GROUP **Family** ***Scientific Name***	**Common Name**
Fabaceae (Legume Family)	
Acmispon americanus var. *americanus*	Spanish clover
Acmispon glaber	deerweed
Lupinus bicolor	dove lupine
Trifolium willdenovii	tomcat clover
**Vicia* sp.	vetch
Fagaceae (Oak Family)	
Quercus agrifolia	coast live oak
Quercus berberidifolia	scrub oak
Quercus lobata	valley oak
Geraniaceae (Geranium Family)	
**Erodium botrys*	long-beaked filaree
**Erodium cicutarium*	red-stemmed filaree
Grossulariaceae (Gooseberry Family)	
Ribes speciosum	fuchsia-flowered gooseberry
Juglandaceae (Walnut Family)	
Juglans californica	California black walnut
Lamiaceae (Mint Family)	
**Marrubium vulgare*	horehound
Salvia columbariae	chia
Salvia leucophylla	purple sage
Trichostema lanceolatum	vinegar weed
Malvaceae (Mallow Family)	
Malacothamnus fasciculatus	bush mallow
Montiaceae (Miner's Lettuce Family)	
Calandrinia ciliata	red maids
Myrsinaceae (Myrsine Family)	
**Anagallis arvensis*	scarlet pimpernel
Onagraceae (Evening-Primrose Family)	
Camissoniopsis intermedia	intermediate sun cup
Clarkia bottae	Botta's clarkia
Clarkia epilobioides	willow herb clarkia
Clarkia purpurea	purple clarkia
Clarkia unguiculata	elegant clarkia
Paeoniaceae (Peony Family)	
Paeonia californica	California peony
Phrymaceae (Lopseed Family)	
Mimulus aurantiacus	bush monkeyflower
Plantaginaceae (Plantain Family)	
Collinsia heterophylla	Chinese houses
Keckiella cordifolia	heartleaf penstemon
Penstemon heterophyllus	foothill penstemon

GROUP Family *Scientific Name*	Common Name
Plantago erecta	California plantain
Polemoniaceae (Phlox Family)	
Gilia sp.	gilia
Microsteris gracilis	slender phlox
Navarretia ojaiensis	Ojai navarretia
Polygonaceae (Buckwheat Family)	
Chorizanthe staticoides	Turkish rugging
Eriogonum elongatum	wand buckwheat
Eriogonum fasciculatum	California buckwheat
**Polygonum aviculare* ssp. *depressum*	prostrate knotweed
**Rumex crispus*	curly dock
Ranunculaceae (Buttercup Family)	
Delphinium parryi ssp. *parryi*	Parry's larkspur
Rhamnaceae (Buckthorn Family)	
Ceanothus cuneatus	buck brush
Rhamnus ilicifolia	hollyleaf redberry
Rosaceae (Rose Family)	
Adenostoma fasciculatum	chamise
Cercocarpus betuloides	birch-leaf mountain mahogany
Heteromeles arbutifolia	toyon
Rubiaceae (Madder Family)	
Galium angustifolium	narrowleaf bedstraw
Galium nuttallii	San Diego bedstraw
Scrophulariaceae (Figwort Family)	
**Verbascum virgatum*	wand mullein
Solanaceae (Nightshade family)	
Solanum xanti	purple nightshade
Viscaceae (Mistletoe Family)	
Phoradendron villosum	oak mistletoe
Zygophyllaceae (Caltrop Family)	
**Tribulus terrestris*	puncture vine
FLOWERING PLANTS-MONOCOTS	
Agavaceae (Century Plant Family)	
Hesperoyucca whipplei	chaparral yucca
Iridaceae (Iris Family)	
Sisyrinchium bellum	blue-eyed grass
Liliaceae (Lily Family)	
Calochortus catalinae	Catalina mariposa lily
Calochortus clavatus var. *pallidus*	yellow mariposa lily
Poaceae (Grass Family)	
**Avena barbata*	slender wild oat
**Avena fatua*	common wild oat
**Bromus diandrus*	ripgut brome
**Bromus hordeaceus*	soft chess
**Bromus madritensis* ssp. *rubens*	red brome

GROUP **Family** ***Scientific Name***	**Common Name**
Elymus glaucus	blue wildrye
Festuca microstachys	small fescue
**Festuca myuros*	rat-tail fescue
**Hordeum murinum*	foxtail barley
Melica californica	California melic
Melica imperfecta	coast melic grass
**Schismus barbatus*	Mediterranean grass
Stipa lepida	foothill needlegrass
Stipa pulchra	purple needlegrass
Themidaceae (Brodiaea Family)	
Bloomeria crocea	golden stars
Dichelostemma capitatum	blue-dicks

Aerial Source: GoogleEarth Pro, Aug. 27, 2013.

Legend

- Existing Property Line
- Proposed Property Line
- Zone E/G Boundary
- Landscaping Boundary
- Limits of Grading/Construction
- Limits of Fuel Modification (200-Foot Buffer of Proposed Structures)

Special-Status Plant Species *

- Lyon's Pentachaeta (*Pentachaeta lyonii*)
- Agoura Hills Dudleya (*Dudleya cymosa* ssp. *agourensis*)
- Ojai Navarretia (*Navarretia ojaiensis*)
- Ojai Navarretia (*Navarretia ojaiensis*)

Locally Rare Species *

- Linear-leaf Goldenbush (*Ericameria linearifolia*)

* The number denotes the quantity of individual plants found at that location.

AGOURA CORNERSTONE MIXED-USE PROJECT

ENVICOM CORPORATION

Spring 2014 Rare Plant Survey

0 50 100 Feet

SCALE 1

Photo 1A – Agoura Hills dudleya (*Dudleya cymosa* ssp. *agourensis*) is shown in bloom at the site in May 2014. The Agoura Hills dudleya is listed as Threatened under the Federal Endangered Species Act.

Photo 1B – The occurrence of Agoura Hills dudleya at the site is restricted to the steep gully shown in this photo, which is located near the southwestern property boundary.

Photo 1C – One (1) Lyon's pentachaeta (*Pentachaeta lyonii*) plant was found at the site in a patch of non-native grassland surrounded by scrub oak chaparral. Lyon's pentachaeta is listed as Endangered under the Federal and California Endangered Species Acts.

Photo 1D – The patch of non-native grassland where the Lyon's pentachaeta plant was found is shown. Seventy-three (73) Ojai navarretia (*Navarretia ojaiensis*) were also found in this area.

Photo 1E – An Ojai navarretia is shown in bloom at the site in May 2014. This species was previously thought to have all white flowers, but it is now recognized that some populations of Ojai navarretia contain plants with blue and white flowers (i.e., blue corolla lobes and white throats). Originally found in the Ojai, California area, this species has now also been found at several locations in the Santa Monica Mountains.

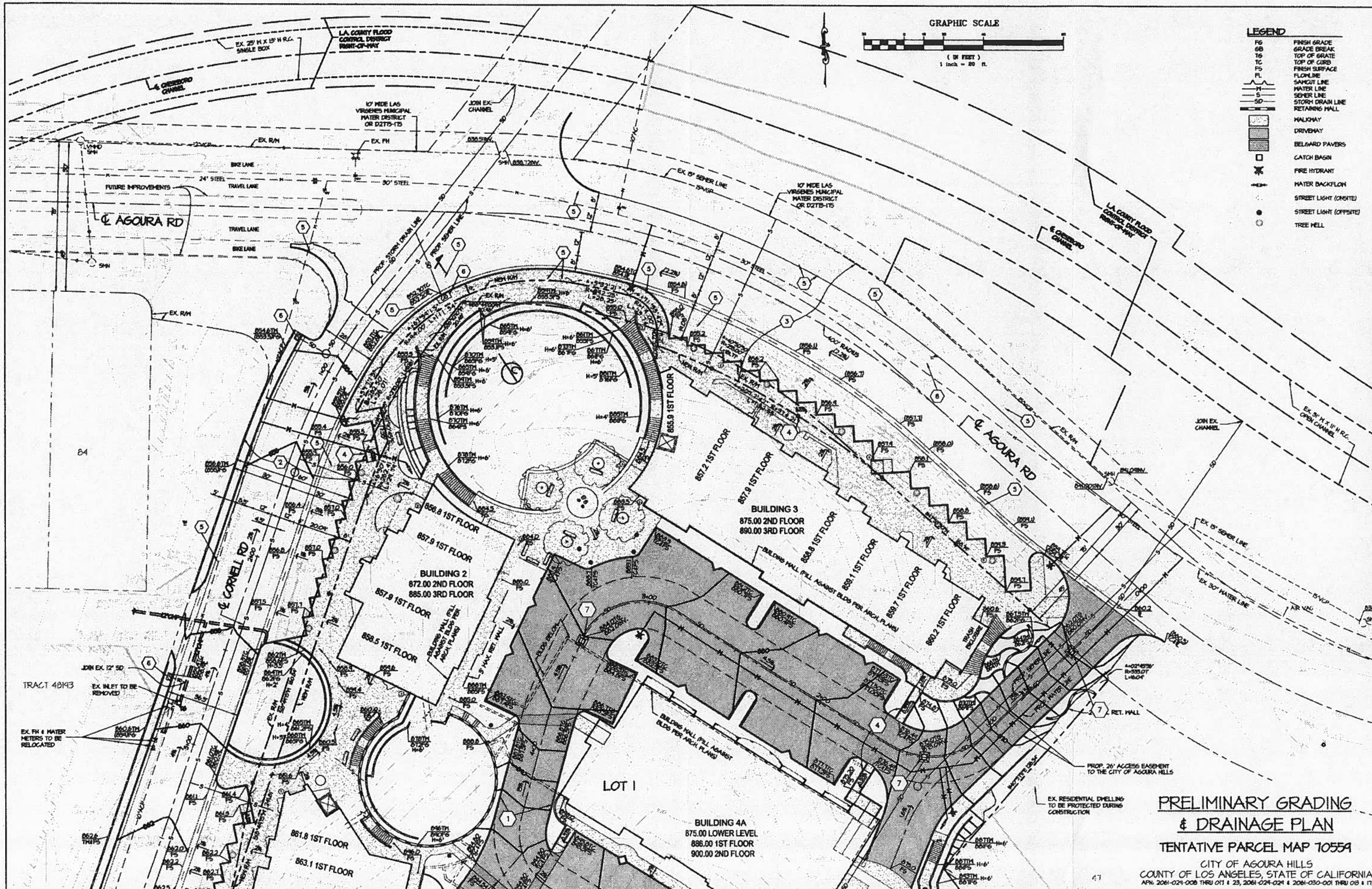
Photo 1F – Ojai navarretia was found at the site within a dirt roadbed and within non-native grassland habitats along the margins of scrub oak chaparral, such as at the location shown in this photo.

AGOURA CORNERSTONE MIXED-USE PROJECT

ENVICOM CORPORATION

Representative Photos of Special-Status Plants and Occupied Habitat

PLATE 1


GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
LEGEND
FG FINISH GRADE
GB GRADE BREAK
TG TOP OF GRATE
TC TOP OF CURB
FS FINISH SURFACE
FL FLOWLINE
SAWCUT LINE
WATER LINE
SEWER LINE
STORM DRAIN LINE
RETAINING WALL
WALKWAY
DRIVEWAY
BELGARD PAVERS
CATCH BASIN
FIRE HYDRANT
WATER BACKFLOW
STREET LIGHT (ONSITE)
STREET LIGHT (OFFSITE)
TREE WELL
L.A. COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY
EX. 25' W X 13' H R.C. SINGLE BOX
℄ CHESEBORO CHANNEL
10' WIDE LAS VIRGENES MUNICIPAL WATER DISTRICT OR D2715-115
JOIN EX. CHANNEL
EX. R/W
EX. FH
24' STEEL
30" STEEL
FUTURE IMPROVEMENTS
TRAVEL LANE
BIKE LANE
℄ AGOURA RD
EX. 15" SEWER LINE
PROP. STORM DRAIN LINE
PROP. SEWER LINE
400' RADIUS
855.9 1ST FLOOR
856.8 1ST FLOOR
857.9 1ST FLOOR
BUILDING 2
872.00 2ND FLOOR
885.00 3RD FLOOR
857.9 1ST FLOOR
858.5 1ST FLOOR
BUILDING WALL (FILL AGAINST BLDG PER ARCH. PLANS)
5' MAX. RET. WALL
857.2 1ST FLOOR
857.9 1ST FLOOR
BUILDING 3
875.00 2ND FLOOR
890.00 3RD FLOOR
858.8 1ST FLOOR
859.1 1ST FLOOR
859.7 1ST FLOOR
860.2 1ST FLOOR
TRASH ENCLOSURE
BUILDING WALL (FILL AGAINST BLDG PER ARCH. PLANS)
EX. 51' W X 11' H R.C. OPEN CHANNEL
EX. 30" WATER LINE
AIR VAC
84
℄ CORNELL RD
JOIN EX. 12" SD
EX. INLET TO BE REMOVED
TRACT 48193
EX. FH & WATER METERS TO BE RELOCATED
861.8 1ST FLOOR
863.1 1ST FLOOR
LOT 1
BUILDING 4A
875.00 LOWER LEVEL
886.00 1ST FLOOR
900.00 2ND FLOOR
RET. WALL
PROP. 26' ACCESS EASEMENT TO THE CITY OF AGOURA HILLS
EX. RESIDENTIAL DWELLING TO BE PROTECTED DURING CONSTRUCTION

PRELIMINARY GRADING & DRAINAGE PLAN

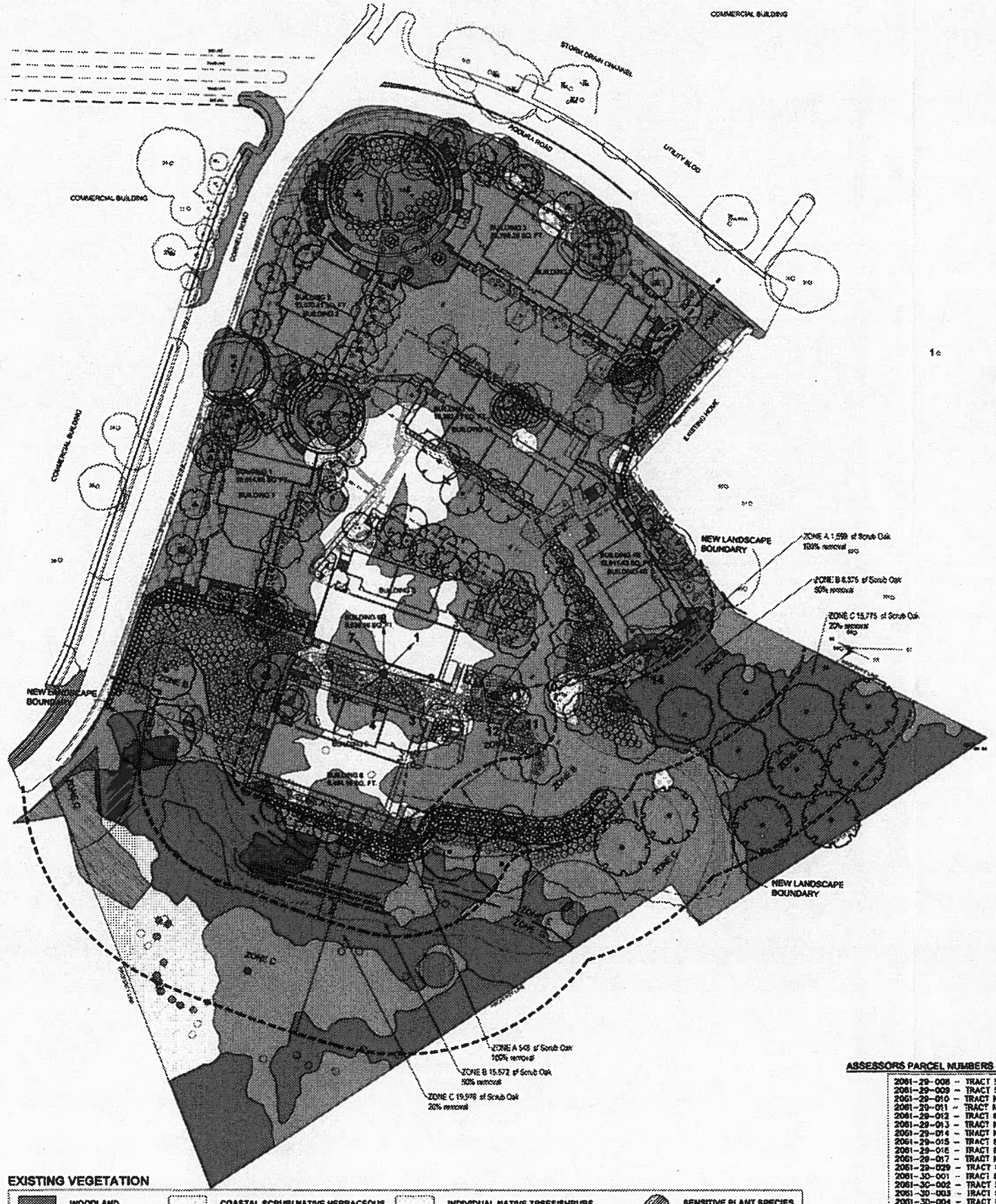
TENTATIVE PARCEL MAP 70559

CITY OF AGOURA HILLS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA
APN: 2061-029-008 THRU 011 & 23, 2061-029-029 & 2061-030-001 THRU 08 & 17

47

JOB 3305

SHEET 3 OF 6



EXISTING VEGETATION

WOODLAND
- -Quercus lobata
- -Quercus agrifolia

CHAPARRAL
- -Cercocarpus betuloides
- -Heteromeles arbutifolia
- -Quercus berberidifolia

COASTAL SCRUB
- -Salvia leucophylla

COASTAL SCRUB/ NATIVE HERBACEOUS
- -Selaginella bigelovii
- -Eriogonum fasciculatum

NATIVE HERBACEOUS
- -Stipa pulchra

NON-NATIVE HERBACEOUS
- - Non-native grasses and forbs

INDIVIDUAL NATIVE TREES/SHRUBS
- -Juglans californica -Quercus lobata
- -Quercus agrifolia -Sambucus nigra spp. caerulea
- -Quercus berberidifolia -Heteromeles arbutifolia

SENSITIVE PLANT SPECIES
- -Dudleya cymosa agourensis
- -Navarretia ojaiensis
- -Pentachaeta lyonii

ASSESSMENT FOR FUEL MODIFICATION PLAN

Zone A - Setback Zone
- Extends 20 feet beyond the edge of any combustible structure, accessory structure, appendage or projection. Overhangs or other parts of the structure not accurately reflected on the plans may negate the approval of plant location on the approved plan.
- Irrigation by automatic or manual systems shall be provided to landscaping to maintain healthy vegetation and fire resistance
- Landscaping and vegetation in this zone shall consist primarily of green lawns, ground covers not exceeding 6 inches in height, and adequately spaced shrubs. The overall characteristics of the landscape shall provide adequate defensible space in a fire environment.
- Plants in Zone A shall be inherently highly fire resistant and spaced appropriately. Species selection should be made referencing the Fuel Modification Plant List. Other species may be utilized subject to approval. Final or revised Plans submitted after 6 months from the initial submittal will have plants in all zones evaluated based on the most current *Fuel Modification Plant List* available from the Fuel Modification Unit.
- Except for dwarf varieties or mature trees small in stature, trees are generally not recommended within Zone A
- Target species will typically not be allowed within 30 or more feet of combustible structures and may require removal if existing on site.
- Vines and climbing plants shall not be allowed on any combustible structure requiring review

Zone B - Irrigated Zone
- Extends from the outermost edge of Zone A to 100 feet from structure.
- Irrigation by automatic or manual systems shall be provided to landscaping to maintain healthy vegetation and fire resistance.
- Landscaping and vegetation in this zone shall typically consist primarily of green lawns, ground covers, and adequately spaced shrubs and trees
- Unless otherwise approved, Ground covers shall be maintained at a height not to exceed 6 inches in Zone B, 12 inches is acceptable within 50 feet of a structure and 18 inches beyond 50 feet in Zone B if it is on a slope. The overall characteristics of the landscape shall provide adequate defensible space in a fire environment. Specimen native plants may be approved to remain if properly maintained for adequate defensible space. Annual grasses and weeds shall be maintained at a height not to exceed 3 inches.
- Plants in Zone B shall typically be fire resistant and spaced appropriately. Species selection should be made referencing the Fuel Modification Plant List. Other species may be utilized subject to approval.
- Vegetation in this zone may consist of modified existing native plants, adequately spaced ornamental shrubs and trees, or both. There may also be replacement landscape planting with ornamental or native species to meet minimum slope coverage requirements of City or County agencies or other Landscape or Hillside ordinances. In all cases the overall characteristics of the landscape shall provide adequate defensible space in a fire environment
- Target species will typically not be allowed within 30 or more feet of combustible structures and may require removal if existing on site. This distance may extend to 50 feet if the situation dictates.
- Irrigation systems are not required for this zone if it consists entirely of native plants. (Native plants are generally not compatible with regular, un-seasonal supplemental water.)
- All trees, unless otherwise approved, shall be planted far enough from structures and Fire Department accesses as to not overhang any structure or access at maturity.

Zone C - Native Brush Thinning Zone
- Extends from the outermost edge of Zone B up to 200 feet from structure or to property line
- Required thinning and clearance will be determined upon inspection. Required clearance may increase to the maximum allowed by the Fire Code as needed because of vegetation growth
- Irrigation systems are not required for this zone if it consists entirely of native plants. (Native plants are generally not compatible with regular, un-seasonal supplemental water.)
- Vegetation in this zone may consist of modified existing native plants, adequately spaced ornamental shrubs and trees, or both. There may also be replacement landscape planting with ornamental or native species to meet minimum slope coverage requirements of City or County agencies or other Landscape or Hillside ordinances. In all cases the overall characteristics of the landscape shall provide adequate defensible space in a fire environment
- Plants in Zone C shall be spaced appropriately. Existing native vegetation shall be modified by thinning and removal of those species constituting a fire risk. These species include, but are not limited to chamise, sage, sage brush, and buckwheat.
- Annual grasses and weeds shall be maintained at a height not to exceed 3 inches.
- General spacing for existing native shrubs or groups of shrubs is 15 feet between canopies. Native plants may be thinned by reduced amounts as the distance from development increases
- General spacing for existing native trees or groups of trees is 30 feet between canopies. This distance may increase or decrease depending on the slope, arrangement of the trees in relation to slope, and the species of tree

Fire Access Road Zone
- Extends a minimum of 10 feet from the edge of any public or private roadway that may be used as access for fire-fighting apparatus or resources.
- Clear and remove flammable growth for a minimum of 10 feet on each side of Fire Access Roads. (Fire Code 325.10) Additional clearance beyond 10 feet may be required upon inspection
- Fire access roads, driveways and turnarounds shall be maintained in accordance with fire code. Fire Access Roads shall have unobstructed vertical clearance for a width of 20 feet. (Fire Code 503.2.1)
- Landscaping and native plants within the Fire Access Road Zone shall be appropriately spaced and maintained to provide safe egress in wildland fire environments.
- All trees, unless otherwise approved, shall be planted far enough from structures and Fire Department accesses as to not overhang any structure or access at maturity

Maintenance

Routine maintenance shall be regularly performed in all zones. Requirements include but are not limited to those items in the Fuel Modification Guidelines and those outlined below:
- Removal or thinning of undesirable combustible vegetation and removal of dead or dying landscaping to meet minimum brush clearance requirements.
- Pruning and thinning to reduce the overall fuel load and continuity of fuels.
- Fuel loads shall be reduced by pruning lower branches of trees and tree-form shrubs to 1/3 of their height, or 6 feet from lowest hanging branches to the ground, to help prevent fire from spreading and make maintenance easier. Trees with understory plants should be limbed up at least three times the height of the underlying vegetation or up to a height of 40 feet, whichever is less, to help prevent fire from spreading upward into the crown.
- Accumulated plant litter and dead wood shall be removed. Debris and trimmings produced by thinning and pruning should be removed from the site or chipped and evenly dispersed in the same area to a maximum depth of 6 inches
- All invasive species and their parts should be removed from the site.
- Manual and automatic irrigation systems shall be maintained for operational integrity and programming. Effectiveness should be regularly evaluated to avoid over or under-watering.
- Compliance with the Fire Code is a year-round responsibility. Enforcement will occur following inspection by the Fire Department. Annual inspections for brush clearance code requirements are conducted following the natural drying of grasses and fine fuels, between the months of April and June depending on geographic region. Inspection for compliance with an approved Fuel modification Plan may occur at any time of year.
- Brush Clearance enforcement issues on adjacent properties should be directed to the County of Los Angeles Fire Department's Brush Clearance Unit at (626) 969-2375
- All future plantings shall be in accordance with the County of Los Angeles Fire Department Fuel Modification Guidelines and approved prior to installation. Changes to the approved plan which require an additional plan review will incur a plan review fee.
- Questions regarding landscape planning and maintenance with regard to fire safety should be directed to the Fire Department's Fuel Modification Unit at (626) 969-5208.

Maintenance Associated with Sensitive Biological Resources

High Value Coastal Sage Scrub and Scrub Oak/ Scrub Oak Habitat
- Clearance and thinning activities will consist of removing the dead wood present on the individual shrubs, the removal of the lower 1/ 3 of the established shrubs annually prior to fire season
- The amount of material removed during clearance and thinning activities shall be reduced as the distance from structures increases. Accordingly, coastal sage scrub and scrub oak habitat present in Zone A will receive the greatest amount of thinning and those in Zone C the least
- Accumulated plant litter, dead material, and weeds present beneath shrubs and within the canopy gaps shall be removed routinely and dispersed off-site.

Individual Oaks/Oak Woodland
- Maintenance activities related to Oak trees shall be limited to deadwood removal from the ground and canopy (after July 1 when valley oaks are in full leaf and live oaks are semi dormant).
- Weeds present beneath the understory shall be removed routinely and dispersed off-site.
- Oaks should be limbed up to a minimum of 6 feet above bare ground or 3 times the height of understory vegetation.
- Exotic species control will require both hand removals and weed-whipping in areas with dense infestations. No weed-whipping equipment shall be used near the oak trunks.

Long Term Maintenance Agreement

The property owner(s) agree to be responsible for the long-term maintenance of this Fuel Modification plan, as described herein. A Covenant & Agreement identifying the applicable Fuel Modification Plan will be recorded on the parcel(s) or CC&R's approved, prior to occupancy being granted. Notification of Fuel Modification requirements is to be made upon sale to new owners. Proposed changes to the Final Fuel Modification plan must be submitted to the Fuel Modification Unit for approval, prior to implementation. Plans will be reviewed based on the current plant list. Regular inspections will be performed by the Fire Department to ensure compliance with the approved plan. Failure to comply with the Fuel Modification Plan requirements may result in an Administrative Fine of at least $500 per violation, as well as possible liens, assessments, and legal action. Violations may also be corrected at the owners expense with the cost placed on the property tax bill with the addition of an Abatement Enforcement Cost of $648.

Name (Print) _____ Signature _____ Date _____

Name (Print) _____ Signature _____ Date _____

Approval of this Fuel Modification Plan constitutes approval for only those Codes reviewed as part of the Fuel Modification process and does not replace the needed approval of any other office or agency with jurisdiction and review responsibility for those items which may or may not be illustrated on the plan.

ASSESSORS PARCEL NUMBERS & LEGAL DESCRIPTION

2061-29-008	--	TRACT NO. 7661	LOT 48
2061-29-009	--	TRACT NO. 7661	LOT 49
2061-29-010	--	TRACT NO. 7661	LOT 50
2061-29-011	--	TRACT NO. 7661	LOT 51
2061-29-012	--	TRACT NO. 7661	LOT 52
2061-29-013	--	TRACT NO. 7661	LOT 53
2061-29-014	--	TRACT NO. 7661	LOT 54
2061-29-015	--	TRACT NO. 7661	LOT 55
2061-29-016	--	TRACT NO. 7661	LOT 56
2061-29-017	--	TRACT NO. 7661	LOT 57
2061-29-029	--	TRACT NO. 7661	LOT 58
2061-30-001	--	TRACT NO. 7661	LOT 103
2061-30-002	--	TRACT NO. 7661	LOT 104
2061-30-003	--	TRACT NO. 7661	LOT 105
2061-30-004	--	TRACT NO. 7661	LOT 106
2061-30-005	--	TRACT NO. 7661	LOT 107
2061-30-006	--	TRACT NO. 7661	LOT 108
2061-30-007	--	TRACT NO. 7661	LOT 109
2061-30-008	--	TRACT NO. 7661	LOT 110
2061-30-009	--	TRACT NO. 7661	LOT 111
2061-30-010	--	TRACT NO. 7661	LOT 112
2061-30-011	--	TRACT NO. 7661	LOT 113
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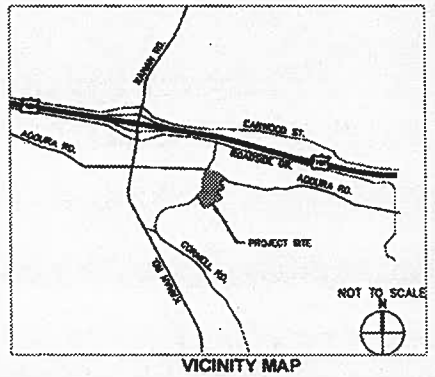
2061-30-013	--	TRACT NO. 7661	LOT 115



VICINITY MAP

NOTE:
SEE SUPPLEMENTAL SHEET FOR SITE IMAGES CALLED OUT ON THE PLAN.

SCALE: 1"=40'-0"

WET SIGNATURE

1 of 3

FUEL MODIFICATION
EXISTING VEGETATION

CORNERSTONE
AGOURA ROAD AND CORNELL ROAD
AGOURA HILLS, CALIFORNIA

NOT FOR CONSTRUCTION

JAMES DEAN DESIGN

REVISIONS:

DATE: 1/15/14
PRINT DATE:

CORNERSTONE
FUEL MODIFICATION
EXISTING VEGETATION 1 of 3

FINAL OAK TREE REPORT

Site Address:
Cornerstone at Agoura Village
Agoura & Cornell Roads
Agoura Hills, CA

Client:
Agoura Cornell Roads, LP
19528 Ventura Blvd., #628
Tarzana, CA 91356

Prepared by:

JAMES DEAN, A.S.L.A., I.S.A.
Landscape Architect
223 East Thousand Oaks Blvd. #304
Thousand Oaks, Ca 91360
Ph: 805.494.0623
Fax: 805.494.9254
james@jamesdeandesign.com

May 29,2008

07-AVDP-002

OAK TREE REPORT

CLIENT
Agoura Cornell Roads, LP
19528 Ventura Blvd., #628
Tarzana, CA 91356

Site Address:
Agoura @ Cornell Road
Agoura Hills, CA

REPORT DATE
May 29, 2008

BACKGROUND

The Agoura Cornerstone Project is envisioned as an 85,000 square foot development located on the southeast corner of Agoura Road and Cornell Road in Agoura Hills, California. The 6.8 acre site is nestled along the northern foothills of the Santa Monica Mountains.

The concept behind Cornerstone is to develop a village-like, pedestrian friendly environment that blends retail space, professional offices, and housing into the Agoura Village Plan created by the City of Agoura Hills. The project is designed to be a gateway into the Agoura Village area from the east. Each building along Agoura Road and Cornell Road is comprised of retail space on the ground floor, offices along the second floor, and residences on the third floor. The other three buildings consist of multi-family housing with parking structures below grade.

Upon this site many indigenous oak trees are scattered, some in groupings and others as individual natural sculptures. They vary in age distribution from saplings to very old trees. The purpose of this report is to focus upon the affects of development the tree resource.

TREE PROTECTION ORDINANCES AND POLICIES

Public law within the City of Agoura Hills affords protection to oak trees and canopy coverage upon within projects where development is proposed.

THE SITE

The site is located upon an elevated plateau above Agoura and Cornell Roads ascending southerly to steeper slopes and eventually to a ridgeline. To the north the site drops steeply to the adjacent roadways.

The proposed development is located on the lower portion of the site immediate to the corner of Agoura and Cornell Roads. The ground surface of the parcel is mostly covered by exotic grass with scattered oak trees. The upper section of the site is covered by grass and Chaparral.

The oak trees located within the parcel are mostly Coast Live Oak and Valley Oak with a large number of Scrub Oak at the upper reaches of the site. Upon the steeper terrain Scrub Oak is dominant with a scattering of the other two oak species.

Development of the structures and roadways to provide access to the site will result in some loss of oak trees. Other oaks immediately adjacent to the proposed structures and roadways will be disturbed by grading and modification of their physical form by pruning.

SOILS OF THE SITE

The soils of this site are comprised of thin silty clays over either moderately firm Conejo Volcanics or Sandy Gravel with cobbles and boulders. The depth of the surface soils vary from one foot to three and one half feet with most of the site at one foot. The strike and dip of the substrata seems to be favorable to oak tree preservation in terms of subsurface water flow.

Over time gravity has displaced much of the surface soils leaving thin poorly defined soil profiles above dense bedrock. Therefore soil depth at each oak tree is inconsistent. This is an important fact in design and construction as well as the long term maintenance of those trees that are to remain. Also, the thin soil profile makes transplanting of some oaks problematic.

OBJECTIVE OF REPORT

The objective of this report is to assess potential development impact upon individual oak trees that are located within or immediate to the proposed project.

INTENT

The overall intent was to:

1. Observe and report on the current condition of the subject trees.
2. Review site plans for proposed structures, retaining walls and driveways to determine the potential affect upon trees.
3. Determine what trees must be removed.
4. Ascertain what impacts might occur to trees that remain.
5. Make recommendations to mitigate the affects of development, if any, upon individual trees.

COMBINED DATA

The information contained within this report is intended to compliment and extend the information contained in the June 2004 report prepared by *Trees, etc.* The *Trees, etc.* report addresses 61 oak trees and approximately 350 scrub oaks located within the project area and beyond its boundaries. This report does not restate that information.

COLLECTION OF DATA

Specific data was gathered by *James Dean, Landscape Architect and Staff* regarding the status of each tree. Some of the data presented within our updated report is based upon field work by *Trees, etc.* During our fieldwork the following tasks were performed:

1. Verification of the numbered tree tags as presented within the *Trees, etc.* report. The general position of each tree was verified as shown on site survey maps.
2. Trunk diameter of the tagged oak trees was verified.
3. Data regarding the diameter of the leaf canopy of each tree as presented within the *Trees, etc.* report was reviewed and verified.
4. During 2008 a field survey was conducted to verify the precise location and elevation of all trees and the descending edge of the Scurb Oak.

TREE SPECIES

Trees located within or immediate to the proposed roadways are as follows:

25	Coast Live Oak	*Quercus agrifolia*
34	Valley Oak	*Quercus lobata*
2	*Specimen* Scrub Oak	*Quercus berberidifolia*
138	Scrub Oaks in Habitat	*Quercus berberidifolia*

Note that the number (350) of Scrub Oak by *Trees, etc* was estimated and could not be verified by physical count. It is difficult to accurately verify the individual plants as they form a dense brush.

The physical edge of the Scrub Oak growth has been verified by field survey measurements. In our experience each specimen Scrub Oak, within a mature habitat occupy approximately one hundred (120) square feet. The measured area of Scrub Oak removal is 19,981 square feet. Our calculations based upon the plan indicate that approximately 138 individual Scrub Oak plants will be removed due to the site grading.

138	Scrub Oak	*Quercus berberidifolia*

For a physical description of the subject oak trees see OAK TREE DISPOSITION FORM contained herein. Additionally, see the Oak Tree Report (under separate cover) prepared by *Richard Ibarra, President of Trees, etc.* June 2004.

Types of Development Impact to oak trees:

OAK TREE IMPACT

Changes in water regime

Mass grading of a site, with cut and fill conditions, will disrupt the natural subsurface water flowing along the bedrock and supplying moisture to the trees. This will likely cause a water deficit to indigenous oaks of this site. It will be necessary to immediately respond to this problem by establishing a method for replacing this water loss to the trees.

Oak trees respond to surface applied water during any season of the year. However, the root crown area, for a diameter of twelve feet, should be kept dry at all times to prevent the invasion of root rotting diseases. Long term management practices must address this condition.

Tree Removals:

Preliminary data indicates that there are sixty-one (61) oak trees including two (2) significant scrub oaks within the core of the developed site. Twenty-two (22) oak trees (36%) are located within the building footprint of structures and roads and therefore must be removed.

Grading beyond the Protected Zone:

Oak trees characteristically feature shallow rooting with some roots extending great distances beyond the drip line. This is particularly true in shallow soils with shallow bedrock as exists upon this site. Therefore, there will be some immeasurable root disturbance to oaks where grading does not enter their Protection Zone. Oaks do adjust to this minor perturbation often without a visible change in vigor or appearance.

Once root disturbance has occurred an indigenous oak joins other introduced plants as exotics. They become like other introduced plants to the site with a similar critical requirement for maintenance.

Grading within the drip line:

Grading within the drip line of oaks will cause the most significant root disturbance. The vertical position of each tree relates to the elevation of the ground plane upon which it rests. Grading designed to create uniform building pads, pedestrian walkways or roadways will cause cutting and filling to occur in close proximity to or within the drip line of individual oaks. Cutting will cause some root removal. The degree of root removal will vary significantly. It has been demonstrated with oak species *(Q. lobata and Q. agrifolia)* that healthy oaks can survive root loss of up to forty five (45%) percent and continue as a valuable tree.

Fill within the Protected Zone:

Filling over the root zone of oaks may also occur. Fill conditions will cause the same root disturbance as cut conditions since there is normally an over excavation to competent natural material or bedrock before filling begins. So, in effect a fill is also a cut condition producing the same result.

Saved Trees:
Thirty nine (39) will be retained in place at this site with minimal impact. These numbers do not include the hundreds of Scrub Oak that exist in thickets south and east of the building area.

See Tree Section drawings depicting impact to oaks included herein.

PREDICTABLE TREE RESPONSE TO IMPACT

Response of Oaks to Root Loss:
In our experience the predictable responses to root loss by an oak are thought to be as follows:

1. The tree will enter its dormant phase earlier by as much as one month.
2. The tree will abort some amount of leaf canopy to reduce transpiration loss.
3. The individual leaves will curl to reduce transpiration loss.
4. The following season there will be fewer leaves and the new leaves will have less leaf surface. Over several growing seasons this condition will improve.
5. The severed roots of two inches (2") or greater could become infected by root rotting organisms. It will take several years for a tree to gain closure around a severed root to control infection. Each year the tree will regain some of the lost vigor until it reestablishes itself.

Response to Pruning:
Successful healing of pruning wounds to oaks is a function of time, the condition of the tree, size of the roots / branches and the proper execution of the pruning wound. Trees generate new callous tissue growth around a wound to gain closure thereby protecting the inner xylem tissue (hard wood) from invasion of pathogens, consumers and insect vectors.

Trees control infection of wounds through a natural process known as Compartmentalization. In this process the tree responds to infection by creating barriers (walls) in all four directions at the margins of the infected tissue. This action delays the advancement of the disease organism until the tree has gained closure at the wound site. Closure of the wound effectively stops or delays the disease process.

Time plays an important role in recovery from pruning wounds to roots and branches. Clearly, as shown by Pytopathologist Dr. Alex Shigo (deceased) and other notable scientist's smaller root / branch wounds will recover in a short

period of time with little consequence to a tree. However, a problem of structural stability could arise from long term progression of decay.

Rapid closure means that the inner core of the tree, comprised mostly of dead wood, is less likely to be exposed to decay organisms as the wound is closed. Larger wounds (10" and greater) could require several years to gain closure. During this period of time the structural integrity of a tree gradually declines as wood is decayed by consuming saprophytes. Only live wood has the protection from compartmentalization. The generation of new wood is necessary to form a protective covering over any dead wood.

Smaller roots / branches of a tree that are properly pruned will gain closure in 5-10 years. After closure small pruning wounds are not a liability to a tree. When pruning to remove small tree roots / branches, and in some cases larger roots / branches, man is immolating the normal and natural process of a tree shedding a root/branch.

OVERALL TREE DISPOSITION

Species	Quantity Assessed	Removal	Save in Place
Quercus agrifolia	25	9	16
Quercus lobata	34	11	23
Quercus berberidifolia	2	0	2
Scrub Oak Habitat	500+(*)	138(+) (1)	372(+)

(*) Estimated quantity. Actual count is greater than 1000.
Note that development encroaches into Coastal Scrub Oak Habitat in two areas. It appears that approximately 19, 581 square feet of habitat will be removed.

See the OAK TREE LOCATION MAP, DISPOSITION FORMS and the *Trees, etc* Report for detailed information concerning the description of each tree by number.

DOCUMENTATION
The following documents shall be maintained upon the site during progress of the work and until final acceptance by the city:

1. Copy of the approved Tree Reports.
2. The Conditions of Approval relating to trees.
3. The Tree Inspection Permit.
4. The City Grading Permit.

CONCLUSIONS:

The oak trees upon the site will be subjected to modification of their natural environment to accommodate the proposed development. Alteration of the natural environment of trees occurs when development enters within a wood lot. There is a corresponding perturbation of the natural biological processes. If careful planning is not invoked the natural senescence that the trees are progressing through could be accelerated. Decline of the resource would be favored over the health of the trees. Decline could lead to the progression of conditions that are hazardous to life and property.

Oak trees do survive development and can benefit from that experience. Once development occurs it is important for maintenance personnel to be aware of trees, the soil profile in which they exist and their ever changing vigor to promote their continued survival. The developer proposes to prepare a written Maintenance Plan to guide the long term care of the oaks.

The document will address some conditions that must be monitored as follows:

1. Constant moisture near the root crown of a tree is bad for their health and leads to infection of the three major diseases that are mostly fatal to oak trees. The organisms (*Phytophthora cinnamomi*, commonly referred to as Avocado Root Rot, *Armillaria mellea*. commonly known as Oak Root Fungus and *Ganoderma spp*. known as Ganoderma Root Rot) are not active in dry soil. Each of these organisms attack at the root crown where the tree enters the ground and are favored by wet soil. The landscape development plan will not irrigate, or plant within 6-8' of the root crown.
2. As trees decline, they become susceptible to infestation by bark beetles. The beetles bore into the growth area of weakened trees (cambium tissue just below the bark) and result in girdling ultimately causing death. This condition is reversible if treated soon after discovery and the treatment is repeated during the following season.
3. Fill dirt at the root crown of a tree, or over the root zone restricts gaseous exchange from the roots to the atmosphere promoting decline. Monitor the condition of the root crown on a regular basis to identify changes such as the growth of mushrooms (the fruiting body of fungi).
4. Any planting within 8 -10' of the trunk of an oak tree should be selected from an available list of acceptable plants that could be planted near oaks.
5. Indiscriminate pruning will be avoided. Oak trees do not require frequent pruning. In fact pruning and regeneration of growth often promotes the need for more pruning in subsequent years. Pruning wounds open the door for invasion of disease through the site of the wound.

MITIGATION
Mitigation for tree loss should be in the form of reforestation and protection during construction

Reforestation:

As required the trees scheduled for removal will be replaced following the requirements of the Agoura Hills Oak Tree Ordinance. It is the intention to install 50-100 one gallon oak trees within the transition of the developed and undeveloped site. They will be distributed in a random natural pattern.

Protection:
Work around oak trees of the site must acknowledge the following:

1. Prior to start of construction:
   Protection fencing must be installed at a position five feet beyond the drip line of each oak tree and 5' beyond the outer edge of Scrub Oak to the satisfaction of the city prior to commencement of the grading. The fence shall be secured to the ground to prevent displacement. The fence shall not be moved or removed without prior permission of the city. In situations where the barrier is continuous around a tree, a break in the fence should be included for maintenance access.
2. Notice: The applicant shall provide a forty-eight (48) hour notice to the City and the applicant's oak tree consultant prior to the start of any approved work within the protected zone of any oak tree.
3. Pruning: All approved pruning shall be performed by a qualified arborist under the direction of the applicant's oak tree consultant. The arborist shall use the Pruning Standards of the Western Chapter of the International Society of Arboriculture. No unauthorized pruning is to be performed without prior permission of the City Inspector and the Oak Tree Consultant.
4. Excavation: All approved excavation performed within the protected zone of any oak tree shall be performed with hand tools under the direction of the applicant's oak tree consultant.
5. Debris: No construction materials, debris or vehicles shall be stored within the Protected Zone of any oak tree at any time.
6. Planting and Irrigation: Unless specifically approved by the City, no planting or irrigation shall be placed within the protected zone of any oak tree.
7. Mulch: At the completion of construction, the applicant shall place three inches (3") of approved mulch throughout the drip line of each oak tree.
8. Certification: Within ten (10) days of the completion of work, the applicant's oak tree consultant shall submit written forensic certification to the Planning Division. This certification shall describe all work performed and whether such work was performed in accordance with the above permit conditions.
10. Chemicals: No chemical weed killers are used within 100' of any oak tree.
11. Drainage: Direct all drainage water away from the trunk of oak trees. Keep the base of oak trees thoroughly dry.

12. Permit: A copy of the Oak Tree Permit should be kept on file at the site during construction.

End of Report

NOTICE OF DISCLAIMER
The author makes no warranty as to the precise accuracy of the information contained herein. Since disease and defects often operate insidiously within the system of a tree, affecting its condition, outward signs are not always visible. Therefore the condition of a tree is difficult to determine with certainty.

With this in mind it is prudent for property owner's with trees to be vigilant in observing the ever-changing outward appearance of trees. When significant change occurs they should seek the advice of professionals trained in tree care.

Respectfully submitted,

James Dean, A.S.L.A.
Landscape Architect
License No. 1146

APPENDIX "A"

PROGRAM FOR PRESERVATION OF OAK TREES

Oak Tree Protection:

1. All oak trees scheduled to remain shall be fenced at the location of their Protected Zone with a 5' temporary fence of a material approved by the City of Agoura Hills prior to commencement of grading. The fence is to be embedded into natural grade. The Protected Zone is located five foot beyond the oak tree drip line. Leave a pass-through opening in the fence enclosure for maintenance access. The fence shall remain during all phases of construction. It shall not be relocated or removed without permission of the City. Damaged fencing shall be immediately replaced or repaired.
2. No activity, such as: equipment or material storage, deposit of debris, or parking shall occur within the Protected Zone of any oak tree at any time.
3. Signs must be installed on the fence in four locations (equidistant) around each tree. Each sign must be a minimum of two feet by two feet square and must contain the following language.

> WARNING
> THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FRM THE DEPARTMENT OF COMMUNITY DEVELOPMENT.

Pruning:

3. Any pruning shall be by permit after approval by the Landscape Architect and the City of Agoura Hills. Pruning wounds shall not be sealed. Approved pruning shall be performed by an ISA Certified Arborist under the direct supervision of the Landscape Architect / Tree Consultant.
4. Pruning shall be performed to the standards set forth by the International Society of Arboriculture (ISA).

Grading within the Protected Zone:

5. All excavation within the protected zone shall be done by hand with hand tools unless specifically approved by the City.
6. Relocation or removal of protective fencing must be approved prior to excavation.
7. All spoils shall be placed outside of the Protected Zone of the tree.

8. Excised roots shall be hand sawn with clean cut at 45 degree angle facing downward and shall not be sealed.

Other protective measures:

9. Protect oak trees by not wounding them. Nailing any thing to an oak tree such as grade stakes should be avoided. The potential for breaking of branches by mechanical equipment should be anticipated and avoided. Notify the Landscape Architect / Tree Consultant with a request for an evaluation and recommendation.
10. It is important to leave the natural leaf litter (duff) that exists beneath the drip line of an oak tree.
11. No chemicals such as herbicides shall be used within twenty-five feet of any oak tree Protected Zone.
12. Although an 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 no irrigation water system should ever be applied any closer to the tree trunk than six feet. In other words, the ground should remain totally dry for at least six feet in all directions in and round the trunk of an oak tree.
13. Many nursery-grown plants carry diseases that oak trees are susceptible to. It has been shown that Azaleas purchased in a retail nursery often carry Avocado Root (*Phytophthora cinnamomi)* with them. Oak trees are susceptible to this aggressive disease organism. Indiscriminate planting beneath the drip line of oak trees is to encourage inoculation of disease.
14. Similarly, oak trees are susceptible to two other important disease organisms, Oak Root Fungus (Armillaria mellea) and Ganoderma Root Rot (Ganoderma spp.). As with Avocado Root Rot these organisms are favored when constant moisture is maintained within the drip line of an oak. It follows that it is best not to apply irrigation within the drip line of an oak tree.
15. If grading is completed other than during the rainy season, dust deposited on the foliage of oaks should be hosed off so that the growth processes of the tree are not disrupted.

APPENDIX "B"
REPORT DEFINITIONS

The following is an explanation of general information and terminology that may be presented within the body of the Oak Tree Report for the subject site.

PHYSICAL DESCRIPTION OF OAK TREES

1. Tree number- each tree in the field has been assigned a number that corresponds to a tree location on the "Oak Tree Location Map".
2. Species - is the classification of tree that is being evaluated.
3. Number of Trunks- as measured in accordance existing measurements at the time of evaluation.
4. Diameter of Trunks- as measured at 4½' above mean natural grade, existing at the time of evaluation. Diameter is referred to as the trunk diameter at breast height (dbh).
5. Height above grade- is the height above the ground to significant branch structure that restricts movement beneath the branch.
6. Tree Height- is the approximate height of each numbered, evaluated tree.
7. Leaning- is the direction the tree is inclined from the natural vertical position.
8. Codominant union – refers to a system of main trunks that are mostly equal in size and relative importance, are generally growing in a vertical configuration, and are crowding each other to gain room for expansion to the extent that a structural defect results. This condition may or not result in a significant hazard.

Plant Disease and Insect Vectors

Plant disease causes a dysfunction in the physiological processes of a tree that result in a loss of plant vigor. The three diseases that are of major importance are: Avocado Root Rot (*Phytophthora cinnamomi*) and Oak Root Fungus (*Armillaria mellea*) Butt rot Ganoderma Root Rot *(Ganodema spp.)*.

Phytophthora is an aggressive pathogen. It is classified as a water mold that causes crown or root rot. This organism can infect and grow readily through uninjured trunk or root bark. It can infect a tree at any time of the year in California.

Armillaria is a weaker pathogen. It generally infects through the roots or root crown of a weakened or stressed tree. Once infected the tree gradually declines and most often the tree dies from girdling.

Ganoderma causes butt rot ultimately affecting the ability of a tree to support itself resulting in mass failure of the root crown.

While the previous specific disease information is important, 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. Disease and insect infection, along with the disruption and damage caused by the alteration of the natural oak tree environment is the main cause in decline of the oak resource in California. Decline is manifested by changes in plant vigor. Visible signs and symptoms associated with oak tree decline cause a change in visible appearance.

An Oak tree is rated as to vigor by its visual appearance as follows:

Vigor Class

Vigor is the capacity of a tree for growth and survival. A vigorous tree has bright green leaves of large size for the species. The bark is relatively smooth, free from cracks and decay. It will more easily ward off disease and insect attacks and will recover from impacts more quickly than a weak tree.

Each tree that is the subject of this report is compared to an index tree of the same species within the same local that is considered to be a near perfect specimen of the species in a similar environment.

A A vigorous tree with a healthy, dense, full leaf canopy, normal yearly growth extension, excellent foliage color, normal leaf size and reasonably free from structural defect.

B Trees with slightly less vigor, slightly thinner foliage density, healthy leaf canopy with good color, normal yearly growth extension, normal leaf size and my have minor structural defects (open cavity exposing decay, etc.)

C Displays plant stress, level of vigor is average or less, fair to poor leaf size or color, may have a minor level of twig or small branch dieback, exudation, insect infestation and/or exfoliating bark. May have significant correctable structural defect.

D Trees with severe conditions of disease, thin to very-thin leaf canopy with dwarfed leaf size, poor to non-existent yearly growth extension, poor callusing at wounds, major cavities with decay, major dieback of main stem or scaffolding branches and limbs, exfoliating bark, wounds with exudation, lesions on stems or distorted bark, fungal conks present, epicormic growth (short, twiggy growth along major branches), thin foliage characterized by small leaves which may be discolored, may have mistletoe: little chance of recovery.

F Dead or almost dead tree.

A basic knowledge of disease and insects should include an understanding of the following information:

Physical Defects of Oak Trees

1. Trunk Cavity- is a hollow area in the trunk, usually due to the decay of wood.
2. Co dominant Trunks – equal in size and relative importance that often creates a hazardous condition due to the expanding growth of both trunks competing for the same physical space.
3. Trunk Damage- is a damaged area on the trunk, usually due to external force onto the tree. Also described as a lesion.
4. Exposed Roots- roots exposed near tree; e.g. in creek bed.
5. Exfoliating Bark- the flaking off of bark from trunk, branches and/or twigs.
6. Water Pocket- pockets formed at branch crotches that can hold water and possibly weaken the tree's structure (possible hazard).
7. Exudation- the issuance or expelling of liquid, usually from wounds. The cause is generally an agent of a bacteria or fungus.
8. Fruiting Bodies- are the outward signs (i.e. mushrooms, conks, etc.) of decay in the interior wood of the tree.
9. Insect / Mite Damage- are some form of damage to the tree caused by insects or mites (i.e. scale, caterpillars, weevils, borers, mites, etc.)
10. Galls- are an abnormal hypertrophy growth (tumors) on the tree, which may be caused by insects, mites, bacteria, etc.
11. Oak Pit Scale- has a severe weakening effect on the twigs, frequently resulting in their death. When the scale settles on the twigs, a swelling of the twig tissue occurs. So the insect in effect is in a pit; hence, the name.
12. Main stem Dieback- Atrophy or death of healthy main stems from the growing tip back.
13. Branch Cavities- hollow areas in the trunk or limbs in the upper tree, usually due to the decay of wood.
14. Weak Crotches- poorly formed branch attachments.
15. Twig / Branch Dieback- death of unhealthy twigs from the growing tip back.
16. Epicormic Growth- excessive growth along main limbs, rather than on twigs.
17. Thin Foliage- defoliation and twig dieback throughout the canopy.
18. Potential Hazard - any tree may be a hazard to humans, depending on its location and / or health.

Aesthetic Quality

The aesthetic quality of the trees was visually determined from an overall inspection of appearance. The following system was to describe their conditions:

A. OUTSTANDING
The tree is visually symmetrical having the ideal form and appearance for the species. The leaf canopy is dense with large green leaves.

B. AVERAGE
The tree, though non-symmetrical, has an appealing form for the species with very little dieback of foliage or twigs/branches.

C. POOR
The tree may be intermediate, co dominant or suppressed by other trees, may be in debilitated condition with a level of significant decline that affects its visual appearance to a degree that it lacks an overall satisfactory visual quality.

Recommended treatment:

1. Remove Deadwood - if noticeable deadwood, making the tree unattractive, 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. Cable/Brace- can extend the time the tree remains healthy, attractive and hazard free.
4. None- no treatment is recommended.
5. 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- leaf growth generating from around base of trunk.
2. Exposed Buttress Roots- soil absent, either all or partial, at basal portion of tree.
3. Heart Rot - 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 (atrophy) of tissue that 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- leaves have a variegated pattern of green and yellow.
8. Defoliation- premature leaf drop.
9. Bark Beetle Frass- is 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, fungus, etc.

11. Mistletoe- is a leafy evergreen perennial parasite with dark green leathery leaves that occur as bunches on the branches.
12. Crowded - is a tree within the canopy of an adjacent tree or canopy.
13. Shading Out - defoliation and twig dieback inside the canopy due to the lack of sunlight.

OAK TREE DISPOSITION FORM

OAK TREE DISPOSITION FORM

				HEIGHT ABOVE GRADE (feet)				PHYSICAL DESCRIPTION DRIPLINE (feet)								CONDITION		DISPOSITION	
Tree No.	SPECIES	COMMON NAME	TRUNK DIAMETER	NORTH	EAST	SOUTH	WEST	NORTH	NORTHEAST	EAST	SOUTHEAST	SOUTH	SOUTHWEST	WEST	NORTHWEST	APPEARANCE	HEALTH	SAVE	REMOVE
1	*Quercus lobata*	*Valley Oak*	36"	10'	10'	10'	10'	43'	42'	45'	41'	40'	39'	41'	40'	A	B	S	
2	*Quercus lobata*	*Valley Oak*	23",18.5"	10'	8'	12'	18'	24'	20'	23'	22'	24'	21'	19'	20'	C	C	S	
3	*Quercus agrifolia*	*Coast Live Oak*	27"	5'	6'	12'	5'	22'	21'	15'	17'	23'	24'	25'	19'	C	C	S	
4	*Quercus agrifolia*	*Coast Live Oak*	19",9.5"	12'	10'	5'	3'	18'	27'	25'	29'	5'	3'	4'	6'	C	C	S	
5	*Quercus agrifolia*	*Coast Live Oak*	32"	10'	9'	12'	10'	31'	30'	29'	18'	27'	26'	28'	29'	B	B	S	
6	*Quercus lobata*	*Valley Oak*	9",2"	10'	10'	5'	12'	10'	11'	12'	11'	10'	9'	6'	8'	B	B		R
7	*Quercus lobata*	*Valley Oak*	Z	10'	5'	8'	10'	9'	10'	14'	10'	11'	10'	9'	10'	B	B		R
8	*Quercus lobata*	*Valley Oak*	D	3'	2'	3'	2'	2'	3'	6'	4'	3'	4'	1'	3'	C	C		R
9	*Quercus agrifolia*	*Coast Live Oak*	5",2@3"	5'	0'	0'	0'	7'	7'	7'	6'	6'	7'	8'	6'	B	B		R
10	*Quercus agrifolia*	*Coast Live Oak*	11",10.5",6"	12'	10'	0'	0'	12'	13'	15'	16'	18'	16'	17'	15'	D	D		R
11	*Quercus agrifolia*	*Coast Live Oak*	6.5",6",2@5"	0'	5'	0'	0'	14'	10'	9'	11'	15'	12'	14'	13'	C	C	S	
12	*Quercus lobata*	*Valley Oak*	10",8.5",5"	15'	0'	0'	0'	20'	19'	22'	20'	21'	22'	0'	15'	C	C		R
13	*Quercus lobata*	*Valley Oak*	11.5",11"	15'	15'	5'	10'	18'	19'	21'	20'	21'	19'	20'	20'	B	B		R
14	*Quercus agrifolia*	*Coast Live Oak*	2.5"	0'	0'	0'	0'	3'	4'	3'	4'	4'	3'	3'	3'	B	B		R
15	*Quercus lobata*	*Valley Oak*	4",12"	5'	4'	5'	5'	5'	5'	11'	6'	6'	5'	5'	6'	B	B		R
16	*Quercus lobata*	*Valley Oak*	10.5"	15'	0'	0'	15'	19'	16'	20'	10'	21'	9'	11'	20'	B	B		R
17	*Quercus agrifolia*	*Coast Live Oak*	13",12",7"	0'	0'	0'	0'	10'	9'	10'	12'	10'	11'	10'	8'	B	B	S	
18	*Quercus lobata*	*Valley Oak*	22"	15'	15'	6'	15'	20'	21'	23'	22'	24'	20'	23'	21'	A	C	S	
19	*Quercus lobata*	*Valley Oak*	27"	15'	20'	5'	15'	20'	21'	23'	20'	25'	22'	23'	22'	B	B	S	
20	*Quercus lobata*	*Valley Oak*	7.5",3"	5'	6'	6'	4'	10'	10'	10'	11'	12'	10'	6'	10'	B	B	S	
21	*Quercus agrifolia*	*Coast Live Oak*	27"	4'	10'	12'	15'	33'	34'	35'	30'	27'	28'	25'	26'	A	B	S	
22	*Quercus agrifolia*	*Coast Live Oak*	7"	4'	4'	4'	4'	12'	10'	10'	10'	11'	11'	13'	12'	B	B	S	
23	*Quercus agrifolia*	*Coast Live Oak*	6"	4'	4'	4'	4'	12'	11'	6'	10'	11'	7'	5'	6'	B	B	S	
24	*Quercus agrifolia*	*Coast Live Oak*	9"	6'	6'	6'	6'	20'	19'	18'	17'	19'	18'	15'	17'	B	B	S	
25	*Quercus agrifolia*	*Coast Live Oak*	13"	6'	5'	10'	10'	17'	14'	13'	14'	17'	14'	12'	13'	B	B	S	
26	*Quercus agrifolia*	*Coast Live Oak*	10.5",4",2"	5'	5'	5'	5'	16'	17'	17'	18'	18'	17'	17'	17'	B	B	S	
27	*Quercus lobata*	*Valley Oak*	7"	3'	3	3'	6'	10'	12'	11'	11'	12'	10'	9'	10'	C	C		R
28	*Quercus lobata*	*Valley Oak*	11"	5'	3'	5'	10'	10'	15'	27'	16'	21'	15'	12'	11	C	C		R
29	*Quercus lobata*	*Valley Oak*	3.5",2"	5'	4'	4'	.5'	5'	6'	6'	6'	2'	3'	6'	5'	C	C		R
30	*Quercus lobata*	*Valley Oak*	37"	18'	18'	15'	15'	23'	21'	20'	20'	24'	20'	21'	19'	B	C	S	
31	*Quercus agrifolia*	*Coast Live Oak*	4",3",2"	0'	0'	0'	0'	9'	9'	9'	8'	8'	9'	8'	10'	B	B		R
32	*Quercus lobata*	*Valley Oak*	6",5.5"	10'	5'	4'	10'	13'	14'	15'	13'	14'	11'	12'	11'	B	B		R

OAK TREE DISPOSITION FORM

				HEIGHT ABOVE GRADE (feet)				PHYSICAL DESCRIPTION DRIPLINE (feet)								CONDITION		DISPOSITION	
Tree No.	SPECIES	COMMON NAME	TRUNK DIAMETER	NORTH	EAST	SOUTH	WEST	NORTH	NORTHEAST	EAST	SOUTHEAST	SOUTH	SOUTHWEST	WEST	NORTHWEST	APPEARANCE	HEALTH	SAVE	REMOVE
33	*Quercus lobata*	*Valley Oak*	4.5"	5'	4'	0'	0'	9'	3'	3'	3'	0'	0'	0'	5'	D	E	S	
34	*Quercus lobata*	*Valley Oak*	15"	15'	5'	10'	5'	26'	27'	28'	25'	24'	25'	28'	26'	B	B	S	
35	*Quercus lobata*	*Valley Oak*	2"	3'	2'	3'	3'	3'	3'	3'	4'	4'	2'	2'	4'	C	C	S	
36	*Quercus lobata*	*Valley Oak*	3.5"	1'	0'	2'	2'	1'	2'	9'	10'	10'	10'	4'	2'	C	C	S	
37	*Quercus lobata*	*Valley Oak*	2@2.5"	3'	2'	1'	4'	9'	10'	8'	7'	6'	6'	4'	4'	C	C	S	
38	*Quercus lobata*	*Valley Oak*	22"	5'	1'	0'	0'	2'	5'	28'	31'	32'	30'	25'	0'	C	C		R
39	*Quercus lobata*	*Valley Oak*	18"	10'	15'	10'	10'	13'	14'	15'	17'	16'	14'	3'	3'	C	C	S	
40	*Quercus lobata*	*Valley Oak*	5.5",3.5"	4'	0'	3'	4'	3'	3'	7'	6'	10'	10'	6'	7'	C	C	S	
41	*Quercus lobata*	*Valley Oak*	19"	15'	3'	0'	15'	18'	18'	3'	3'	17'	5'	15'	18'	C	C		R
42	*Quercus berberidifolia*	Coastal Scub Oak	29@2" (mass 30 plants	M	A	S	S									C	C	S	
43	*Quercus lobata*	*Valley Oak*	7.5",7"	15'	7'	10'	10'	12'	11'	10'	4'	3'	4'	5'	9'	C	C		R
44	*Quercus lobata*	*Valley Oak*	8.5"	10'	10'	10'	5'	6'	5'	6'	13'	15'	8'	9'	3'	C	C		R
45	*Quercus lobata*	*Valley Oak*	4.5",3.5"	4'	0'	0'	4'	3'	0'	0'	4'	10'	8'	11'	5'	C	C		R
46	*Quercus lobata*	*Valley Oak*	7"	15'	15'	15'	15'	8'	6'	7'	10'	10'	6'	7'	7'	C	C		R
47	*Quercus lobata*	*Valley Oak*	7"	15'	15'	10'	15'	13'	5'	6'	5'	7'	10'	9'	12'	C	C	S	
48	*Quercus agrifolia*	*Coast Live Oak*	10",23",15",12",11"	10'	1'	10'	10'	12'	16'	20'	20'	22'	15'	11'	10'	B	B		R
49	*Quercus berberidifolia*	Coastal Scub Oak	3",5@2"	2'	2'	2'	2'	3'	3'	4'	3'	3'	3'	3'	4'	B	B	S	
50	*Quercus agrifolia*	*Coast Live Oak*	24"	15'	15'	15'	15'	26'	27'	25'	25'	26'	23'	24'	25'	B	B	S	
51	*Quercus agrifolia*	*Coast Live Oak*	14",3@7"	0'	0'	0'	5'	16'	5'	17'	16'	15'	5'	6'	5'	B	B	S	
52	*Quercus lobata*	*Valley Oak*	12",10"	10'	10'	10'	10'	24'	22'	21'	21'	23'	20'	25'	23'	B	B	S	
53	*Quercus agrifolia*	*Coast Live Oak*	19"	0'	0'	0'	0'	23'	21'	22'	20'	24'	21'	21'	20'	B	B	S	
54	*Quercus agrifolia*	*Coast Live Oak*	8",7",6",5"	5'	6'	4'	5'	12'	11'	10'	10'	9'	10'	13'	11'	C	C	S	
55	*Quercus lobata*	*Valley Oak*	3"	5'	5'	5'	5'	3'	4'	3'	4'	3'	3'	3'	3'	C	C	S	
56	*Quercus agrifolia*	*Coast Live Oak*	4"	5'	5'	5'	5'	4'	4'	4'	3'	4'	3'	4'	3'	C	C	S	
57	*Quercus agrifolia*	*Coast Live Oak*	4"	4'	4'	4'	4'	3'	4'	3'	3'	3'	3'	3'	4'	C	C	S	
58	*Quercus lobata*	*Valley Oak*	3.5"	6'	6'	6'	7'	3'	3'	3'	4'	4'	4'	5'	4'	C	C	S	
59	*Quercus agrifolia*	*Coast Live Oak*	4.5"	2'	2'	2'	2'	4'	4'	5'	5'	4'	4'	4'	5'	C	C	S	
60	*Quercus agrifolia*	*Coast Live Oak*	25.5"	6'	15'	5'	10'	27'	26'	26'	24'	24'	25'	25'	25'	B	B	S	
61	*Quercus agrifolia*	*Coast Live Oak*	2",4"	0'	0'	0'	0'	5'	5'	5'	5'	4'	3'	5'	5'	A	A		R

* **Not tagged - 138 individual *Quercus berberidifolia*, Scrub Oak, to be removed**

EXCERPTS OF SOIL REPORT

Enclosed are the Logs of Borings that show the dept of soil within the boundaries of this site dated June 16, 2004

BORING 1

JOB: 04183

FIELD ENGINEER: FRED HEATHCOTE

DATES DRILLED: JUNE 18, 2004

DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (kip-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
12.8	105					CL	SILTY CLAY–dark brown,loose,some gravel,cobble
11.2	106			5			VOLCANICS– brown,damp,firm
10.6	108						

WATER NOT ENCOUNTERED

BORING 2

JOB: 04183

FIELD ENGINEER: FRED HEATHCOTE

DATES DRILLED: JUNE 18, 2004

DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (kip-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
17.6	99					CL	SILTY CLAY–dark brown,loose,some gravel,cobble
13.8	104			5			VOLCANICS– brown,damp,firm

WATER NOT ENCOUNTERED

BORING 3

JOB: 04182
FIELD ENGINEER: FRED HEATHCOTE
DATES DRILLED: JUNE 18, 2004
DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (kip-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
						CL	SILTY CLAY–dark brown,loose,some gravel,cobble
13.3	103					GP	SANDY GRAVEL–brown,damp,some boulders and cobbles
14.1	102			5			

WATER NOT ENCOUNTERED

BORING 4

JOB: 04182
FIELD ENGINEER: FRED HEATHCOTE
DATES DRILLED: JUNE 18, 2004
DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (kip-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
						CL	SILTY CLAY–dark brown,loose,some gravel,cobble
16.1	100					GP	SANDY GRAVEL–brown,damp,some boulders and cobbles
9.6	111			5			

WATER NOT ENCOUNTERED

BORING 5

JOB: 04163
FIELD ENGINEER: FRED HEATHCOTE
DATES DRILLED: JUNE 18, 2004
DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (kip-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
13.3	96	6				CL	SILTY CLAY–dark brown,loose,some gravel,cobble
11.9	107	6		5		GP	SANDY GRAVEL–brown,damp,some boulders and cobbles

WATER NOT ENCOUNTERED

BORING 6

JOB: 04163
FIELD ENGINEER: FRED HEATHCOTE
DATES DRILLED: JUNE 18, 2004
DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (kip-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
15.8	92	6				CL	SILTY CLAY–dark brown,loose,some gravel,cobble
13.4	108	6		5			VOLCANICS– brown,damp,firm

WATER NOT ENCOUNTERED

BORING 7

JOB: 04162

FIELD ENGINEER: FRED HEATHCOTE

DATES DRILLED: JUNE 18, 2004

DRILLING EQUIPMENT: BACKHOE

MOISTURE CONTENT (% of dry weight)	DRY DENSITY (lbs. per cubic foot)	DRIVE ENERGY (ldp-feet)	ELEVATION (feet)	DEPTH (feet)	SAMPLE LOCATION		
17.4	96					CL	SILTY CLAY–dark brown,loose,some gravel,cobble
14.3	107			5			VOLCANICS– brown,damp,firm

WATER NOT ENCOUNTERED

PHOTOGRAPHS

See separate report by *Trees, Etc, Inc.* for individual photos of trees.

Appendix C

Peer Review of Cultural Resources Reports

Rincon Consultants, Inc.
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Ventura, California 93003

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info@rinconconsultants.com
www.rinconconsultants.com

November 20, 2014
Rincon Project No. 12-00611

Doug Hooper
Assistant Director of Community Development
City of Agoura Hills
30001 Ladyface Court
Agoura Hills, CA 91301-1335

Subject: **Peer Review of an Archaeological Technical Report for the Cornerstone Mixed-Use Project, City of Agoura Hills, Los Angeles County, California**

This letter summarizes the results of a peer review of the report entitled: *Expanded Phase II Archaeological Test Excavation at CA-LAN-1352, Agoura Hills, California,* prepared by A. George Toren, Dan Larson, and Gwen R. Romani (2011) of Compass Rose Archaeological Inc. This peer review is part of an environmental analysis being conducted in conformance with the California Environmental Quality Act (CEQA) by the City of Agoura Hills. The purpose of the review is to determine whether the Compass Rose report is adequate for the purposes of preparing an Initial Study for the proposed project.

Methods

Peer Review

This peer review was conducted by Cultural Resources Principal Investigator Robert Ramirez, M.A., RPA, who meets the Secretary of the Interior's *Professional Qualification Standards* for historic and prehistoric archaeology (National Park Service 1983). Cultural Resources Program Manager Kevin Hunt, B.A. provided program-level oversight. Quality control for the peer review was provided by Vice President Duane Vander Pluym, D. Env.

The analysis entailed review of the Compass Rose report with regard to methods, findings, and the potential for the project to impact significant archaeological resources as defined in CEQA and the *State CEQA Guidelines*.

Cultural Resources Records Search

Rincon contacted the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC) on November 12, 2014 to request copies of three previous cultural resources studies conducted at site CA-LAN-1352. These studies were obtained to gain additional information regarding cultural resources work at the site and provide a basis from which to evaluate the adequacy of the Compass Rose report. These studies include the following:

Romani, John
2010 Phase I Archaeological Site Status Update: Cornerstone Mixed-Use Project, Corner of Agoura Road and Cornell Road, Agoura Hills, California.

Singer, Clay
2004 Cultural Resource Re-evaluation of Archaeological Site CA-LAN-1352 and Impact Assessment for the Cornerstone Agoura Village Project in the City of Agoura Hills, Los Angeles County, California.

Wlodarski, Robert
1988 An Archaeological Assessment of CA-LAN-1352 (the Lundin Site) Agoura Hills, Los Angeles County, California.

Findings

The report entitled: *Expanded Phase II Archaeological Test Excavation at CA-LAN-1352 Agoura Hills, California* (Toren et al. 2011) was prepared following the Archeological Resource Management Reports (ARMR) guidelines for the preparation of cultural resources technical reports (California Office of Historic Preservation 1990). The report is well organized and provides the necessary legal, environmental, and culture history background for a study of this scope. The fieldwork and laboratory methods were adequate for a study of this scope and in conformance with current professional standards. The report discusses in detail past research at CA-LAN-1352 and provides a Research Orientation section that discusses a series of research domains and questions used to evaluate the site for this study. The authors state that the primary purpose of this study was to determine if CA-LAN-1352 retains integrity after suffering mechanical impacts described by Singer (2004) and to assess the significance of additional portions of the site beyond those originally tested.

Upon review of the report, Rincon has concluded the study does an adequate job assessing the integrity of CA-LAN-1352. The fieldwork included the excavation of three 40 to 50 cm diameter shovel test pits (STPs) and four 1.0 x 0.5 meter test units. The STPs were placed in the southern area of the site to assess whether a subsurface deposit exist within the portion of the site recorded by Singer (2004). Two test units (Unit 7 and 8) were placed in the midden deposit recorded by Wlodarski (1988) and the remaining two test units (Unit 5 and 6) were placed to the east of the midden deposit. The excavations were successful in determining that the site still retains integrity as no evidence of mechanical disturbance was identified in any of the excavation units. However, the study did not completely define the boundaries of the site. The STP excavations identified a southern terminus of the site as STP 3, the most southern STP, which was sterile for cultural resources. These STPs were placed in a single north-south line however, and do not represent a complete systematic sampling of the site to determine its boundaries. The test unit excavations were likewise limited in determining horizontal site boundaries. Test Unit 5 and 6 were placed in a previously untested area to the east of the midden deposit. These units were positive for cultural resources and Unit 5 contained a possible feature. Although generally adequate, the study did not completely define the boundaries of CA-LAN-1352, site boundaries will need to be defined as part of a Phase III data recovery program if the site cannot be avoided by the proposed project.

In sum, Rincon concurs with the study's assessment that the site is eligible for listing in the California Register of Historical Resources under Criterion 4. We further concur that the site should be avoided and if avoidance is not feasible then a Phase III data recovery program should be conducted. In addition, all construction-related ground disturbing activities should be monitored by a qualified archaeologist and a Chumash Native American representative.

Sincerely,
RINCON CONSULTANTS, INC.

Robert Ramirez, M.A.,RPA
Cultural Resources Principal Investigator

Kevin Hunt, B.A.
Cultural Resources Program Manager

References

California Office of Historic Preservation
1990 *Archaeological Resource Management Reports (ARMR) Guidelines: Recommended Contents and Format*. Electronic document accessed March 15, 2013. Online at: http://ohp.parks.ca.gov/pages/1054/files/armr.pdf

Singer, Clay
2004 Cultural Resource Re-evaluation of Archaeological Site CA-LAN-1352 and Impact Assessment for the Cornerstone Agoura Village Project in the City of Agoura Hills, Los Angeles County, California. On file at Eastern Information Center, University of California Riverside.

Toren, George, Dan Larson, and Gwen Romani
2011 Expanded Phase II Archaeological Test Excavation at CA-LAN-1352 Agoura Hills, California. On file at Eastern Information Center, University of California Riverside.

Wlodarski, Robert
1988 An Archaeological Assessment of CA-LAN-1352 (the Lundin Site) Agoura Hills, Los Angeles County, California. On file at Eastern Information Center, University of California Riverside.

Appendix D

Soil Engineering Report and Addendums
Geotechnical Investigation

SOIL ENGINEERING INVESTIGATION

FOR PROPOSED OFFICE, RETAIL, RESIDENTIAL BUILDINGS

AT

SOUTHEAST CORNER OF AGOURA ROAD AND CORNELL ROAD

AGOURA HILLS, CA

FOR

AGOURA AND CORNELL ROADS L.P.

HEATHCOTE GEOTECHNICAL
SOIL TESTING • FOUNDATIONS • INSPECTION
1884 EASTMAN AVENUE, SUITE 105, VENTURA, CALIFORNIA 93003

Agoura and Cornell Roads L.P.
Attn: Doron Tal
5924 Melvin Avenue
Tarzana, California 91356

Job: 04182
Date: January 22, 2014

Ladies/Gentlemen:

We are pleased to present this soil engineering report in conjunction with an engineering geology report for you to aid in the design of your proposed project. The engineering geology report was prepared by Terry Mayer, Certified Engineering Geologist, and is presented in a separate report.

The project is located at the southeast corner of Agoura Road and Cornell Road in Agoura Hills.

The project involves erecting one and two story buildings. The structures will be built substantially into the existing grade. Some substantial grading is expected. Basement walls are planned for some of the buildings. The basement walls may be up to 40 to 50 feet in height. The loads will be light to heavy. The floor will be slab-on-grade. The proposed building will be serviced by public sewers. Additionally, there will be some road widening and improvements made along Agoura Road and Cornell Road. Detailed calculations and geologic studies of the area are presented to facilitate the slope work.

Submittal of this report to appropriate governmental agencies is the responsibility of the owner or their representatives.

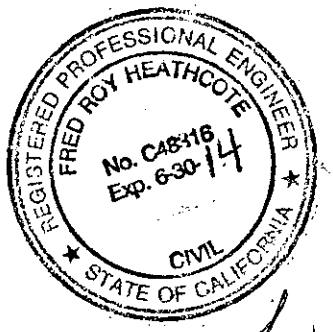
The project will be safe for intended use as long as the recommendations of the report are followed.

The report will follow and includes; a comprehensive task list, observations and findings, recommendations, basis of

report, results of testing, plot plan, borings, and slope stability sections with calculations.

It has been our pleasure to serve you and if you have any questions or need additional service, please contact us.

Fred Heathcote
Civil Engineer
No. C48316



Comprehensive Task List

GENERAL

This portion of the report specifies all the work that was performed and the procedures used.

This investigation did not address the possibility of any contaminants in the soil, although none were noted. Geologic hazards are presented in a separate report by Terry Mayer. Our report addresses geologic issues raised in the geology report with engineering strengths, calculations, recommendations, and factors of safety. The following is the comprehensive task list.

SITE WORK

1. Reviewed site for engineering problems that can be associated with the soil.
2. Seven backhoe borings up to 9 feet in depth with undisturbed samples taken at frequent intervals. Additionally, there were 5 bucket auger borings performed to a depth of 30 feet. Undisturbed samples were taken in the borings. These borings were used for foundation and slope stability.
3. Logging of soils in the borings for engineering properties.
4. Obtained a bulk samples for laboratory testing.

TESTING

1. Moisture and density of the undisturbed samples
2. Maximum density and optimum moisture contents of soils on site for grading purposes
3. Expansion index tests
4. Shear testing for slope stability studies. We utilized ultimate shears and residual shears. Residual shears were sheared 5 times. The shears were examined at the end of testing. No piece larger than 1/8 inch was in the sheared zone. The latest version of the ASTM procedures were used. The strain rate was performed at a deformation rate of .05 inches per minute.
5. Consolidation testing for foundations using the latest versions of the ASTM.

Results of testing are presented following the basis of report and in the boring logs.

REPORT

1. Comprehensive task list
2. Findings and Observations
    a) site conditions
    b) soil conditions
    c) slope stability
    d) geologic hazards
3. Recommendations
    a) foundation: depths, bearing value, settlements, and lateral values
    b) slabs on grade
    c) basement/retaining walls
    d) paving
    e) construction procedures: earthwork, inspection
4. Basis of report
5. Results of testing
6. Plot plan
7. Boring logs
8. Slope stability

SITE CONDITIONS

The area of the proposed building is located on the top of a knoll. Generally, the existing side of the knoll slopes downward at incline of 2:1 at the steepest. See grading plan for details.

The hillside is composed of the volcanic bedrock. No gross instabilities were noted.

The site is mostly in a natural state with weeds and brush. There has been some weed abatement in the form of tilled earth. Some oak trees are present.

SOIL CONDITIONS

Twelve borings were performed. No fill soils were encountered in the borings. Fill soils may be encountered in the construction phase.

Soils

Some minor surface soils are present on the sites. These soils are generally moderately firm and considered to have high expansion potential. These soils consist of silty clays with volcanic cobbles. Foundations will not rest on any of the soils.

Bedrock

Below the upper natural soils is found a volcanic bedrock. The bedrock formation is moderately dense and not very compressible. The expansion potential is considered medium.

During excavation of the bucket auger pits, the bedrock for the most part was moderate to moderately hard. There was one section that a core barrel was needed for 3 feet. This project should be able to be excavated with large excavators with the appropriate rock teeth. Some breaking will be needed.

The following shows the strength values used in analysis for the bedrock formation. These strengths are based on the conservative use of ultimate shear strength for the allowable strength for cross bedding. For along bedding strengths, we have used residual shear.

1. volcanic bedrock-ultimate
   c=400 psf
   ϕ=36
   γ=120 pcf

2. volcanic bedrock-residual
   c=200 psf
   ϕ=36
   γ=120 pcf

For the seismic case we have used the following ultimate value. This is conservative but yielded sufficient factors of safety.

1. Cross bedding
   c=400 psf
   ϕ=36
   γ=120 pcf

3. volcanic bedrock-residual
   c=200 psf
   ϕ=36
   γ=120 pcf

Water conditions

Groundwater was not observed at a depths excavated. Historical groundwater is at 10 feet at the elevation of Agoura Road. This historical groundwater is not within 5 feet of the finished floor elevations.

SLOPE STABILITY

We used the value of the ultimate shear strength in the analysis of the total slope stability. Residual shear is used in the design of individual basement and retaining walls.

We are using circular failures to determine the factor of safety for gross stability.

Gross Stability

The overall gross stability of the slope was evaluated The physical testing and inspection did not reveal a slide plane underneath the proposed structures. No gross stability failures were noted.

Bishop's Simplified method was used with computer analysis. Generally, the lowest factors of safety for gross stability were almost surficial failures.

The gross factor of safety for the overall stability of the entire proposed cut slope to the north is 2.24.

For the seismic case, the factor of safety is 1.39.

Surficial Stability

Using the shear values obtained for residual shear yields sufficient factor of safety for the surficial stability. The factor of safety is 1.71. Some minor weathered areas of the bedrock may erode and should be maintained.

GEOLOGIC HAZARDS

This report is not a geology report, but certain things should be noted.

Liquefaction

No groundwater was observed in the borings. The site is listed in an area of liquefaction. Bedrock is found at the surface. No liquefaction danger is present. Lateral spreading is not of concern due to the bedrock conditions at the surface. No change in recommendations will be needed due to liquefaction.

Debris flows

Due to the mild nature of the uphill slopes around the proposed building debris flows are not of concern. Proper setbacks of building shall be maintained as in accordance with C.B.C. code.

Flooding

No specific flooding is anticipated. The project is well above any flood plain issues. Surface waters need to be drained properly away from the proposed structures.

Faulting and Seismicity

Faults are addressed in the geology report.

2003 NEHRP Seismic Design Provisions

Latitude = 34.14
Longitude = -118.76
Spectral Response Accelerations Ss and S1
Ss and S1 = Mapped Spectral Acceleration Values
Site Class B - Fa = 1.0 ,Fv = 1.0
Data are based on a 0.01 deg grid spacing

Period (sec)	Sa (g)	
0.2	1.673	(Ss, Site Class B)
1.0	0.696	(S1, Site Class B)

Design Spectral Response Accelerations SDs and SD1
SDs = 2/3 x SMs and SD1 = 2/3 x SM1
Site Class B - Fa = 1.0 ,Fv = 1.0

Period (sec)	Sa (g)	
0.2	1.115	(SDs, Site Class B)
1.0	0.464	(SD1, Site Class B)

MCE Response Spectrum for Site Class B
Ss and S1 = Mapped Spectral Acceleration Values
Site Class B - Fa = 1.0 ,Fv = 1.0

Period (sec)	Sa (g)	Sd (inches)
0.000	0.669	0.000
0.083	1.673	0.113
0.200	1.673	0.654
0.416	1.673	2.832
0.500	1.393	3.402
0.600	1.161	4.082
0.700	0.995	4.763
0.800	0.870	5.443
0.900	0.774	6.123
1.000	0.696	6.804
1.100	0.633	7.484
1.200	0.580	8.164
1.300	0.536	8.845
1.400	0.497	9.525
1.500	0.464	10.206
1.600	0.435	10.886
1.700	0.410	11.566
1.800	0.387	12.247
1.900	0.367	12.927
2.000	0.348	13.607

FOUNDATIONS

The expansion potential of the bedrock indicates a foundation design for medium expansion soils is needed for the foundations. Foundations should have at least 2-#4 bar at top and bottom.

All foundation excavations will need to be reviewed to ascertain that the bedrock conditions are similar. Problems can be found with uneven expansion due to sulfide expansion and other expansion issues.

No lateral pressure on foundations due to seismic loads are anticipated.

No lateral loads or movement are expected on foundations due to liquefaction. There are no retaining walls that will be affected by liquefaction. There is no flotation of buried structures that will affect the project.

No ground stabilization is deemed necessary. The foundations do not need extra structural reinforcement from normal due to lack of liquefiable soils. Differential settlement has been accounted for in the design.

Supporting Soils

The proposed building may be supported on the bedrock.

Depth and Width

The footings must extend at least 24 inches below finished grade and at least 12 inches into the bedrock. Minimum width for the footings is 12 inches.

Proper depths of foundations will be needed to attain daylight distance from the bottoms of the foundations as prescribed in the U.B.C. and as per City of Agoura Hills code. The distance shall be 40 feet to daylight or H/2 whichever is less. We will need to review the depths of the foundations as exact locations are given. Piles may be needed to attain the depths needed.

Allowable Bearing Value

The proposed foundations may be designed to place a load of 6000 pounds per square foot on the bedrock.

Settlement

Load induced settlement of the structures should not exceed 1/2 inch. Differential settlement should be less than 1/4 inch.

Lateral Values

The coefficient of friction for the foundations shall be 0.4. The allowable passive pressure is equal to a fluid density of 400 pounds per cubic foot. Sliding resistance and passive pressure may be used to resist lateral forces without reduction.

SLABS ON GRADE

The slabs may be placed on the resulting compacted fill from proper grading. The slabs should be designed for soils of high expansion. Reinforcing should have a minimum of #4 bars at 18 inches on centers each way.

Due to the basement conditions, we recommend that you use a 6 inch layer of gravel beneath the slab as a capillary break. The gravel should be of 3/4 inch variety with less than 1% sand with very little amount of fines. The basement gravel shall have slotted pipes and be positively drained from beneath the slabs.

A visquene covering shall be used to serve as a water vapor barrier. A 2 inch layer of sand should be placed on top of the visquene.

BASEMENT/RETAINING WALLS

Lateral values

The retaining walls must be designed to resist a lateral pressure equal to a fluid density of 35 pounds per cubic foot assuming a level backfill behind the walls to accomodate active pressures. The equivalent fluid pressure for a 2:1 backfill must be at least 50 pcf.

We have reviewed the grading plans and there is a potential for interaction between retaining wall that are stacked. Foundations shall be deep enough to eliminate this possibility. We will need to review structural plans to accomplish this.

Basement walls must be designed to resist a lateral pressure equal to a fluid density of 70 pounds per cubic foot assuming a level backfill behind the walls to accomodate at rest pressures. The equivalent fluid pressure for a 2:1 backfill must be at least 80 pcf.

Walls have been designed for worst case scenario using the weakest along bedding strengths. A factor of .15 must be used for seismic design of the walls.

Drainage

To provide proper drainage behind basement walls, a layer of gravel should be placed behind the wall to a depth of 24 inches below the proposed finished grade. The gravel should extend up to within 18 inches of the top ground surface, but no higher. All gravel shall be completely wrapped in burrito fashion so as to minimize soil entering the gravel. Compacted soils should be placed in the remainder to reduce surface water infiltration. A method of drainage should be provided in the form of a slotted pipe with Class 2 permeable material. Proper water proofing should be used on basement walls and be adequately protected from puncture.

ASPHALTIC PAVING

The asphaltic paving is designed using a R value of 14 for the type of soil. The Caltrans Method is used for designing the paving.

The following design will be satisfactory assuming a stable and compacted subgrade. The following sections will address this issue. The pavement sections are designed for traffic indices of 5 and 9. Both are presented. Other indices are presented at the end of the report.

Areas that are subject to purely auto traffic may use a Traffic Index of 5. Areas subject to heavy truck traffic must use a traffic index of at least 9.

TI=5
3" Asphaltic paving over
8" Base course

TI=9
6" Asphaltic paving over
18" Base course

Base course shall use class 2 aggregate base compacted to 95% of maximum compaction. Asphalt shall be similarly compacted. Proper drainage of paved areas will increase the life of the paving.

DRAINS AND GRADES

All grades shall drain away from the foundations. Downspouts should be drained away from the foundations.

CONSTRUCTION PROCEDURES

Slopes

All temporary slopes must maintain 3/4 to 1 horizontal to vertical. Vertical cuts over 4 feet are not allowed by OSHA.

Finished cut slopes shall not exceed 2:1 horizontal to vertical. Fill slopes shall not exceed 2:1 horizontal to vertical. Hillside should be planted for erosion control.

Generally, all buildings shall conform to setback requirements for slopes as specified by the City of Agoura Hills.

All appropriate drains and slope interceptor drains shall be installed as required by the City of Agoura Hills.

Excavations

To support slabs and any proposed fill soils the following must be excavated.

1) In the area of the proposed grading all organic material should be removed and taken off site.

2) Any fill soils

3) A keyway shall be placed at the bottom of all fill slopes a minimum depth of 3 feet and down to the bedrock. Keyway shall be a minimum of 10 feet wide.

4) All fill soils shall be benched into the hillside.

5) All upper soils shall be removed to the bedrock.

The following must be excavated in areas to be paved.

a) All organic material

b) All upper soils shall be removed to the bedrock.

Standard grading procedure

After excavation the following must be accomplished.

1) All bottoms of the excavations and areas to receive slabs shall be scarified and compacted to 90% compaction.

2) All fills and backfills should be placed in horizontal layers less than 8 inches in loose thickness.

3) The soils shall be compacted to a minimum of 90% of the maximum density rendered by the latest ASTM version.

4) The moisture content should not vary more than 2% from the optimum moisture content, although the grading process will be more easily accomplished with the soils being 1 to 2% wetter than optimum moisture content.

5) Any utility trenches will need to be properly backfilled as detailed in 2,3 and 4 above.

6) All on site soils may be used. Any import soils should be approved by our firm.

7) Slope face shall be compacted to at least 90% of maximum compaction.

Subdrains

Subdrains shall be placed in all fill slopes to minimize the affects of pore pressure on the finished slopes. One drain shall be placed for every 10 feet of fill slope height.

Inspection

This is an important step to obtain quality construction and to obtain correct design. The following will need inspection by our firm.

* Foundations
* All earthwork
  a) All fill and backfills
  b) Testing frequency is at all bottoms and every 2 vertical feet
* Subgrade preparation for slabs on grade

Inspection, by our firm, is needed to assure that the soil conditions are consistent with this report and design assumptions. Inspection by local government agencies may also be needed.

RIGHT OF USE

This report is intended exclusively for the use of the Agoura and Cornell Roads L.L.P. and the project designers.

METHODS

This report has been developed based on our understanding of the project details, field review, boring excavations, laboratory testing, engineering analyses, and experience with similar soil conditions with similar use and loads.

DEGREE OF PERFORMANCE

The work was performed using the methods and degree of care used by other soil engineering firms operating in this vicinity, for similar projects, in this time period. This firm is responsible only for our own negligent errors and negligent omissions. Any error or omission that results in an unexpected cost that normally would have been present, is not the responsibility of our firm. Nothing else is warranted, implied or expressed, as to the details presented in this report.

VALIDITY OF REPORT

Changes

This report is valid for this specific project as described in the text of the report and on the plot plan. Any change in project size, loads, location, grade or use would require a review of this report.

Inspection

The recommendations given in this report are based on the assumption that all necessary inspection work will be performed during the construction phase of the project. The initial soil engineering investigation is only a part of the work needed to obtain correct engineering design. The soil conditions are only anticipated in the initial report. The inspection work verifies the conditions are as expected and allow our firm the ability to modify the recommendations in the event that the soil conditions are different.

The presence of inspection will provide the owner with the ability to obtain advice as to soil related construction procedures and answer related questions as to the implementation of the recommendations provided in this report.

If another firm is used to perform the construction inspection of the soil related aspects, our professional liability and responsibility would be drastically reduced to the point that we would no longer be the soils engineer of record.

EXPANSION INDEX TEST

Sample Location:	Boring 2@0-1'
Soil type:	Silty Clay
Confining Pressure:	144 psf
Initial Moisture Content: (% of dry wt.)	18.5
Final Moisture Content: (% of dry wt.)	34.5
Dry Density:	85 pcf
Expansion Index:	95

TEST METHOD:
THE LATEST ASTM VERSION
EXPANSION INDEX TEST

COMPACTION TEST

Sample Location:	Boring 2@0-1'
Soil type:	Silty Clay
Maximum Dry Density:	109 pcf
Optimum Moisture Content: (% of dry wt.)	16

TEST METHOD:
LATEST ASTM VERSION
COMPACTION TEST

R VALUE TEST

Sample Location:	Boring 2@0-1'
Soil type:	Silty Clay
Exudation Pressure:	240 psi
Final Moisture Content at Equil.: (% of dry wt.)	18.5
Dry Density:	104 pcf
R-Value at Equil:	14

TEST METHOD:
HVEEM

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1884 EASTMAN AVENUE, SUITE 105, VENTURA, CALIFORNIA 93003

Agoura and Cornell Roads L.P.
Attn: Doron Tal
5924 Melvin Avenue
Tarzana, California 91356

Job: 04182
Date: February 11, 2015

Ladies/Gentlemen:

We are pleased to present this addendum to our soil engineering report dated January 22, 2014.

The project is located at the southeast corner of Agoura Road and Cornell Road in Agoura Hills.

In response to the City of Agoura Hills response letter dated April 7, 2014 we present the following information.

Planning Feasibility Comments.

1. Our firm does not have this information.
2. We only encountered 1 zone of hard rock that required 3 feet of coring in the entire site. It is possible that there are harder layers that may require blasting, although we do not expect this. Blasting is not always necessary if large enough equipment is used with the concrete breakers. It is the owners desire to avoid blasting at all costs. Due to the material encountered we feel that the possibility of extensive very hard material is remote. Additionally, that no other way than blasting would be necessary is remote.

Report Review Comments

1. No newer maps are available. Everything is on the latest maps.
2. Included is the R-Value testing.

3. Section is provided by Geologist Terry Mayer. The following is our discussion. The walls shall be

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accomplished using pile foundations. Foundations shall extend at least 5 feet below the level of the wall immediately below. The foundations shall also maintain a minimum of H/2 to daylight. See attached geology section with foundation depths.

4. Closely stacked retaining walls will be built to not interact due to depth of lower walls as detailed in the previous question.

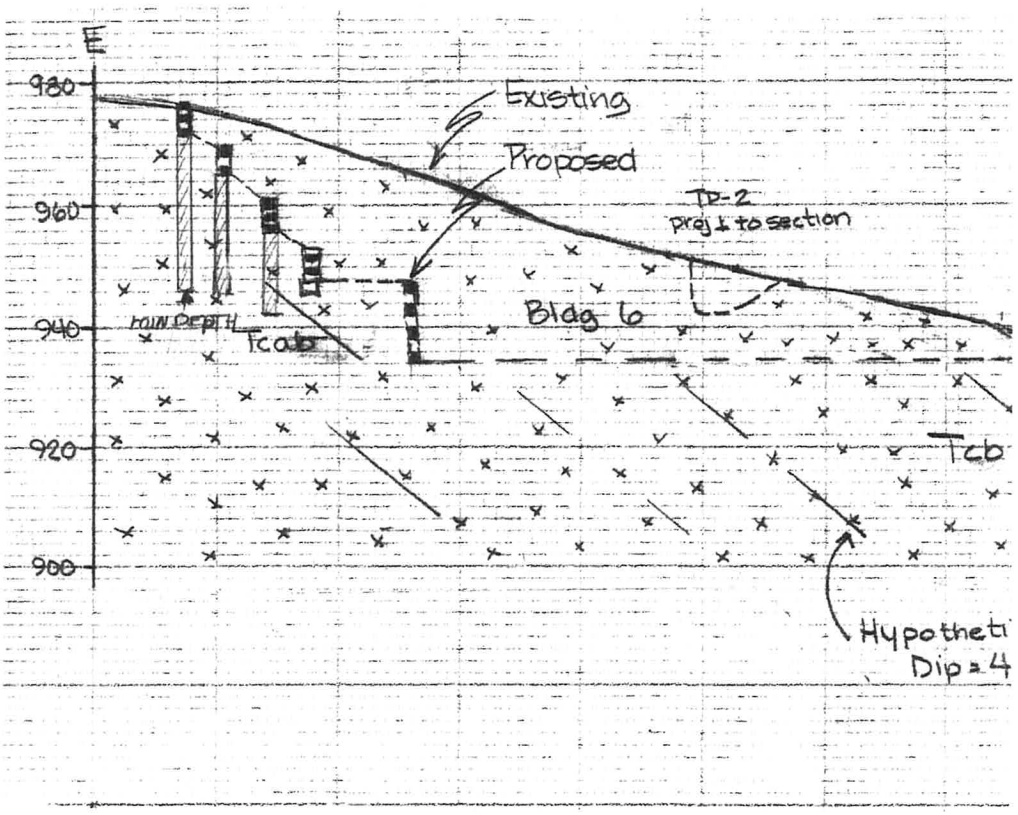
It has been our pleasure to serve you and if you have any questions or need additional service, please contact us.

Fred Heathcote
Civil Engineer
No. C48316

R VALUE TEST

Sample Location:	Boring 1@0-2'
Soil type:	Clayey Silt
Exudation Pressure:	240 psi
Final Moisture Content at Equil.: (% of dry wt.)	18.5
Dry Density:	104 pcf
R-Value at Equil:	14

TEST METHOD:
HVEEM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GeoDynamics, Inc.
Applied Earth Sciences
Geotechnical Engineering & Engineering Geology Consultants

Date: January 20, 2015
GDI #: 06.00103.0132

CITY OF AGOURA HILLS - GEOTECHNICAL REVIEW SHEET

To:	Doug Hooper
Project Location:	Southeast Corner of Agoura Road and Cornell Road, Agoura Hills, California.
Planning Case #:	07-AVDP-002 & TPM-70559
Building & Safety #:	None
Geotechnical Report:	Heathcote Geotechnical (20014b), "Addendum to Soil Engineering Report dated January 22, 2014, Southeast Corner of Agoura Road and Cornell Road, Agoura Hills, California," Job 04182, dated September 11. 2014. Terry A. Mayer, Consulting Geologist (2014b), "Geologic Study for Proposed Office Building Complex, Cornerstone Project, Southeast Corner of Agoura Road and Cornell Road, City of Agoura Hills, California," Project No. 040802, dated January 23. 2014. Heathcote Geotechnical (20014a), "Response to City of Agoura Hills Geotechnical Review Sheet date April 7, 2014, Proposed Office Building Complex, Cornerstone Project, Southeast Corner of Agoura Road and Cornell Road, City of Agoura Hills, California," Job 04182, dated July 11, 22. 2014. Terry A. Mayer, Consulting Geologist (2014a), "Geologic Study for Proposed Office Building Complex, Cornerstone Project, Southeast Corner of Agoura Road and Cornell Road, City of Agoura Hills, California," Project No. 040802, dated January 23. 2014.
Plans:	DTR Engineering (2008), "Tentative Parcel Map 70559, Cornerstone, Agoura Road and Cornell Road, Sheets 1 through 6 of 6," Job 3305, dated June, October, and November 2008. Heathcote & Associates, Architecture; (2013), "Cornerstone Reference Site Plan," Job No. 1886, dated November 21, 2013.
Previous Reviews:	June 8, 2005 (BYA), May 29, 2007 and June 10, 2008 and April 7, 2014 (GDI).

FINDINGS

Planning/Feasibility Issues	Geotechnical Report
☐ Acceptable as Presented	☐ Acceptable as Presented
☒ Response Required	☒ Response Required

REMARKS

Heathcote Geotechnical (Heathcote) and Terry A. Mayer (TAM) provided a response to the geotechnical review letter by the City of Agoura Hills dated April 7, 2014 regarding the proposed development at the site located at the southeast corner of Agoura Road and Cornell Road in the City of Agoura Hills, California. The proposed development includes the construction of seven one- and two-story office/retail buildings with basements, access roads and parking areas. The grading and building construction will make extensive use of stacked retaining walls that appear to range up to individual heights of over 40 feet. No significant fills appear to be proposed. It appears that excavated material will need to be exported from the site.

The City of Agoura Hills – Planning Department reviewed the above-referenced reports and plans from a geotechnical perspective for compliance with applicable codes, guidelines, and standards of practice. GDI

performed the geotechnical review on behalf of the City. Based upon the City's review of the above-referenced report and plans, the consultant shall adequately respond to the following Planning/Feasibility comments prior to consideration by the Planning Commission of approval of case number 07-AVDP-002. The Consultant should respond to the following Report Review comments prior to Building Plan-Check Approval. Some of the comments are reiterated from the previous review letter with a note explaining why the response by the consultant is considered incomplete. Plan-Check comments should be addressed in Building & Safety Plan Check. A separate geotechnical submittal is not required for plan-check comments. The reviewers welcome the opportunity to discuss remaining comments with the consultant if they so desire.

Comments to Applicant and City

- The plan includes interior retaining walls that extend to heights over 40 feet. The City code limits the height of retaining walls to 6 ft. or less.

Planning/Feasibility Comments

1. The consultant should discuss the need for an on-site surface water disposal system for the site. Accordingly, an evaluation of such a system should be performed as per the County of Los Angeles guidelines and requirements. Mitigation measures should be recommended as necessary.

   Note: The consultant responds to this comment by stating that "*We have not been contracted at this point to provide on site water disposal.*" Any required on-site storm water disposal system must be evaluated in accordance with the current County of Los Angeles Geotechnical Manual prior planning approval.

2. The consultants drilled 5 bucket auger borings that extended to 30 feet below existing grade. Some of the proposed cuts extend to depths greater than 40 ft. Hence, information regarding some of the engineering characteristics below 30 ft is not available, but could impact the feasibility of the project. For example, hard rocks are not uncommon within the Conejo Volcanics. Blasting might be necessary if conventional excavation equipment is not able to excavate through deeper materials. The consultant should further evaluate the rock hardness in deep excavation areas (example: using seismic traverses) and discuss the need for and the feasibility of blasting.

   Note: Considering the depth of cut in this project, information regarding the excavation characteristics (example: using seismic traverses) of the rock should be provided. A discussion of the need for and feasibility of blasting should also be provided.

Report Review Comments

1. The consultant should review final development plans, including the grading plans when they become available. A copy of the grading plan should be used as a base map for an updated geotechnical map. Additional geotechnical recommendations should be provided as necessary to address the various aspects of the development/grading plans.
2. Laboratory data for the R-value was not found within the report. What is the basis for the R-value used to compute pavement sections? The Consultant needs to justify the R-value used in his analyses.

   Note: No results were provided as indicated in response to this comment.
3. The consultant should provide at least one cross-section at appropriate scale through the most critical stacked retaining wall. The section should depict geologic/soil materials, contacts, joints, fractures, foundation depth to meet setback requirements, and surcharge pressure on lower retaining walls due to upper ones.
4. The consultant should evaluate the potential for interaction between closely located retaining walls and between retaining walls and closely located foundations/structures. An appropriate method of engineering analyses should be used (example: 1) Spangler & Handy (1982), Soil Engineering, fourth Edition, Harper & Row, New York. 2) Navy Design Manual NAVFAC DM-7.2, Figure 18).

Plan-Check Comments

1. The name, address, and phone number of the Consultant and a list of all the applicable geotechnical reports shall be included on the building/grading plans.
2. The following note must appear on the grading and foundation plans: "*All retaining wall excavations shall be reviewed by the project engineering geologist for the presence of adversely oriented joint surfaces. Adverse*

surfaces shall be evaluated and supported in accordance with recommendations of the project geotechnical engineer."

3. The grading plan should include the limits and depths of overexcavation of the building pad and flatwork areas as recommended by the Consultant.
4. The following note must appear on the grading and foundation plans: "*Excavations shall be made in compliance with CAL/OSHA Regulations.*"
5. The following note must appear on the foundation plans: "*All foundation excavations must be observed and approved, in writing, by the Project Geotechnical Consultant prior to placement of reinforcing steel.*"
6. Foundation plans and foundation details shall clearly depict the embedment material and minimum depth of embedment for the foundations.
7. Drainage plans depicting all surface and subsurface non-erosive drainage devices, flow lines, and catch basins shall be included on the building plans.
8. Final grading, drainage, and foundation plans shall be reviewed, signed, and wet stamped by the consultant.
9. Provide a note on the grading and foundation plans that states: "*An as-built report shall be submitted to the City for review. This report prepared by the Geotechnical Consultant must include the results of all compaction tests as well as a map depicting the limits of fill, locations of all density tests, outline and elevations of all removal bottoms, keyway locations and bottom elevations, locations of all subdrains and flow line elevations, and location and elevation of all retaining wall backdrains and outlets. Geologic conditions exposed during grading must be depicted on an as-built geologic map.*"

If you have any questions regarding this review letter, please contact GDI at (805) 496-1222.

Respectfully Submitted,

GeoDynamics, INC.

Ali Abdel-Haq
Geotechnical Engineering Reviewer
GE 2308 (exp. 12/31/15)

Christopher J. Sexton
Engineering Geologic Reviewer
CEG 1441 (exp. 11/30/16)

REFERENCES

Reports

Heathcote Geotechnical (2004), "Soil Engineering Investigation for Proposed Office, Retail, Residential Buildings at Southeast Corner of Agoura Road and Cornell Road, Agoura Hills, California," Job 04182, dated September 28, 2004.

Terry A. Mayer, Consulting Geologist (2004), "Geologic Study for Proposed Office Building Complex, Southeast Corner of Agoura Road and Cornell Road, City of Agoura Hills, California," Project No. 040802, dated August 23, 2004.

Plans

DTR Engineering (2008), "Preliminary Grading Plan, Tentative Parcel Map 70559 for Air-Space condominium Purposes, City of Agoura Hills, County of Los Angeles, State of California,, Sheets 1 through 6," Job 3305, dated June 2008.

Heathcote & Associates, Architecture; (2008), "Concept and Preliminary Grading Plan, Cornerstone Project;, 2008; Sheets A5.01.1-3, A2.1.1-3, A2.2.1-3, A2.3.1-3, A2.4.1-3, A2.5.1-3, A2.6.1-2, A2.7.1-2, A3.1, A4.1-7, A7.1, P1-3, T1-3.," dated June 1, 2008.

Heathcote & Associates, Architecture; (2007), "Concept and Preliminary Grading Plan, Cornerstone Project;; Sheets A1.1-3, A2.1.1-3, A2.2.1-3, A2.3.1-3, A2.4.1-3, A2.5.1-3, A2.6.1-2, A2.7.1-2, A3.1, A4.1-7, A7.1, P1-3, T1-3," dated April, 2007

Heathcote & Associates, Architecture (2004), "Site Plan, Floor Plans, and Lighting Plans for Cornerstone, Agoura Road, Agoura Hills, California," Sheets A1.1, A12, A1.3, and A1.4 at 40-scale, Sheets A2.1.1, A2.3.3, A2.6.1, A2.7.1 at 8-scale, and Sheet L2, All Sheets dated 06-01-04.

Pacific Coast Civil, Inc. (2004), "Cornerstone @ Agoura Village, Conceptual Grading Plan, Sheet C1, 40-scale, dated 06-01-04.

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Agoura and Cornell Roads L.P.
Attn: Doron Tal
5924 Melvin Avenue
Tarzana, California 91356

Job: 04182
Date: August 26, 2015

Ladies/Gentlemen:

We are pleased to present this addendum to our soil engineering report dated January 22, 2014.

The project is located at the southeast corner of Agoura Road and Cornell Road in Agoura Hills.

In response to the City of Agoura Hills comment letter dated April 27, 2015, we present the following information.

We have reviewed the revised "Page 11" to the report produced by Westland Civil and have included a copy of the revised page of the SUSMP report.

In our professional opinion, on-site infiltration is not possible due to bedrock and clay conditions.

Per the revised page 11 to the SUSUMP Report, the project does not propose infiltration outside the planter box and water will be contained inside the planter box.

As far as the soils conditions on the site are concerned, we are in agreement with this report.

Additionally, in my letter dated February 11, 2015, I provided a discussion in response to the City's comment on the necessity of blasting as a means of excavation. I state in my response to the City's comment that "we only encountered 1 zone of hard rock that required 3 feet of coring in the entire site. It is possible that there are harder layers that may require blasting, although we do not expect this." There are other appropriate and feasible methods of excavation that can be used, which are; using a rock hammer on an excavator and or a D-10 with rippers.

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Further, the City approved the locations and depths for the previously drilled 5-bucket auger borings that extend to 30 feet below existing grade.

It has been our pleasure to serve you and if you have any questions or need additional service, please contact us.

Fred Heathcote
Civil Engineer
No. C48316

TERRY A. MAYER
CONSULTING GEOLOGIST
2902 GROVE STREET
VENTURA, CALIFORNIA 93003

805-653-5670

January 23, 2014

Mr. Fred Heathcote
Heathcote Geotechnical
1884 Eastman Avenue, Suite 105
Ventura, California 93004

Subject: Geologic Study for Proposed Office Building Complex, Cornerstone Project, Southeast Corner of Agoura Road and Cornell Road, City of Agoura Hills, California

Project No: 040802

References: see enclosed Plate R

Dear Mr. Heathcote:

In accordance with your request, our firm has undertaken an addendum study of the geologic conditions which occur on and adjacent to the subject site. Our purpose was to evaluate the distribution and characteristics of the earth materials and geologic structure which occur at the site so that we might assess their impact upon the proposed construction of a proposed office building and appurtenances.

The scope of work for this project included 1) review of our files and available references, 2) geologic mapping of the site and immediate vicinity, 3) review and logging of five (5) exploratory bucket-auger borings in addition to the seven (7) previously logged

exploratory test pits 4) construction of eight (8) additional geologic structure sections and 5) preparation of this report.

This field portion of this study was conducted on November 20 - 22, 2013. Geologic data obtained during this study is plotted on the attached 1-inch to 20-foot scale Geologic Site Map (Plate 1.1) and on the attached 1-inch to 500-foot Regional Geologic Map (Plate 1.2). Logs of the borings are included as Plates B-1 through B-5. Geologic sections are included as Plates 2.1through 2.4.

Site Development

It is our understanding that office buildings, parking lots, parking structures and appurtenances are proposed to be constructed on the site. Grading is anticipated in order to establish desired grades. Retaining walls are to be utilized to accommodate some of the proposed grade changes.

Project Location and Description

The site is located on the southeast intersection of Agoura Road and Cornell Road in the City of Agoura Hills, California. The site is currently vacant and at the time of our site investigation had been disced for weed abatement. Oak trees are scattered throughout the site. The site is irregular in shape and ascends from both Agoura Road and Cornell Road. Overall, slope gradients range from 1 1/2:1(horizontal to vertical) in the southwestern portion of the site to less than 4:1(horizontal to vertical). Note that a localized area of the site in southwestern corner along a drainage channel, has slope gradients of nearly 1:1 with maximum slope heights in this area of 50 feet. Drainage occurs as sheet flow over the site in a general northerly direction via existing natural contours.

FINDINGS

Lithology

As observed on the site and encountered in exploratory excavations and outcrops excavations, earth materials consist of extrusive Conejo Volcanics which are in part overlain by terrace deposits. A thin soil layer mantles the site. Utilizing on-site data and regional geologic maps (Plate 1.2) some geologic contacts are projected offsite.

Natural Soil - A veneer of soil covers the project site. The soil ranges in thickness from 1 foot to 3 ½ feet and consists of light brown to chocolate brown clayey silt with abundant volcanic fragments, and minor to moderate quantities of roots. The soil was found to be dry to damp and is generally loose.

Slump Debris (Qls) – Along portions of Cornell Road, the toe of slope has been undercut by heavy equipment. This has resulted in localized surficial slumping of the bedrock materials. The slump areas are depicted on the enclosed geologic site map.

Terrace Deposits (Qt) - Terrace deposits cap the lower portion of the site. These deposits were found to consist of rounded to sub-angular volcanic boulders and gravel in a clayey silt matrix. The sediments were found to be damp and dense.

Conejo Volcanics (Tcb/Tcab) - Interbedded andesitic-dacite flow breccias and basalts underlie the site and are in part overlain by terrace deposits. The volcanic deposits were found to be light gray to light brown in color, crudely stratified gravel, cobble and boulder-size andesitic fragments. Where observed, bedding planes are moderately to poorly defined. These

are highly to moderately weathered, locally hard and slightly to moderately fractured. No evidence of sulfides was noted in our exploratory excavations, however grading may expose such deposits. Contacts between the two volcanic units were defined by utilization of reference geologic maps (see Plate R) and by field mapping of exposures along roadways. In the exploratory test pits, excavation of the volcanics ranged from relatively easy to practical refusal (maximum depth explored 9 feet). In the exploratory borings, borings 3 and 5 experienced some difficulty in drilling at depths of 15 ft – 18 ft and 8 ft to 11ft., respectively. At these depths, a coring bucket was utilized. The rippabiltity of the earth materials between exploratory excavations and below the depths explored was not determined by this study.

Geologic Structure

The project site is located on the northern flank of the east-west trending Santa Monica Mountains. Where present, volcanic flow structures are poorly to moderately well-defined with bedding orientations ranging from approximately N75°W to N87°E with dips ranging from 56°N to 61°N. Field mapping of the roadside along Cornell Road indicated a dip of N64°E with a dip of 50°N. Joint orientation were found to range from N53°W to N32°E with corresponding dips of 50°SW to 69°NW. Due to weathering, structural features could not be discened in the majority of the test pits, borings and roadcuts.

Seepage and Groundwater

Neither seepage nor groundwater was encountered in our exploratory excavations and are not anticipated to interfere with construction activities. A historic shallow ground water depth of 10 feet is indicated for this area (Plate 1.3). It should be noted that fluctuations in

level of the groundwater may occur due to variations in rainfall, temperature, and other factors not evident at the time of our study.

Faulting - Seismicity

The site is situated within an intricately block-faulted area of the Transverse Ranges. As with most of the mountain ranges in Southern California, this area is bordered by faults which are active, potentially active, and inactive. Faults, of most concern from a ground shaking viewpoint are the San Andreas, Malibu Coast, Simi-Santa Rosa, San Cayetano, Big Pine, Red Mountain and Oak Ridge faults. Each is capable of generating large to moderate earthquakes and of causing significant shaking at the site. However, no significant and/or potentially active or active faults are known to underlie nor trend toward the site. The hazard of site damage as the result of ground rupture, caused by fault offset, is not anticipated. According to the State of California Seismic Hazard Zone Map – Thousand Oaks Quadrangle (Plate 1.4) areas within the project site are susceptible to seismically induced landslides.

Notwithstanding, the site, as with all sites in southern California, will experience significantly strong coseismic ground motions caused by activity on regional faults at some time in the future.

Ground Shaking

Strong to severe ground shaking will be experienced in the project area if a large magnitude earthquake occurs on one of the nearby active or potentially active faults. Moderate to severe ground shaking due to a seismic event on a nearby fault could potentially cause damage to the proposed structure.

[redacted] Rupture

Surface rupture usually occurs along the traces of known active or potentially active faults, although many historic and recent events occurred on faults not previously known to be active. Inasmuch as no features indicative of on-site faulting were noted, the potential for damage as a result of ground rupture is considered to be low.

Liquefaction

The potential for liquefaction is defined by several factors which include: magnitude and proximity of the earthquake, duration of shaking, soil types, grain size distribution, density, effective overburden, groundwater level, as well as others. In light of the volcanic bedrock which underlies the project site and vicinity, the potential of liquefaction during a strong seismic event is considered to be negligible.

Lateral Spreading

Lateral spreading occurs as a result of liquefaction in which a subsurface layer becomes a liquefied mass, and gravitational and inertial forces cause the mass to move downslope. In light of the earth materials, the potential of lateral spreading during a strong seismic event is considered to be negligible.

Seismic Settlement

Seismic settlement occurs under a structure when cohesionless soils underlying the structure densify as a result of ground shaking. Although the magnitude of the seismically-induced differential settlement cannot be reliably predicted, it is not anticipated to

[redacted] within the Conejo Volcanics. Based upon the dense nature of the subsurface earth materials, the seismic settlement hazard is considered to be insignificant.

Landslides

Geologic maps reviewed as part of this study are indicated on the enclosed reference list. No landslides are indicated on these maps nor were any landslides were encountered in the exploratory excavations, however localized slump features were noted in the roadcut along Cornell road. No buried soil zones which would indicate a graben nor any indications of a landslide slip surface were noted.

The topography in the area of the building site and near vicinity is not indicative of large-scale landsliding: ie. non-hummocky topography, no offset drainage patterns, no visible landslide scarps, nor oversteepened slopes.

Based upon the above discussion, we conclude that the building site and near-vicinity are not underlain by a landslide. However, as previously noted, the site is located within an area designated by the State of California Seismic Hazard Map as being susceptible to seismically induced landslides.

DISCUSSION AND RECOMMENDATIONS

Data from our field exploration coupled with inferred conditions between exploratory excavations are the basis for the following discussion. Recommendations, based upon the presently available data, are presented below for your consideration.

General

The following recommendations have been prepared assuming that Terry A. Mayer, Consulting Geologist will review the grading and foundation plans prior to construction, and observe all construction activities.

1) The excavation characteristics of the earth materials exposed in the exploratory test pits, ranged from relatively easy to excavate to practical refusal with a backhoe and localized areas of difficult drilling in the exploratory boreholes. The rippability of these materials was not determined by this study and heavy equipment may be required to achieve desired pad/footing grades.

2) Finalized plans and specifications should be provided to this firm prior to grading. Plans should include the grading plans, foundation plans, and foundation details.

3) All prepared bottoms, backcuts, keyways and benches shall be observed by this firm prior to fill placement. Further recommendations may be issued depending upon geologic conditions observed.

4) The proposed footings shall bear upon compacted certified fill or in-place competent earth materials, not partially into each. Recommendations for foundations shall be provided by the soils engineer.

5) Slopes along Cornell Road are subject to surficial erosion. These slopes should be regraded to remove slump material and should be protected from future erosion.

6) All slopes should be planted or protected from erosion as soon as possible after construction.

7) All grading shall be performed under the supervision of the engineering geologist and geotechnical engineer. Final grading plans shall be reviewed by the engineering geologist and geotechnical engineer prior to construction.

8) Positive drainage should be established on the site. Water should not be allowed to flow towards nor pond adjacent to tops of slopes, nor to flow over the slope face. Water should not be allowed to pond adjacent to footings. It is the responsibility of the owner to maintain slopes and drainage facilities and improve deficiencies found during occupancy of the property.

9) The engineering geologist from this office shall review all temporary and permanent excavations (including foundation excavations and backcuts). Should the observations reveal any unforeseen conditions, additional recommendations may be made at that time.

10) All work and materials shall comply with the latest applicable specifications of the City of Agoura Hills.

Limitations

The engineering geologist has prepared this report using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable engineering geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to

the professional advice provided under the terms of the agreement and included in this report.

Should the project be delayed beyond the period of one year after the date of this report, the site should be examined and the report reviewed to consider possible changed conditions.

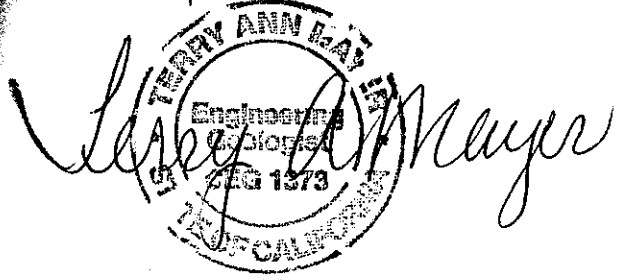
This report is issued with the understanding that it is the responsibility of the owner, or his representative, to assure that the information and recommendations contained herein are called to the attention of the designers and builders for the project.

The subsurface conditions, excavations, characteristics, and geologic structure described herein and shown on the enclosed cross sections have been projected from individual test pits placed on the subject property. The subsurface conditions, excavation characteristics, and geologic structure shown should in no way be construed to reflect any variations which may occur between these test pits.

If conditions encountered during construction appear to differ from those disclosed, this office should be notified so as to consider the need for modifications. No responsibility for construction compliance with the design concepts, specifications, or recommendations is assumed unless on-site construction review is performed during the course of construction which pertains to the specific recommendations contained herein.

Thank you for this opportunity to be of service to you. Should you have any questions, please feel free to contact our office.

Respectfully submitted,



Terry A. Mayer
President
C.E.G. 1373

Enclosures:

Geologic Maps	Plates 1.1* - 1.4
Test Pit Logs	Plate 2.1 - 2.7
Boring Lobs	Plates B-1 – B-5
Geologic Section	Plate 3.1 - 3.4
References	Plate R

* in pocket

Appendix E

Noise Measurements and Noise Modeling Results

Num.	Time	Length	LAeq	LAE	LAmax	LAmin	LA10	LA33	LA50	LA90	LA95	Lppeak
1	9/2/2014 3:40	0:15:00	58.3	87.8	78.2	41	57.4	46.8	45.4	43.2	42.4	101.8
2	9/2/2014 4:00	0:15:00	66.2	95.7	79	45.5	70.6	65.7	62	51.5	50.3	102.3

Agoura btwn Cornell & Lewis - Existing
* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Agoura btwn Cornell & Lewis - Existing

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	465.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	8.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	16.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	4.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	2.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	32.8
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	67.6

Agoura btwn Cornell & Lewis - Existing + Project
* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Agoura btwn Cornell & Lewis - Existing + Project

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	569.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	10.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	20.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	5.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	2.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	32.8
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	68.4

Agoura btwn Cornell & Lewis - Cumulative
* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Agoura btwn Cornell & Lewis - Cumulative

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	675.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	12.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	23.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	6.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	3.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	32.8
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.2

Agoura btwn Cornell & Lewis - Cumulative + Project
* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Agoura btwn Cornell & Lewis - Cumulative + Project

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	780.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	14.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	27.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	7.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	3.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	32.8
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.8

Appendix F

Traffic and Circulation Study