned if you have any questions regarding the content of this report, or any other matters related to our services.

Sincerely,
RINCON CONSULTANTS, INC.

Cher Batchelor
Senior Botanist

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APPENDIX B

Floral and Faunal Compendia

PLANT SPECIES OBSERVED DURING APRIL 27, 2012 RARE PLANT SURVEY

Scientific Name	Common Name	Family	Status
<i>Adenostoma fasciculatum</i>	Chamise	Rosaceae	Native
<i>Artemisia californica</i>	California sagebrush	Asteraceae	Native
<i>Astragalus trichopodus</i> var. <i>trichopodus</i>	Three-pod Milkvetch	Fabaceae	Native
<i>Avena barbata</i>	Slender wild oat	Poaceae	Non-native
<i>Baccharis pilularis</i>	Coyote brush	Asteraceae	Native
<i>Bromus diandrus</i>	Ripgut grass	Poaceae	Non-native
<i>Bromus hordeaceus</i>	Soft chess	Poaceae	Non-native
<i>Bromus madritensis</i> ssp. <i>rubens</i>	Red brome	Poaceae	Non-native
<i>Calystegia macrostegia</i> ssp. <i>intermedia</i>	Intermediate morning-glory	Convolvulaceae	Native
<i>Carduus pycnocephalus</i>	Italian thistle	Asteraceae	Non-native
<i>Centaurea melitensis</i>	Tocalote	Asteraceae	Non-native
<i>Chenopodium californicum</i>	California goosefoot	Chenopodiaceae	Native
<i>Erigeron canadensis</i>	Horseweed	Asteraceae	Native
<i>Cryptantha muricata</i>	Jones prickly forget-me-not	Boraginaceae	Native
<i>Cuscuta pacifica</i> var. <i>pacifica</i>	Saltmarsh dodder	Convolvulaceae	Native
<i>Encelia californica</i>	California bush sunflower	Asteraceae	Native
<i>Eriogonum elongatum</i> var. <i>elongatum</i>	Long-stemmed Buckwheat	Polygonaceae	Native
<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	Leafy California buckwheat	Polygonaceae	Native
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	Golden yarrow	Asteraceae	Native
<i>Erodium cicutarium</i>	Redstem filaree	Geraniaceae	Non-native
<i>Eucrypta chrysanthemifolia</i> var. <i>chrysanthemifolia</i>	Common eucrypta	Hydrophyllaceae	Native
<i>Galium angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaved Bedstraw	Rubiaceae	Native
<i>Hazardia squarrosa</i> var. <i>grindelioides</i>	Sawtooth goldenbush	Asteraceae	Native
<i>Hesperoyucca</i> [<i>Yucca</i>] <i>whipplei</i> ssp. <i>whipplei</i>	Our lord's candle	Agavaceae	Native
<i>Hirschfeldia incana</i>	Summer mustard	Brassicaceae	Non-native
<i>Hordeum murinum</i> ssp. <i>glaucum</i>	Summer barley	Poaceae	Non-native
<i>Juglans californica</i> var. <i>californica</i>	Southern California black walnut	Juglandaceae	Native
<i>Keckiella cordifolia</i>	Heart-leaved Bush Penstemon	Plantaginaceae	Native
<i>Lactuca serriola</i>	Prickly wild lettuce	Asteraceae	Non-native
<i>Lathyrus vestitus</i> var. <i>vestitus</i>	Pacific pea-vine	Fabaceae	Native
<i>Elymus condensatus</i>	Giant wildrye	Poaceae	Native
<i>Acmispon maritimus</i> var. <i>maritimus</i>	Coastal lotus	Fabaceae	Native
<i>Acmispon glaber</i> var. <i>glaber</i>	Deerweed	Fabaceae	Native
<i>Lupinus succulentus</i>	Fleshy lupine	Fabaceae	Native
<i>Malacothamnus fasciculatus</i> var. <i>fasciculatus</i>	Chaparral bushmallow	Malvaceae	Native
<i>Malacothrix saxatilis</i> var. <i>tenuifolia</i>	Tenuated cliff-aster	Asteraceae	Native
<i>Malosma laurina</i>	Laurelleaf sumac	Anacardiaceae	Native
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	Large-fruited Man-root	Cucurbitaceae	Native
<i>Marrubium vulgare</i>	White horehound	Lamiaceae	Non-native
<i>Melilotus indica</i>	Yellow sweetclover	Fabaceae	Non-native

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Scientific Name	Common Name	Family	Status
<i>Mimulus aurantiacus</i> var. <i>aurantiacus</i>	Bush monkeyflower	Phrymaceae	Native
<i>Stipa pulchra</i>	Purple needlegrass	Poaceae	Native
<i>Nicotiana glauca</i>	Tree tobacco	Solanaceae	Non-native
<i>Phacelia cicutaria</i> var. <i>cicutaria</i>	Caterpillar phacelia	Hydrophyllaceae	Native
<i>Phacelia grandiflora</i>	Large-flowered Phacelia	Boraginaceae	Native
<i>Stipa miliacea</i>	Smilo grass	Poaceae	Non-native
<i>Poa secunda</i> ssp. <i>secunda</i>	One-sided Bluegrass	Poaceae	Native
<i>Pseudognaphalium californicum</i>	Green everlasting	Asteraceae	Native
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak	Fagaceae	Native
<i>Quercus berberidifolia</i>	California scrub oak	Fagaceae	Native
<i>Quercus lobata</i>	Valley oak	Fagaceae	Native
<i>Rhamnus ilicifolia</i>	Hollyleaf redberry	Rhamnaceae	Native
<i>Rhus integrifolia</i>	Lemonade berry	Anacardiaceae	Native
<i>Salsola tragus</i>	Russian thistle	Chenopodiaceae	Non-native
<i>Salvia leucophylla</i>	Purple sage	Lamiaceae	Native
<i>Salvia mellifera</i>	Black sage	Lamiaceae	Native
<i>Sambucus nigra</i> ssp. <i>Canadensis</i>	Blue elderberry	Caprifoliaceae	Native
<i>Sanicula crassicaulis</i>	Pacific sanicle	Apiaceae	Native
<i>Silybum marianum</i>	Milk thistle	Asteraceae	Non-native
<i>Sisymbrium irio</i>	London rocket	Brassicaceae	Non-native
<i>Solanum xantii</i> var. <i>xantii</i>	Chaparral nightshade	Solanaceae	Native
<i>Urtica urens</i>	Dwarf nettle	Urticaceae	Non-native
<i>Verbena lasiostachys</i> var. <i>lasiostachys</i>	Western verbena	Verbenaceae	Native

ANIMAL SPECIES OBSERVED DURING JANUARY 13, 2012 FIELD RECONNAISSANCE SURVEY

Family Name	Scientific Name	Common Name	Status			Comment
			Federal	State	DFG	
Reptiles						
Phrynosomatidae: Lizards	<i>Sceloporus occidentalis</i>	western fence lizard				
Birds						
Columbidae: Pigeons, Doves	<i>Zenaida macroura</i>	mourning dove				
Trochilidae: Hummingbirds	<i>Calypte anna</i>	Anna's hummingbird				
Accipitridae: Diurnal Raptors	<i>Buteo jamaicensis</i>	red-tailed hawk				
Picidae: Woodpeckers	<i>Picoides nuttallii</i>	Nuttall's woodpecker	BCC			BCC: nesting
	<i>Melanerpes formicivorus</i>	acorn woodpecker				
Tyrannidae: Tyrant Flycatchers	<i>Sayornis nigricans</i>	black phoebe				
Regulidae: Kinglets	<i>Regulus calendula</i>	ruby-crowned kinglet				
Mimidae: Mimids	<i>Toxostoma redivivum</i>	California thrasher				
Corvidae: Jays, Crows, and Their Allies	<i>Aphelocoma californica</i>	western scrub-jay				
	<i>Corvus corax</i>	common raven				
Fringillidae: Finches	<i>Carpodacus mexicanus</i>	house finch				
Parulidae: Wood- Warblers	<i>Dendroica coronata</i>	yellow-rumped warbler				
Emberizidae: Emberizine Sparrows and Their Allies	<i>Melospiza crissalis</i>	California towhee				
	<i>Pipilo maculatus</i>	spotted towhee				
Paridae: Chickadees and Titmice	<i>Baeolophus inornatus</i>	oak titmouse	BCC			BCC: nesting
Mammals						
Cricetidae: Woodrats	<i>Neotoma macrotis</i>	Large-eared woodrat				middens
Cervidae: Deer	<i>Odocoileus hemionus</i>	mule deer				
Geomyidae: Pocket Gophers	<i>Thomomys bottae</i>	Botta's pocket gopher				mounds

APPENDIX C

Special Status Species Evaluation Tables

SPECIAL STATUS PLANT SPECIES IN THE REGIONAL VICINITY OF THE PROJECT SITE

Scientific Name	Common Name	Listing Status	Habitat	Potential to Occur/Factual Basis for Determination
<i>Astragalus brauntonii</i>	Braunton's milk-veitch	Federal endangered; State none; G2; S2; CDFG none; CRPR 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland. Recent burns or disturbed areas; in saline, somewhat alkaline soils high in Ca, Mg, with some K. Soil specialist. 15-610m.	Low. Requires calciferous soils, no such soils present on site.
<i>Baccharis malibuensis</i>	Malibu baccharis	Federal none; State none; G1; S1.1; CDFG none; CRPR 1B.1	Coastal scrub, chaparral, cismontane woodland. In Conejo volcanic substrates, often on exposed roadcuts. Sometimes occupies oak woodland habitat. 150-260m.	Low. Known current distribution in Malibu Creek. As a perennial herb/subshrub this species would likely be detected during surveys.
<i>California macrophylla</i>	round-leaved filaree	Federal none; State none; G2; S2; CDFG none; CRPR 1B.1	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1200m.	Low. Clay soils not present onsite.
<i>Calochortus clavatus var. gracilis</i>	slender mariposa-lily	Federal none; State none; G4T2; S2; CDFG none; CRPR 1B.2	Chaparral, coastal scrub. Shaded foothill canyons; often on grassy slopes within other habitat. 420-760m.	Moderate to High. Coastal sage scrub habitat and appropriate soils exist on site.
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	Federal none; State none; G3; S3; CDFG none; CRPR 1B.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 90-1610m.	Moderate to High. Coastal sage scrub habitat and appropriate soils exist on site.
<i>Chorizanthe parryi var. fernandina</i>	San Fernando Valley spineflower	Federal candidate for listing; State endangered; G2T1; S1.1; CDFG none; CRPR 1B.1	Coastal scrub. Sandy soils. 3-1035m.	Moderate. Coastal sage scrub habitat and sparsely vegetated soil present on site.
<i>Deinandra minthornii</i>	Santa Susana tarplant	Federal none; State rare; G2; S2.2; CDFG none; CRPR 1B.2	Chaparral, coastal scrub. On sandstone outcrops and crevices, in shrubland. 280-760m.	Low. Although coastal sage scrub habitat present, this plant requires calciferous soils, no such soils present on site.
<i>Dudleya cymosa ssp. ovatifolia</i>	Santa Monica dudleya	Federal threatened; State none; G5T2; S2.2; CDFG none; CRPR 1B.2	Chaparral, coastal scrub. In canyons on sedimentary conglomerates; primarily north-facing slopes. 210-500m.	Low. While no rare plant surveys have been conducted no dudleyas were detected onsite during a reconnaissance survey. No sedimentary conglomerate soils present onsite.
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	Federal endangered; State endangered; G2; S2; CDFG none; CRPR 1B.1	Chaparral, valley and foothill grassland. Edges of clearings in chap., usually at the ecotone between grassland and chaparral or edges of firebreaks. 30-630m.	Low. Suitable chaparral and grassland habitat not present onsite.

SPECIAL STATUS ANIMAL SPECIES IN THE REGIONAL VICINITY OF THE PROJECT SITE

Scientific Name	Common Name	Listing Status	Habitat	Potential to Occur/Factual Basis for Determination
Invertebrates				
<i>Danaus plexippus</i>	Monarch butterfly	Federal none; State none; G5; S3; CDFG none	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Low. Low potential for roost sites to occur on site. No wind protected eucalyptus, Monterey pine or cypress tree groves present on site.
<i>Socalchemmis gertschi</i>	Gertsch's socialchemmis spider	Federal none; State none; G1; S1; CDFG none	Known from only 2 localities in Los Angeles County: Brentwood (type locality) and Topanga Canyon.	Low. Study area is outside of the restricted range of this species. Two elements occurred in CNDDDB list, both pre-1997.
Amphibians				
<i>Anaxyrus californicus</i>	Arroyo toad	Federal endangered; State none; G2G3; S2S3; CDFG species of special concern	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	Low. Suitable habitat including sandy washes and rivers with sandy banks not present on site.
<i>Rana draytonii</i>	California red-legged frog	Federal threatened; State none; G4T2T3; S2S3; CDFG species of special concern	Lowlands & foothills in or near permanent deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Requires access to estivation habitat.	Not expected to occur. No permanent sources of deep water with dense, shrubby or emergent riparian vegetation.
Reptiles				
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	Federal none; State none; G5T3T4; S2S3; CDFG none	Found in deserts & semiarid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Firm soil, sandy, or rocky.	Moderate. Woodland habitat and areas with sparse vegetation present on site.
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	Federal none; State none; G5T2T3; S2?; CDFG none	Most common in open, relatively rocky areas. Moist microhabitats near intermittent streams. Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous.	Low. Suitable habitat including open rocky areas not present on site. Element occurrence occurred greater than 5 years ago and more than 2.5 miles away.
<i>Emys marmorata</i>	Western pond turtle	Federal none; State none; G3G4; S3; CDFG species of special concern	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Low. No permanent water source on site. No marshes, permanent rivers, streams or irrigation ditches present.
<i>Thamnophis hammondi</i>	Two-striped garter snake	Federal none; State none; G3; S2; CDFG species of special concern	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Along streams with rocky beds and riparian growth.	Low. No permanent water source on site.

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Scientific Name	Common Name	Listing Status	Habitat	Potential to Occur/Factual Basis for Determination
<i>Lampropeltis zonata (pulchra)</i>	California mountain kingsnake (San Diego population)	Federal none; State none; G4G5; S1S2; CDFG species of special concern	Restricted to the San Gabriel and San Jacinto Mtns of southern California. Inhabits a variety of habitats, including valley-foothill hardwood, coniferous, chaparral, riparian, and wet meadows.	Low. The study area is not within the restricted range. The date of the element occurrence is greater than two decades ago.
<i>Phrynosoma blainvillii</i>	Coast horned lizard	Federal none; State none; G4G5; S3S4; CDFG species of special concern	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	Moderate. Coastal sage scrub habitat with scattered openings present on site.
Birds				
<i>Athene cucularia</i>	Burrowing owl	Federal none; State none; G4; S2; CDFG species of special concern	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Low. Open grassland and scrubland habitat not present onsite.
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	Federal threatened; State none; G3T2; S2; CDFG species of special concern	Obligate, permanent resident of coastal sage scrub below 2,500 ft in southern California. Low, coastal sage scrub in arid washes, on mesas & slopes. Not all areas classified as coastal sage scrub are occupied.	Low. No species records in the Santa Monica Mountains and no individuals were detected during surveys. Low potential due to onsite habitat composition (purple sage dominant), steep topography, and isolation from larger habitat tracts.
Mammals				
<i>Eumops perotis californicus</i>	Western mastiff bat	Federal none; State none; G5T4; S3?; CDFG species of special concern	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	Moderate. Deciduous woodlands and coastal scrub present. Roosting potential in the many trees onsite.
<i>Lasiurus blossevillei</i>	Western red bat	Federal none; State none; G5; S3?; CDFG species of special concern	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges & mosaics with trees that are protected from above & open below with open areas for foraging.	Moderate. Deciduous woodlands and coastal scrub present. Roosting potential in the many trees onsite.
<i>Macrotus californicus</i>	California leaf-nosed bat	Federal none; State none; G4; S2S3; CDFG species of special concern	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats. Needs rocky, rugged terrain with mines or caves for roosting.	Low. Suitable habitat and rocky rugged terrain lacking onsite. CNDDDB occurrence from roost site approximately 4 miles away dated 1949.
<i>Neotoma bryanti [Neotoma lepida intermedia]</i>	Bryant's woodrat [San Diego desert woodrat]	Federal none; State none; G5T3?; S3?; CDFG species of special concern	Coastal scrub of southern California from San Diego county to San Luis Obispo county. Moderate to dense canopies preferred. Particularly abundant in rock outcrops & rocky cliffs & slopes.	Low. Rock outcrops lacking onsite. Only middens typical of the common large-eared woodrats observed onsite.

APPENDIX D

Listing Status Definitions

Appendix D - Special status Definitions

Special status habitats are vegetation types, associations, or sub-associations that support concentrations of special status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act (CESA) or the California Native Plant Protection Act. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g. Audubon Society, CNPS, The Wildlife Society), and the scientific community.

The CNPS' Inventory of Rare and Endangered Vascular Plants of California (CNPS 2001, 2006) categorizes rare California plants based on the California Rare Plant Rank List (CRPR). The List places plants into one of five ranks (1A, 1B, 2, 3, and 4) representing five levels of species status, indicating its status of rarity or endangerment and distribution. Most taxa also receive a threat rank extension following the rank (e.g. 1B.1, 2.3). Table 1 provides a definition for each List rank number, and Table 2 defines the Threat rank extensions that indicate the level of endangerment within the state as determined by this organization. Please note that the CNPS Inventory is used as a tool by CDFG to help identify those plants that may qualify for listing under the CESA, with the formal list kept by CDFG being the *Special Vascular Plants, Bryophytes and Lichens List*.

California Rare Plant Rank Definitions

CNPS List	Definition
1A	Presumed Extinct in California
1B	Rare, Threatened, or Endangered in California and elsewhere
2	Rare, Threatened, or Endangered in California, but more common elsewhere
3	Need more information (a Review List)
4	Plants of Limited Distribution (a Watch List)

California Native Plant Society List Threat Rank Extensions

CNPS Rare Plant Rank Extension	Definition
.1	Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2	Fairly endangered in California (20-80% occurrences threatened)
.3	Not very endangered in California (<20% of occurrences threatened)

The CNDDDB Element Ranking system (Table 3) provides a numeric global and state-ranking system for all special status species tracked by the CNDDDB. The global rank (G-rank) is a reflection of the overall condition of an element (species or natural community) throughout its global range. The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

California Natural Diversity Database Element Ranking System

Global Ranking (G)	
G1	Less than 6 viable element occurrences (pops for species), OR less than 1,000 individuals, OR <809.4 hectares (ha) (2,000 acres [ac]).
G2	6 to 20 element occurrences OR 809.4 to 4,047 ha (2,000 to 10,000 ac).
G3	21 to 100 occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac).
G4	Apparently secure; rank lower than G3, factors exist to cause some concern (i.e. there is some threat, or somewhat narrow habitat).
G5	Population, or stand, demonstrably secure to ineradicable due to being commonly found in the world.
GH	All sites are historic; the element has not been seen for at least 20 years, but suitable habitat still exists.
GX	All sites are extirpated; this element is extinct in the wild.
GXC	Extinct in the wild; exists in cultivation.
G1Q	The element is very rare, but there is a taxonomic question associated with it.
<p>Subspecies Level: Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire <u>species</u>, whereas the T-rank reflects the global situation of just the <u>subspecies</u> or <u>variety</u>. For example: <i>Chorizanthe robusta</i> var. <i>hartwegii</i> is ranked G2T1. The G-rank refers to the whole species range (<i>Chorizanthe robusta</i>), whereas the T-rank refers only to the global condition of the variety (var. <i>hartwegii</i>).</p>	
State Ranking (S)	
S1	Less than 6 element occurrences OR less than 1,000 individuals OR less than 809.4 ha (2,000 ac). S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
S2	6 to 20 element occurrences OR 3,000 individuals OR 809.4 to 4,047 ha (2,000 to 10,000 ac). S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known
S3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac). S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
S4	Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e., there is some threat, or somewhat narrow habitat). NO THREAT RANK.
S5	Demonstrably secure to ineradicable in California. NO THREAT RANK.
SH	All California sites are historic; the element has not been seen for at least 20 years, but suitable habitat still exists.
SX	All California sites are extirpated; this element is extinct in the wild.
Notes	
<p>1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take an aerial view when ranking sensitive elements rather than simply counting element occurrences.</p>	
<p>2. Uncertainty about the rank of an element is expressed in two major ways: by expressing the rank as a range of values (e.g. S2S3 means the rank is somewhere between S2 and S3), and by adding a ? to the rank (e.g. S2?). This represents more certainty than S2S3, but less than S2.</p>	

APPENDIX F

Regulatory Setting

REGULATORY SETTING

Special status habitats are vegetation types, associations, or sub-associations that support concentrations of special status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g. Audubon Society, CNPS, The Wildlife Society), and the scientific community.

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include:

- *U.S. Army Corps of Engineers (wetlands and other waters of the United States);*
- *Regional Water Quality Control Board (waters of the State);*
- *U.S. Fish and Wildlife Service (federally listed species and migratory birds);*
- *California Department Fish and Game (riparian areas and other waters of the State, state-listed species);*
- *City of Calabasas General Plan*

U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material or otherwise adversely modify wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill or adverse modification of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through compensatory mitigation involving creation or enhancement of similar habitats.

Regional Water Quality Control Board. The State Water Resources Control Board (SWRCB) and the local Central Coast Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The Central Coast RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

United States Fish and Wildlife Service. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 *et seq.*). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

California Department of Fish and Game. The CDFG derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 *et. seq.*) prohibits take of state listed threatened, endangered or fully protected species. Take under CESA is restricted to direct mortality of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFG also prohibits take for species designated as Fully Protected under the Code.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Species of Special Concern (SSC) is a category used by the CDFG for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFG for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands. The CDFG also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 *et seq.*). The NPPA requires the CDFG to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of plant.

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFG. Section 1600 *et seq.* of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFG regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

City of Calabasas General Plan. The City of Calabasas General Plan is a "constitution" for local decision making that addresses the range of immediate, mid-, and long-term issues with which the community is concerned, including but not limited to environmental sensitivity and preservation, public services, and economic vitality. The Plan is intended to allow land use and policy determinations to be made within a comprehensive framework that incorporates public health, safety, and "quality of life" considerations in a manner that recognizes the resource limitations and the fragility of the community's natural environment.

The Conservation Element within the General Plan describes Calabasas' program to manage its natural environment. The primary objective of this element is to define environmental features within the plan area

and provide each feature with an appropriate level of protection. This element meets State requirements for conservation elements including sensitive plants, animals, and vegetation communities.

Calabasas has adopted an Oak Tree Ordinance that requires reforestation, registration, and preservation of all healthy oak trees, unless reasonable and conforming use of a property justifies the removal, transplanting, altering, and/or encroachment into the oak tree's protected zone. The Ordinance also requires establishment of an Oak Habitat Preservation Program to provide for reforestation and replacement of woodlands, public acquisition of woodlands, and public education regarding habitat preservation.

APPENDIX G

Photo Plate



Photo 1. View east from APN 2065-065-001. In the distance can be seen APNs 2065-065-002 and 003.



Photo 2. View east of Purple Sage Scrub on west facing slope of APN 2065-065-002.



Photo 3. View west from APN 2065-065-002 of east facing slope of APN 2065-065-001 demonstrating the transition from Chamise Scrub on the south facing slope to Scrub Oak Scrub on the north facing slope.



Photo 4. View facing north on ridge of APN 2065-065-002 showing Purple Sage Scrub – disturbed vegetation community.





Photo 5. View south of Purple Sage Scrub/Coast Live Oak Woodland on APN 2065-065-003.

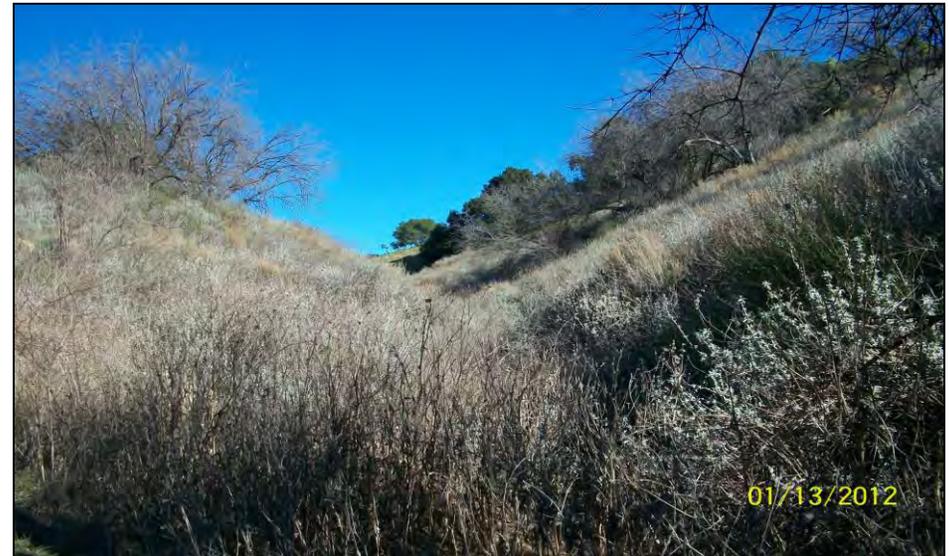


Photo 6. View north of west facing slope of APN 2065-065-003 showing Purple Sage Scrub with emergent southern California black walnuts, and drainage 2b.



Photo 7. View south of culvert outlet for drainage 1 heading under Mulholland Highway.



Photo 8. View northwest of drainage 1 detention basin immediately north of Mulholland Highway.



Photo 9. View south of drainage 1 showing Purple Sage Scrub/Coast Live Oak Woodland.



Photo 10. View south of culvert outlet for drainage 2 heading under Mulholland Highway.



Photo 11. View north of drainage 2 detention basin.

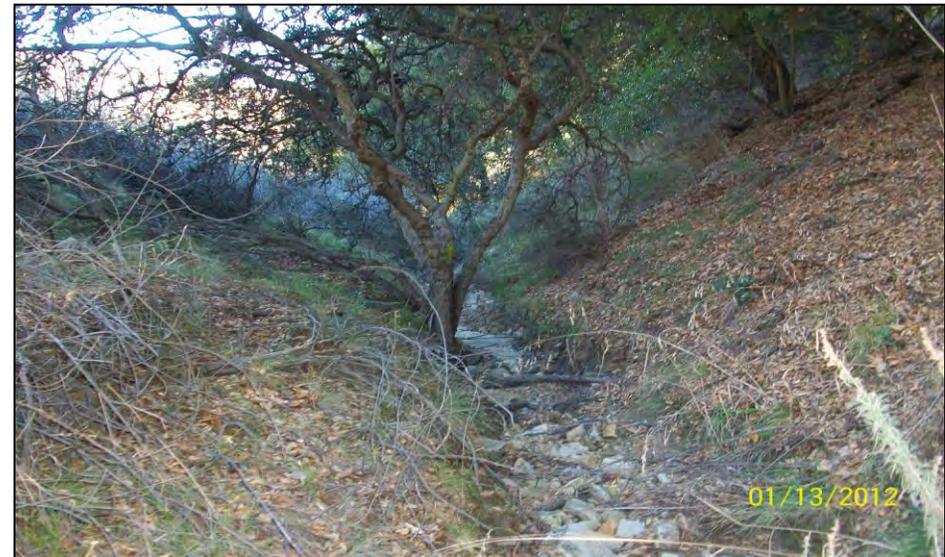


Photo 12. View south along drainage 2b.



Appendix C
Oak Tree Report



OAK TREE REPORT

SUBJECT

**Lot 1, 2, and 3 of Parcel Map 205/84-85
Mulholland Highway**

PREPARED FOR

BSVERCOM, LLC
24007 Ventura Blvd., Suite 102
Calabasas, CA 91302

PREPARED BY

L. NEWMAN DESIGN GROUP, INC.
ASLA, California State License #1314
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31300 Via Colinas, Suite 104
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Date: March 14, 2012

LNDG Project No.: 2342-01

RECEIVED

MAY 07 2012

COMMUNITY DEVELOPMENT
PLANNING DEPT.

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OBJECTIVES

The objective of this report is to qualify the present condition of the site's existing oak trees and to discuss the proposed encroachments to them and the effect on the health of the trees. This involved the following:

1. Determining the condition of the protected oak trees (see **SUMMARY of FIELD OBSERVATIONS**);
2. Ascertaining the impact that will occur due to grading (see **OAK TREE LOCATION MAP**);
3. Providing guidance to minimize the encroachments into the protected zones of the saved trees.

METHODS of STUDY

Qualifications of the oak trees were accomplished by the use of our standard visual survey, as completed by L. NEWMAN DESIGN GROUP, INC. (LNDG) on October 29, 2011. In the course of the fieldwork, we performed the following tasks:

1. Live tree trunks were measured at 4½' above mean natural grade and those that were 2 inches in diameter and larger were inventoried and assessed for plant quality. All trees in or near the limit of work were included;
2. The trees were tagged with numbered, metal tags. These tags are affixed to the sides of the trees and correspond to the numbers on the **OAK TREE LOCATION MAP**;
3. Drip lines (the outermost edge of the tree's canopy) were field measured at eight compass directions equidistant around the circumference of the tree. The minimum clearance from the present grade to the bottom of the canopy at each of the points was estimated.
4. All the inventoried trees were previously land surveyed and are shown on the topographic map/grading plan (scale: 1"=40'). Refer to the **OAK TREE LOCATION MAP** included herein for the tree locations.

PROJECT LOCATION

The site, in the City of Calabasas, is located on the north side of Mulholland Hwy, across from Viewpoint School. The entrance to Lot 1 is approximately 500 feet east of Park South Street.

OAK SPECIES

51 of the 53 oak trees addressed in this phase of the project are *Quercus agrifolia* (coast live oak). The other oak species present is *Quercus beberidifolia* (scrub oaks).

OAK TREE ORDINANCE

The City lies in a unique area of Los Angeles County, the beauty of which is greatly enhanced by the presence of large numbers of majestic Oak trees. Development of the area has resulted in the removal of a great number of these trees. Further uncontrolled and indiscriminate destruction of Oak trees would detrimentally affect the safety and welfare of the citizens of Calabasas. This preservation program outlined in this Ordinance contributes to the welfare and aesthetics of the community and retains the great historical and environmental value of these trees.

This ordinance sets forth the policy of the City to require the preservation of all healthy Oak trees unless reasonable and conforming use of the property justifies the removal, cutting, pruning and/or encroachment into the

Protected Zone of an Oak tree. The Protected Zone shall mean that area within the dripline of an oak tree and extending there from to a point at least 5' outside the dripline, or 15' from the trunk(s) of a tree, whichever distance is greater.

The major thrust of the Oak Tree Policy was established to recognize Oak trees as significant, historical, aesthetic and valuable ecological resources, and as one of the most picturesque trees in Los Angeles County, lending beauty and charm to the natural and man-made landscape, enhancing the value of property, and the character of the communities in which they exist. In addition, the Oak Tree Policy intends to create favorable conditions for the preservation and propagation of this unique, threatened plant heritage, particularly those trees which may be classified as 'Heritage Oak Trees', for the benefit of current and future residents of Calabasas. It is the intent of the Oak Tree Policy to maintain and enhance the general health, safety, and welfare by assisting in counteracting air pollution, and in minimizing soil erosion and other related environmental damages. The Oak Tree Policy is also intended to preserve and enhance property values by conserving and adding to the distinctive and unique aesthetic character of many areas of Calabasas in which Oak trees are indigenous.

RESULTS of STUDY

1. **Physiological Condition of the Oaks**

The physiological condition of the oak trees is detailed in the **SUMMARY of FIELD OBSERVATIONS**. All recommendations made in this report are based on the condition of the trees as of the date of the field work.

2. **Summary of Data/Plan Review**

- A. 53 oaks were tagged for the tree inventory for this project and masses of scrub oaks were roughly mapped and are shown on the oak tree location map. Lot 1 contains trees 19 oaks, trees 1 - 19, Lot 2 contains 5 oaks, trees 20 – 24, and Lot 3 contains 29 oaks, trees 25 – 53. Although the civil engineer designed the driveways and building pads to avoid oak trees and scrub oak habitat, 6 oak trees must be removed and 16 oak trees and 1 scrub oak will be encroached. Most encroachments are less than 22% and many are insignificant to the continued health of the trees. 30 oaks will not be encroached.
- B. There is a large mass of scrub oaks on lot 1 that covers an area of 80,000 square feet. There are patches of scrub oaks between lots 2 and 3 the total area of which is 35,000 sq. ft. 23,000 s.f. of the lot 1 scrub oaks will be removed (27%), almost all for the building pad. None of the scrub oaks between lots 2 and 3 will be disturbed.
- C. According to the conceptual grading study, the following 16 encroachments will occur (refer to the six **TREE SECTIONS** within this report that are six examples of encroachments):

Tree No.	Reason for Encroachment
8	This tree will be encroached by the fill slope to support the new driveway. The toe of the slope is proposed to be 4 feet from the trunk with 5 feet over-excavation assumed. This will be a major impact to this tree, impacting 31% of the protected zone. Most of the canopy on the east side will have to be pruned to allow grading of the slope. This tree can be preserved by being careful to root prune only what is necessary while keeping the other roots undamaged. Although the canopy will be lopsided, this is acceptable because this tree is not

	a symmetrical, upright tree. From Mulholland Highway, this tree should look good when the project is complete.
9	This tree will be encroached by the same slope as tree 8 but the assumed over-excavation of 5 feet will be no closer than 20 feet from the trunk, impacting approximately 10% of the protected zone. This is a minor impact.
10	This tree will be impacted slightly by the manufactured slope to support the driveway. The assumed over-excavation of 5 feet means the encroachment will be no closer than 15 feet from the trunk impacting approximately 15% of the protected zone. This is a minor impact. Some pruning may be required.
11	This tree will be impacted slightly by the manufactured slope to support the driveway. The assumed over-excavation of 5 feet means the encroachment will be no closer than 14 feet from the trunk impacting approximately 16% of the protected zone. This is a minor impact.
12	This tree will be impacted slightly by the manufactured slope to support the driveway. The assumed over-excavation of 5 feet means the encroachment will be no closer than 25 feet from the trunk impacting approximately 1% of the protected zone. This encroachment is insignificant.
13	This tree will be impacted by the manufactured slope to support the driveway. The assumed over-excavation of 5 feet means the encroachment will be no closer than 12 feet from the trunk impacting approximately 21% of the protected zone. This is a minor impact.
14	This tree will be impacted by the manufactured slope to support the driveway. The assumed over-excavation of 5 feet means the encroachment will be no closer than 7 feet from the trunk impacting approximately 22% of the protected zone. This is a minor impact. Some pruning may be required.
19	This tree will be encroached by the construction of a fill slope and wall that will be installed approximately 16 feet from the trunk. The over-excavation for the wall footing may make the excavation as close as 11 feet from the trunk impacting approximately 15% of the protected zone. This is a minor impact.
20 - 24	The encroachments to these trees have been previously approved by the City and the encroachments have not changed.
31	This tree will be impacted slightly by the manufactured slope to support the driveway to Lot 3 and a headwall will be constructed near it outside of the protected zone. The assumed over-excavation of 5 feet means the encroachment will be no closer than 11 feet from the trunk impacting approximately 6% of the protected zone. This is a minor impact.
48	This tree will be impacted by the manufactured cut slope above the proposed building pad. The top of the slope will be approximately 8 feet from the trunk. Approximately 42% of the protected zone will be impacted. This is a major impact. Some pruning will be required for clearance.
51	This tree will be impacted by the manufactured cut slope above the proposed building pad. The top of the slope will be approximately 12 feet from the trunk. Approximately 20% of the protected zone will be impacted. This is a minor impact.

D. The following 6 trees must be removed to complete this project:

Tree No.	Reason for Removal
15	This tree is located in the proposed driveway alignment 2 or 3 feet below finished grade.
18	This tree must be removed because it will be approximately 5 feet from the limit of grading and it leans into the area where the wall will be constructed. The root pruning and branch pruning required will most likely make this tree unviable.
29, 30	Both of these trees are in the area where the headwall for the inlet structure will be constructed and both will be approximately 5 feet from the trunk and assuming a 5-foot over-excavation, these trees will not survive the impact.
52, 53	Both of these trees are located in the area of the proposed cut slope and can not be saved. These trees are both stumps left when they were cut down previously. A few of the stems from the regrowth of these stumps are greater than 2 inches and were included as part of the oak tree inventory although they are not viable, mature trees.

- E. Of the 53 oak trees addressed, 21 of them are heritage trees (see **OAK TREE LOCATION MAP**). These 21 trees are: 1, 2, 4, 5, 6, 8, 9, 10, 12, 17, 21, 22, 24, 26, 27, 38, 39, 41, 43, 45, 46, 47, and 48. None of the heritage trees are proposed to be removed.
- F. Drip lines on the **OAK TREE LOCATION MAP** graphically represent the canopies based on field measurements and estimates. See the **DRIPLINE MEASUREMENTS** section for dripline data.

3. **Tree Replacement Program**

A. **Oak Tree Planting Plan**

- a. Oak trees shall be replaced on an inch for inch basis in accordance with the conditions of the oak tree ordinance.
- b. The landscape architect for this project shall design into the landscape the replacement and/or transplanted trees.
- c. In native, undisturbed areas where new nursery grown trees are to be planted, trees may be up to a density of no closer than 20' on center.
- d. The irrigation system (i.e., drip system or comparable) to water these newly planted replacement trees shall be compatible with the watering requirement of the project's indigenous oak trees.
- e. The irrigation system maintenance program should water these replacement trees for the first 3 years at least to establish the trees. Thereafter, watering should be done only in the winter months during periods of severe drought as deemed necessary by the LNDG.

4. **Mitigation Recommendations**

- A. Any City approved work within the protected zones of the saved oak trees, including branch removals, shall be under the direct inspection/observation of LNDG.
- B. Copies of the oak tree report and the City of Calabasas oak tree permit shall be kept on-site during all construction.

OAK TREE PRESERVATION PROGRAM

1. General Oak Tree Protection

- A. Trees that are to be preserved on the site during construction shall be fenced at the location of their protected zones or at the limit of grading with a temporary fence of a material approved by the City of Calabasas prior to commencement of grading.
- B. No activity, such as equipment or building materials storage, deposit of debris and trash, or parking shall be allowed within the protected zones of any oak tree at any time.

2. Pruning

- A. Any pruning approved by the City of Calabasas prior to commencement of work shall be executed only after notification of the landscape architect / tree consultant and the City of Calabasas.
- B. Pruning required, but not previously approved by the City of Calabasas, shall not be performed until a written request for pruning has been submitted and approved by the City of Calabasas unless the branches are less than 2" in diameter and is deemed necessary by LNDG.
- C. All pruning shall be performed to the standards set forth by the International Society of Arboriculture (ISA).
- D. Pruning wounds shall not be sealed. Approved pruning shall be performed by an ISA certified arborist under the direct supervision of the landscape architect / oak tree consultant.

3. Grading within the Protected Zones of Oak Trees

- A. The grading and construction operation shall avoid encroaching into the drip lines of the oak trees by activity beyond the limit of grading.
- B. The City requirement to hand-dig any approved excavation within the drip line of oak trees is designed to avoid irreparable root damage. The purpose is to locate and expose roots that must be excised and to carefully prune them, thereby avoiding the ripping and tearing caused with the use of backhoe excavation equipment. Due to the scope of the improvements to construct this project, the standard city requirement for hand digging any approved excavation within the drip line of oak trees may be impractical. Therefore, a **WORK PROCEDURES PROGRAM** is proposed to execute the work with precise and controlled methodology that avoids indiscriminant damage. The program is as follows:

WORK PROCEDURES PROGRAM SPECIFICS

1. Preparation Phase

During the pre-construction, on-site survey and staking, to provide layout control for the proposed improvements, the precise location of any improvement directly affecting any oak tree that is to be preserved in place shall be identified with monument stakes. The following information will be provided by this survey:

- A. The verified location of affected oak trees that will remain along with the precise location of improvements that are encroaching within the protected zone of the individual trees.
- B. For ease of identification, stakes with information concerning oak trees shall be uniquely flagged.

2. **Execution Phase**

A. Protective Fencing:

- i. See “General Oak Tree Protection” above. The oak trees that are to be preserved on the site shall be kept fenced during the construction operation, per the approved fencing plan, with a 5-foot high, temporary, chain-link fence. Orange safety fence may be used (as shown on the fencing plan) for protection during preconstruction activities but the chain-link fence must be in place prior to the commencement of grading. A two to three foot wide pass-through opening in the fence enclosure shall be provided for maintenance access. The fence shall remain during all phases of construction. Damaged fencing shall be immediately replaced or repaired.
- ii. In some cases, fencing may be placed at the limit of grading or excavation in order to allow approved work to be done inside the protected zones. Refer to the fencing plan for these situations. No fencing shall be removed or moved without notifying the oak tree consultant and without approval from the City of Calabasas Community Development Department.

B. Pruning:

- i. Pruning, as permitted for the use of the proposed facility, shall be performed before grading to avoid conflict between oak trees and excavation equipment. This action should eliminate the potential for broken branches resulting from equipment.
- ii. A pruning chart may be prepared for anticipated pruning impacts to the trees if necessary.

C. Excavation:

The greatest potential for consequential damage to oak trees is from excavation for footings, utilities, driveway base elevations and from grading.

It is not possible to develop this site without some conflict between the trees and the proposed improvements. The conflict relates to both the aerial canopy and the root structure of oak trees. The goal is to minimize and to control such damage. This can be accomplished as follows:

- i. Define the area of excavation and the direction of the pioneering for the excavation that occurs within the drip line of an oak tree.
- ii. Utilize small equipment to remove the overburden (insitu soil) above the primary root structure under the immediate direction of the Landscape Architect / Tree Consultant. Stop this effort upon encountering roots of significant size.
- iii. Excise roots to the required depth using standard, sterile, mechanical root pruning equipment accompanied by hand work. In the case of a roadbed, excise the roots on each side of the road as close to the improvements as possible. Where trenching is required, cut the roots on each side of the proposed trench in a similar way to the required depth. Follow excavation by hand pruning the exposed roots.

- iv. This methodology will minimize root damage from excavation equipment pulling on roots in a lateral direction from their path of travel. Excised roots shall be hand sawn with a clean cut at a 45 degree angle facing downward and shall not be sealed.
- v. Place all excavation spoils outside of the protected zone of the tree.

D. Other protective measures:

- i. Protect oak trees by not wounding them. Nailing of any thing such as grade stakes must be avoided.
- ii. The potential for breaking of branches by mechanical equipment should be anticipated. Notify the landscape architect / tree consultant with a request for an evaluation and recommendation.
- iii. It is important to leave the natural leaf litter that exists beneath an oak tree.
- iv. No chemicals such as herbicides shall be used upstream and within one hundred feet of any oak tree protected zone.
- v. Oak trees do not require supplemental watering. Although the increase in water and nutrients may improve tree vigor and appearance initially, most often disease problems increase over time. Decay, root, and crown rots are favored by high moisture conditions. To avoid disease infestation irrigation water system must not ever be applied any closer to the tree trunk than fifteen feet. In other words, the ground must remain totally dry for at least fifteen feet in all directions in and around the trunk of an oak tree.
- vi. If grading is completed other than during the rainy season, dust deposited on the foliage of oaks must be hosed off so that the growth processes of the tree are not disrupted.

NOTICE OF DISCLAIMER:

This report represents the independent opinion of the signatory consultant (L. NEWMAN DESIGN GROUP, INC.). The tree(s) discussed herein was/were generally reviewed for physical, biological function and aesthetic conditions. This examination was conducted in accordance with presently accepted industry procedures, which are a ground-plane macro-visual observation only. No extensive micro-biological, soil-root excavations, upper crown examination nor internal tree investigations were conducted and therefore, the reporting herein reflects the overall visual appearance of the tree(s) on the date reviewed and no warranty is implied as to the potential failure, health or demise of any part or of whole of any tree described in the report. Records may not remain accurate after our inspection due to unknown causes of changeable deterioration of the reviewed site.

Sincerely,

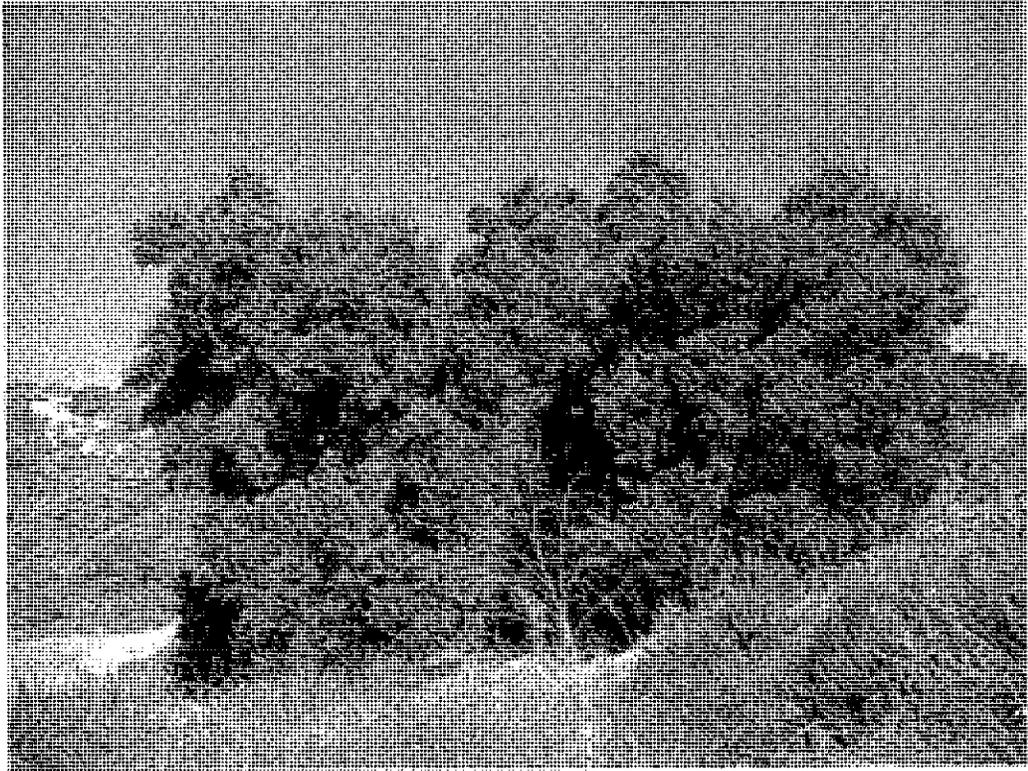
L. NEWMAN DESIGN GROUP, INC.
ASLA, California State License #1314



John Oblinger
Oak Tree Consultant

Certified Arborist WE-6820A

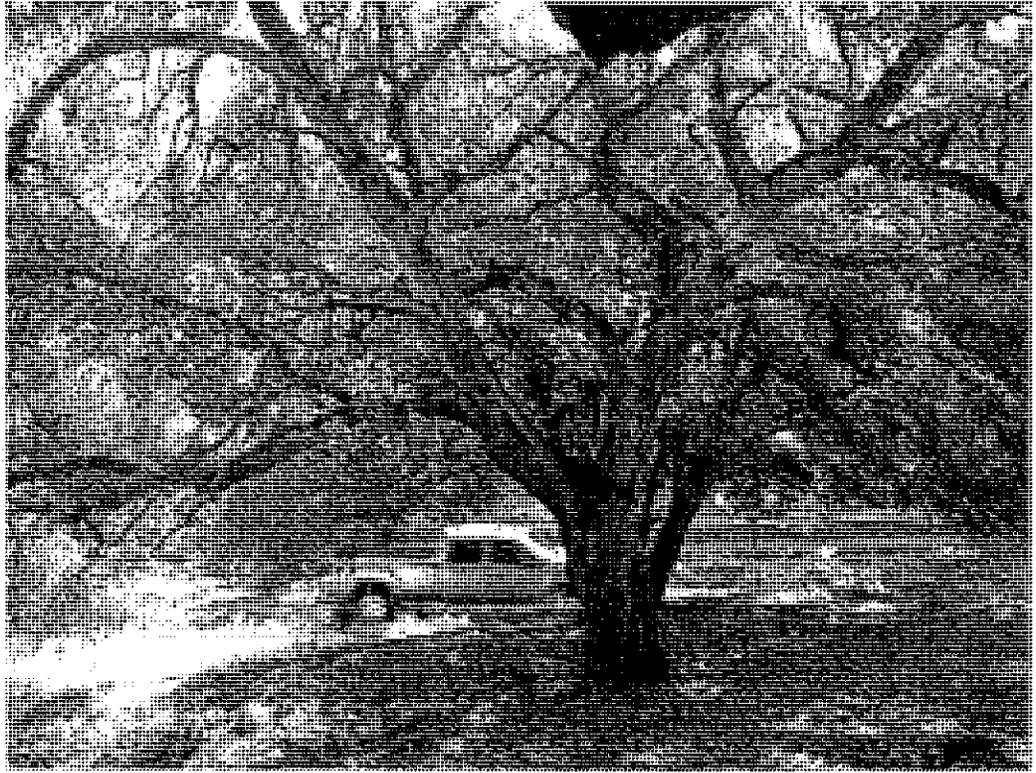
OAK TREE PHOTOGRAPHS



OAK TREE 1



OAK TREE 2



OAK TREE 3



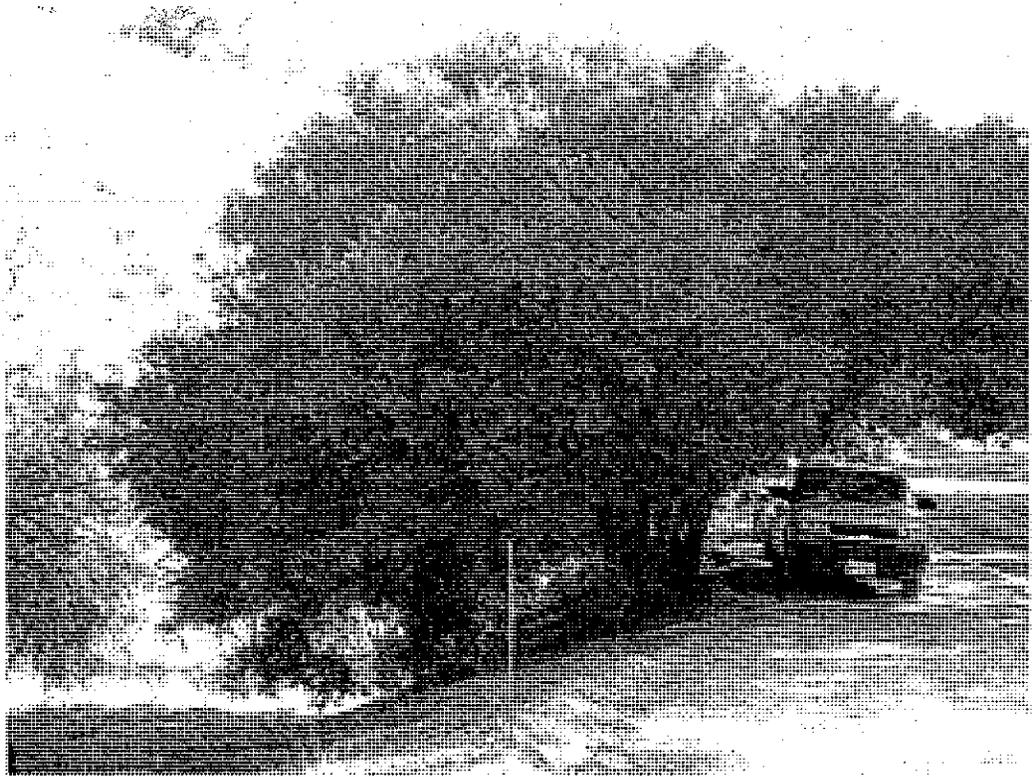
OAK TREE 4



OAK TREE 5



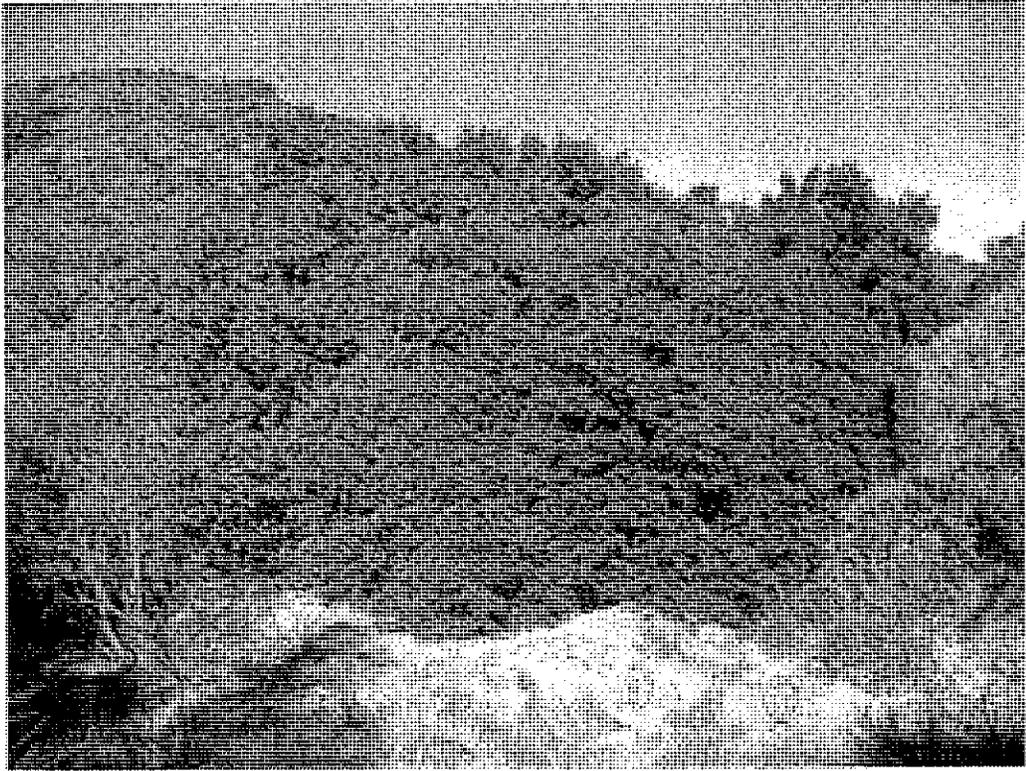
OAK TREE 6



OAK TREE 7



OAK TREE 8



OAK TREE 8



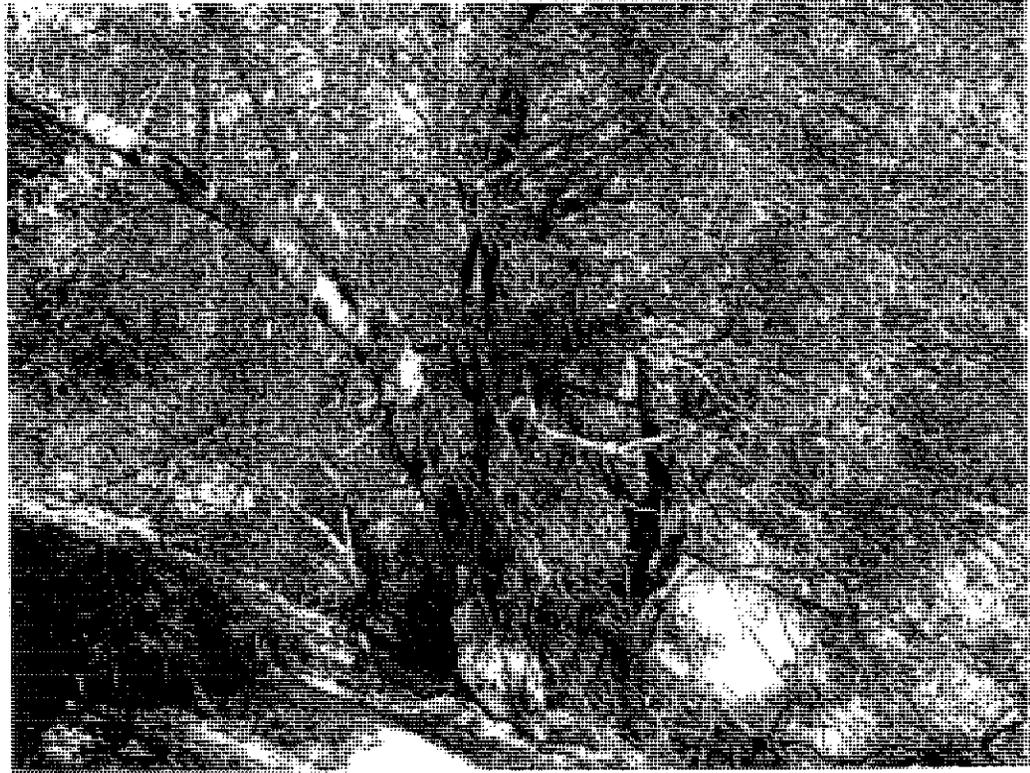
OAK TREE 9



OAK TREE 10



OAK TREE 11



OAK TREE 12



OAK TREE 13



OAK TREE 14



OAK TREE 15



OAK TREE 16



OAK TREE 17



OAK TREE 18



OAK TREE 19



OAK TREE 20



OAK TREE 21



OAK TREE 22



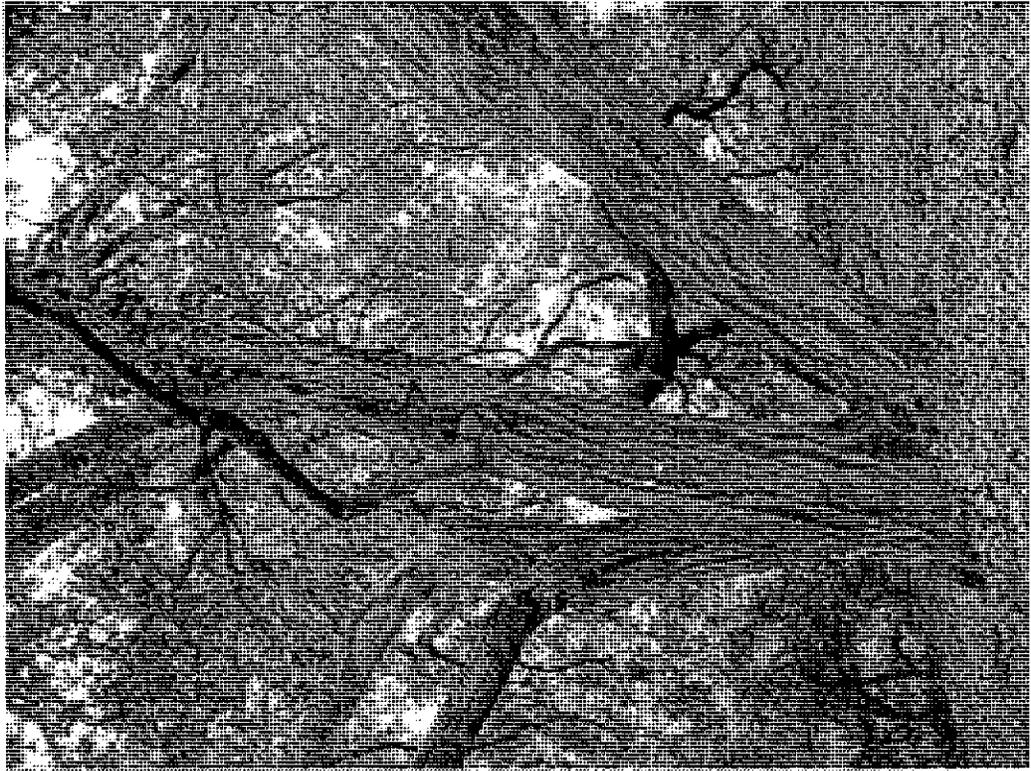
OAK TREE 23



OAK TREE 24



OAK TREE 25



OAK TREE 26



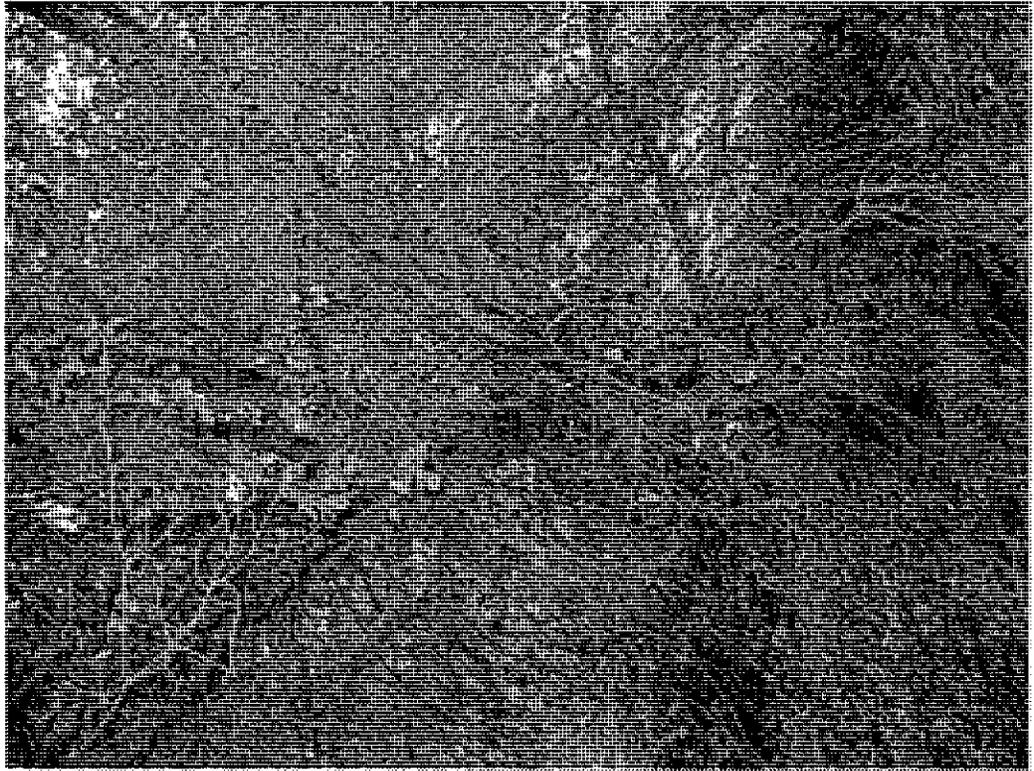
OAK TREE 27



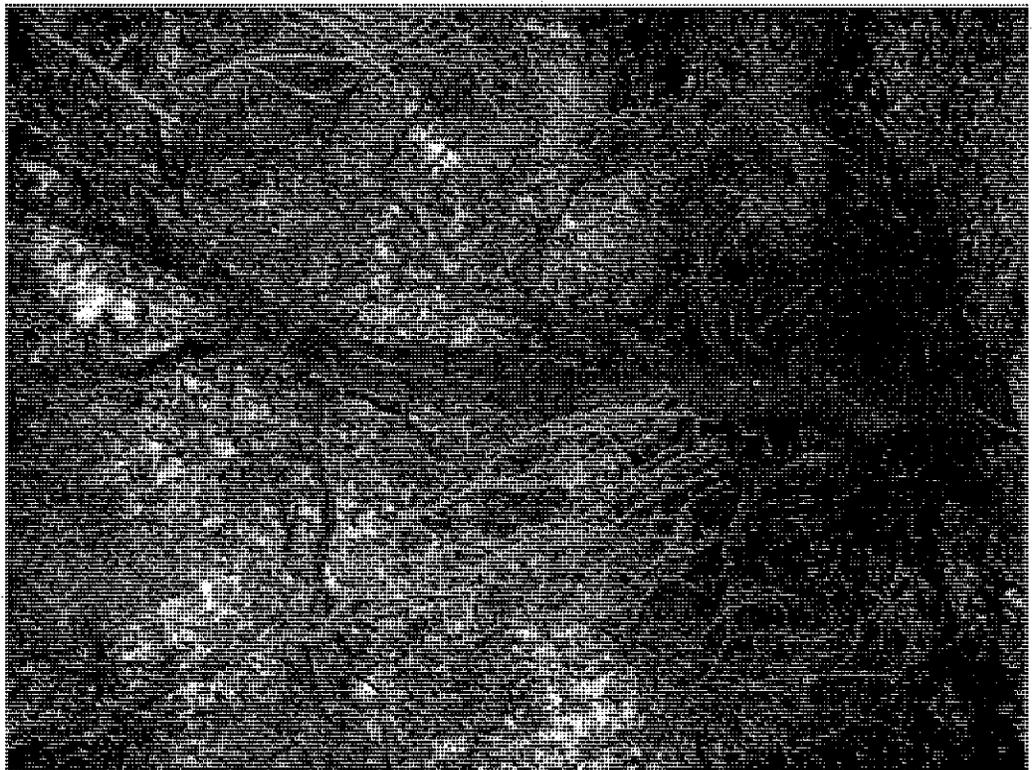
OAK TREE 28



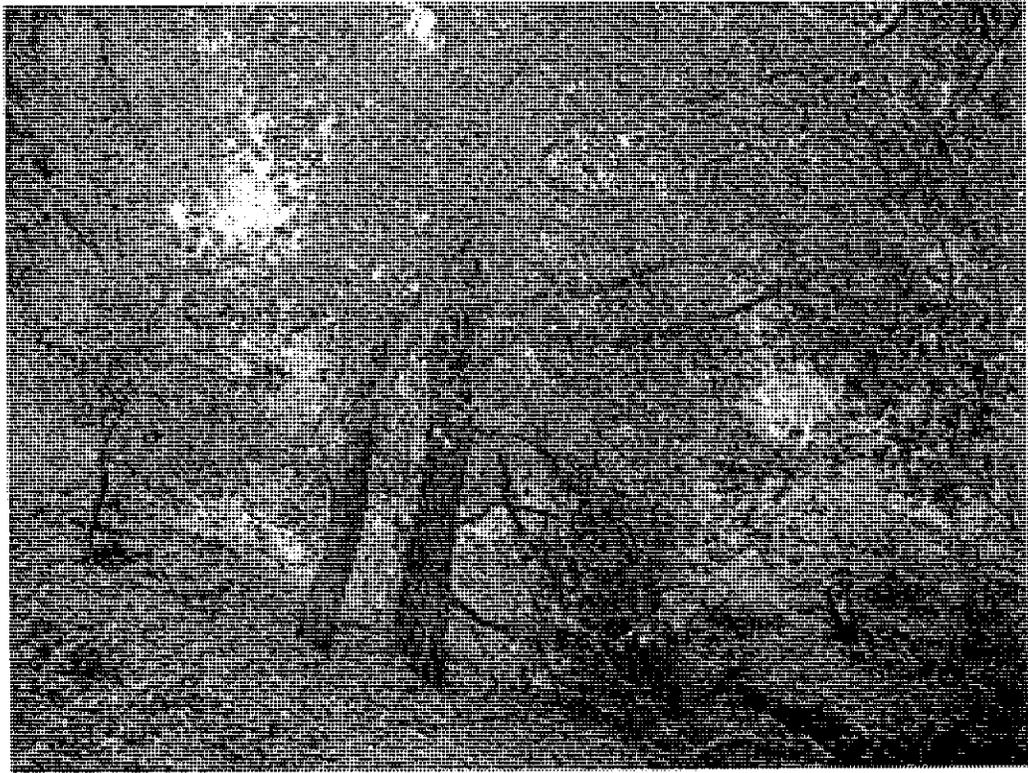
OAK TREE 29



OAK TREE 30



OAK TREE 31



OAK TREES 32 AND 33



OAK TREE 34 AND 35



OAK TREE 36



OAK TREE 37



OAK TREE 38



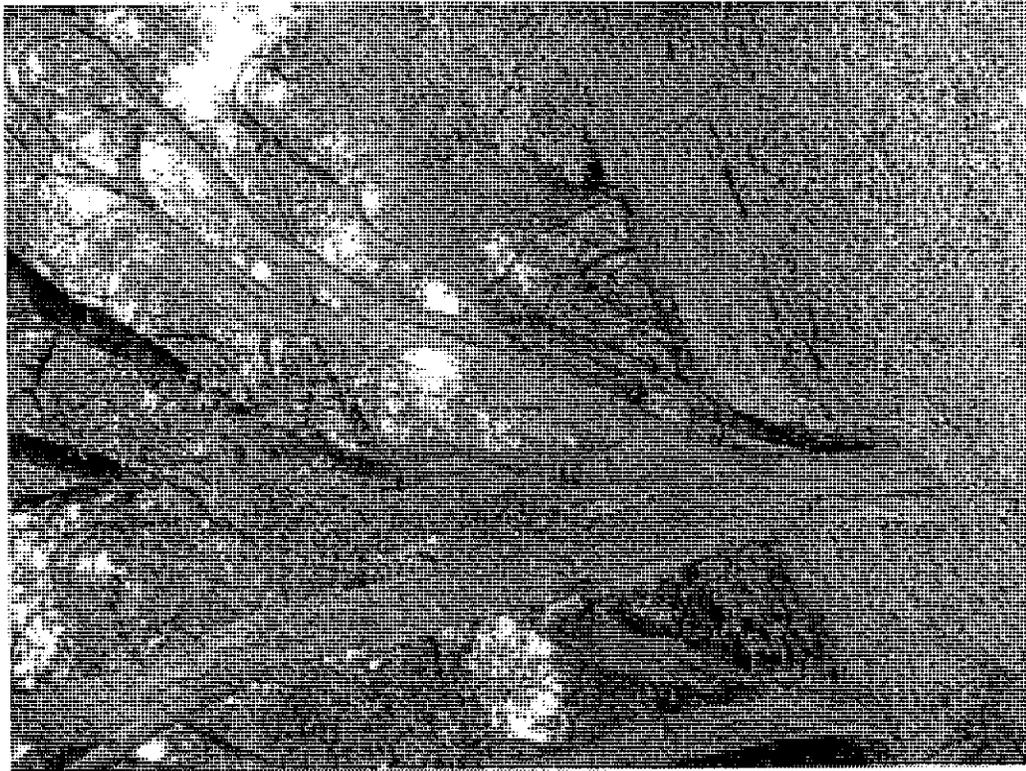
OAK TREE 39



OAK TREE 40



OAK TREE 41



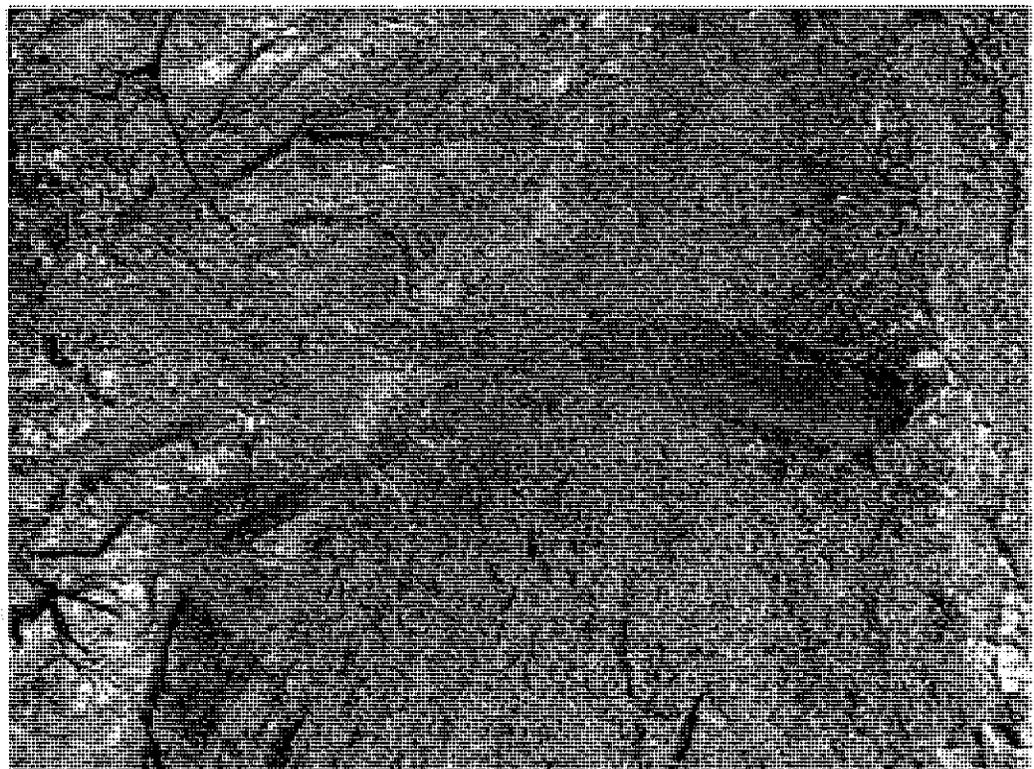
OAK TREE 42



OAK TREE 43 AND 44



OAK TREE 45



OAK TREE 46



OAK TREE 47



OAK TREE 48



OAK TREE 49



OAK TREE 50



OAK TREE 51

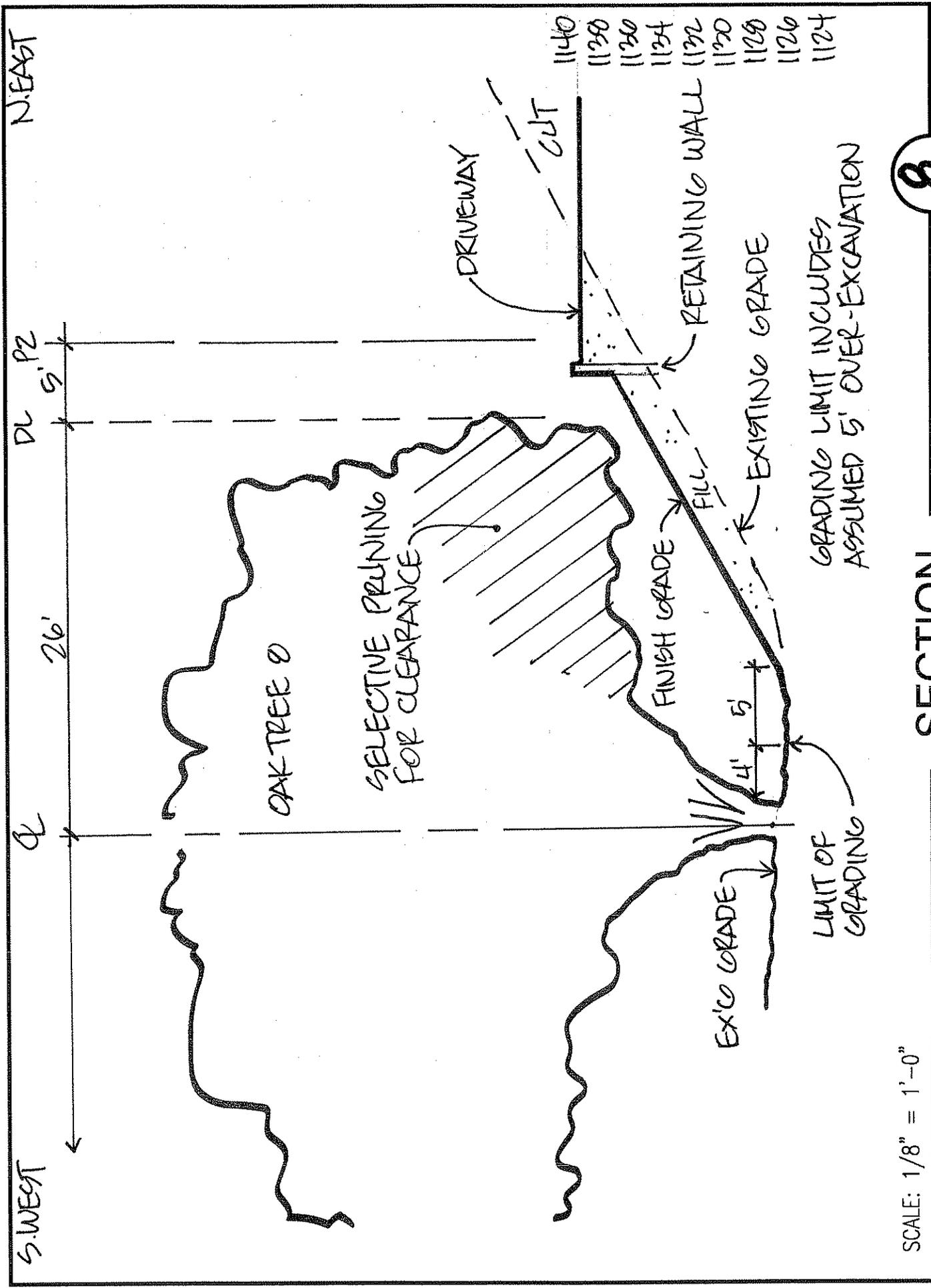


OAK TREE 52



OAK TREE 53

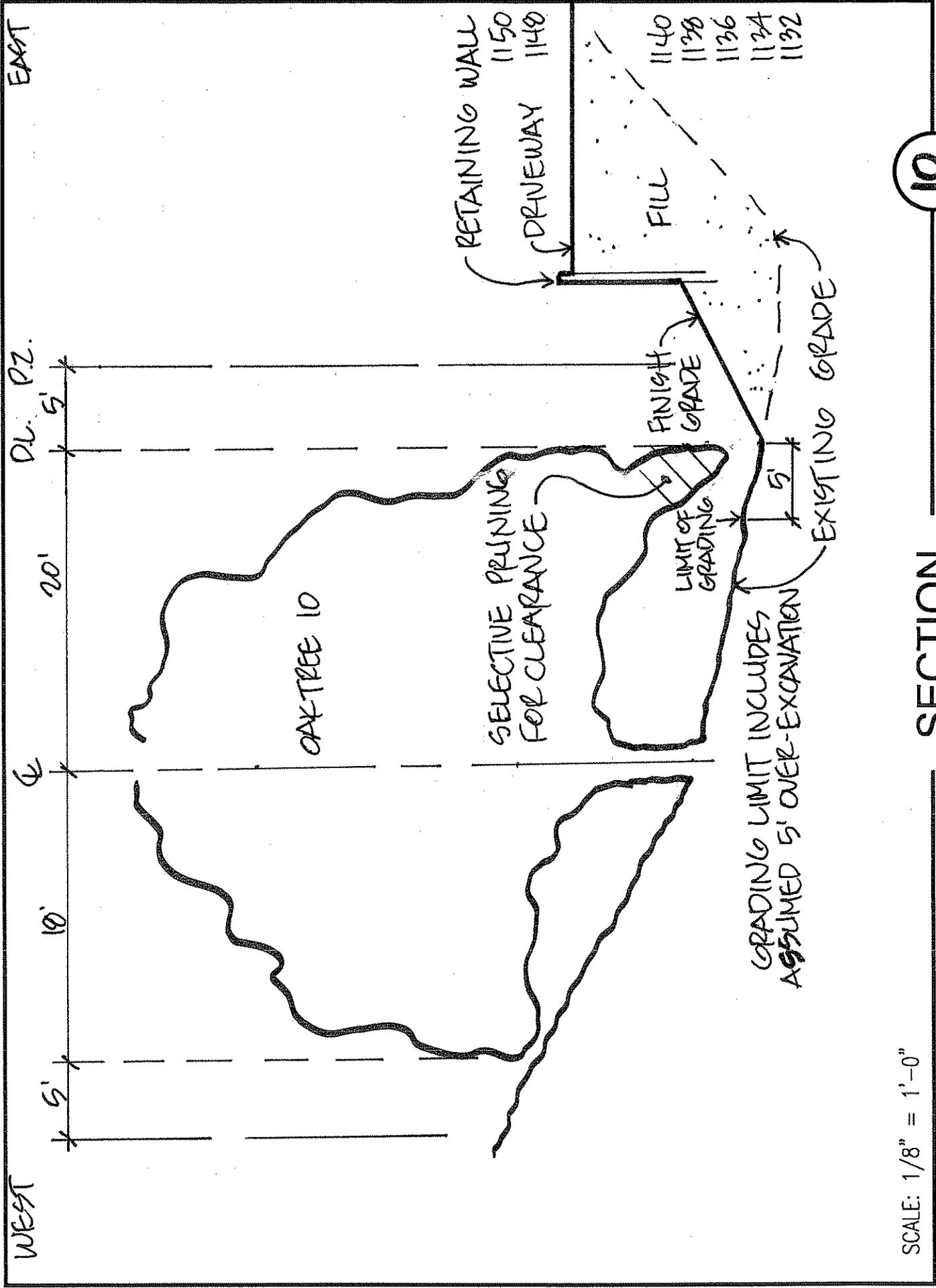
OAK TREE CROSS SECTIONS



SCALE: 1/8" = 1'-0"

SECTION 8

SECTION



EAST

DL. P.Z.

5'

20'

10'

5'

WEST

OAK TREE 10

SELECTIVE PRUNING FOR CLEARANCE

FINISH GRADE

LIMIT OF GRADING

GRADING LIMIT INCLUDES ASSUMED 5' OVER-EXCAVATION

EXISTING GRADE

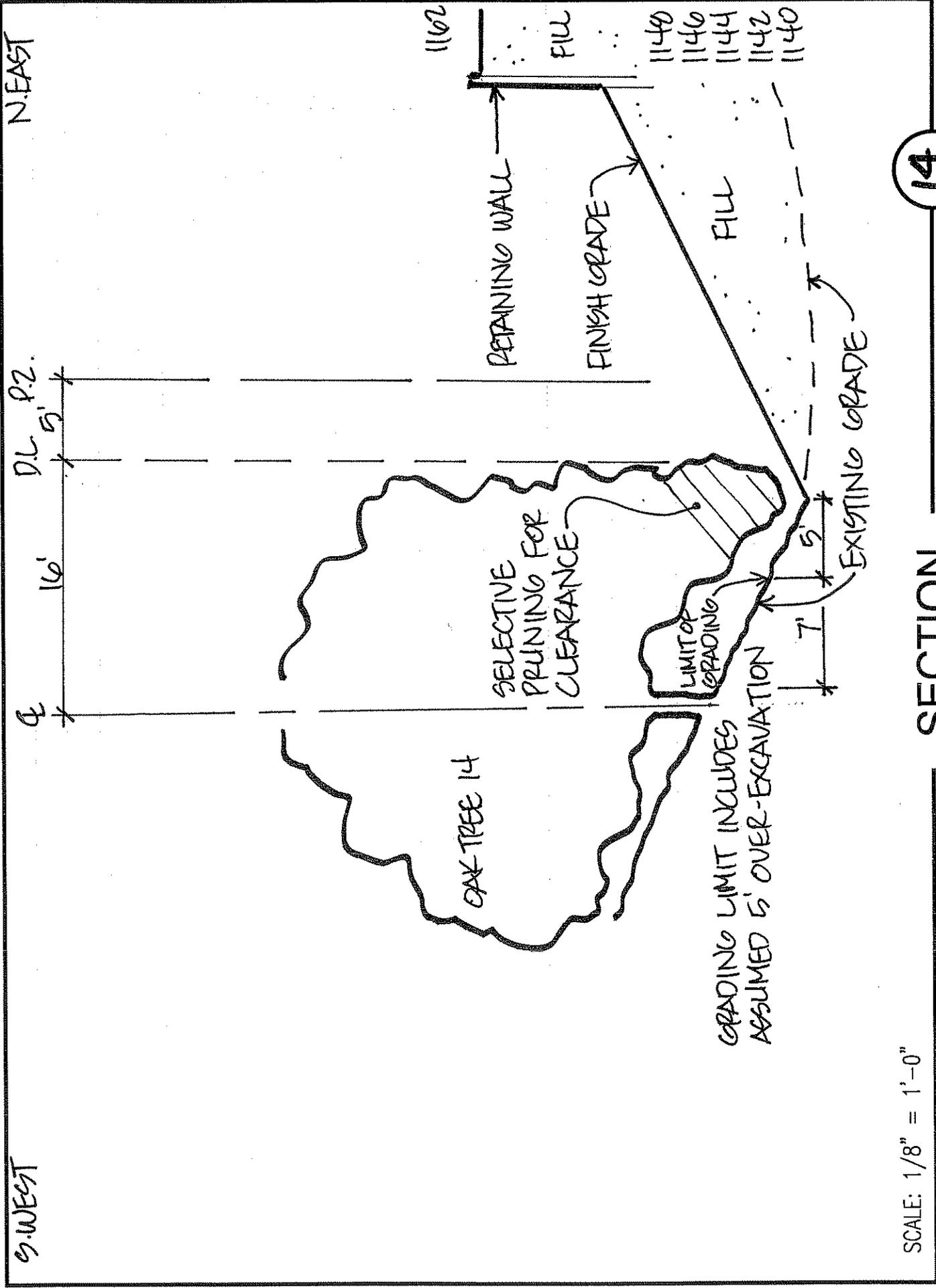
RETAINING WALL 1150
DRIVEWAY 1140

FILL
1140
1138
1136
1134
1132

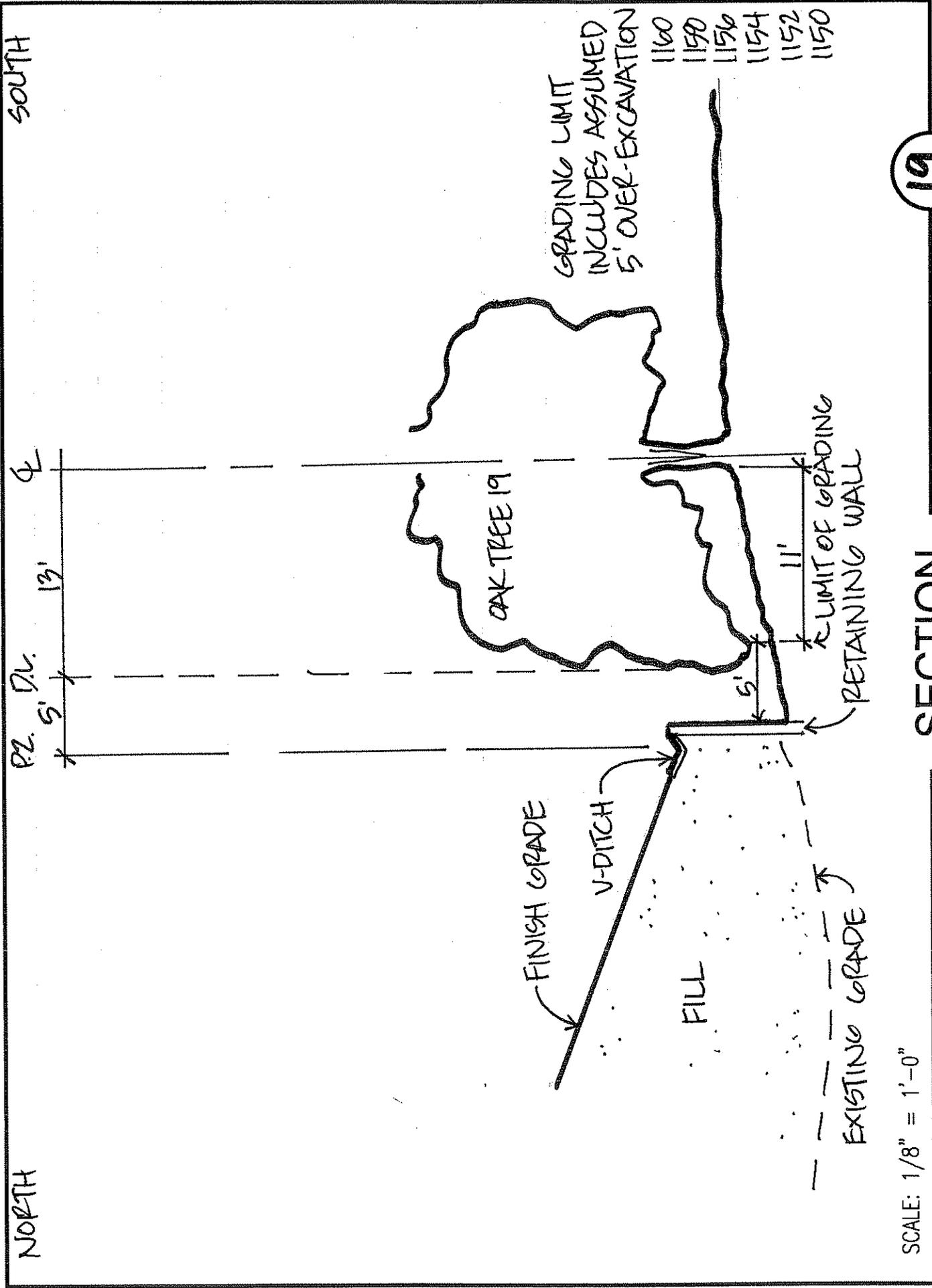
SCALE: 1/8" = 1'-0"

10

SECTION



SCALE: 1/8" = 1'-0"



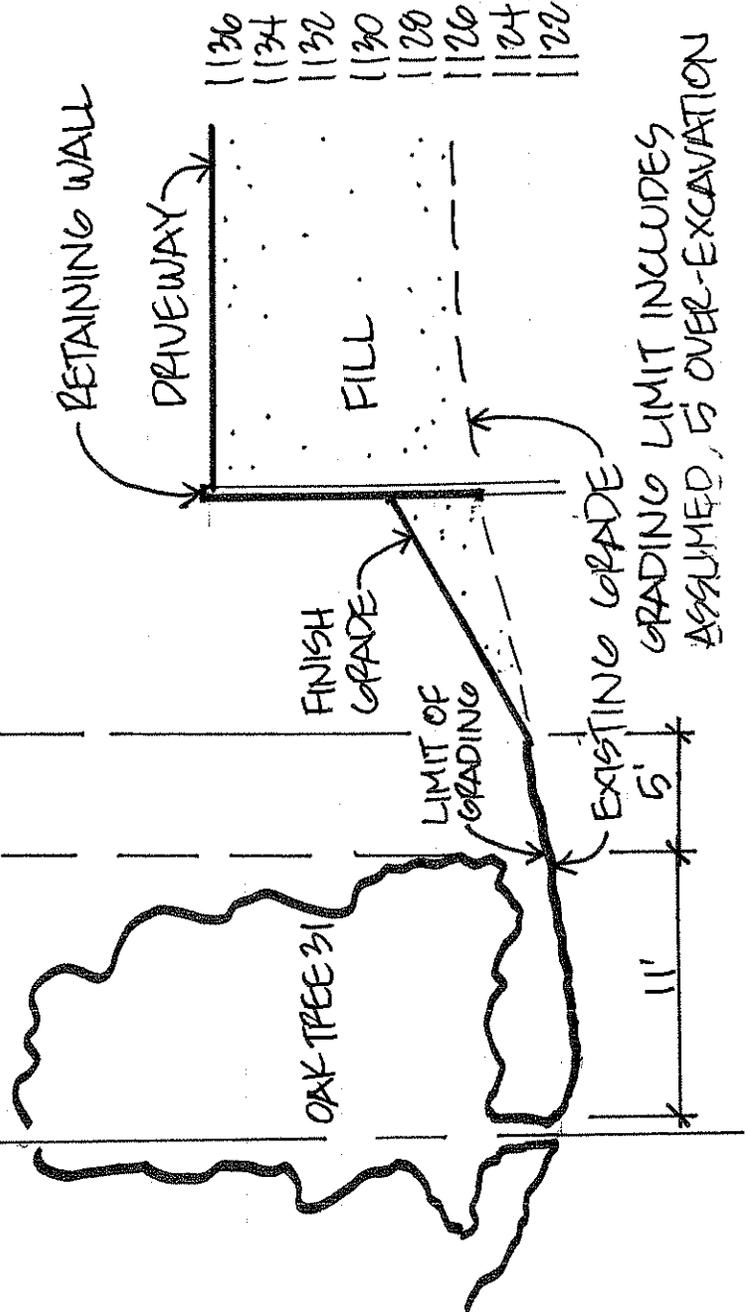
SECTION

SCALE: 1/8" = 1'-0"

WEST

E 12' DL: 5' PZ: 5'

EAST



SCALE: 1/8" = 1'-0"

SECTION

31

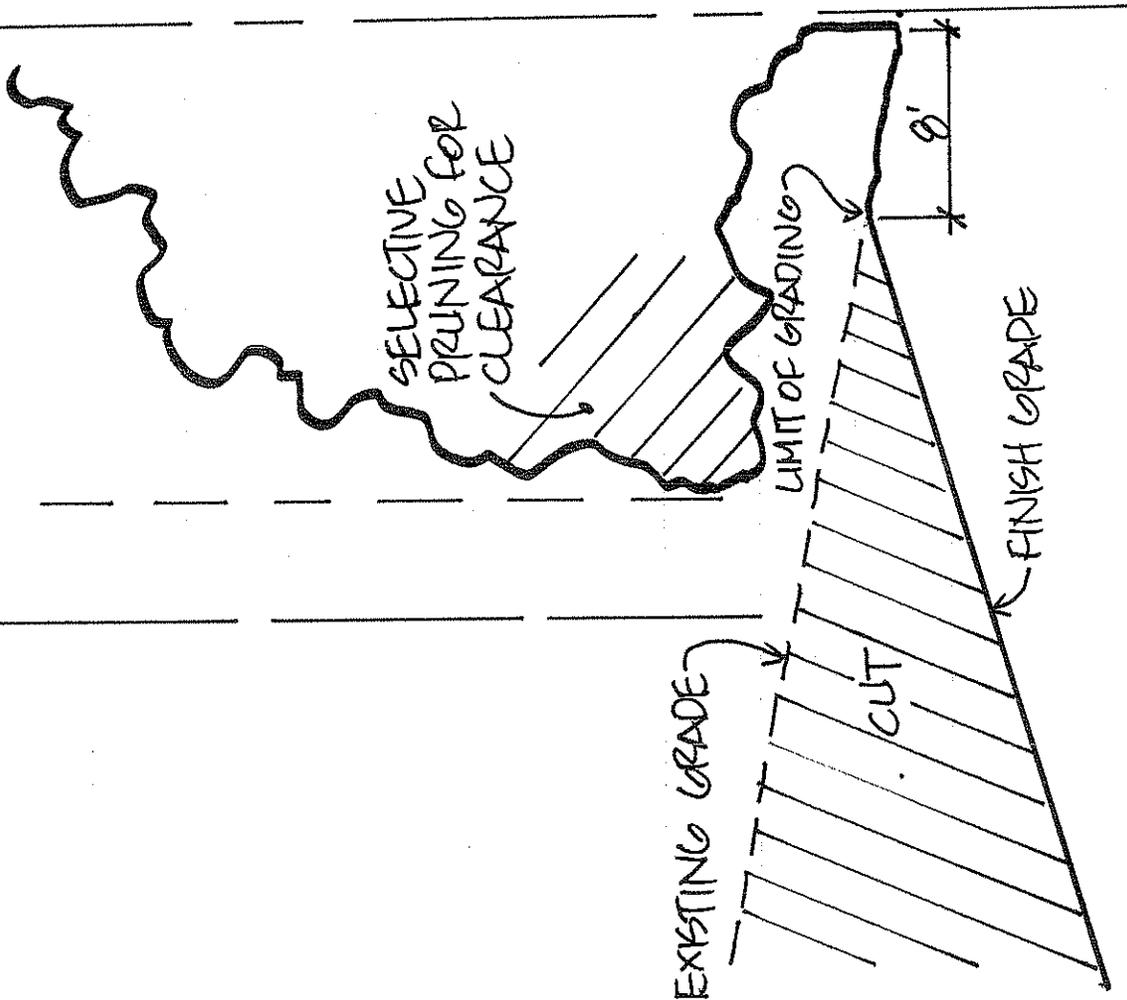
S. WEST

P.Z. D.L.
+ 5'

±

N. EAST

20'



SCALE: 1/8" = 1'-0"

SECTION

48

SUMMARY of FIELD OBSERVATIONS

INSPECTION NOTICE

The following information was observed on the date(s) indicated herein, and should only be considered true at the time of field inspection.

SUMMARY OF FIELD OBSERVATIONS

FORM	TREE NUMBER	1	2	3	4	5	6	7	8	9	10	
	<i>Quercus agrifolia</i>	X	X	X	X	X	X	X	X	X	X	X
	<i>Quercus lobata</i>											
	<i>Quercus berberidifolia</i>											
	TREE HEIGHT (APPROX)	35'	25'	30'	35'	35'	28'	18'	35'	35'	35'	
	LEANING (DIRECTION)											
	TRUNK DIAMETER 1	21"	16"	23"	25"	28"	33"	9"	14"	24"	28"	
	TRUNK DIAMETER 2	20"	12"					9"	13"	22"		
	TRUNK DIAMETER 3	20"	11"					9"	13"	17"		
	TRUNK DIAMETER 4	17"	10"					6"	12"	16"		
	TRUNK DIAMETER 5	16"	9"					6"	12"	16"		
	TRUNK DIAMETER 6		6"					5"		15"		
	TRUNK DIAMETER 7		4"									
PHYSICAL CONDITION	TRUNK CAVITY	X								X		
	TRUNK DAMAGE									X		
	EXPOSED ROOTS						X			X		
	EXFOLIATING BARK	X	X		X							
	FRUITING BODIES									X		
	INSECT/MITE DAMAGE	X	X	X	X	X	X	X	X	X	X	
	FIRE DAMAGE											
	MAINSTEM DIEBACK									X		
	BRANCH CAVITIES	X	X							X	X	
	TWIG/BRANCH DIEBACK	X	X	X	X	X	X	X	X	X	X	
	EPICORMIC GROWTH											
	THIN FOLIAGE				X		X			X		
	VIGOR (GOOD/MOD/POOR)	G	G	G	M	G	M	G	M	M	G	
TERRAIN - SLOPE/FLAT	S	S	S	S	S	S	F	S	S	S		
RATING	HERITAGE	X	X		X	X	X		X	X	X	
	HEALTH	B	B	B	B	B	B	B	C	C	B	
	AESTHETICS/COMFORMITY	B	B	C	C	B	C	B	B	C	B	
TREAT- MENT	REMOVE DEADWOOD											
	INSECT/DISEASE TREAT											

REMARKS:

SUMMARY OF FIELD OBSERVATIONS

FORM	TREE NUMBER	11	12	13	14	15	16	17	18	19	20	
	<i>Quercus agrifolia</i>	X	X	X	X	X	X	X	X			X
	<i>Quercus lobata</i>											
	<i>Quercus berberidifolia</i>									X		
	TREE HEIGHT (APPROX)	35'	55'	55'	35'	40'	25'	60'	25'	18'	30'	
	LEANING (DIRECTION)			E					N			
	TRUNK DIAMETER 1	15"	26"	19"	15"	11"	16"	35"	13"	6"	23"	
	TRUNK DIAMETER 2		6"			10"	7"			5"		
	TRUNK DIAMETER 3					9"						
	TRUNK DIAMETER 4					8"						
	TRUNK DIAMETER 5											
	TRUNK DIAMETER 6											
	TRUNK DIAMETER 7											
PHYSICAL CONDITION	TRUNK CAVITY											
	TRUNK DAMAGE											
	EXPOSED ROOTS							X				
	EXFOLIATING BARK											
	FRUITING BODIES											
	INSECT/MITE DAMAGE	X	X	X	X	X	X	X	X	X	X	
	FIRE DAMAGE											
	MAINSTEM DIEBACK											
	BRANCH CAVITIES	X	X		X	X						
	TWIG/BRANCH DIEBACK	X	X	X	X	X	X	X	X	X	X	
	EPICORMIC GROWTH											
	THIN FOLIAGE	X	X		X	X			X	X		
	VIGOR (GOOD/MOD/POOR)	M	M	M	M	M	M	G	M	M	G	
TERRAIN - SLOPE/FLAT	S	S	S	S	S	S	S	S	S	S		
RATING	HERITAGE		X					X				
	HEALTH	B	B	B	B	B	B	B	B	C	B	
	AESTHETICS/COMFORMITY	C	B	B	B	B	B	B	C	C	B	
TREAT- MENT	REMOVE DEADWOOD											
	INSECT/DISEASE TREAT											

REMARKS:

SUMMARY OF FIELD OBSERVATIONS

FORM	TREE NUMBER	21	22	23	24	25	26	27	28	29	30	
	<i>Quercus agrifolia</i>	X	X	X	X	X	X	X	X		X	X
	<i>Quercus lobata</i>											
	<i>Quercus berberidifolia</i>								X			
	TREE HEIGHT (APPROX)	35'	35'	35'	30'	35'	35'	40'	25'	25'	24'	
	LEANING (DIRECTION)	SE					SE					
	TRUNK DIAMETER 1	17"	18"	13"	32"	16"	22"	22"	9"	14"	11"	
	TRUNK DIAMETER 2	14"	17"	12"	24"	16"	22"	22"	8"		5"	
	TRUNK DIAMETER 3	12"	13"	4"			20"	21"				
	TRUNK DIAMETER 4	10"	12"	4"				17"				
	TRUNK DIAMETER 5											
	TRUNK DIAMETER 6											
	TRUNK DIAMETER 7											
PHYSICAL CONDITION	TRUNK CAVITY				X							
	TRUNK DAMAGE				X							
	EXPOSED ROOTS											
	EXFOLIATING BARK							X	X			
	FRUITING BODIES											
	INSECT/MITE DAMAGE	X	X	X	X	X	X	X	X			
	FIRE DAMAGE											
	MAINSTEM DIEBACK											
	BRANCH CAVITIES											
	TWIG/BRANCH DIEBACK	X	X	X	X	X	X	X	X	X	X	
	EPICORMIC GROWTH											
	THIN FOLIAGE	X										
	VIGOR (GOOD/MOD/POOR)	M	M	G	G	M	M	M	P	M	M	
TERRAIN - SLOPE/FLAT	S	S	S	S	S	S	S	S	S	F		
RATING	HERITAGE	X	X		X		X	X				
	HEALTH	B	B	B	C	B	B	B	C	B	B	
	AESTHETICS/COMFORMITY	B	B	B	B	B	B	B	D	C	B	
TREAT- MENT	REMOVE DEADWOOD											
	INSECT/DISEASE TREAT											

REMARKS:

DRIPLINE MEASUREMENTS

INSPECTION NOTICE

The following information was observed on the date(s) indicated herein, and should only be considered true at the time of field inspection.

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
1	HORIZ.	22'	22'	27'	24'	29'	30'	25'	27'
	VERT.	3'	2'	2'	2'	1'	1'	1'	2'
2	HORIZ.	10'	14'	17'	22'	20'	26'	23'	17'
	VERT.	3'	6'	3'	10'	12'	0'	2'	2'
3	HORIZ.	10'	23'	25'	20'	20'	21'	21'	18'
	VERT.	8'	6'	2'	2'	6'	2'	2'	4'
4	HORIZ.	29'	22'	15'	30'	30'	25'	25'	25'
	VERT.	0'	6'	15'	8'	8'	0'	0'	0'
5	HORIZ.	25'	21'	30'	24'	18'	18'	15'	21'
	VERT.	2'	4'	0'	2'	4'	12'	6'	3'
6	HORIZ.	22'	20'	15'	20'	20'	20'	28'	20'
	VERT.	2'	3'	2'	0'	0'	1'	3'	4'
7	HORIZ.	20'	20'	16'	15'	18'	15'	16'	20'
	VERT.	6'	2'	0'	4'	6'	4'	0'	2'
8	HORIZ.	25'	25'	35'	30'	30'	30'	20'	20'
	VERT.	6'	4'	6'	0'	0'	0'	0'	0'
9	HORIZ.	40'	40'	35'	50'	40'	40'	40'	40'
	VERT.	0'	0'	0'	0'	0'	0'	0'	0'
10	HORIZ.	21'	22'	20'	18'	16'	16'	18'	18'
	VERT.	0'	1'	2'	1'	0'	0'	0'	0'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
11	HORIZ.	15'	18'	15'	8'	0'	5'	6'	10'
	VERT.	2	2	2	15	0	8	8	10
12	HORIZ.	15'	25'	25'	15'	20'	30'	25'	25'
	VERT.	8'	2'	2'	1'	8'	0'	0'	0'
13	HORIZ.	20'	22'	20'	18'	15'	15'	18'	15'
	VERT.	15'	6'	2'	2'	10'	6'	0'	0'
14	HORIZ.	15'	16'	18'	15'	15'	15'	15'	20'
	VERT.	0'	0'	0'	0'	2'	1'	1'	2'
15	HORIZ.	15'	12'	15'	22'	20'	20'	10'	15'
	VERT.	2'	2'	0'	0'	0'	0'	1'	2'
16	HORIZ.	10'	10'	9'	8'	8'	8'	8'	10'
	VERT.	2'	0'	0'	0'	0'	0'	1'	1'
17	HORIZ.	30'	28'	35'	45'	35'	45'	35'	35'
	VERT.	5'	10'	5'	0'	0'	0'	10'	20'
18	HORIZ.	18'	18'	10'	8'	3'	8'	15'	18'
	VERT.	0'	2'	15'	15'	18'	10'	1'	1'
19	HORIZ.	13'	15'	15'	15'	10'	10'	12'	12'
	VERT.	0'	0'	0'	0'	6'	10'	6'	2'
20	HORIZ.	18'	18'	25'	25'	25'	20'	18'	20'
	VERT.	3'	2'	4'	5'	0'	0'	1'	3'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
31	HORIZ.	8'	12'	12'	12'	10'	0'	0'	0'
	VERT.	1'	3'	2'	4'	1'	0'	0'	0'
32	HORIZ.	15'	15'	15'	10'	0'	0'	0'	0'
	VERT.	8'	0'	0'	10'	0'	0'	0'	0'
33	HORIZ.	0'	12'	12'	10'	8'	6'	6'	0'
	VERT.	0'	1'	2'	8'	2'	2'	2'	0'
34	HORIZ.	18'	18'	18'	15'	15'	18'	8'	18'
	VERT.	1'	1'	1'	1'	3'	8'	4'	4'
35	HORIZ.	1'	18'	15'	15'	20'	20'	18'	18'
	VERT.	8'	4'	4'	8'	6'	4'	3'	2'
36	HORIZ.	30'	30'	20'	20'	20'	20'	20'	20'
	VERT.	2'	2'	3'	0'	0'	3'	3'	5'
37	HORIZ.	20'	35'	30'	30'	30'	35'	35'	30'
	VERT.	10'	4'	4'	1'	0'	0'	0'	0'
38	HORIZ.	15'	15'	28'	35'	35'	30'	20'	15'
	VERT.	3'	2'	0'	0'	0'	0'	0'	3'
39	HORIZ.	22'	30'	35'	35'	25'	25'	20'	25'
	VERT.	5'	7'	8'	0'	0'	2'	4'	6'
40	HORIZ.	18'	20'	25'	30'	18'	25'	25'	18'
	VERT.	1'	3'	3'	5'	2'	0'	2'	2'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
41	HORIZ.	30'	30'	25'	25'	35'	30'	30'	25'
	VERT.	0'	0'	0'	0'	0'	0'	0'	0'
42	HORIZ.	25'	25'	15'	0'	30'	23'	25'	25'
	VERT.	15'	10'	10'	10'	10'	8'	6'	6'
43	HORIZ.	35'	40'	30'	40'	30'	20'	20'	20'
	VERT.	6'	6'	3'	3'	25'	25'	25'	25'
44	HORIZ.	15'	40'	50'	15'	10'	5'	10'	15'
	VERT.	6'	6'	4'	4'	3'	4'	2'	4'
45	HORIZ.	45'	55'	8'	0'	0'	0'	5'	45'
	VERT.	0'	8'	0'	0'	0'	0'	0'	0'
46	HORIZ.	40'	50'	30'	25'	25'	10'	15'	10'
	VERT.	1'	1'	1'	0'	0'	0'	1'	1'
47	HORIZ.	40'	40'	40'	23'	0'	0'	0'	0'
	VERT.	0'	0'	0'	0'	0'	0'	0'	0'
48	HORIZ.	18'	18'	20'	23'	25'	20'	18'	18'
	VERT.	25'	12'	6'	0'	0'	2'	4'	7'
49	HORIZ.	0'	20'	20'	20'	0'	0'	0'	0'
	VERT.	0'	2'	0'	3'	0'	0'	0'	0'
50	HORIZ.	20'	25'	25'	12'	3'	6'	10'	20'
	VERT.	1'	1'	8'	2'	6'	6'	4'	4'

DEFINITIONS

SUMMARY of FIELD OBSERVATIONS DEFINITIONS

INTRODUCTION

There are numerous diseases and insects, which frequently attack the Oak trees in Calabasas. A long discourse in plant pathology or entomology is not necessarily a prerequisite to develop a basic understanding of the casual effects of disease and insects upon living plant tissue. A basic knowledge of disease and insects should include an understanding of the following definitions:

FORM

1. **Tree Number** - each tree in the field (sizes within the existing ordinance) has been assigned a number, which corresponds to a tree location on the "Oak Tree Location Map".
2. **Species** - is the type of tree that is being evaluated.
3. **Number of Trunks** - as measured per the ordinance existing at the time of evaluation.
4. **Diameter of Trunks** - as measured at 4½' above mean natural grade.
5. **Tree Height** - is the approximate height of each numbered, evaluated tree.
6. **Leaning** - is the direction the tree is inclined from the natural vertical position.

PHYSICAL CONDITION

1. **Trunk Cavity/Damage** - A **Cavity** is a hollow area in the trunk, usually due to wood decay. **Damage** is a damaged area on the trunk, usually due to an external force onto the tree.
2. **Exposed Roots** - roots exposed near tree; e.g. in creek bed.
3. **Exfoliating Bark** - the flaking off of bark from trunk, branches and/or twigs.
4. **Water Pocket** - pockets formed at branch crotches that can hold water and possibly weaken the tree's structure (possible hazard).
5. **Exudation** - the issuance or expelling of liquid, usually from wounds.
6. **Fruiting Bodies** - are the external signs (i.e. mushrooms, conks) of internal wood decay.
7. **Insect/Mite Damage** - is some form of damage to the parts of the tree caused by insects or mites (i.e. scale, caterpillars, weevils, borers, mites, etc.).
8. **Galls/Oak Pit Scale** - **Galls** are abnormal growth (tumors) on the tree, which may be caused by insects, mites, bacteria, etc. **Oak Pit Scale** has a severe weakening effect on the twigs, frequently resulting in their death. When the scale settles on the twig, a swelling of the twig tissue occurs so the insect in effect is in a pit; hence, the name.
9. **Fire Damage** - each tree is rated on the amount of burn it has received. These are:

<u>Category</u>	<u>Percent of Tree Burned</u>
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Slight (S)	0% - 25%
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Moderate (M)	26% - 75%
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Heavy (H)	76% - 100%
-----------	------------

Complete (C)	Burned to the ground
--------------	----------------------

A. A check mark only, indicates a sign of past fire damage;

B. The trees with slight damage have an excellent chance of recovering to their original form. Trees with moderate damage have a good chance of recovery with alterations in form. Heavy percentage of burn on trees will significantly alter their form and lower their probability of survival to half;

C. The complete category are those trees which burned to the ground.

DEFINITIONS

Calabasas

Page 2 of 3

10. **Mainstem Dieback** - death of healthy mainstems from the growing tip back.
11. **Branch Cavities** - hollow areas in the trunk/limbs in the upper tree, usually due to the wood decay.
12. **Weak Crotches** - poorly formed branch attachments.
13. **Twig/Branch Dieback** - death of unhealthy twigs from the growing tip back.
14. **Exocormic Growth** - excessive growth along main limbs, rather than on twigs.
15. **Thin Foliage** - defoliation and twig dieback throughout the canopy.
16. **Vigor** - is the capacity of a tree for growth and survival. Below are the ratings:

Good (G) -New tip growth; good leaf color; relatively smooth bark free from cracks and decay.
OK (OK) -Some new tip growth; medium leaf color; some galls; thinning crown.
Poor (P) -No new tip growth; poor leaf & bark color & growth; much dead wood; heavily thinned crown.
A vigorous tree will more easily ward off disease and/or insect attacks, and should recover from impacts more quickly than a weak tree.
17. **Terrain** - refers to "lay" of the land where the tree is found.
18. **Potential Hazard** - any tree may be a hazard to humans, depending on its location and/or health.

RATINGS

1. A **Heritage Tree** according to the Calabasas "Oak Tree Ordinance" is one of the following:
 - A. For a single trunk tree, its trunk must at least 24" in diameter or larger as measured at 4½' above mean natural grade;
 - B. For a multiple trunk (more than one trunk) tree, the combination of the trunks must add-up to at least the equivalent of a 24" in diameter or larger as measured at 4½' above mean natural grade using the cumulative total of the cross-sectional area of each trunk;
 - C. Any Oak tree having a significant historical or of cultural importance to the community, not withstanding that the tree is less than 24" in diameter (as identified officially by the Topanga Canyon Resource Conservation District or any City of Calabasas recognized agency).
2. The **Health** of the trees were visually determined from a macroscopic inspection of signs and symptoms of disease. The following describes our system:
 - A. **Outstanding** - A healthy and vigorous tree characteristic of its species and free of any visible signs of disease or pest infestation;
 - B. **Above Average** - A healthy and vigorous tree. However, there are minor visible signs of disease and pest infestation;
 - C. **Average** - Although healthy in overall appearance, there is a normal amount of disease and/or pest infestation;
 - D. **Below Average/Poor*** - This tree is characterized by exhibiting a greater degree of disease and/or pest infestation or structural instability than normal and appears to be in a state of decline. This tree also exhibits extensive signs of dieback;
 - E. **Dead*** - This tree exhibits no signs of life whatsoever at the time of field evaluation.
*A tree rating of "D" and lower is in a low stage of vigor and naturally a meaningful level of recovery is doubtful. Removal should be considered if it is within the proposed project development.
3. The **Aesthetic/Conformity** quality of the trees were visually determined from an overall inspection of appearance. The following system was used to describe their conditions:

DEFINITIONS

Calabasas

Page 3 of 3

- A. **Outstanding** - The tree is visually symmetrical, having the ideal form and appearance for the species;
- B. **Average** - The tree, though non-symmetrical, has an appealing form for the species with very little dieback of foliage or twigs/branches;
- C. **Below Average** - The tree is non-symmetrical for the species with an unappealing form and/or has much dieback of foliage and twigs/branches;
- D. **Poor** - The tree has few, if any, positive characteristics and may detract from the beauty of the landscape.

TREATMENT

- 1. **Remove Dead Wood** - if noticeable dead wood is within the canopy, it should be removed.
- 2. **Remove Wire, etc.** - if anything has been physically attached to the tree, it should be removed.
- 3. **Insect/Disease Treatment** - see the TREE PRESERVATION PROGRAM within this report for explanation.
- 4. **Cable/Brace** - can extend the time the tree remains healthy, attractive and hazard free.
- 5. **None** - no treatment is recommended.
- 6. **Remove Tree** - if the tree cannot be saved through any type of treatment, it should be removed.

REMARKS (Some other terms that may be used)

- 1. **Basal Growth** - is leaf growth generating from around base of trunk.
- 2. **Exposed Buttress Roots** - is when soil absent, either all or partial, at basal portion of tree.
- 3. **Heart Rot** - is decomposition of heartwood (the central portion of a twig/branch/trunk).
- 4. **Powdery Mildew** - are leaves that are covered by a white powdery growth generally when new growth becomes wet for long periods of time; leaves may be distorted, stunted and drop prematurely.
- 5. **Cankers** - are rough swellings with depressed centers resulting in death of tissue, which later cracks open and exposes the wood underneath in twigs, branches, and/or trunks.
- 6. **Chlorotic Leaves** - leaf veins remain normally green, but the tissue between veins becomes yellow, which is usually caused by nutrient deficiencies.
- 7. **Mottling** - are leaves that have a variegated pattern of green and yellow.
- 8. **Defoliation** - is a premature leaf drop.
- 9. **Bark Beetle Frass** - are wood fragments mixed in the insect's excrement.
- 10. **Witches Broom** - is an abnormal growth cluster of twigs, which may be caused by insects, mites or fungus.
- 11. **Mistletoe** - is a leafy evergreen perennial parasite with dark green leathery leaves.
- 12. **Crowded** - is a tree within the canopy of an adjacent tree or canopy.
- 13. **Shading Out** - is the defoliation and twig dieback inside the canopy due to the lack of sunlight.

OAK TREE LOCATION MAP

Appendix D

*Geologic and Geotechnical Engineering Study
(On File with the City of Calabasas)*



April 18, 2012

Willdan Geotechnical Project No. 100498-1018-003

**CITY OF CALABASAS – DEPARTMENT OF COMMUNITY DEVELOPMENT
ENGINEERING GEOLOGY AND GEOTECHNICAL ENGINEERING REVIEW**

Submitted to: Matt Baumgardner, City of Calabasas

Project Location: APN 2069-065-001,002,003, Mulholland Highway,
City of Calabasas, California

Geotechnical Reports;

- "Plan Review, Conceptual Grading and Drainage Plan, APN 2069-065-001,002,003, Mulholland Highway, City of Calabasas, California", by Geo Concepts Inc., Dated March 29, 2012, Project No. 4291
- "Change of Consultant & Update Report Lot 1, APN 2069-065-001, 23401 Mulholland Highway, Calabasas, California", by Geo Concepts Inc., Dated September 12, 2011, Project No. 4291
- "Preliminary Geologic and Geotechnical Engineering Investigation, Proposed Grading Plans for Future Single-Family Residence, PM 205-84-85, Lot 3, APN 2069-065-003, 23421 Mulholland Highway, Calabasas, California", by Geo Concepts, Inc., dated September 13, 2011, Project No. 4292
- Supplemental Geotechnical Review Report for The Proposed Single Family Residential Development Located at 23401 Mulholland Highway, City of Calabasas, California", prepared by LGC Valley, Inc., dated December 14, 2007, project no. 033137-03
- Supplemental Geotechnical Review Report for The Proposed Single Family Residential Development Located at 23355 Mulholland Highway, City of Calabasas, California", prepared by LGC Valley, Inc., dated December 14, 2007, project no. 033137-01
-
- "Geologic and Geotechnical Engineering Review, 23401 Mulholland Highway, Parcel 2, Parcel Map 13553, City of Calabasas, California", by RJR Engineering Group, dated January 10, 2007, Project No. RJR 1315.149
- "Preliminary Geotechnical Review of the Proposed Single Family Residential Development Located at 23401 Mulholland Highway (Lot 2), City of Calabasas, California", by LGC Valley, Inc., dated January 7, 2007, Project No. 033137-03

Review Status: *The Plan Review, Conceptual Grading and Drainage Plan for APN 2069-065-001, 002, and 003, Mulholland highway is approved from geotechnical viewpoint for **feasibility purposes only**. Prior to issuing any grading permit, consultant of the record must prepare a single report for each lot or combined report for 3 lots, compiling all available data, summarizing all findings, conclusions and recommendations.*

This review was performed in accordance with generally accepted professional geotechnical engineering principles and practice in Southern California at this time. We make no other warranty, either express or implied. Conclusions presented herein are based on review of work by others. No field exploration or laboratory testing was performed.

Please contact us if you have questions or need additional services.

Respectfully submitted,
WILLDAN GEOTECHNICAL



Ross Khiabani, PE, GE 2202
President/CEO

Distribution: Addressee
Roxanne Hughes, Willdan engineering



Appendix E
Hydrology Study



23401-23421 Mulholland Hwy.

Hydrology Study

City of Calabasas

Draft

March 28, 2012

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2. LACoDPW 2006 Hydrology Manual – Land Use and Percentage Impervious Table
3. Grading Plans
4. Existing Watershed Flow Rate and Volume Data
5. Proposed Watershed Flow Rate and Volume Data
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Nomenclature

'	feet	in	inch
"	inch	L_o	overland flow path length
<	less than	MAP	Mean annual precipitation
>	greater than	max	maximum
ac	acre	MEP	maximum extent practicable
ac-ft	acre - feet	mi	mile
APN	County Assessor's parcel number	min	minimum
ARC	antecedent runoff condition	misc	miscellaneous
BMPs	best management practices	msl	mean sea level
C	Rational Method runoff coefficient	MWC	municipal water company
Caltrans	California Department of Transportation	MWD	municipal water district
CDMG	California Division of Mines & Geology	NPDES	National Pollutant Discharge Elimination System
cfs	cubic feet per second	NRCS	National Resource Conservation Service
City	City of Calabasas	o.d.	outside diameter
CMP	corrugated metal pipe	O&M	Operations and maintenance
CN	SCS curve number	ped.	Pedestrian
Cnl	open channel	Q	flow quantity
Consultant	Diamond West, Inc.	Qty	quantity
County	County of Los Angeles	R.C.E.	California, Registered Civil Engineer
C_p	pan coefficient	RCP	reinforced concrete pipe
d/s	downstream	req'd	required
DWR	California Department of Water Resources	RWQCB	California Regional Water Quality Control Board
DSOD	California Department of Water Resources -- Safety of Dams	s	second
E	evaporation	SCS	Soil Conservation Service
EGL	energy grade line	sf	square feet
FEMA	Federal Emergency Management Agency	SFHA	FEMA, special flood hazard area
FIP	Finance and Implementation Plan	SUSMP	County, Standard Urban Storm Water Mitigation Plan
FIRM	Flood Insurance Rate Map	t_c	storm duration (time of concentration)
FIS	Flood Insurance Study	t_p	time from start of storm to peak runoff
ft	feet	t_r	rain storm duration
ft/s	feet per second	T	transmissivity
g	acceleration due to gravity	TR-20	SCS Technical Release Number 20
gpm	U.S. gallons per minute	TR-55	SCS Technical Release Number 55
gpd	U.S. gallons per day	u/s	upstream
gpd/ft ²	U.S. gallons per day per square foot	USACE	U.S. Army Corps of Engineers
H	total hydraulic head	USEPA	U.S. Environmental Protection Agency
h	horizontal	USGS	U.S. Geological Survey
HEC	Hydrologic Engineering Center	V	volume
HEC-	HEC-HMS Computer Program	v	vertical
HMS			
HEC-	HEC-RAS Computer Program	w.s.	water surface
RAS			
HGL	hydraulic grade line		
hr	hour		
i	rainfall intensity		
i_a	initial abstraction		
i.d.	inside diameter		
imp	impervious		



Executive Summary

The purpose of this report is to facilitate the planning and implementation of drainage infrastructure improvements to accommodate storm water runoff for the proposed residential project, located at 23401-23421 Mulholland Hwy. in the City of Calabasas.

This report includes an evaluation of existing land uses and existing drainage patterns. The results of this report will be the basis for subsequent storm drainage improvements solely for this project.

The site is located on the north side of Mulholland Hwy. between Park South St. and Old Topanga Canyon Rd. (Figure 1). The project is situated on Assessor's Parcel Numbers 2069-065-001, -002 and -003, which encompass 16.3 acres. The study area is 53.6 acres, which includes upstream offsite areas primarily to the northwest and north. The site is undeveloped and vegetated.

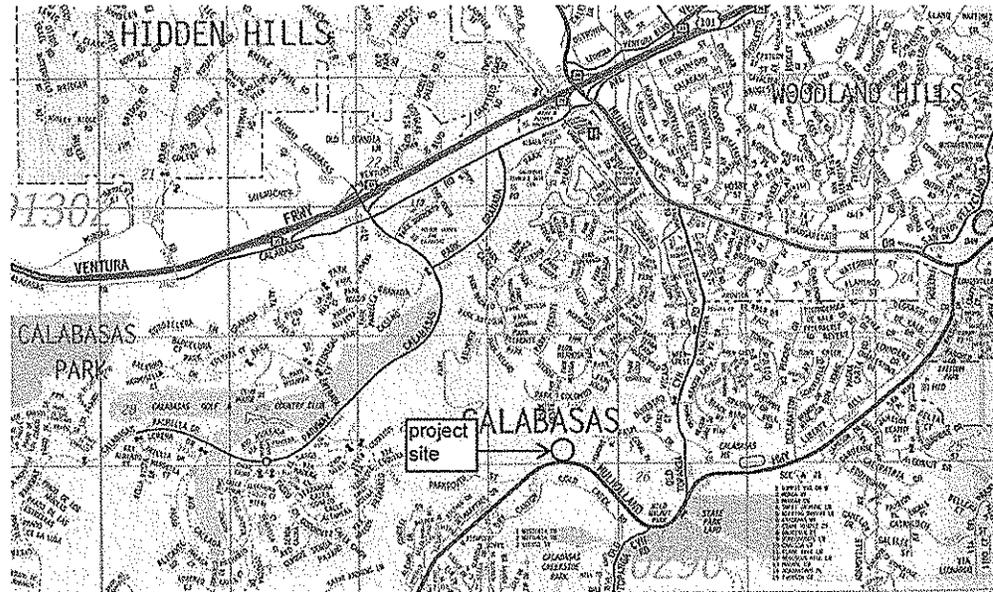
This report addresses the impacts from $\frac{3}{4}$ " (mitigated peak flow), 10-year, and 50-year, 24-hour design storm events. Its intended use is for the development of storm water runoff infrastructure solely for this project. Existing drainage areas and other characteristics are shown in Appendix 1. Land use and associated impervious percentages from the Los Angeles County 2006 Hydrology Manual are shown in Appendix 2.

Authorization

This report has been performed at the request of BSVERCOM, LLC, the property owner, to determine the existing drainage patterns and the drainage impacts from the proposed development on the study area. It is not the intent of this report to suggest remediation for any regional drainage issues outside of the project area.



Figure 1. Location Map



The following information is contained within this report:

1. A description of the existing drainage conditions for the study area.
2. A recommended drainage infrastructure plan showing the locations and sizes of the primary components of the drainage infrastructure that will be needed to accommodate or alleviate storm water runoff generated by the proposed project. Drainage infrastructure elements evaluated include:
 - storm drain pipes
 - storm water collection devices
 - storm water impoundments
 - storm water treatment devices
3. Watershed catchment boundaries and hydrologic information that support the drainage infrastructure plan. The County's Modified Rational (MODRAT) computer model has been used as the basis for hydrologic evaluations. Discharges expected at numerous key points of concentration have been estimated using the MODRAT computer model for the design storm events.
4. Hydraulic analyses that examine the functional characteristics of the proposed drainage infrastructure. The hydraulic capacities of the proposed storm drains have been evaluated using standard formulas. Volumetric analysis of runoff hydrographs have been evaluated using WMS.

5. Cost estimates for the components of the recommended drainage infrastructure plan(s) are provided under separate cover.

Study Approach

The project area currently surface drains in a southerly direction towards Mulholland Hwy. within two separate watersheds (West and East), each of which drains to separate culverts (MP 28.91 and 28.99, respectively) along the site frontage that cross under Mulholland Hwy. The project shall not adversely affect the hydrologic conditions of the surrounding properties.

Summary of objectives and hydrologic conditions

The proposed project includes three single family residences. The proposed study area will encompass the project site and adjacent areas to remain undisturbed that have historically drained onto the site. Proposed drainage areas are shown in Appendix 1, and grading and drainage plans are shown in Appendix 3. The main objective of this study is to design drainage infrastructure that will not significantly change the historic runoff patterns that are experienced by adjacent properties. The study area contains natural watersheds; therefore additional burning and bulking analyses are required.

Table 1. Pre- vs. Post-Development Runoff at West Culvert (4A/17A)

24-hour, design storm event	existing flow (cfs)	proposed flow (cfs)	existing volume (af)	proposed volume (af)
¾" (Qpm)	0.77	0.25	0.165	0.081
10-year	36.40	19.37	3.34	2.52
50-year	53.60	28.88	5.57	4.59
50-year burned	57.52	30.89	8.73	6.81
50-year bulked	95.5	51.3	-	-



Table 2. Pre- vs. Post-Development Runoff at East Culvert (11C/26E)

24-hour, design storm event	existing flow (cfs)	proposed flow (cfs)	existing volume (af)	proposed volume (af)
$\frac{3}{4}$ " (Qpm)	0.38	0.44	0.016	0.143
10-year	22.30	21.04	1.54	1.68
50-year	48.55	46.40	2.57	2.76
50-year burned	54.49	46.69	4.08	2.82
50-year bulked	90.5	77.5	-	-

Tables 1 and 2 show the existing and proposed runoff conditions from the project site. The flow and volume has increased slightly for the $\frac{3}{4}$ " storm, and the volume has also increased for the 10- and 50-years storms, likely due to the increased impervious areas of the projects. Based on the MODRAT model, a change in time of concentration (Tc) can change the flow rate and volume. The flow patterns in the proposed model are different from the existing flow patterns, which caused changes in the Tc.

Project Setting

The project is located in the City of Calabasas on the north side of Mulholland Hwy., between Park South St. and Old Topanga Canyon Rd. The study area is approximately 53.6 acres and encompasses the project site as well as adjacent offsite areas to the northwest and north. The existing land uses in the area include primarily residential.

**BASIS OF
CONTROL**

The horizontal coordinates shown herein are based on the California Coordinate System of 1983, Zone V in U.S. Survey Feet.

**EXISTING
WATERSHED
CHARACT-
ERISTICS**

The study area consists of 53.6 acres within two sub-watersheds. The watershed is defined by the topography surrounding the project site. The land uses within the study area are residential. The natural slopes within the area are moderate to steep with grades steeper than 1:1. Storm water runoff generated from the study area generally drains southerly as overland flow within the project site to two existing culverts at the project frontage along Mulholland Hwy.

Flood Insurance Study

The detailed study area is located on the following FEMA FIRMs:

Los Angeles County, California (and Incorporated Areas), community panel number 06037C1269F, September 26, 2008. According to this map, the northern portion of the study area is located in Zone X (Other Areas), which is defined as an area determined to be outside the 0.2% annual chance floodplain. The southern portion of the study area is located in Zone D, which is defined as an area in which flood hazards are undetermined, but possible.

Native Soil Type

The soil types within the study area were identified from the current County Hydrology Manual. Individual soil types are given unique values ranging from 1-180. All of the soil within the study area is Type 66 – Upper Los Angeles River (ULAR-14).

Proposed Drainage Study Approach

The purpose of this hydrology study is to facilitate the planning and implementation of drainage infrastructure improvements to accommodate storm water runoff in the general vicinity of the project area. Additional study objectives include:

- Provide study services consistent with City and County standards.



- Develop solutions that limit O&M costs.
- Involve City staff in the development and implementation of storm drainage solutions.
- Develop solutions that will minimize any disturbance to the City, County, and surrounding community.
- Site and operate storm drainage facilities in such a manner that minimizes adverse environmental impacts.

**DESIGN
ANALYSIS**

The approach to design process is to explore a range of solutions. The drainage design presented in this report has been developed based on evaluations of the following constraints:

- Watershed characteristics
- Topography
- Existing land use & its adaptability
- Location of transportation corridors
- Property boundaries & acquisition
- Logical points of drainage outfall
- Agency objectives
- Retrofitting opportunities
- Existing facilities
- Design level of protection
- Environmental impacts
- Financing (expenses)
- Structure relocation
- Operation and maintenance
- Regulatory compliance
- Agency compliance
- Hydrologic criteria
- Flexibility of service area
- Hydraulic capacities & characteristics

Formulation of the infrastructure design was characterized by an evaluation of all of the above constraints, their level of importance to the successful completion of the project, and their interrelationships with each other.

No provisions have been made for changes in future land use within the study area.



Proposed Drainage Description

In order to adequately evaluate the impacts and requirements of the proposed project, the existing drainage conditions were analyzed. Research efforts were made to identify any drainage studies that documented the existing drainage conditions for the study area. The results of these efforts did not find any study that adequately documented those conditions on-site. The purpose of this drainage study is to document the impacts of certain rainfall events on the study area. This information will be the basis of comparison between pre-development and post-development storm drainage infrastructure improvements.

This proposed drainage description will analyze the effects of the 3/4" (Qpm), 10-year, and 50-year, 24-hour storm events within the study area.

METHODOLOGY

Due to the need to accurately model a detention basin system, a hydrograph method was chosen to estimate the design storm runoff. The complex aspects of the sub-basin include consideration of available storage and varying times of travel. The Modified Rational Method, as defined in the current County Hydrology Manual was employed to generate the effective runoff within each sub-basin.

The County Hydrology Manual utilizes a Modified Rational Method approach for its hydrologic calculations. In general, the Rational Method is understood to provide peak discharge relative to rainfall intensity. It is not generally preferred in watershed catchments where ponding of storm water occurs. Additionally, it does not typically provide a reasonable relationship between peak storm water discharge and storm water runoff volume. This phenomenon can be seen in Figure 2. As seen on the synthetic rainfall distribution, the County method yields little runoff before or after the peak. This typically produces a sharp, narrow peak, which ultimately requires less storage volume for detention basin analysis. The runoff yield could be as low as 15%. Previous versions of the Manual required a minimum yield of 40%.

Because the MODRAT method is considered the 'standard of practice' for this area, it will be used to generate the project hydrology contained herein.

Equation 1. Rational Method

$$Q = CiA$$

Where

C	= runoff coefficient
i	= rainfall intensity (in/hr)
A	= drainage area (ac)

Equation 2. Manning Equation

$$V = \frac{1.486}{n} R^{2/3} S^{1/2}$$

Where

V	= average velocity (ft/s)
---	---------------------------



- n = pipe roughness coefficient
- R = hydraulic radius (ft)
- S = head loss per unit length of pipe (ft/ft)

The rainfall intensity was taken from County Standards. The runoff coefficient in the rational formula is dependent on the soil type, antecedent moisture condition, recurrence interval, land use, slope, amount of urban development, rainfall intensity, surface and channel roughness, and duration of storm. Equation 3 provides a relationship between all of these factors and was used to calculate the runoff coefficients.

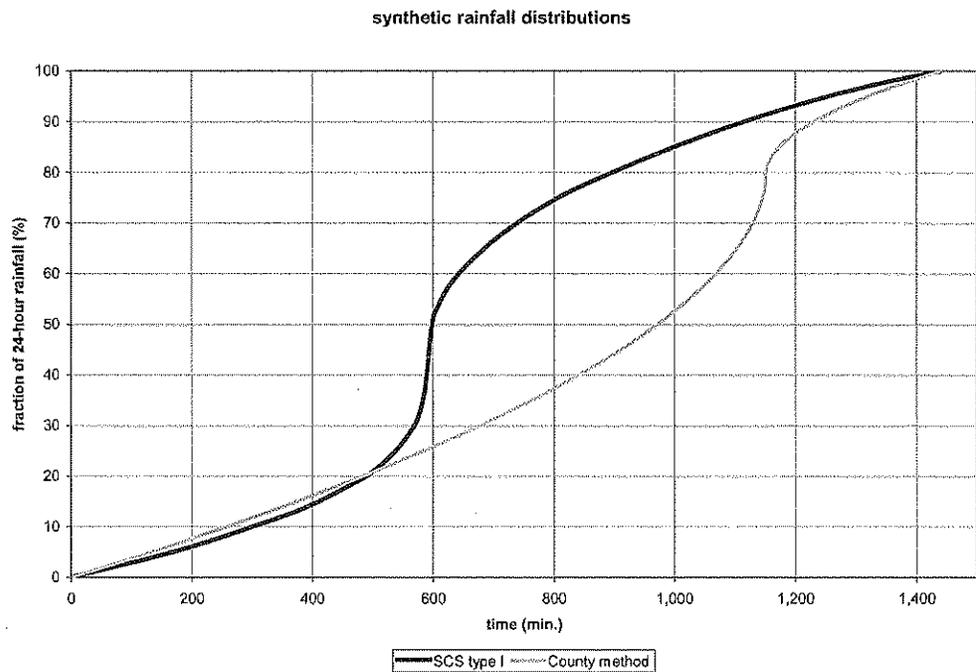
Equation 3. Rational Runoff Coefficient

$$C = 7.2(10^{-7})CN^3T^{0.05} \left[\left((0.01CN)^{0.6} \right) \right]^{-S^{0.2}} (0.001CN^{1.48})^{(0.15-0.11)} [(P+1)/2]^{0.7}$$

- Where
- CN = SCS composite curve number
 - T = recurrence interval (years)
 - S = average sub-basin land slope (%)
 - I = rainfall intensity of recurrence interval (in/hr)
 - P = percent impervious (decimal)

The average rainfall for the 50-year, 24-hour storm event for the study area per the County Hydrology Manual is approximately 7.8 inches.

Figure 2. Synthetic Rainfall Distribution Comparison



Hydrologic Model

The computer model MODRAT was used to simulate, combine, and route outflow hydrographs within each watershed. The simulation of the hydrologic data is generated by the development of the synthetic unit hydrograph, 50-year design storm pattern, and the runoff hydrograph. The total volume of runoff for both pre- and post-development can be increased 1-3% because the runoff is still occurring at the end of the design storm.

The development of the synthetic unit hydrograph involves the identification of several watershed characteristics including composite curve numbers, soil cover, percent impervious, antecedent moisture conditions, land use, basin area, initial abstractions, hydraulic length, basin slope, and lag time. These parameters are calculated in the following steps:

- The sub-basin watershed boundaries were delineated manually based on an aerial survey and the USGS map.
- Rainfall excess is that part of the total precipitation depth that appears as surface flow during and after a storm event. Rainfall excess equals to total rainfall depth minus losses due to interception by vegetation, infiltration into the soil, and surface depression storage. This process is defined internally in the MODRAT method. The information is based on:
 1. Soil data from the current County Hydrology Manual
 2. Zoning designations in the City and County
- The catchment time of concentration is defined as the time from the center of mass of net rainfall and the center of mass of runoff. The time of concentration for each sub-basin was identified from the County method. This method is shown in equation 4.

Equation 4. Time of Concentration

$$T_c = 10^{-0.507} * (C_d * I)^{-0.519} * L^{0.483} * S^{-0.135}$$

Where	T_c	= time of concentration in minutes
	C_d	= developed runoff coefficient
	I	= rainfall intensity in inches per hour
	L	= hydrologic length of the catchment in feet
	S	= average watershed land slope in feet per feet

- To adequately define the unit hydrograph, the unit time period of the synthetic critical storm pattern should generally be 30 percent of the basin time of concentration and should use multiples of 1 minute. The unit time period utilized in this report is 1 minute.



Time of Concentration (Tc)

The time of concentration is the necessary time it takes for runoff from the most distant point within a drainage area to reach the outlet point. The County’s MODRAT is heavily dependent on the time of concentration to determine a drainage area’s peak runoff value. Equation 4 presents the County’s Regression Equation that is used in the County’s Tc Calculator program.

There are two main methods in calculating the Tc: Kinematic Wave Theory and the Regression Equation. The kinematic wave theory calculates the Tc by separating the hydraulic length into two parts: overland flow and conveyance flow. The Tc is then determined by summing the individual Tc’s each type of flow. The County uses the newer Regression Equation method as it was derived from hundreds of studies using the kinematic wave theory. Additionally, a quick comparison between the kinematic wave method and the regression method using average slope and length yielded a difference of one minute in the Tc calculation, with the latter method being longer.

Burning and Bulking Analysis

As previously mentioned, there are some undeveloped areas subject to burning. Therefore, burning and hulking analyses were performed with results summarized in Table 1, and details shown in Appendices 4 and 5. Under existing conditions, all areas were burned. For the proposed conditions, Basins 1A, 16A and 24E were burned, with the remaining basins being fuel modification zones. Basin 1A discharges to a proposed debris/detention basin that can retain the entire 3,172 cy of debris produced in Basin 1A. This debris basin will require periodic maintenance. The project is reducing debris production by 45%, as shown in Table 3.

Table 3. 50-year storm event debris production

	<i>Pre-development</i>	<i>Post-development</i>
West (4A/17A)	4,093 cy	3,254 cy
East (11C/26E)	1,924 cy	74 cy

Flow Routing

Flow routing methods for storage areas (reservoirs), channel, and sheet flow were estimated from proposed dimensions and parameters. The Modified Puls method was used to route flow through storage areas. The MODRAT method was used to route flow through existing open channels and sub-basins. Proposed dimensions were used for all open channel routing. The discharge relationship from the storage areas used the Normal Depth method with similar dimensions. See Appendix 1, Exhibit C for a diagram of the entire watershed hydrologic model. See Tables 4A, 4B and 4C for detention rating tables and Tables 5A, 5B and 5C for post-development detention system results. See Appendix 6 for the detention basin routing tables.



Table 4A. Detention System Rating Table – West Culvert (4A/17A)

<i>Stage</i> (msl)	<i>Volume</i> (ac-ft)	<i>Discharge</i> (cfs)
1123.5 (bottom)	0.0	0.0
1124	0.0	0.0
1126	0.07	23.6
1128	0.19	40.9
1130	0.40	52.8
1132	0.74	62.5
1133	0.95	66.8
1134	1.21	162

Table 5B. Detention System Rating Table – East Culvert (11C/26E)

<i>Stage</i> (msl)	<i>Volume</i> (ac-ft)	<i>Discharge</i> (cfs)
1113.5 (bottom)	0.0	0.0
1114	0.0	0.0
1116	0.08	15.1
1117	0.14	21.4
1118	0.23	86.9

Table 6C. Detention System Rating Table – Proposed Basin (2A)

<i>Stage</i> (msl)	<i>Volume</i> (ac-ft)	<i>Discharge</i> (cfs)
1188	0.0	0.0
1190	0.63	0.0
1192	1.91	4.64
1194	3.60	11.2
1196	5.75	19.2
1197	5.75	38.45



Table 7A. Detention System Results – West Culvert

<i>Description</i>	<i>Detention Basin</i>
node	17A
drainage area (ac)	36.7
primary discharge type	orifice (30-inch pipe)
basin top elevation (msl)	1133
max. 50-yr., 24-hr. w.s. (msl)	1126.61
basin volume (ac-ft)	0.95
max. 50-yr., 24-hr. vol. (ac-ft)	0.11

Table 8B. Detention System Results – East Culvert

<i>Description</i>	<i>Detention Basin</i>
node	26E
drainage area (ac)	16.9
primary discharge type	orifice (24-inch pipe)
basin top elevation (msl)	1117
max. 50-yr., 24-hr. w.s. (msl)	1117.38
basin volume (ac-ft)	0.14
max. 50-yr., 24-hr. vol. (ac-ft)	0.17



Table 9C. Detention System Results – Proposed Basin

<i>Description</i>	<i>Detention Basin</i>
node	2A
drainage area (ac)	28.2
primary discharge type	orifice (36-inch riser with cut-outs)
basin top elevation (msl)	1196
max. 50-yr., 24-hr. w.s. (msl)	1193.2
basin volume (ac-ft)	19.2
max. 50-yr., 24-hr. vol. (ac-ft)	2.92

It should be recognized that detention volume was not designed nor intended to store the entire runoff volume for a 50-year/24-hour storm event. The detention volume is designed to attenuate storm water runoff to decrease post-development values to less than pre-development values. The discharge rating curves of the two existing basins were based on the orifice openings of the culverts. However, the discharge rating curves of the culverts may be less.

Hydraulic Model

The outlet for the proposed detention system at 2A will be a 36-inch riser with three rows each of eight 2"x6" cut-outs above the debris level, around the perimeter of the pipe.

Equation 5. Orifice Equation

$$Q = C * A * \sqrt{2 * g * H}$$

Where	Q	= discharge (cfs)
	C	= discharge coefficient (0.60)
	A	= orifice area (ft ²)
	g	= gravitational acceleration (32.2 ft/s ²)
	H	= effective head on the orifice measured from the centroid of the opening (ft)

Manning's Equation was used to simulate the hydraulic analysis of the proposed storm drainage conveyance system. The simulation of the hydraulic system utilized the design storm event.

ASSUMPTIONS

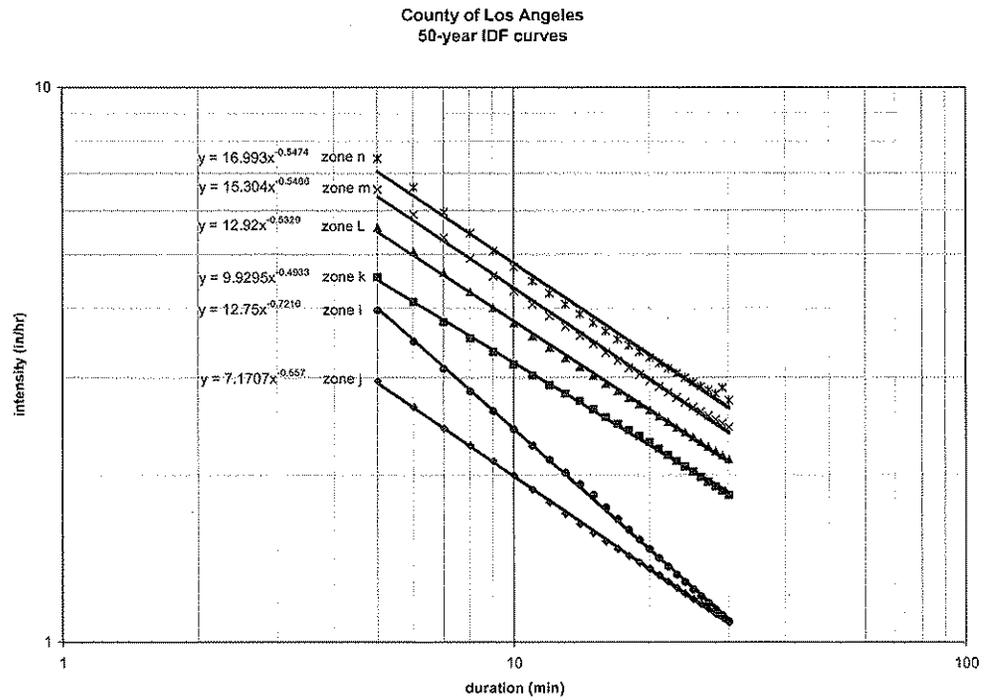
The rainfall and runoff parameters are based on the County Hydrology Manual and the County Design Standards.



Rainfall

According to the isohyetal rainfall map in the County Hydrology Manual, the study area has an average 50-year, 24-hour rainfall depth of about 7.8 inches.

Figure 3. IDF Curves



References

- 1) Brater, E.F. and King, H.W. (1976). *Handbook of Hydraulics*. 6th ed., McGraw-Hill, New York, NY.
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- 8) U.S. Geological Survey (1982). *Guidelines for Determining Flood Flow Frequencies, Bulletin No. 17B*, U.S. Department of the Interior, Reston, VA.
- 9) U.S. Geological Survey (1994). *Water-Resources Investigations Report 94-4002, Nationwide Summary of U.S. Geological Survey Regional Regression Equations for Estimating Magnitude and Frequency of Floods for Ungaged Sites, 1993*. U.S. Department of the Interior, Reston, VA.
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- 12) U.S. Soil Conservation Service (1986). *Urban Hydrology for Small Watersheds, Technical Release No. 55*. U.S. Department of Agriculture, Washington, D.C.
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Appendix 1

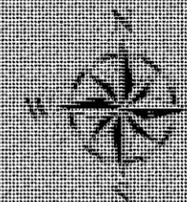
Exhibits

Exhibit A – Existing Drainage Areas

Exhibit B – Existing Land Uses

Exhibit C – Proposed Drainage Areas

Exhibit 2 Existing Land Use



Muholland Highway

LACDPW Land Use Data 2005

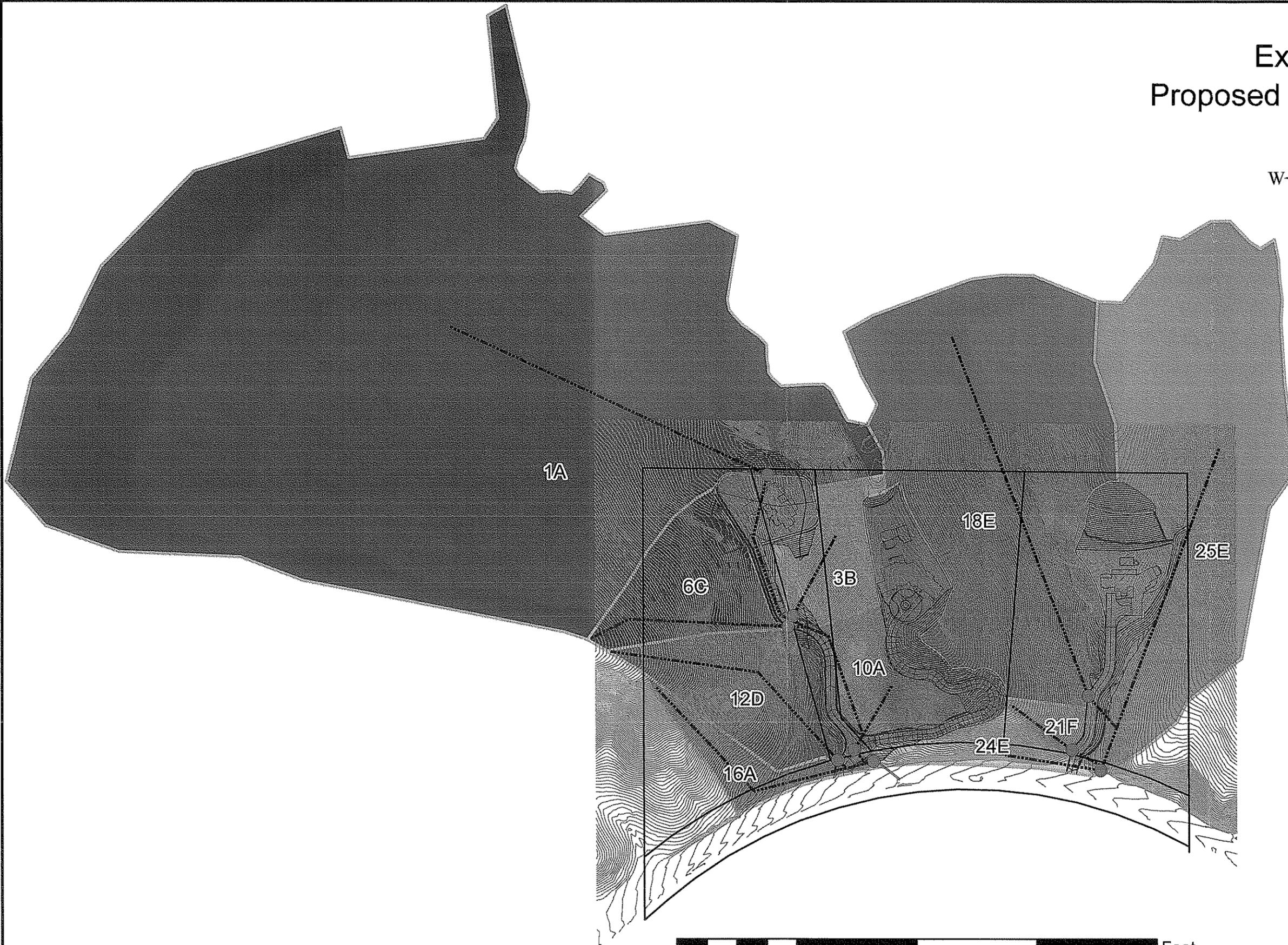
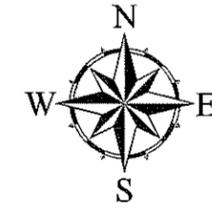
Existing Land Use

Land Use, Impervious Percentage

	Elementary Schools, 82%
	High-Density Single Family Residential, 42%
	Horse Ranches, 42%
	Junior or Intermediate High Schools, 82%
	Low-Density Single Family Residential, 21%
	Senior High Schools, 82%
	Vacant Undifferentiated, 1%
	Existing Lot Lines
	Existing Contours

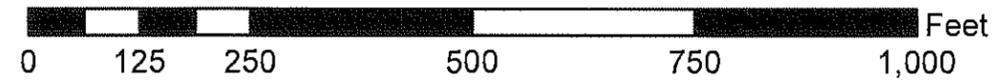


Exhibit 3 Proposed Drainage Area



Proposed Drainage Areas Drainage Area Name, Area (acres)

-  10A, 3.2
-  12D, 1.9
-  16A, 0.72
-  18E, 7.9
-  1A, 28.2
-  21F, 0.26
-  24E, 0.66
-  25E, 8.1
-  3B, 1.1
-  6C, 1.6
-  Proposed Drainage Reach Outlet
-  Proposed Drainage Reach
-  Existing Lot Lines
-  Existing Contours
-  Proposed Contours



Appendix 2
LACoDPW 2006 Hydrology Manual –
Appendix D
Proportion Impervious Data

Proportion Impervious Data

Code	Land Use Description	% Impervious
1111	High-Density Single Family Residential	42
1112	Low-Density Single Family Residential	21
1121	Mixed Multi-Family Residential	74
1122	Duplexes, Triplexes and 2-or 3-Unit Condominiums and Townhouses	55
1123	Low-Rise Apartments, Condominiums, and Townhouses	86
1124	Medium-Rise Apartments and Condominiums	86
1125	High-Rise Apartments and Condominiums	90
1131	Trailer Parks and Mobile Home Courts, High-Density	91
1132	Mobile Home Courts and Subdivisions, Low-Density	42
1140	Mixed Residential	59
1151	Rural Residential, High-Density	15
1152	Rural Residential, Low-Density	10
1211	Low- and Medium-Rise Major Office Use	91
1212	High-Rise Major Office Use	91
1213	Skyscrapers	91
1221	Regional Shopping Center	95
1222	Retail Centers (Non-Strip With Contiguous Interconnected Off-Street	96
1223	Modern Strip Development	96
1224	Older Strip Development	97
1231	Commercial Storage	90
1232	Commercial Recreation	90
1233	Hotels and Motels	96
1234	Attended Pay Public Parking Facilities	91
1241	Government Offices	91
1242	Police and Sheriff Stations	91
1243	Fire Stations	91
1244	Major Medical Health Care Facilities	74
1245	Religious Facilities	82
1246	Other Public Facilities	91
1247	Non-Attended Public Parking Facilities	91
1251	Correctional Facilities	91
1252	Special Care Facilities	74
1253	Other Special Use Facilities	86
1261	Pre-Schools/Day Care Centers	68
1262	Elementary Schools	82
1263	Junior or Intermediate High Schools	82
1264	Senior High Schools	82
1265	Colleges and Universities	47
1266	Trade Schools and Professional Training Facilities	91
1271	Base (Built-up Area)	65
1271.01	Base High-Density Single Family Residential	42
1271.02	Base Duplexes, Triplexes and 2-or 3-Unit Condominiums and T	55

Code	Land Use Description	% Impervious
1271.03	Base Government Offices	91
1271.04	Base Fire Stations	91
1271.05	Base Non-Attended Public Parking Facilities	91
1271.06	Base Air Field	45
1271.07	Base Petroleum Refining and Processing	91
1271.08	Base Mineral Extraction - Oil and Gas	10
1271.09	Base Harbor Facilities	91
1271.10	Base Navigation Aids	47
1271.11	Base Developed Local Parks and Recreation	10
1271.12	Base Vacant Undifferentiated	1
1272	Vacant Area	2
1273	Air Field	45
1274	Former Base (Built-up Area)	65
1275	Former Base Vacant Area	2
1276	Former Base Air Field	91
1311	Manufacturing, Assembly, and Industrial Services	91
1312	Motion Picture and Television Studio Lots	82
1313	Packing Houses and Grain Elevators	96
1314	Research and Development	91
1321	Manufacturing	91
1322	Petroleum Refining and Processing	91
1323	Open Storage	66
1324	Major Metal Processing	91
1325	Chemical Processing	91
1331	Mineral Extraction - Other Than Oil and Gas	10
1332	Mineral Extraction - Oil and Gas	10
1340	Wholesaling and Warehousing	91
1411	Airports	91
1411.01	Airstrip	10
1412	Railroads	15
1412.01	Railroads-Attended Pay Public Parking Facilities	91
1412.02	Railroads-Non-Attended Public Parking Facilities	91
1412.03	Railroads-Manufacturing, Assembly, and Industrial Services	91
1412.04	Railroads-Petroleum Refining and Processing	91
1412.05	Railroads-Open Storage	66
1412.06	Railroads-Truck Terminals	91
1413	Freeways and Major Roads	91
1414	Park-and-Ride Lots	91
1415	Bus Terminals and Yards	91
1416	Truck Terminals	91
1417	Harbor Facilities	91
1418	Navigation Aids	47
1420	Communication Facilities	82
1420.01	Communication Facilities-Antenna	2

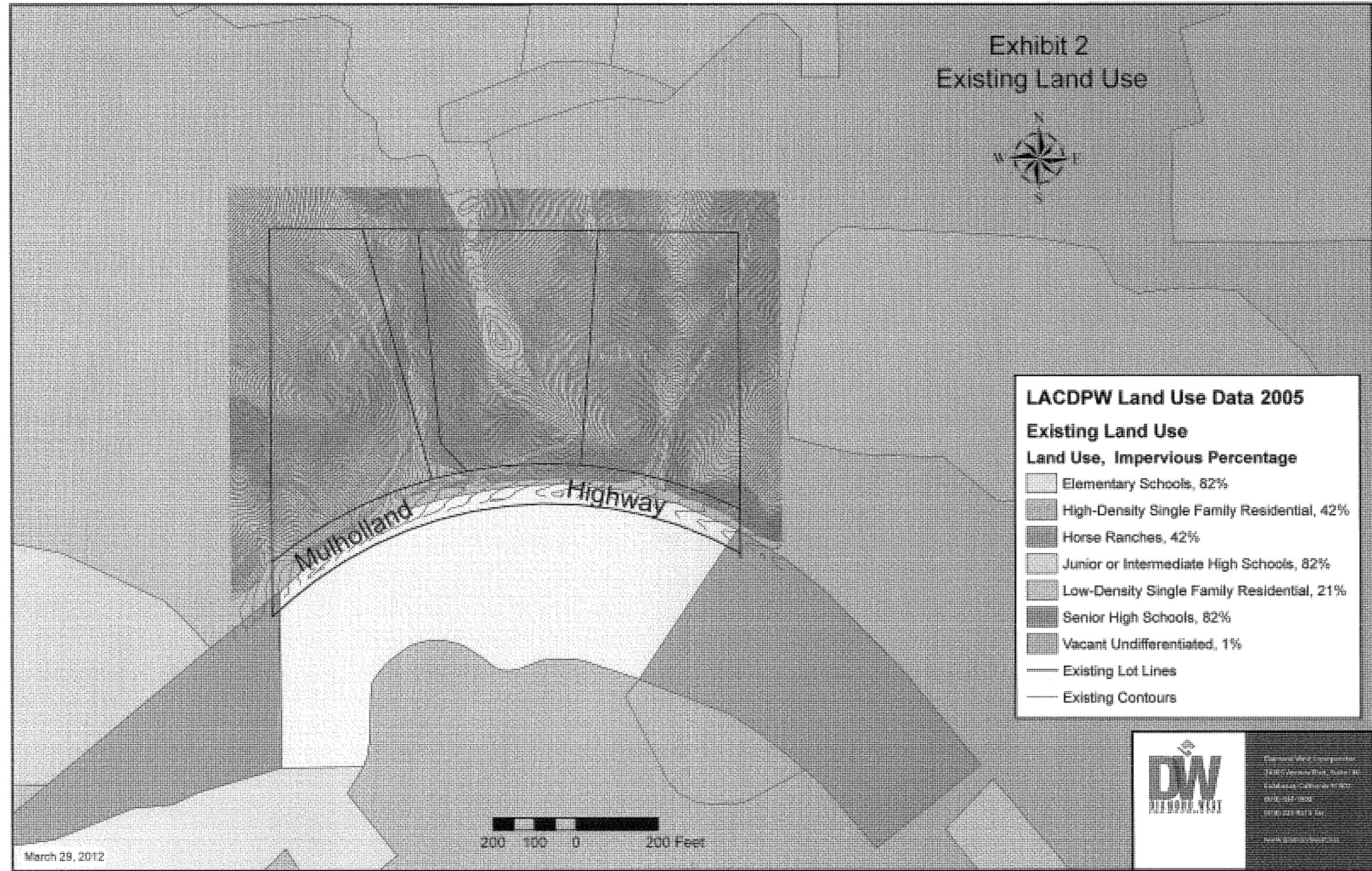
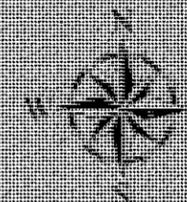
Code	Land Use Description	% Impervious
1431	Electrical Power Facilities	47
1431.01	Electrical Power Facilities-Powerlines (Urban)	2
1431.02	Electrical Power Facilities-Powerlines (Rural)	1
1432	Solid Waste Disposal Facilities	15
1433	Liquid Waste Disposal Facilities	96
1434	Water Storage Facilities	91
1435	Natural Gas and Petroleum Facilities	91
1435.01	Natural Gas and Petroleum Facilities-Manufacturing, Assembly, and In	91
1435.02	Natural Gas and Petroleum Facilities-Petroleum Refining and Processing	91
1435.03	Natural Gas and Petroleum Facilities-Mineral Extraction – Oil and Gas	10
1435.04	Natural Gas and Petroleum Facilities-Vacant Undifferentiated	1
1436	Water Transfer Facilities	96
1437	Improved Flood Waterways and Structures	100
1440	Maintenance Yards	91
1450	Mixed Transportation	90
1460	Mixed Transportation and Utility	91
1460.01	Mixed Utility and Transportation-Improved Flood Waterways and Structures	100
1460.02	Mixed Utility and Transportation-Railroads	15
1460.03	Mixed Utility and Transportation-Freeways and Major Roads	91
1500	Mixed Commercial and Industrial	91
1600	Mixed Urban	89
1700	Under Construction (Use appropriate value)	91
1810	Golf Courses	3
1821	Developed Local Parks and Recreation	10
1822	Undeveloped Local Parks and Recreation	2
1831	Developed Regional Parks and Recreation	2
1832	Undeveloped Regional Parks and Recreation	1
1840	Cemeteries	10
1850	Wildlife Preserves and Sanctuaries	2
1850.01	Wildlife-Commercial Recreation	90
1850.02	Wildlife-Other Special Use Facilities	86
1850.03	Wildlife-Developed Local Parks and Recreation	10
1860	Specimen Gardens and Arboreta	15
1870	Beach Parks	10
1880	Other Open Space and Recreation	10
2110	Irrigated Cropland and Improved Pasture Land	2
2120	Non-Irrigated Cropland and Improved Pasture Land	2
2200	Orchards and Vineyards	2
2300	Nurseries	15
2400	Dairy, Intensive Livestock, and Associated Facilities	42
2500	Poultry Operations	62
2600	Other Agriculture	42
2700	Horse Ranches	42

Code	Land Use Description	% Impervious
3100	Vacant Undifferentiated	1
3200	Abandoned Orchards and Vineyards	2
3300	Vacant With Limited Improvements (Use appropriate value)	42
3400	Beaches (Vacant)	1
4100	Water, Undifferentiated	100
4200	Harbor Water Facilities	100
4300	Marina Water Facilities	100
4400	Water Within a Military Installation	100

Appendix 3

Grading and Drainage Plans

Exhibit 2 Existing Land Use



LACDPW Land Use Data 2005

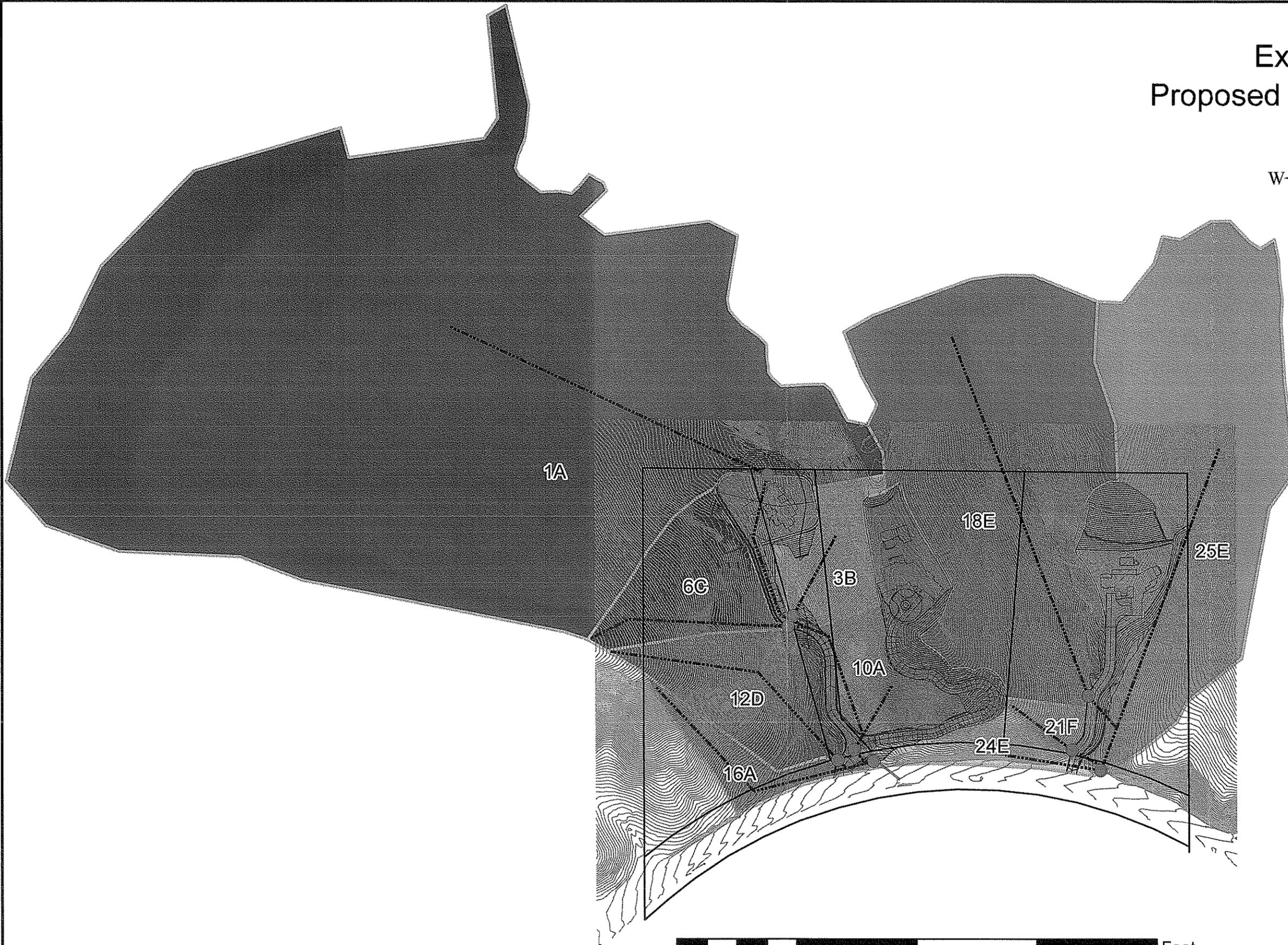
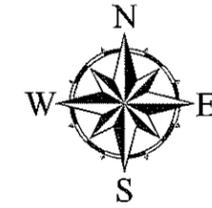
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	Existing Contours

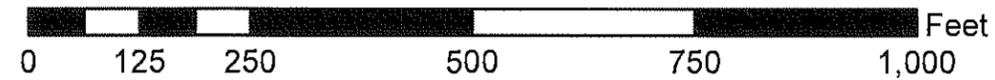


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Appendix F



Visual Simulations



TREE LEGEND
 ALL TREES ARE STANDARD

SYMBOL	BOTANIC NAME - COMMON NAME	QUANTITY AND SIZE	LOW
	LASENSTROEMIA L. 'VATCHEZ'	24 INCH BOX	LOW
	LAURIS NOBILIS	24 INCH BOX	LOW
	OLEA E. 'MISSION OLIVE'	48 INCH BOX	LOW
	QUERCUS AGRIFOLIA	COAST LIVE OAK	15 GAL



- NOTES:**
1. NO PLANTS WILL REQUIRE SHEARING
 2. NO INVASIVE PLANTS ON SITE
 3. 15% OF DROUGHT TOLERANT PLANTS PER HUGGELS LIST
 4. ALL BEDS TO RECEIVE 3" MULCH AND SOIL AMENDED WITH 2" COMPOST OR PER SOIL ANALYSIS
 5. IRRIGATION SYSTEM WILL BE LOW FLOW HEADS WITH MATCHED PERGIRATION RATE, RAIN SHUT OFF AND SMART CONTROLLER.
 6. PLANTS WILL BE GROUPED IN HYDROZONES WITH LIKE WATERING REQUIREMENTS.

PRELIMINARY LANDSCAPE PLAN

SCALE: 1" = 30'-0"

**MULHOLLAND CALABASAS
 PHOTO SIMULATION KEY MAP**

1

3

2





