Staff Report to the Zoning Administrator

Application Number: 05-0407

Applicant: Hamilton Swift Land Use
Owner: S&P Carmichael Enterprises, Inc.
APN: 040-081-06, -07, -09

Agenda Date: November 16,2007
Agenda Item #: 4
Time: After 10:00 am

Project Description: Proposal to cut approx. 1,880 cubic yards of earth and fill 2,300 cubic yards for a single family dwelling with garage, detached shop, water tank and driveway. Recognize grading of approximately 310 cubic yards of earth that has already occurred. Recognize remedial grading that was done to mitigate erosion and to improve drainage. Requires a Grading Permit and Riparian Exception (Residence redesigned and relocated from that area proposed under application 00-0143)

Location: The property is located near the Vienna Woods neighborhood of the Aptos Planning Area on the vacant parcel approximately 100' west of Danube Drive, approximately ¾ of a mile north of the intersection of Soquel Drive and Vienna Drive.

Supervisoral District: 2nd District (District Supervisor: Ellen Pirie)

Permits Required: Grading Permit, Riparian Exception

Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act and Approval of the attached Mitigated Negative Declaration.

- Approval of Application 05-0407, based on the attached conditions.

Exhibits

A.	Project plans	F.	Zoningmap
B.	Conditions	G.	Septic Test Locations
C.	Mitigated Negative Declaration and Initial Study (CEQA Determination)	H.	Comments & Correspondence (on file with the Planning Department)
D.	Riparian Exception Findings		
E.	Assessor's parcel map		

Parcel Information

Parcel Size:	141 Acres
Existing Land Use - Parcel:	Vacant

Existing Land Use - Surrounding:	SU (Nisene Marks), PF (Cabrillo College), R-1 (Vienna Wood Subdivision), RA (Parcels to the West)
Project Access:	Kamian St. (A St.) off of Danube Dr. via Jennifer Dr.
Planning Area:	Aptos
Land Use Designation:	Rural Residential, Mountain Residential, Public Facility
Zone District:	RA-D, PF, SU
Coastal Zone:	__ Inside X Outside
Appealable to Calif. Coastal Comm.	__ Yes X No

Environmental Information

Geologic Hazards:	Not mapped/no physical evidence on site
Soils:	Watsonville Loam, Los Osos Loam
Fire Hazard:	Yes, Portion
Slopes:	Less than 30%
Env. Sen. Habitat:	Wetland, Native Grassland, Oak Woodland
Grading:	Yes, 1,880 cys of cut, 2,300 cys offill
Tree Removal:	Yes
Scenic:	Not a mapped resource
Drainage:	To be retained / dispersed onsite
Archeology:	Not mapped/no physical evidence in disturbance area

Services Information

Urban/Rural Services Line:	__ Inside X Outside
Water Supply:	Well
Sewage Disposal:	Septic
Fire District:	Central Fire
Drainage District:	None

History

The project has an extensive history. **A** grading violation occurred in 1999 where portions of the property were stripped and graded. In 2000, the property owner submitted an application (00-0143) *to* recognize the unauthorized grading as well as propose a new single family dwelling and accessory building. The grading initially proposed in application 00-0143 was refined through the review process to comply with General Plan policies on the protection of ridge-tops and minimizing grading. The proposed single-family dwellingwas moved below the ridge top to a point approximately two thirds of the height ofthe slope. This further helped reduce the disruption of the ridge top as well as disturbance of Coastal Terrace Prairie.

Application 00-0143 was originally heard by the Zoning Administrator on March 21, 2003. After continuing the hearing for clarification concerning compliance with sensitivehabitat protection, erosion control, fire access, project design, and over-heightissues, the applicationwas reviewed and approved at the Zoning Administrator's Hearing on December 19,2003. Due to Notices of the Hearing not being sent to some neighbors, the application was re-noticed, re-reviewed and approved again on March 19, 2004 by the Zoning Administrator.

Nisene 2 Sea appealed the Zoning Administrator's decision to the Planning Commission. On June 23, 2004, the public hearing was continued by the Planning Commission to allow staff time to provide more information regarding 30% slopes, biotic issues, fire access, public access, septic suitability, and the potential for future development of the site. On August 11, 2004, the Planning Commission upheld the appeal thereby denying application 00-0143. The Planning Commission's decision to uphold the appeal was because a 600 square foot portion of the proposed house was located on a greater than 30% slope.

On June 28, 2005, the owner submitted the current application (05-0407) with the residence redesigned and relocated off of the area of 30% slopes. Other notable changes from the previous application include a refined 30% slope line that now includes slopes that are currently steeper than 30% and an estimation of 30% slopes before the unauthorized grading, the elimination of the circular driveway above the residence, the elimination of the access driveway to the water tanks, as well as more drainage, biotic and fire protection / fuel management information included on the plan **set.**

Project Setting

The approximately 141-acre property consists of 3 parcels numbers (040-081-06, -07, -09) and is currently undeveloped. **A** developed sub-division (Vienna Woods) is located to the east. Developed single-family residences are located on larger parcels (–5-21 acres) to the west. Cabrillo College is located to the southwest and Nisene Marks State Park is located to the north. The property has slopes generally less than 15% near the Vienna Woods subdivision and the slopes generally increase towards the northern and western property lines. Vegetation on the site includes coastal terrace prairie, mixed *oak* woodland, coyote brush, redwood forest as well as non-native grassland and invasive plant species such as French broom, acacia, cotoneaster, and pampas grass. Two small wet meadows also exist on the property. (See Botanical Report for Details, Exhibit C Attachments 11-13).

Application 05-0407 proposes the grading of an access driveway to a building site (see Exhibit A, Sheets C1- C7) and grading to accommodate a proposed single-family dwelling and accessory building (shop). The total volume of earthwork will be approximately 1,880 cubic yards of cut and 2,300 cubic yards of fill. All grading and building will occur on slopes less than 30%. Retaining walls will be located along the driveway near the homesite to minimize grading as well to ensure that all grading will occur on slopes less than 30%.

The breakdown of the excavation is as follows:

Strippings	550 cys
Lower Driveway	480 cys
Upper Driveway	440 cys
Residence and Turnaround	410 cys
	1,880 cys

The breakdown of fill is as follows:

Lower Driveway	920 cys
Upper Driveway	300 cys
Residence and Turnaround	80 cys
Asphalt and Baserock	1000 cys
	2,300 cys

The proposed driveway starts approximately 110 feet west of the intersection of Danube Drive and Kamian Street (see Exhibit **A,** Sheet C2) and traverses the relatively flat portion of the property for about 1,700 feet before climbing a hill. An accessory building (shop) is proposed to be located immediately west of the access roadway at the base of the hill. The access driveway continues 300 feet up the slope to the building site. The building site is located near the acceptable septic location to avoid problems associated with a pump-up septic system. Retaining walls up to a maximum of **8.5** feet are proposed below the home and along portions of the driveway. A turn-around is proposed upslope of the home, which will also require the construction of retaining walls. The water tanks for the house are proposed further up the ridge, but no grading will be required to access the tanks. The grading for the residence, driveway and retaining walls, while necessary for the project as designed, will also correct the previous unpermitted grading. This includes smoothing drainage ditches and supporting an un-retained cut.

When the Park Wilshire subdivision (Tract No. 388) was approved in 1963, a I-foot wide non access strip at the terminus of Kamian Street where it abuts the Carmichael property was offered for dedication to the County. A non-access strip would ordinarily prevent access from Kamian Street and force the access to move to the end of Jennifer Drive, further south. However, research on the non-access strip indicates that the non-access strip offered for dedication has never been accepted by the County; therefore the non-access strip does not exist. This project, however, does include a Condition of Approval that requires the Applicant to *offer* for dedication to the County a 1-foot wide non-access strip at the terminus of **Jennifer** Drive. In turn, the County of Santa Cruz will immediately quit claim it's interest in the offer of dedication at Kamian Street.

Zoning & General Pian Consistency

The subject property is 141 acres, located in the RA-D, PF, SU (Residential Agriculture w/ future park site designation, Public Facility, Special Use) zone districts, designations which allow the construction of a single-family dwelling. Barry Samuels, as Director of the Department *of* Parks and Recreation, issued a memo to the Planning Department on August 28, 2001 stating that a grading permit for the construction of a road would not trigger the park site review process. Mr. Samuels reiterated this on February *6,* 2006. The proposed single-family dwelling is a principal permitted use within the zone district and the project is consistent with the site's RR (Rural Residential) General Plan designation.

Analysis and Discussion

Primary Planning Constraints:

The project is affected primarily by sensitive habitat including Coastal Terrace Prairie / Mixed Grassland, slopes near the proposed development greater than 30%, and septic suitability. These issues were addressed in detail in the Initial Study (Exhibit C) and **are** summarized below.

Sensitive Habitat:

During the review of this project two primary biotic issues were identified. First, Eco Systems West identified the need to determine whether a special status species, the Ohlone Tiger Beetle, is present on the property, and secondly, the site has been identified by Biotic Resources Group **(see** Initial

Study Attachments 11, 12 & 13) as containing Coastal Terrace Prairie / Mixed Grasslands.

Protocol Surveys for the Ohlone Tiger Beetle were performed (see Initial Study Attachment 9). The beetle was not identified during these surveys. Dr. Arnold concluded that the beetle is unlikely to occur on the property based upon these surveys and upon his personal experience with similar environments. (Reference Exhibit C, Attachment 9)

Coastal Terrace Prairie is present on the **property.** The proposed building pads are located away from the Coastal Terrace Prairie Grasslands, but portions of the proposed driveway alignment as well as the drainage system do impact the Coastal Terrace Prairie. Because the status of the 1' non-access strip at Kamian Street was unknown when this application was submitted, two driveways alignment alternatives were evaluated for impacts to biotic resources – access via Jennifer Drive and access from Kamian Street. Of the two, the driveway alignment from Kamian Street has the least impact to sensitive habitat. This alignment has been designed to minimize the impacts to prairie by utilizing the alignment of an existing **8'** wide path for the proposed driveway.

The project plans were revised during the review process to include the entire construction disturbance limits. The construction disturbance limits are shown on sheets C2 through C6 of Exhibit **A,** and include the entire length of the driveway including required fire turnouts, plus 5' on either side of the driveway. Also included in the disturbance area are the proposed shop and house, construction staging areas, the septic location, drainage dispersion trenches and the areas required to install the drainage pipe. The water tank location and associated piping does not disturb mapped coastal terrace prairie. The proposed project is projected to permanently affect 15,345 sf (.35 acres) of prairie habitat, 4,885 sf (.11 acres) of mixed grassland, and 5,950 sf (.14 acres) of mixed non-native / native grassland with french broom and cotoneaster. In addition, 11,968 sf (.28 acres) of prairie habitat and 6,311 sf (.15 acres) of mixed grassland and mixed non-native / native grassland with french broom and cotoneaster will be temporarily affected by site work.

Mitigations to ensure impacts are minimized include installation of temporary fencing along the construction limits prior to construction to contain disturbance; prohibiting storage of construction materials, equipment and parking outside of the designated work area; re-vegetation of areas disturbed during construction and during the 1999 unauthorized grading with native plant species compatible with the prairie habitat; implementation of a prairie management plan to manage and enhance prairie habitat at a 4:1 ratio';installation of plastic mesh fencing along the construction limits of the drainage line and salvaging of prairie sod blocks during excavation for drainage improvements.

The proposed project will include the removal of approximately 23 mature trees for the construction of the driveway and for fuel management around the shop and house. Twenty two of the trees proposed to be removed are native oak trees between 5 and 18 inches in diameter. The project will also require limbing of trees and possibly trenching within root zones. All of the trees proposed to be removed fall within the 30' tree removal zone required by the local fire department. The tree removal plan has been confirmed with Central Fire Protection District in the field. Any oak tree removed will require replacement oak trees to be replanted at a 3:1 ratio (66 trees), which will be required to be maintained and monitored for survival for a period of seven years.

There are also two oak trees between driveway stations 9+50 and 10+50 that could be saved by

realignment of the driveway. A proposed mitigation measure is to realign the driveway in this area to avoid removal of the oak trees. This realignment of the driveway would not have more impact on other sensitive habitat than what was evaluated in the initial study.

30% Slopes

General Plan Policy 6.3.1 states "Prohibit structures in discretionary projects on slopes in excess of 30 percent." Additionally, General Plan Policy 6.3.9 (b) states "Access road and driveways shall not cross slopes greater than 30 percent..."

The previous application for this property was denied because a 600 **square** foot portion of the proposed house would be located on a slope greater than 30%. The current proposal has the 600 square foot portion of the house removed. In addition, Planning staff required the project applicant to better define the 30% slope line. The previous plans showed only slopes that are currently over 30%. The applicant has now revised the plans, such that the 30% slope line also takes into account the slopes that were greater than 30% prior to the grading violation.

The applicant was also required to revise the plans to eliminate the circular driveway above the homesite as well as the driveway to the water tank site. The current plans have all proposed development located on slopes less than 30%, and on slopes that were less than 30% prior to the grading violation. The project is therefore in compliance with General Plan Policies 6.3.1 and 6.3.9.

Septic Suitability

The property has been extensively evaluated to determine whether and where there is a suitable location for the septic leachfield. The testing done on the property has shown that there are no suitable locations for onsite sewage disposal on the lower portion of the property, and that only the steeper slopes on the property contain soils suitable for a leach field. County Environmental Health Services staff has reviewed the testing done at the 28 locations onsite and concurs that the testing was appropriately distributed, and that the only suitable sites for a leach field are on the steeper portions of the site. See Exhibit G for a map of the areas tested for septic leachfield suitability.

The testing done the property for the purpose of evaluating the septic suitability are listed below:

1978: 14 Borings evaluated by Bowman and Williams
1999: 10 backhoe pits dug and evaluated by Christopher Rummel (Reg. Env. Health Specialist)
1999: **4** additional hand borings evaluated by Christopher Rummel

Additional Issues:

1999 Unauthorized Grading

Part of this project is the recognization of the 1999 unpermitted grading and the associated disturbance. The vegetation in the area graded in 1999 is identified in the botanical report as mixed non-native grassland / native grassland; mixed non-native and native grassland with French broom and / or cotoneaster; and bare. The botanical report states that the mixed-non native / native grassland areas are a result of the prior disturbance and the erosion control mix which was placed on site. This area represents approximately 50,036 sf (1.15 acres). The applicant will be required to include this entire area as part of the prairie management plan. To mitigate for the loss of what may have been there before the invasive erosion control mix was used, a 4:1 ratio **for** enhancement and

replacement will be required

In addition, the unauthorized grading included the removal of numerous oak *trees* on the knoll above the proposed homesite. This area is indicated as "Bare" on sheet C7 of Exhibit A. The applicant will be required to plant native *oak* trees, spaced at 10 feet on center, in this area to account for the oak trees removed during the unauthorized grading.

***Fire Department** Requirements*

The Central Fire Protection District has reviewed and approved the proposed driveway and turnaround. Additionally, to ensure that the fill scope of tree removal was disclosed, the Planning Department required the applicant to prepare a fuel management plan to identify trees that will be required to be removed by the fire agency. **The** applicant has worked with the fire agency to identify the fire protection zones around the proposed structures. The fire protection zones are shown on Sheet C8 of Exhibit A and include a 30' tree removal zone and a 100' fuel management zone around the proposed structures per the fire department requirements.

Additional Biotic** Information Supplied by **Nisene** 2 **Sea

Nisene **2** Sea is a local organization that has opposed this project in the past. Nisene 2 Sea had their own biotic evaluation prepared on the **property,** and states that the applicant's biotic information and the review by the County's consultant are inadequate to analyze the biotic impacts on the site and protect habitat. One of the primary differences between the mapping prepared by the applicant's consultant, Biotic Resources Group, and the information prepared for Nisene 2 Sea is that the Nisene 2 Sea mapping identifies all grassland as "Coastal Terrace Prairie (CTP)". Biotic Resources Group distinguishes between grassland that supports a mix of native grasslands and other species that constitute a prairie, and degraded grassland that is largely or completely made **up** of non-native species that have invaded and displaced the native grass prairie. The distinction is important because disturbance in a grassland that is not a native prairie is not a negative environmental impact, whereas displacement of native CTP is an impact does require mitigation.

The applicant's professional biotic consultant, Biotic Resources Group, has provided detailed maps and data on the vegetation and habitat types on the property. This information has been critically reviewed by the County professional consulting biologist, William Davilla of EcoSystems West, and he has found it to be an accurate description of the resources onsite.

The disturbance of the CTP was documented during the Environmental Review of the project and a mitigation measure was required. The specified mitigation is the design and implementation of a management plan that, over time, will favor the native species in the degraded areas. After review of all of the data, staff and the County's biotic consultant believe that with appropriate mitigation, the proposed project will result in an overall benefit to the grassland habitat through implementation of the required CTP management plan.

Visual Resources

The current visual setting is an open terrace and *oak* studded hillside within a visual context of single-family dwellings. The proposed new home will interrupt this view. However, the home has been designed to comply with the General Plan policies 8.6.5 and 8.6.6 to "encourage design that addresses the neighborhood and community context" and to assure incorporation of "design elements that **are** appropriate to the surrounding uses and the type of land use planned for the area."

Specifically, at this property, this means that the ridge top will be avoided in the development, the trees on the ridge will remain, the tank will be located so that it is screened by the trees, and the site will be landscaped. Further, the color of the buildings and the retaining walls will be required to be earth-tones in the range of the colors of the hillside and ridge backdrop, and non-reflective materials will be required to **be** used in the glazing and roofing. **A** single family dwelling on this large parcel is compatible with the neighborhood context.

*Acquisition of the **Property** by **State Parks***

On June 12,2007, County staff contacted Victor Roth of State Parks regarding interest in acquiring the site. While State Parks has assessed the property and feel that the property has interesting attributes, acquisition of the property has not been approved by State Parks. In addition, the attributes are ranked low (25'' of 34) with respect to other opportunities in Santa Cruz County. It should also he noted that the Planning Department evaluates applications for development based upon the standards contained in locally adopted policies and ordinances. Possible future changes in ownership play no role in the evaluation process by the Department.

California Department** of Fish **and Game (DFG) Approvals

An Initial Study/ Negative Declaration was prepared for this application in compliance with the County's Environmental Review Guidelines. The document was circulated to the Regional Clearinghouse as required per CEQA for comment by agencies and interested parties. DFG did not submit comments on the Initial Study/ Negative Declaration. It is not expected that permits will be required by DFG for this project.

Riparian Exception

The botanical report has identified two small previously unidentified wet meadow areas (approximately 200 sf and 800 sf) where an intermittent drainage traverses the property. The proposed driveway will be constructed within 8 feet of the larger wet meadow and approximately 110 feet from the smaller wet meadow. According to the report, the wet meadows probably meet the definition of a wetland due to the presence of positive wetland hydrology (drainage swale), the dominance of hydropyhtic vegetation, and likely hydric soil conditions. The driveway was proposed near the larger wet meadow in order to follow the alignment of an already disturbed pathway to reduce the disturbance to the coastal prairie grassland. The standard setback required from a wetland per County Code Section 16.30 is 100 feet. However, the findings for a riparian exception (see Exhibit D) can be made to allow the proposed access to pass within 8 feet of the wet meadows, based on the special circumstances of having to balance two competing biotic management goals, that of avoiding CTP on one hand, and providing a large buffer around a wetland on the other. There is not an alternative alignment of the driveway that would result in less disturbance to coastal prairie. Since the driveway follows the alignment of the pathway, the grading in this area will be minimal and the supporting hydrology and surface flow will not be changed. If the driveway were relocated to be further from the wet-meadow, the result would be a greater loss of coastal prairie grassland. Mitigations to reduce the impacts from disturbance are discussed in the attached Initial Study. Given the lack of negative impact and the characteristics of the wet-meadow, it is more desirable to conserve Coastal Terrace Prairie than relocate the driveway further from the wet-meadow.

Environmental Information

An Initial Study has been prepared (Exhibit C) that addresses the environmental concerns associated

with this application.

Environmental Review

Environmental review has been performed for the proposed project per the requirements of the California Environmental Quality Act (CEQA). The project was reviewed by the County's Environmental Coordinator on 03/26/07. A preliminary determination to issue a Negative Declaration with Mitigations was made on 04/1 1/07. The mandatory public comment period expired on 05/16/07, with comments received from neighbors and outside agencies. Comments were reviewed and the Initial Study was amended to address the comments received. A revised preliminary Negative Declaration with Mitigations (Exhibit C) was issued on 06/13/2007.

The environmental review process focused on the potential impacts of the project in the areas of sensitive habitat, impacts of grading and compliance with County policies and ordinances. The environmental review process generated mitigation measures that will mitigate the potential impacts from the proposed development. These mitigation measures include the development of **a** coastal terrace prairie habitat management plan to represent a 4:1 ratio ofmanagement / enhancement area to impact area (including sensitive habitat disturbed by the **1999** unauthorized grading), protection measures for the wet-meadow areas, and replacement ofremoved oak trees at a 3:1 ratio.

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Grading Ordinance, Zoning Ordinance, and General Plan/LCP.

Staff Recommendation

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act and Approval of the attached Mitigated Negative Declaration.

- **APPROVAL** of Application Number **05-0407,** based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: www.co.santa-cruz.ca.us

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ABBREVIATIONS

AB	AGGREGATE BASE	FF	FINISHED FLOOR
AC	ASPHALT CONCRETE	FG	FINISHED GRADE
BC	BEGINNING OF CURVE	FL	FLOWLINE
BVCE	BEGIN VERTICAL CURVE ELEVATION	INV	INVERT
BVCS	BEGIN VERTICAL CURVE STATION	L	ARC LENGTH
CB	CATCH BASIN	MIN	MINIMUM
CL	CENTERLINE	MH	MANHOLE
CONC	CONCRETE	(N)	NEW
CY	CUBIC YARD	PL	PROPERTY LINE
D	DELTA (CENTRAL ANGLE)	PVI	POINT OF VERTICAL INTERSECTION
DET	DETAIL	R	RADIUS
(E)	EXISTING	RET	RETAINING
EC	END OF CURVE	SD	STORM DRAIN
ELEV	ELEV	STA	STATION
EP	EDGE OF PAVEMENT	TB	TOP OF BANK
EG	[illegible]	TG	TOP OF GRATE
EVCE	END VERTICAL CURVE ELEVATION	TW	TOP OF WALL
EVCS	END VERTICAL CURVE STATION	TYP	TYPICAL

BUILDING AREAS

RESIDENCE
UPPER LEVEL (RESIDENCE): 3080 ± S.F.
LOWER LEVEL (BASEMENT & GARAGE): 2550 ± S.F.

TOTAL RESIDENCE: 5630 ± S.F.

SHOP: [illegible] ± S.F.

NOTES

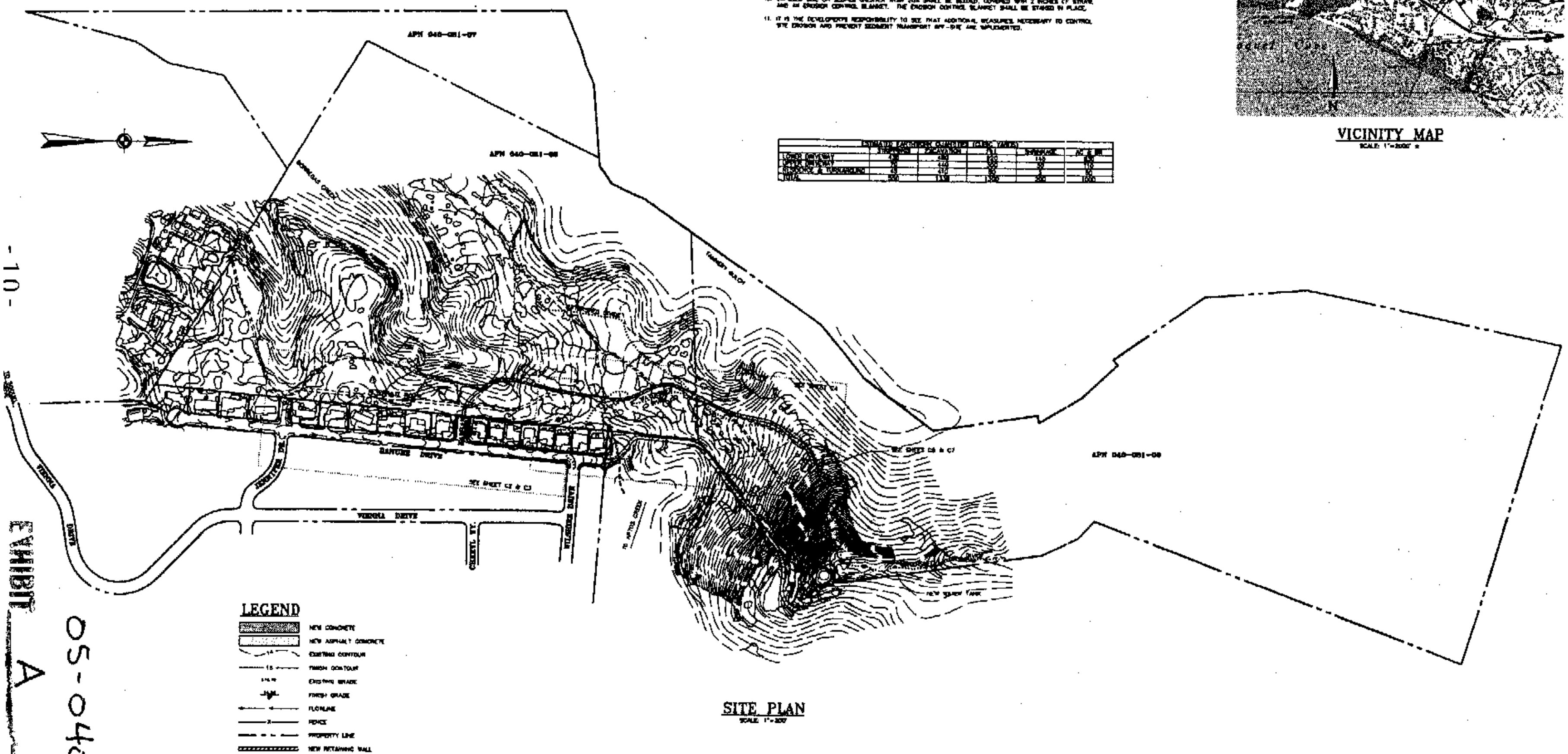
1. TOPOGRAPHIC DATA IS BASED UPON PHOTOGRAMMETRIC MAPPING BY AERIAL DATA INC. ALONG WITH FIELD MAPPING BY LARRY PALM AND BOWMAN & WILLIAMS.
2. NO LAND CLEARING, GRADING OR EXCAVATION SHALL BE DONE BETWEEN OCTOBER 15TH AND APRIL 15TH. ANY DEVIATION FROM THIS CONDITION REQUIRES REVIEW AND APPROVAL OF A SEPARATE WINTER EROSION CONTROL PLAN BY ENVIRONMENTAL PLANNING PRIOR TO BEGINNING SUCH CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING SITE EROSION CONTROL AT ALL TIMES.
3. UNNECESSARY GRADING AND DISTURBING OF SOIL SHALL BE AVOIDED.
4. BETWEEN OCTOBER 15TH AND APRIL 15TH EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIME. HAY BALES, FILTER BERM, SILT FENCES OR OTHER MEANS SHALL BE EMPLOYED TO PREVENT SEDIMENT FROM LEAVING THE SITE OR ENTERING ANY WATERCOURSE.
5. DURING CONSTRUCTION, NO TURBID WATER SHALL BE PERMITTED TO ENTER THE CHANNEL OR STORM DRAIN SYSTEM. USE OF SILT AND GREASE TRAPS, FILTER BERMS, HAY BALES OR SILT FENCES SHALL BE USED TO PREVENT SUCH DISCHARGE.
6. ALL AREAS ON AND OFF SITE EXPOSED DURING CONSTRUCTION ACTIVITIES, IF NOT PERMANENTLY LANDSCAPED PER PLAN, SHALL BE PROTECTED BY MULCHING AND/OR PLANTING OF THE FOLLOWING CONTROL MIX:

    CALIFORNIA BROME — 8 LBS PER ACRE
    PURPLE NEEDLEGRASS — 12 LBS PER ACRE
    BLUE WILD RYE — 10 LBS PER ACRE

7. ALL EXCAVATED MATERIAL SHALL BE REMOVED TO AN APPROVED DISPOSAL SITE OR DISPOSED OF ONSITE IN A MANNER THAT WILL NOT CAUSE EROSION.
8. ANY MATERIAL STOCKPILED ON-SITE SHALL BE COVERED WITH PLASTIC, ESPECIALLY DURING THE WINTER MONTHS OR DURING PERIODS OF RAIN.
9. UPON COMPLETION OF CONSTRUCTION, ALL REMAINING EXPOSED SOILS SHALL BE PERMANENTLY RE-VEGETATED PER THE LANDSCAPING PLAN.
10. EXPOSED SOIL OR SLOPES GREATER THAN 20% SHALL BE SEEDED, COVERED WITH 2 INCHES OF STRAW, AND AN EROSION CONTROL BLANKET. THE EROSION CONTROL BLANKET SHALL BE STAKED IN PLACE.
11. IT IS THE DEVELOPER'S RESPONSIBILITY TO SEE THAT ADDITIONAL MEASURES NECESSARY TO CONTROL SITE EROSION AND PREVENT SEDIMENT TRANSPORT OFF-SITE ARE IMPLEMENTED.

ESTIMATED EARTHWORK QUANTITIES (CUBIC YARDS)					
	STRIPPING	EXCAVATION	FILL	SHRINKAGE	AC & BASE
LOWER DRIVEWAY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
UPPER DRIVEWAY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RESIDENCE & TURNAROUND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	1000

VICINITY MAP
SCALE: 1"=2000' ±



SITE PLAN
SCALE: 1"=200'

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com

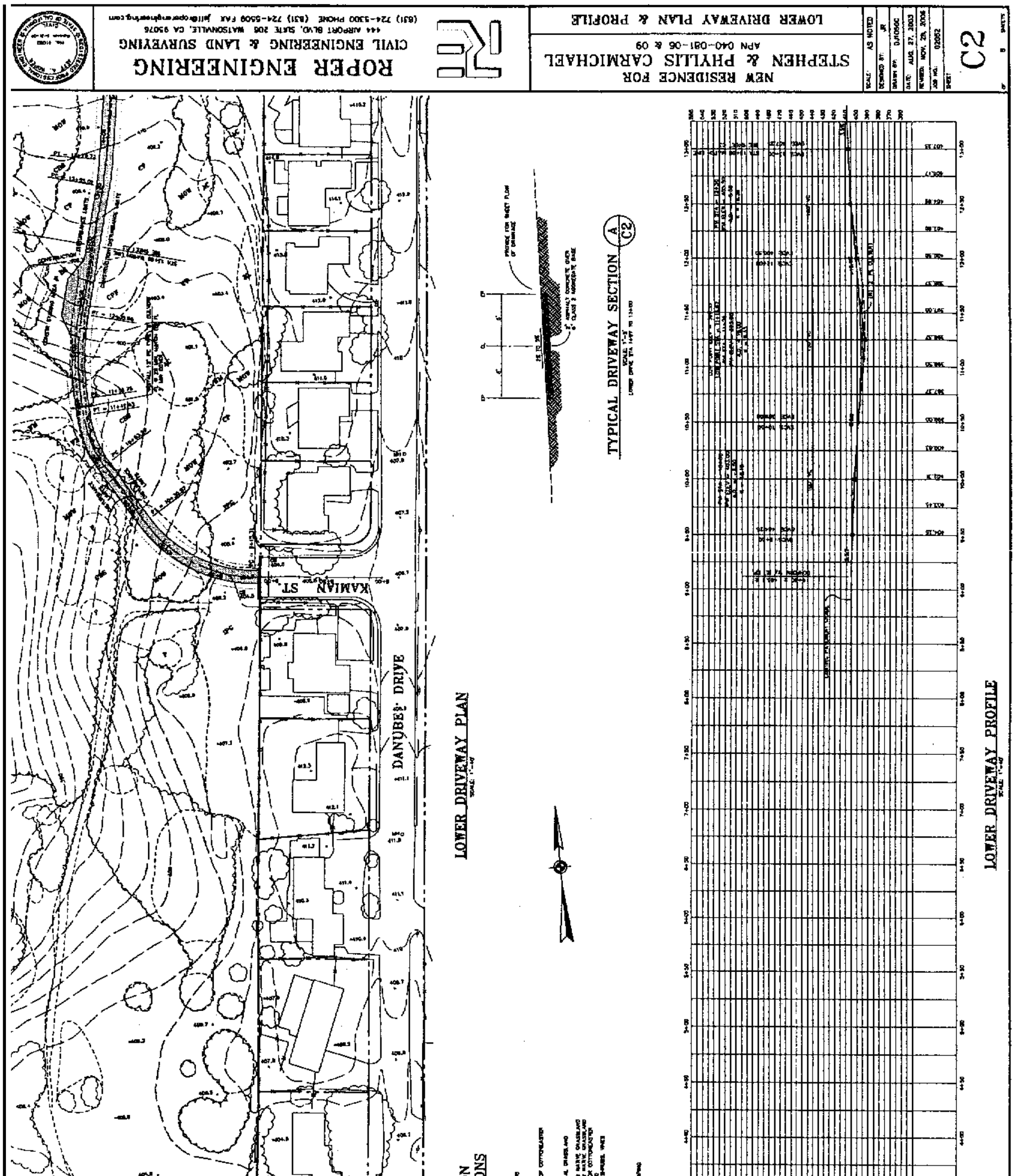
NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

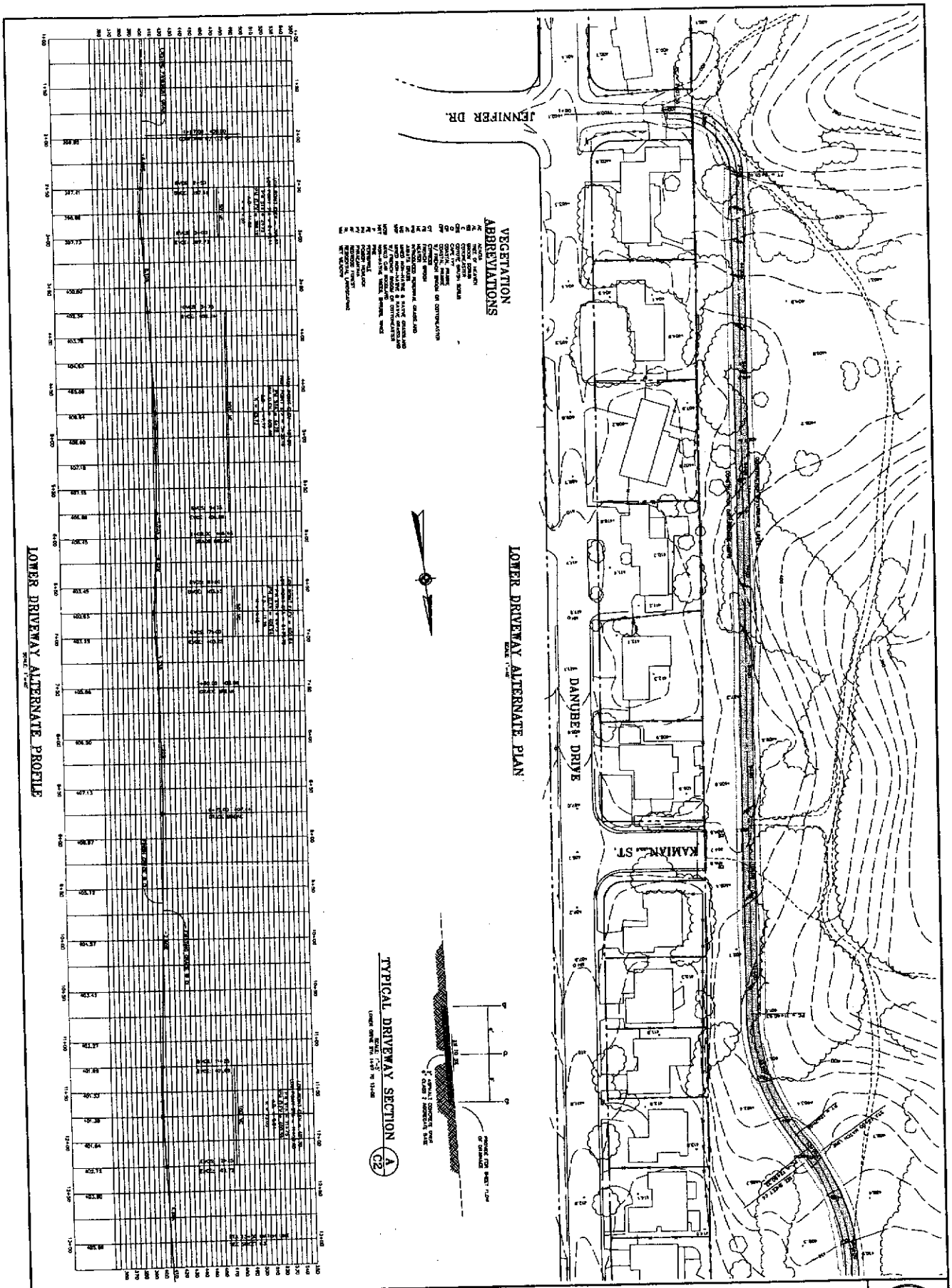
SITE PLAN

SCALE:	AS NOTED
DESIGNED BY:	JR
DRAWN BY:	0J1050C
DATE:	AUG. 27, 2003
REVISED:	NOV. 28, 2006
JOB NO.:	02052
SHEET	C1

05-0407

EXHIBIT A


ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09
LOWER DRIVEWAY PLAN & PROFILE
C2
TYPICAL DRIVEWAY SECTION
LOWER DRIVEWAY PLAN
LOWER DRIVEWAY PROFILE
VEGETATION ABBREVIATIONS
DANUBE DRIVE
KAMIAN ST
JENNIFER DR.



NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

LOWER DRIVEWAY ALTERNATE PLAN & PROFILE

C3

ROPER ENGINEERING
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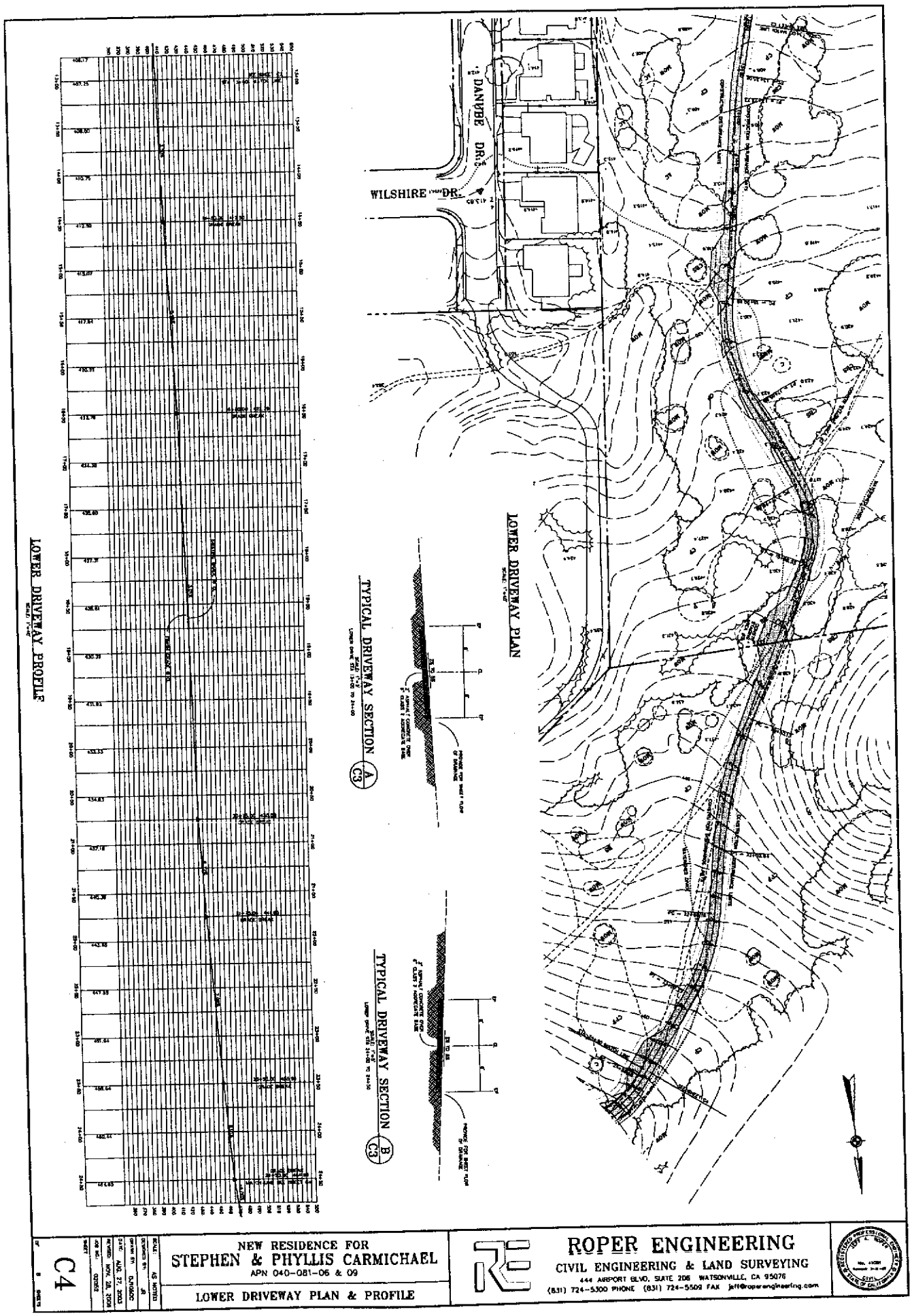
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com

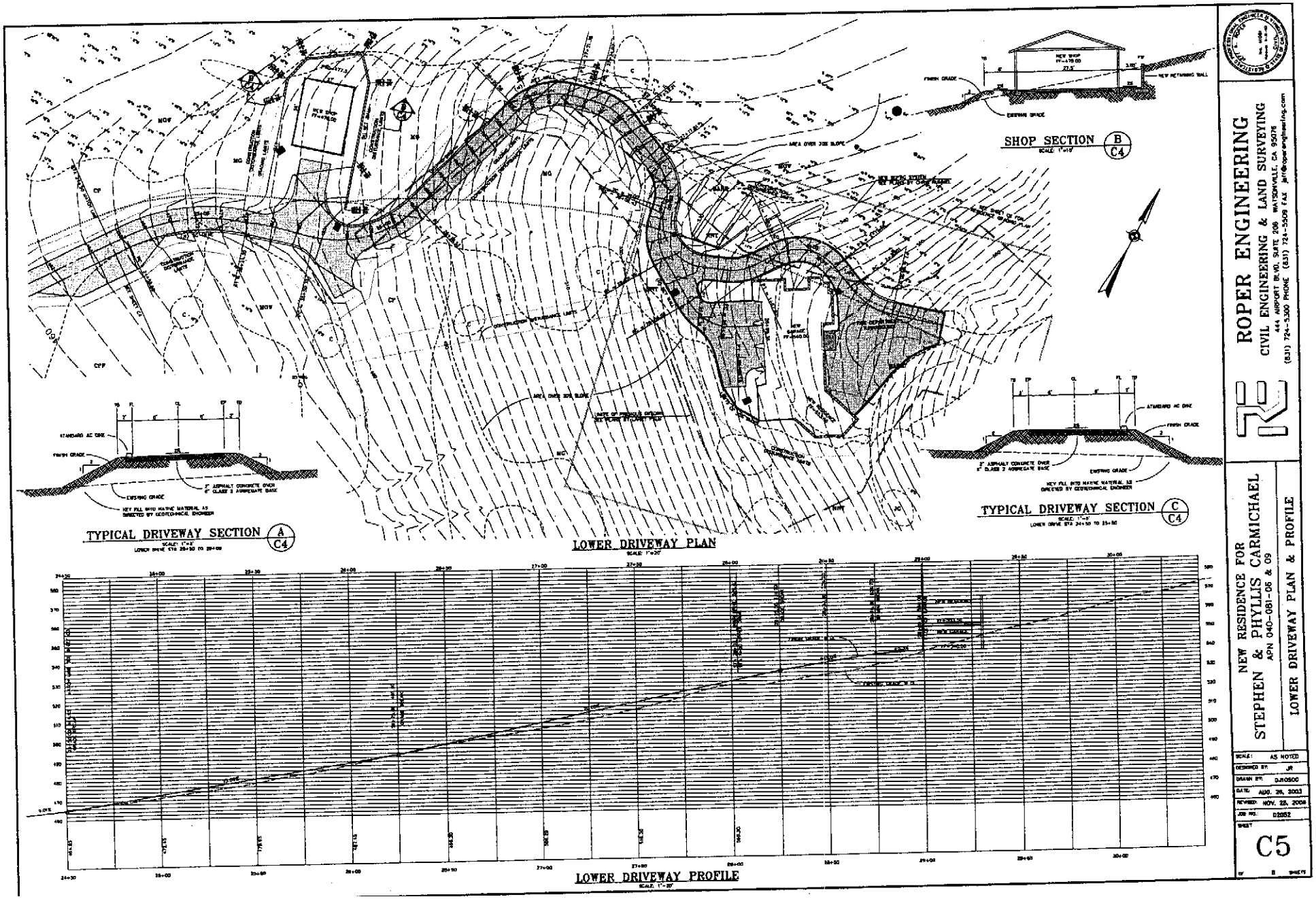


NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

LOWER DRIVEWAY PLAN & PROFILE

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com

C4



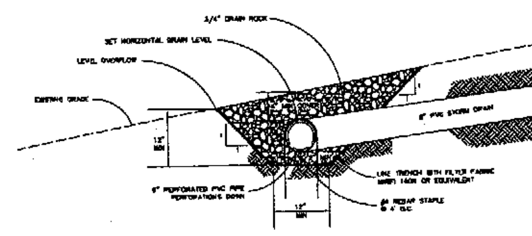
ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jim@roperengineering.com

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

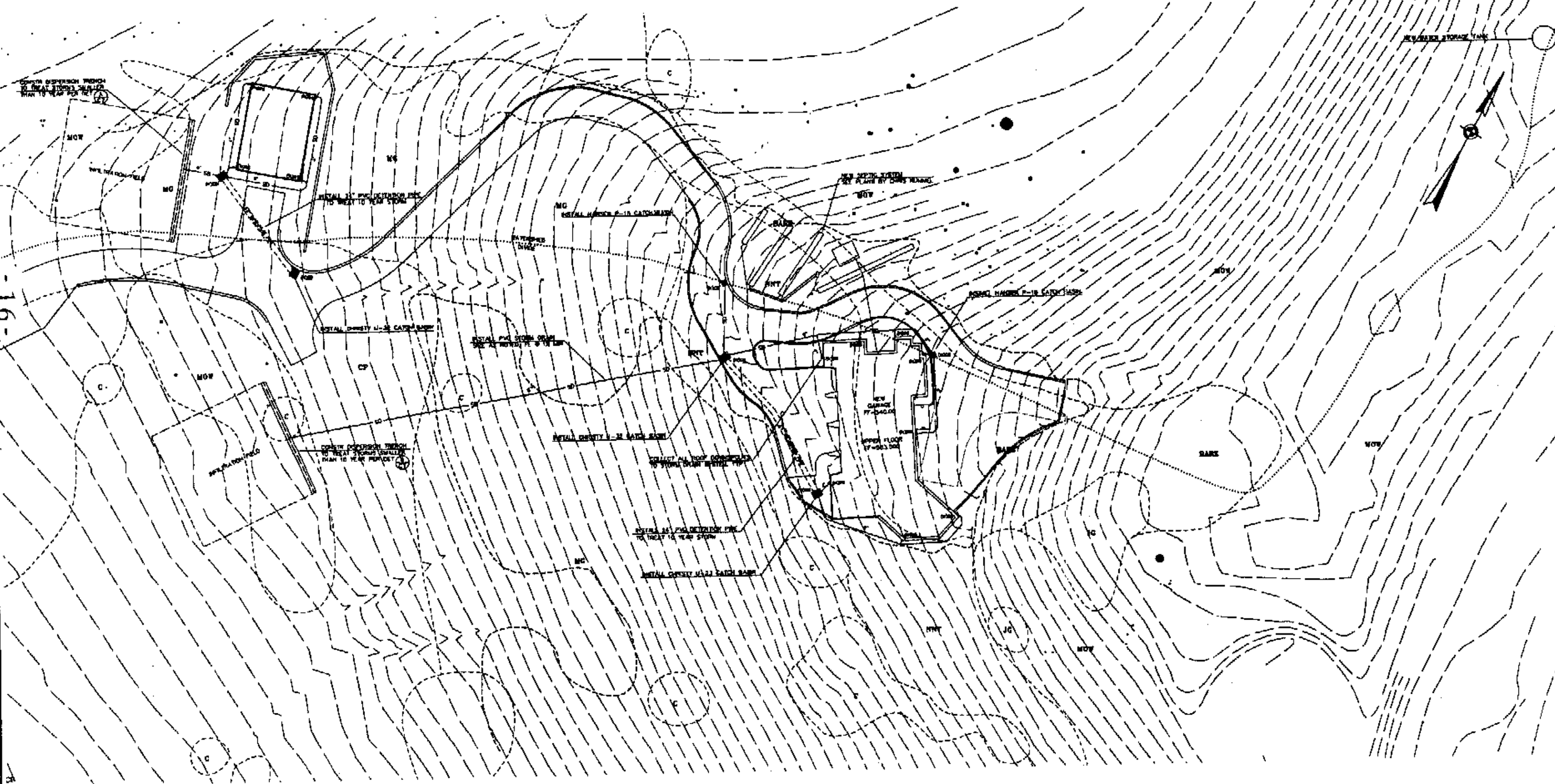
LOWER DRIVEWAY PLAN & PROFILE

SCALE: AS NOTED
DESIGNED BY: JR
DRAWN BY: DJR/DSOO
DATE: AUG. 28, 2003
REVISED: NOV. 22, 2006
JOB NO.: 02052
SHEET: C5
OF 8 SHEETS

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5309 FAX
RESIDENCE GRADING PLAN
NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09
SCALE: AS NOTED
DRAWN BY: JR
CHECKED BY:
DATE: SEPT. 14, 2008
REVISED: NOV. 25, 2008
JOB NO.: 02052
SHEET: C6
RESIDENSE GRADING PLAN
UPPER DRIVEWAY PROFILE
TYPICAL DRIVEWAY SECTION A C5



DISPERSION TRENCH DETAIL (A / C7)
SCALE: 1"=1'



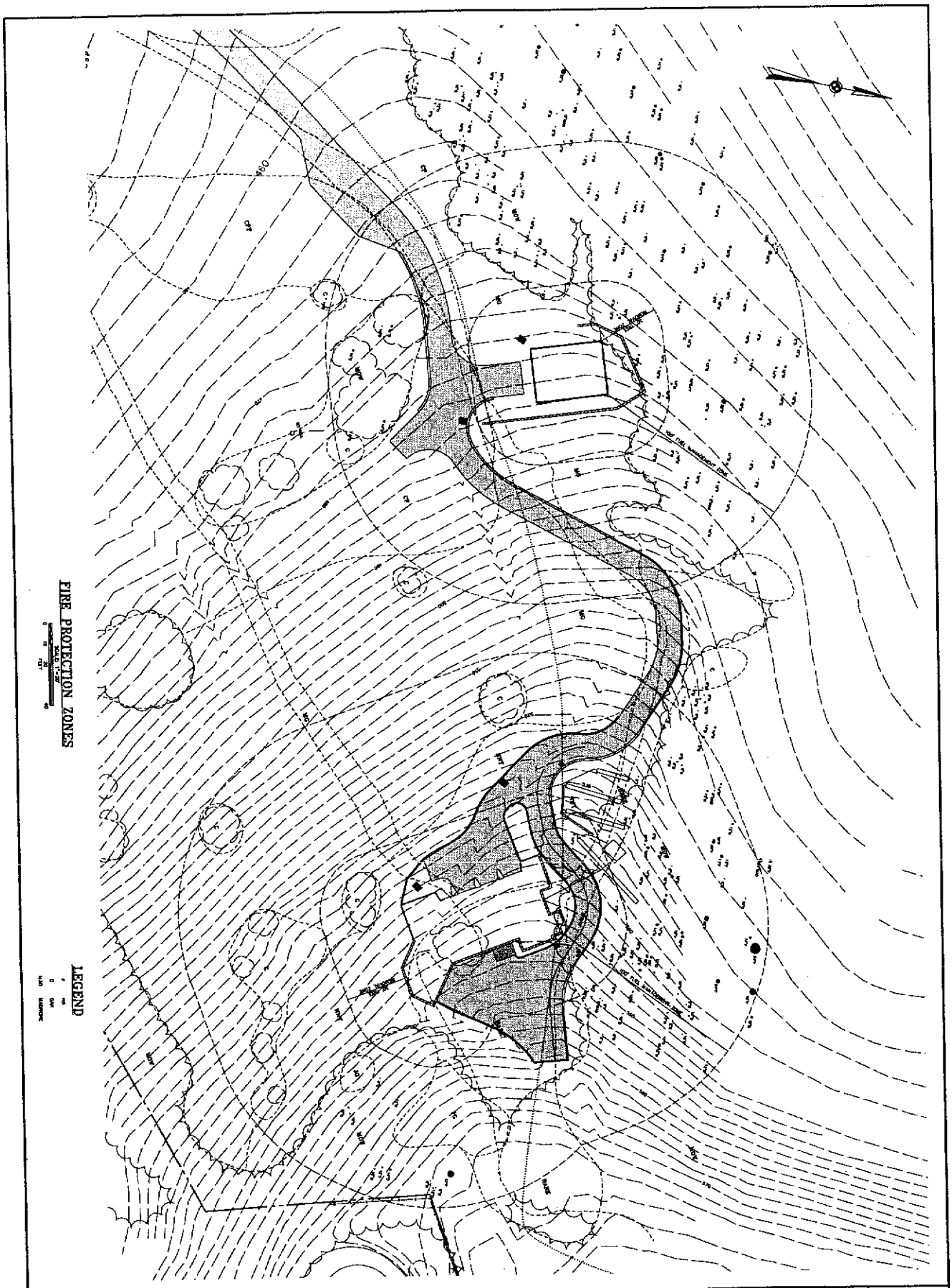
RESIDENCE UTILITY PLAN
SCALE: 1"=20'

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

RESIDENCE UTILITY PLAN

SCALE:	AS NOTED
DESIGNED BY:	JR
DRAWN BY:	DJ1050C
DATE:	AUG. 28, 2003
REVISED:	NOV. 28, 2006
JOB NO:	03052
SHEET	C7

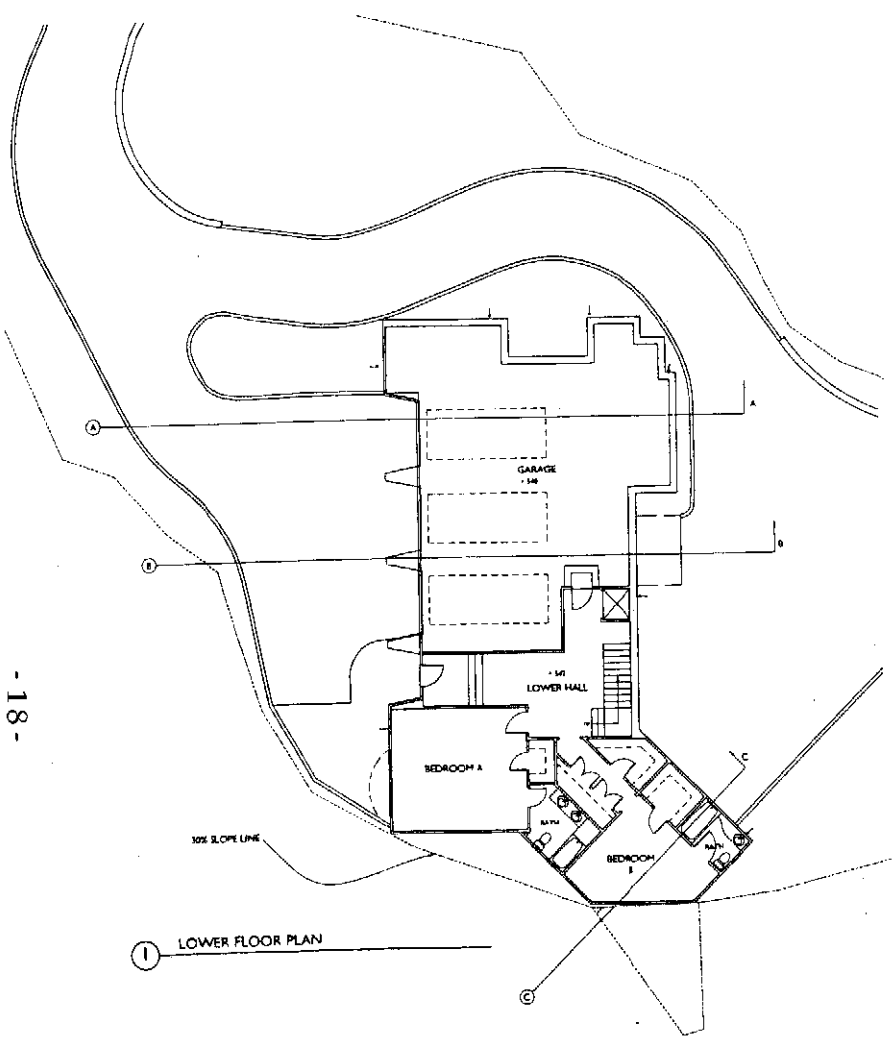


NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

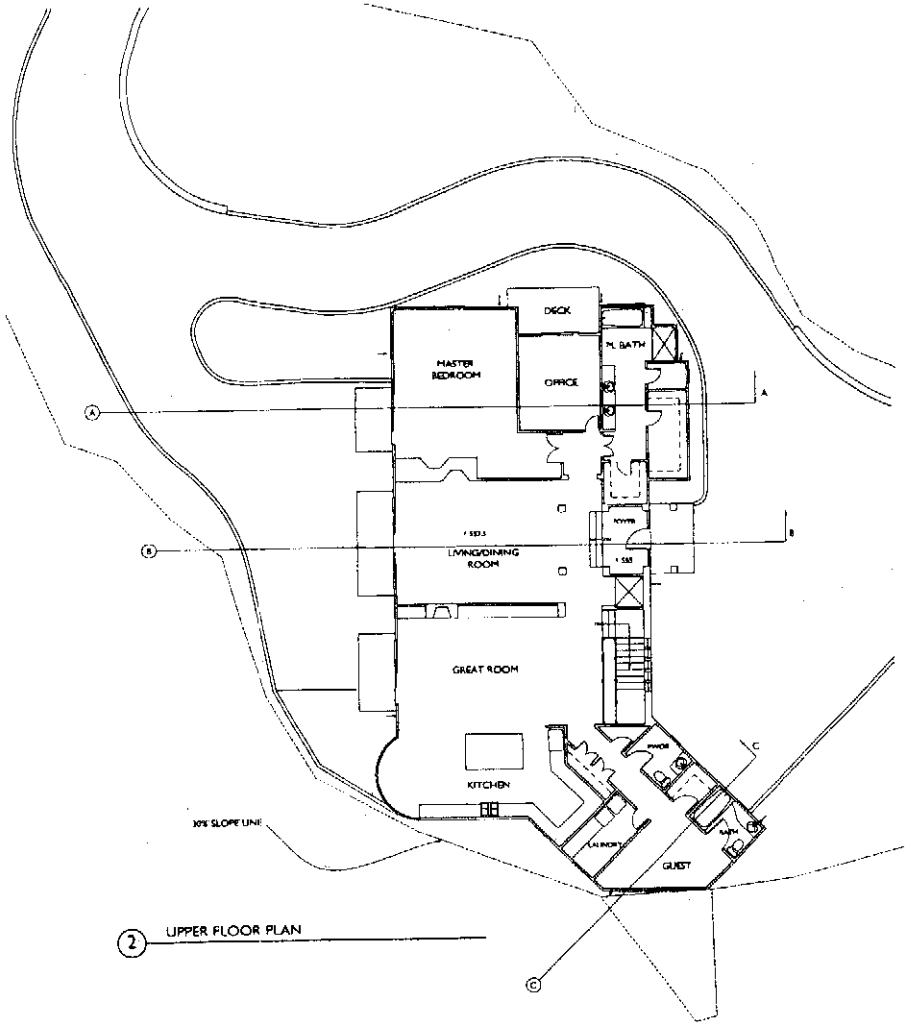
FIRE PROTECTION ZONES

C8

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 208 WATSONVILLE, CA 95076
(831) 724-5500 PHONE (831) 724-5509 FAX jeff@roperengineering.com



1 LOWER FLOOR PLAN



2 UPPER FLOOR PLAN

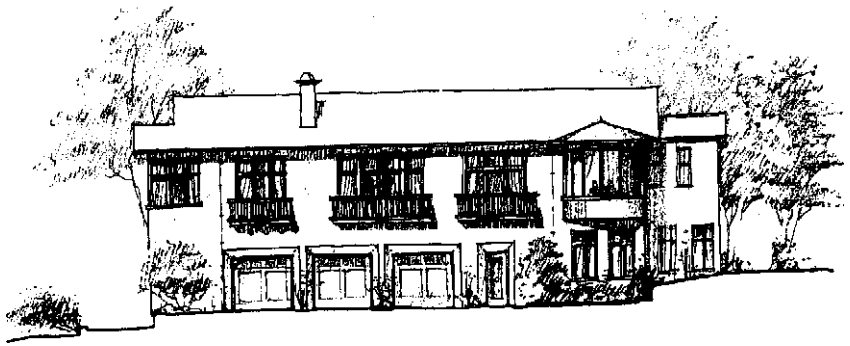
0' 5' 10' 20'

1 FLOOR PLANS

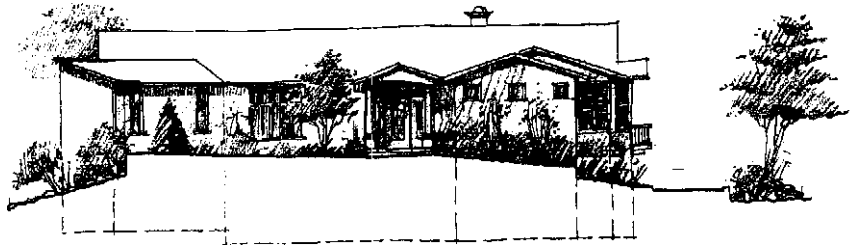
CARMICHAEL RESIDENCE

THACHER & THOMPSON ARCHITECTS

JUNE 16, 2005
SEPTEMBER 30, 2005
JUNE 29, 2007



3 SIDE ELEVATION



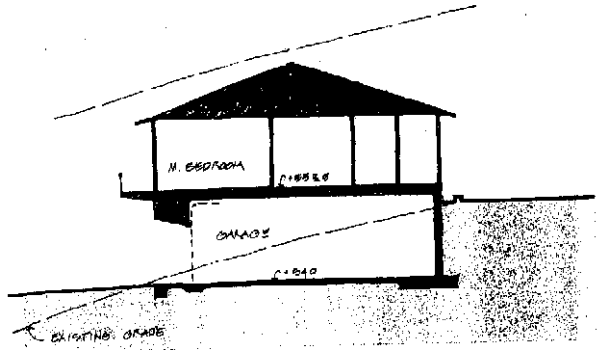
4 FRONT ELEVATION

THACHER & THOMPSON ARCHITECTS

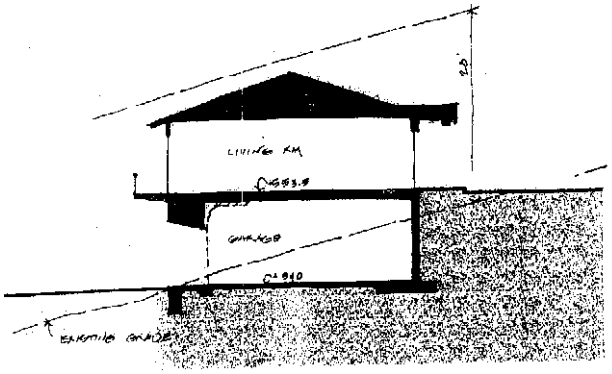
ELEVATIONS

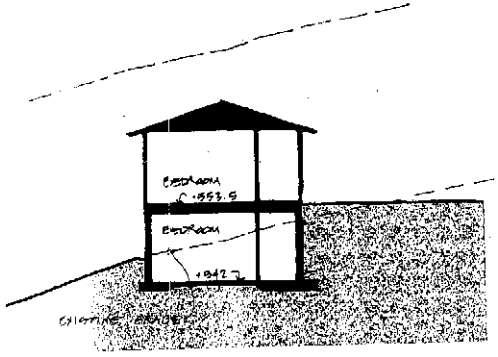
2

CARMICHAEL RESIDENCE



1 SECTION A - A





3 SECTION C - C

3

SECTIONS

CARMICHAEL RESIDENCE

THACHER & THOMPSON ARCHITECTS

JULY 2, 2007

Conditions of Approval

Exhibit A: Project Plans "New Residence for Stephen and Phyllis Carmichael", Sheets C1 – C8, prepared by Roper Engineering dated August 27,2003, revised November 28,2006; 3 Sheets prepared by Thacher & Thompson Architects dated June 29,2007

I. This permit authorizes the grading of 1,880 cubic yards of cut and fill 2,300 cubic yards of fill for a single family dwelling with garage, detached shop, water tank and driveway. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:

A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.

B. Obtain a Building Permit from the Santa **Cruz** County Buiiding Official

C. Obtain a Grading Permit from the Santa Cruz County Building Official

D. Obtain an Encroachment Permit from the Department of Public Works for all off-site work performed in the County road right-of-way.

E. Organize a pre-construction meeting on the site to review the mitigation measures. **The** following parties shall attend: the project applicant, the grading contractor supervisor, the building general contractor, Santa Cruz County Environmental Planning staff, the project biologist, the project arborist, the project civil engineer and the project soils engineer.

II. Prior to issuance of a Building Permit the applicant/owner shall:

A. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder).

B. Submit final grading and building plans for review and approval by **the** Planning Department. **The** final plans shall be in substantial compliance with the plans marked Exhibit **"A"** on file with the Planning Department. Any changes from the approved Exhibit "A" for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:

1. Identify finish of exterior materials and color of roof covering in compliance with this approval, for Planning Department approval. Any color boards must be in 8.5" x 11" format.

EXHIBIT B

2. Grading, drainage, and erosion control plans.

3. Submit a restoration and planting plan for native oaks trees to be planted on the knoll top above the homesite (in the area shown on sheet C7 of "Exhibit A" described are "Bare") for review and approval by the Planning Department, The plan must include the following information:

   a. Locations and species of oak trees to be planted onsite.
   b. The size of all replacement *oak* trees shall be 5 gallons.
   c. All replacement oak trees will be required to be maintained and monitored for survival for a period of seven years.
   d. Success criteria and reporting guidelines.
   e. The *oak* trees shall be planted at a spacing of 10 feet and shall mimic the existing oak trees species directly adjacent.

4. For any structure proposed to be within 2 feet of the maximum height limit for the zone district, the building plans must include a roof plan and **a** surveyed contour map of the ground surface, superimposed and extended to allow height measurement of all features. Spot elevations shall be provided at points on the structure that have the greatest difference between ground surface and the highest portion of the structure above. This requirement is in addition to the standard requirement of detailed elevations and cross-sections and the topography of the project site which clearly depict the total height of the proposed structure.

5. Details showing compliance with fire department requirements, including all requirements of the Urban Wildland Intermix Code, if applicable.

C. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached. The Conditions of Approval shall be recorded prior to submittal, if applicable.

D. Obtain an Environmental Health Clearance for this project from the County Department of Environmental Health Services.

E. Meet all requirements and pay any applicable plan check fee of the Central Fire Protection District.

F. Submit 3 copies of a soils report prepared and stamped by a licensed Geotechnical Engineer.

G. Submit 3 copies of an engineering geology report prepared and stamped by a licensed Engineering Geologist.

H. Submit plan review letters from the soils engineer and engineering geologist which review the final version of the plans.

I. Pay all Code Compliance costs to date.

J. Record with the County Assessor an Affidavit to retain APN's 040-081-06, -07, and –09 as one parcel. One this request has been approved, a copy of the approval must be submitted to planning staff.

K. Pay the current fees for Parks and Child Care mitigation for four bedrooms. Currently, these fees are, respectively, $1 000 and $ I09 per bedroom.

L. Pay the current fees for Roadside and Transportation improvements for four bedrooms. Currently, these fees are, respectively, $2,200 and $2,200 per unit bedroom.

M Provide required off-street parking for three cars. Parking spaces must be 8.5 feet wide by 18 feet long and must be located entirely outside vehicular rights-of way. Parking must be clearly designated on the plot plan.

N. Submit a written statement signed by an authorized representative of the school district in which the project is located confirming payment in full of all applicable developer fees and other requirements lawfully imposed by the school district.

O Complete and record a Declaration of Restriction to maintain the biotic habitat as indicated in the approved Coastal Terrace Habitat Management Plan on the subject property. **You may not alter the wording of this declaration.** This declaration will be prepared by the Planning Department; an exhibit that reflects the approved Exhibit **A** for this project shall **be** attached to the declaration to delineate the development envelope. The development envelope will be reviewed by County staff and must encompass all proposed development including the accessory unit, the home, the septic system, and driveway(s), all of which must be located entirely within this envelope. The declaration must indicate that that landscaping shall use characteristic native species with no invasive non-native species. Submit proof that this Declaration has been recorded in the Official Records of the County of Santa Cruz (Office of the County Recorder). Follow **the** instructions to record and return the form to the Planning Department.

P. Open an "At-Cost'' account with the County Planning Department to pay for staff time for review of the Coastal Terrace Habitat Management Plan. The account shall remain funded for a minimum of 7 years from the final inspection of the building and grading permits.

Q Record an offer for dedication to **the** County of a I-foot wide non-access strip at the terminus of Jennifer Drive where it abuts the Carmichael property. Upon receipt of the offer of dedication, the County of Santa **Cruz** will simultaneously record a quitclaim of its interest in the offer of dedication for the 1-foot widenon-access strip at the terminus of Kamian Street.

III. All construction shall be performed according to the approved plans for **the** Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:

A. All site improvements shown on the final approved Building Permit plans shall be installed.

B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.

C. The project must comply with all recommendations of the approved soils report and botanical report. No further encroachment is allowed into the Coastal Prairie Habitat or *Oak* Woodland without written County approval

D. Pursuant to Sections 16.40.040 and 16.42.100 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of a historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.100, shall be observed.

IV. Operational Conditions

A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.

V. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, it officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.

A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify **the** Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.

B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim; action, or proceeding if both of the following occur:

1. COUNTY bears its own attorney's fees and costs; and

2. COUNTY defends the action in good faith.

C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.

D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor'(s) in interest, transferee(s), and assign(s) of the applicant.

VI. Mitigation Monitoring Program

Themitigation measures listed under this heading have been incorporated into the condition of approval for this project in order to mitigate or avoid significant effects on the environment. As required by Section **21081.6** of the California Public Resources Code, a monitoring and reporting program for the above mitigations is hereby adopted as a condition of approval for this project, This monitoring program is specifically described following each mitigation measure listed below. The purpose of this monitoring is to ensure compliance with the environmental mitigations during project implementation and operation. Failure to comply with the conditions of approval, including the terms of the adopted monitoring program, may result in permit revocation pursuant to Section **18.10.462** of the Santa Cruz County Code.

A. Mitigation Measure: Pre-construction Meeting

Monitoring Program: In order to ensure that the mitigation measures B-I below, are communicated to the various parties responsible for constructing the project, prior to any disturbance on the property the applicant shall convene a pre-constructionmeeting on the site. The following parties shall attend: the project applicant, the grading contractor supervisor, the building general contractor, Santa Cruz County Environmental Planning staff, the project biologist, the project arborist. the project civil engineer and the project soils engineer. Orange temporary fencing demarcating the entire limits of disturbance, tree protection fencing, and silt fencing will be inspected at that time.

B. Mitigation Measure: Coastal Terrace Habitat Management Plan

Monitoring Program: In order to reduce impacts on coastal terrace prairie grassland

from the proposed development to a less than significant level, prior to issuance of a building or grading permit, the applicant shall do the following:

1. Submit a coastal terrace prairie habitat management and enhancement plan prepared by the project biologist for review and approval of County staff. The plan shall provide for the management of native species and shall include the removal / control of invasive, non-native species and a mowing and / or grazing regime. The habitat management plan shall represent a 4:1 ratio ofmanagement / enhancement area to impact area. The prairie management plan shall include, at a minimum, the following:

    a. Identify high, moderate and low priority areas for management, based on plant species composition and threats from invasive, non-native plant species.
    b. Identify a schedule for implementing the management actions, based on priorities established in "a", above.
    c. Specify management actions (i.e., removal/ control of broom plants, mechanical mowing and/or grazing) that will preserve and manage the prairie areas.
    d. Techniques required to be implemented in prairie management areas (i.e., seasonal mowing, grazing, other methods), including intervals or treatment.
    e. Identify techniques to be implemented for removal / control of invasive, non-native plant species from prairie management areas (if different from "c", above).
    f. Methods for monitoring effectiveness of management actions (i.e., establishment of on-site prairie reference plots and monitoring locations).
    g. Performance standards for management areas (i.e., species diversity, plant species composition, plant cover, percent cover of invasive plants), success criteria, and a timetable for the success criteria.
    h. Recommendations for overall management of grassland resources (i.e., fire protection mowing along adjacent residences, removal / control of other invasive plant species).
    i. Reporting guidelines.
    j. Adaptive management actions and remedial activities.
    k. Restriction on the corralling, boarding or grazing of livestock on the prairie grassland unless specifically approved by the County of Santa Cruz.
    l. Specify installation of plastic mesh fencing along the construction limits of the drainage line and salvaging of the prairie sod blocks at the drainage excavation to be used to restore the area.

2. Revise the project plans to include notes clearly stating that no Santa Cruz Erosion Control Mix or any other seed mix not specifically approved by the project biologist, shall be used onsite.

C. Mitigation Measure: Mitigation of Unauthorized Grading Impacts

Monitoring Promam: In order to reduce impacts on coastal terrace prairie grassland from the *1999* un-permitted grading, prior to issuance of a building or grading permit, the applicant shall do the following:

1. Include the areas identified in the September 28,2005 botanical report as "mixed non-native grassland / native grassland", "mixed non-native grassland with French broom and /or cotoneaster", and "bare" in the coastal prairie management and enhancement plan at a 4:1 ratio ofmanagement / enhancement area to impact area.

D. Mitigation Measure: Construction Impacts on Coastal Terrace Prairie

Monitoring Program: In order to reduce temporary impacts on coastal terrace prairie to a less than significant level; during construction the applicant shall:

1. Install temporary fencing along the entire construction limits io contain disturbance.
2. Prohibit storage of construction materials, equipment and parking outside of the designated work area.
3. Re-vegetate areas disturbed during construction with native plant species compatible with the prairie habitat;
4. Install plastic mesh fencing along the construction limits ofthe drainage line and salvage the prairie sod blocks at the drainage excavation to be used to restore the area, as these species will readily re-root.

E. Mitigation Measure: Drainage

Monitoring Promam: In order to ensure that existing drainage patterns are not significantly altered by the proposed project, prior to issuance of a building or grading permit, the applicant shall do the following:

1. Submit a drainage plan prepared by a licensed civil engineer for review and approval by County staff. **The** drainage plan shall show that the runoff is discharged into the same drainage area as prior to development. All drainage fiom the development shall kept onsite.

F. Mitigation Measure: Wet Meadow

Monitoring Program: In order to reduce impacts to the wet meadow area near driveway station 11+40 to a **less** than significant level, the applicant shall do the following:

1. Install silt fencing and construction fencing along the construction limits prior to site disturbance.
2. Installation of a culvert of adequate **size** to allow seasonal waters to flow unimpeded under the driveway and downstream to the wet meadow shall be shown on the plans prior to issuance of a building or grading permit.

3. Keep construction materials, vehicles and equipment away from the wet meadow during construction.

G Mitigation Measure: *Oak* Trees

Monitoring Program: In order to reduce impacts from theremoval of native *oak* trees to a less than significant level, the applicant shall do the following:

1. Prior *to* site disturbance, temporary construction fences along the dripline of the native trees will be required to be installed.
2. During construction, all storage of constructionmaterials, parking of vehicles and construction equipment shall be stored outside of the dripline of trees to be retained.
3. During construction, where trenching is to occur within the dripline of the native trees to be retained, a certified arborist shall supervise the pruning and root cutting.
4. Prior to issuance of a building *or* grading permit, the applicant shall include on the plans the locations ofreplacement oak trees to be planted on site for review and approval by County staff. All oak trees removed will require a replacement *oak* tree *to* be replanted at a 3:1 ratio and shall be a minimum size of 5 gallons. All replacement oak trees will be required to be maintained and monitored for survival for a period of seven years.
5. During construction, in order to increase the value of wildlife and forested habitat, snags and downed logs shall be retained.
6. Prior to issuance of a building or grading permit, the dnveway plans shall be revised, so that oak trees in the area between driveway stations 9+50 to 10+50 will not be removed. The driveway plans shall also be revised to show the specific locations of the oak trees from approximately station 9+50 to 10+50.

H Mitigation Measure: Archaeological Resources

Monitoring Program: In order to reduce any impacts to archaeological resources onsite to a less than significant level, during constriction the applicant shall do the following:

1. If at anytime any artifact of other evidence of a historical resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all **further** site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Department if the discovery contains no human remains.

I. Mitigation Measure: Erosion Control

Monitoring Program: In order to reduce potential erosion to a less than significant level, prior to issuance of the grading permit, the applicant shall submit a detailed erosion control plan for review and approval by Planning staff. The plan shall include: A clearing and grading schedule that indicates no grading will occur between October

15 and April 15, clearly marked disturbance envelope, temporary driveway surfacing and construction entry stabilization, specifications for revegetation of bare areas, both temporary cover during construction and permanent planting details, and temporary and permanent drainage control including lined swales and erosion protection at the outlets of pipes. Plans shall state that any plants or seeds used in temporary or permanent re-vegetation shall be specifically approved by the project botanist in advance.

Minor variations to this permit which do not affect the overall concept or densitymay be approved by the Planning Director at the request of the applicant or staff in accordance with Chapter 18.10 of the County Code

Please note: This permit expires two years from the effective date on the expiration date listed below unless you obtain the required permits and commence construction.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Don Bussey	Kent Edler, Civil Engineer
Deputy Zoning Administrator	Project Planner

Appeals: **Any** property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Code.

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET 4TH FLOOR SANTA CRUZ CA 95060
(831) 454-2580 FAX (831) 454-2131 TDD (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

NEGATIVE DECLARATION AND NOTICE OF DETERMINATION

Application Number: 05-0407 **Hamilton Swift, for S & P Carmichael Enterprises Inc Etal**

Proposal to cut approx 1,880 cubic yards of earth and fill 2,300 cubic yards for a single family dwelling with garage, detached shop, water tank and driveway. Recognize grading of approximately 310 cubic yards of earth that has already occurred. Recognize remedial grading that was done to mitigate erosion and to improve drainage. Requires a Grading Permit and Riparian Exception. Located at the dead end of Kamian Way, Aptos. (Residence redesigned and relocated from that ai-ea proposed under application 00-0143). The project is located on the vacant parcel at the dead-end of Jennifer Drive, approx. 200 feet west **of** the intersection ***of*** **Jennifer** Drive and Danuhe Drive, and the adjacent parcel to the north, approx. 2000 feet north of Soquel Drive in the Vienna Woods neighborhood of the Aptos Planning Area, in California.

APN: 040-081-06, -07, and -09 **Kent Edler, Staff Planner**
Zone District: RA-D, PF, SU

ACTION: Negative Declaration with Mitigations
REVIEW PERIOD ENDS: May 16,2007
This project will be considered ai a public bearing by the Zoning Administrator. The time, date and location have not been set. When scheduling does occur, these items will be included io all public bearing notices for tbe projecl.

Findinqs:
This project, if conditioned lo comply with required mitigation measures or conditions shown below, will not have significant effect on the environment. The expected environmental impacls of Ihe projecl are documented in Ihe Initial Study on this projecl attached lo the original of this notice on file with the Planning Department. County of Santa Cruz, 701 Ocean Street, Santa Cruz, California.

Required Mitiqation Measures or Conditions:
_____ None
__XX__ Are Attached

Review Period Ends May 16. 2007

Dale Approved By Environmental Coordinalor June 13. 2007

CLAUDIA SLATER
Environmenlal Coordinalor
(831) 454-5175

If lhis project is approved, complete and file lhis notice with the Clerk of the Board

NOTICE OF DETERMINATION

The Final Approval of This Project was Granled by _____

on _____ No EIR was prepared under CEQA

THE PROJECT WAS DETERMINED **TO** NOT HAVE SIGNIFICANT EFFECT ON THE ENVIRONMENT

Date completed notice filed with Clerk of the Board _____

05-0407
EXHIBIT C

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET 4TH FLOOR SANTA CRUZ, CA 95060
(831)454-2580 FAX (831) 454-2131 TDD (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: Hamilton Swift, for S & P Carmichael Enterprises Inc Etal

APPLICATION NO.: **05-0407**

APN: **040-081-06, -07,** and **-09**

The Environmental Coordinator has reviewed the Initial Study for your application and made the following preliminary determination:

XX Negative Declaration
(Your project will not have a significant impact on the environment.)

XX Mitigations will be attached to the Negative Declaration

_____ No mitigations will be attached.

_____ Environmental Impact Report
(Your project may have a significant effect on the environment. An EIR must be prepared Io address the potential impacts.)

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact Matt Johnston, Environmental Coordinator at (831) 454-3201, if you wish to comment on the preliminary determination. Written comments will be received until 5:00 p.m. on the last day of the review period.

Review Period Ends: May **16,2007**

Kent Edler
Staff Planner

Phone: **454-3168**

Date: April **11, 2007**

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT

Date: March 26, 2007
Staff Planner: Kent Edler

ENVIRONMENTAL REVIEW
INITIAL STUDY

APPLICANT: Hamilton Swift
APN: 040-081-06, -07, -09
SUPERVISORAL DISTRICT: Second
OWNER: S&P Carmichael Enterprises Inc Etal
APPLICATION NO: 05-0407
LOCATION: Project is on the vacant parcel at the dead-end of Jennifer Drive, approx. 200 feet west of the intersection of Jennifer Drive and Danube Drive, and the adjacent parcel to the north, approx. 2000 feet north of Soquel Drive in the Vienna Woods neighborhood of ine Aptos Planning Area.

ALL OF THE FOLLOWING POTENTIAL ENVIRONMENTAL IMPACTS ARE EVALUATED IN THIS INITIAL STUDY. CATEGORIES THAT ARE MARKED HAVE BEEN ANALYZED IN GREATER DETAIL BASED ON PROJECT SPECIFIC INFORMATION.

X	Geology / Soils	___	Noise
X	Hydrology / Water Supply / Water Supply	___	Air Quality
X	Biological Resources	___	Public Services 8 Utilities
___	Energy & Natural Resources	X	Land Use, Population 8 Housing
X	Visual Resources & Aesthetics	___	Cumulative Impacts
X	Cultural Resources	___	Growth Inducement
___	Hazards & Hazardous Materials	___	Mandatory Findings of Significance
___	Transporlation / Traffic		

EXISTING SITE CONDITIONS

Parcel Size: 141 acres
Existing Land **Use:** Vacant
Vegetation: Oak Woodland, Grassland, Coastal Prairie
Slope:
APN 040-081-06:
APN 040-081-07: 0-15% (15), 16-30% (15), 31-50 (IO), 51+% (12) acres
APN 040-081-09: 0-15% (30), 16-30% (30), 31-50 (IO), 51+% (4) acres
Nearby **Watercourse:** Tannery Gulch, Aptos Creek, Porter Gulch, Borregas Gulch
Distance **To:** Tanner Gulch: –300'
Aptos Creek: ~1/3 + mile
Porter Gulch: ~1/3 mile
Borregas Gulch: ~1/4 mile (or less)
Rock/Soil Type: Marine Terrace deposits, Purisima Fm. sandstone bedrock

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: Yes
Water **Supply** Watershed: None Mapped
Groundwater Recharge: Portion (non-project area)
Timber or Mineral: Timber – Portion
Agricultural Resource: None Mapped
Biologically Sensitive Habitat: Yes
Fire Hazard: Yes, Portion
Floodplain: None Mapped
Erosion: High Erosion Potential
Landslide: NIA

Liquefaction: Negligible Potential
Fault Zone: None Mapped
Scenic Corridor: None Mapped

Historic: None Mapped
Archaeology: Mapped Resource
Noise Constraint: None Mapped
Electric Power Lines: None
Solar Access: Adequate
Solar Orientation: Level
Hazardous Materials: None

SERVICES

Fire Protection: Central F.P.D.
School District: PVUSD
Sewage Disposal: Septic

Drainage District. NIA
Project Access: Kamian St. via Jennifer Dr.
Water Supply: Well

PLANNING POLICIES

Zone District: RA-D, PF, SU
Special Designation: No
General Plan: Rural Residential, Mountain Residential, Public Facility
Urban Services Line: Outside
Coastal Zone: Outside

PROJECT SUMMARY DESCRIPTION:

Proposal to cut approx. 1,880 cubic yards of earth and fill 2,300 cubic yards for a single family dwelling with garage, detached shop, water tank and driveway. Recognize grading of approximately 310 cubic yards of earth that has already occurred. Recognize remedial grading that was done to mitigate erosion and to improve drainage. Requires a Grading Permit and Riparian Exception. Located at the dead end of Kamian Way, Aptos. (Residence redesigned and relocated from that area proposed under application 00-0143)

PROJECT SETTING AND BACKGROUND:

The subject property consists of three separate parcel numbers. A developed sub-division (Vienna Woods) *is* located to the east. Developed single-family residences are located on larger parcels (–5-21 acres) to the west. Cabrillo College is located to the southwest and Nisene Marks State Park is located to the north (see Attachment 1).

A grading permit application (00-0143) was initially submitted to recognize unauthorized grading and related erosion control that occurred in 1996. However, during the County review process it was determined that a single-family dwelling was part of the proposed project. The project description was revised to include the proposed single-family dwelling and accessory buildings. An initial study was completed for application 00-0143

which resulted in a Mitigated Negative Declaration. Application 00-0143 was approved by the Zoning Administrator on March 19, 2004. This determination was appealed. The appeal was upheld by the Planning Commission on August 11, 2004 primarily because a 600 square foot porlion of the proposed house was located on slopes greater than 30%. The Planning Commission's determination was then appealed by the applicant to the Board of Supervisor's, who denied the appeal on April 5, 2005. Therefore, the project was deemed "Not Approved".

The current application has been revised to relocate all development off of 30% slopes. In addition, a new botanical report and subsequent addenda have been prepared that characterize and map the major plant communities types on the property, identify the sensitive botanical resources on the property and evaluate the potential effects of the proposed residential development on sensitive botanical resources (see Attachment 11).

DETAILED PROJECT DESCRIPTION:

Application 05-0407 proposes the grading of an access driveway to a building site (see Attachment 4, Sheets C-1, C-2, C-4, C-5, C-6, C-7) and grading to accommodate a proposed single-family dwelling and accessory building (shop). The total volume of earthwork will be approximately 1,880 cubic yards of cut and 2,300 cubic yards of fill. All grading will occur on slopes less than 30%. Retaining walls will be located along the driveway near the homesite to minimize grading as well to ensure that all grading will occur on slopes less than 30%.

The breakdown of the excavation is as follows:

Strippings	550 cy's
Lower Driveway	480 cy's
Upper Driveway	440 cy's
Residence and Turnaround	410 cy's
	1,880 cy's

The breakdown of fill is as follows:

Lower Driveway	920 cy's
Upper Driveway	300 cy's
Residence and Turnaround	80 cy's
Asphalt and Baserock	1000 cy's
	2,300 cy's

The proposed driveway starts at the intersection of Danube Drive and Kamian Street (see Aitachment 4, Sheet C-2) and traverses the relatively flat portion of the property for about 1,700 feet before climbing a hill. An accessory building (shop) is proposed to be located immediately west of the access roadway at the base of the hill. The access driveway continues 300 feet up the slope to the building site. Retaining walls are proposed below the home and along portions of the driveway. A turn-around is proposed upslope of the home, which will also require the construction of retaining

walls. The water tanks for the house are proposed further up the ridge, but no grading will be required to access the tanks. The grading for the residence, driveway and retaining walls, while necessary for the project as designed, will also correct the previous unpermitted grading. This includes smoothing drainage ditches and supporting an un-retained cut.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

ENVIRONMENTAL REVIEW CHECKLIST

A. Geology and Soils

Does the project have the potential to:

1. Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death involving:

   A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or as identified by other substantial evidence? ____ ____ X ____

All of Santa Cruz County is subject to some hazard from earthquakes. A Geotechnical Investigation was prepared by Haro, Kasunich & Associates, dated May 24, 2006 (Attachment 8). This report has been reviewed and accepted by the Environmental Planning section of the Planning Department. The report concluded that the project lies about 10 kilometers southwest of the San Andreas Fault and that a rupture would not be a potential threat to the proposed development. Seismic shaking for the residence could be managed by constructing with a pier and grade beam foundation system and in conformance with current building codes.

   B. Seismic ground shaking? ____ X ____

See comment A-I-a.

   C. Seismic-related ground failure, including liquefaction? ____ X ____

Not described as a potential hazard in the Geotechnical Investigation (referred to in comment A-I-a).

   D. Landslides? ____ X ____

Not described as a potential hazard in the Geologic and Geotechnical Investigations (referred to in comment A-I-a).

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
2. Subject people or improvements to damage from soil instability as a result of on- or off-site landslide, lateral spreading, to subsidence, liquefaction, or structural collapse?			X	

Not described as a potential hazard in the Geotechnical Investigation (referred to in comment A-I-a).

3. Develop land with a slope exceeding 30%?			X	

County Engineering staff performed field measurements of slopes gradients and, in addition, reviewed topographic information performed on the site before and afler the grading violation, as well as pictures of the grading violation, to determine if the proposed development was located on slopes exceeding 30%. County staff required the applicant to revise the *30%* slope line (see Attachment **4,** Sheet C6) and to fit all development within the areas containing slopes less ihan *30%.* The proposed development is not located in areas exceeding 30% slope.

4. Result in soil erosion or the substantial loss of topsoil?			X	

The site soils are described in the soils report as being susceptible to erosion when subjected to concentrated runoff. When left unvegetated, soils have developed erosion rills and ditches in the past. Control of the surface runoff as proposed in the site grading and drainage plan as well as implementation of an erosion control plan (to be submitted for review and approval prior to building permit issuance) will adequately conirol erosion in the proposed development.

5. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to properly?			X	

Not described as a potential hazard in the Geologic and Geotechnical Investigations (referred to in comment A-1-a).

6. Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems?			X	

The location of the proposed septic system has been reviewed and approved by the

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

County department of Environmental Health Services as being appropriate for septic waste disposal.

The subject property has been extensively tested in order lo identify a suitable site for a septic leachfield. In 1978 14 borings were evaluated by Bowman and Williams; in 1999 10 backhoes pits were dug and evaluated by Christopher Rummel (a Registered Environmental Health Specialist); and in 1999, 4 additional hand borings were evaluated by Christopher Rummel.

In addition the septic system proposed is an alternative system that reduces the overall size of the septic leachfield. The alternative system will have enhanced treatment and will have a better quality of effluent than a standard septic system.

7. Result in coastal cliff erosion? X

Project site is not located adjacent to, or otherwise near, a coastal cliff

B. Hydrology, Water Supply and Water Quality

Does the project have the potential to:

1. Place development within a 100-year flood hazard area? X

Project site is not located within a floodway or floodplain.

2. Place development within the floodway resulting in impedance or redirection of flood flows? X

See comment B-1

3. Be inundated by a seiche or tsunami? X

The project site is located approximately 2 miles from the Pacific Ocean and is located approximately 500 feet above sea level.

4. Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit, or a significant contribution to an existing net deficit in available supply, or a significant lowering of the local groundwater table? X

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

While a portion of the property is mapped as primary groundwater recharge, the proposed development will not be located on or in close proximity to these soils. Additionally, the proposed development will rely on a private well, and construction will comply with the Uniform Building Code and local ordinances regarding the conservation and use of water.

5.	Degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).		X	

See comment B-4. Runoff from this project may contain small amounts of chemicals and other household contaminants. No commercial or industrial activities are proposed that would generate a significant amount of Contaminants to a public or private water supply. Potential siltation from the proposed project and erosion control mitigation measures are discussed in comment A-4.

6.	Degrade septic system functioning?		X	

See comment A-6. The proposed project will include the installation of one septic system at the proposed building siie. This is an insignificant additional amount of wastewater that is not anticipated to degrade the proper function of any existing septic system.

7.	Alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which could result in flooding, erosion, or siltation on or off-site?		X	

The existing drainage pattern will not be significantly altered by the proposed project. Runoff will be collected and discharged into the same drainage area that the project site has drained to prior to the proposed development. Dispersion trenches have been incorporated into the project design to keep drainage from the development onsite.

a.	Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems, or create additional source(s) of polluted runoff?		X	

See comment B-7

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
9. Contribute to flood levels or erosion in natural water courses by discharges of newly collected runoff?				

See comment B-1 and B-7

10. Otherwise substantially degrade water supply or quality?			X	

C. Biological Resources

Does the project have the potential to:

1. Have an adverse effect on any species identified as a candidate, sensitive, or special status species, in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?			X	

The only special status wildlife species that has the potential to occur on the parcel is the Ohlone Tiger Beetle.

Surveys for the presence/absence of a special status species, the Ohlone Tiger Beetle (Cicindela ohlone) were performed by Entomological Consulting Services, Ltd in 2001 and the outcome was negative. (Attachment 9) The reporl indicates that wet soil conditions and erosive soils are not favorable to the Ohlone Tiger Beetle.

Additionally, a June 2000 letter by R. Morgan stated that surveys subsequent to his original 1980 botanical survey found Giardner's yampah (Perideridia gairdneri) (CNPS List 4 – species on "watch list") on the slope adjacenl to the water tank. The botanical reporl prepared by Biotic Resources Group on September 28, 2005 (Attachment 11) indicates that individuals of Gairdner's yampah were not located in any of their surveys (note: Botanical Resources Group performed field surveys in April and June of 1998; February and March of 2001; May 2002; May 2004; and March, April and August 2005).

Also, **R.** Morgan (June 13, 2004) observed another List **4** species on the properly – California bottlebrush (Elymus californica). Biotic Resources Group noted in the their September 28, 2005 botanical reporl that no individual specimens of California bottlebrush were located in the proposed development

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
area				
2. Have an adverse effect on a sensitive biotic community (riparian corridor), wetland, native grassland, special forests. inter-tidal zone, etc.)?		X		

A botanical report was prepared for this project by Biotic Resources Group, dated September 28, 2005 (Attachment 11) with Addenda dated July 27, 2006 (Attachment 12) and February 23, 2007 (Attachment 13). This report has been reviewed and accepted by the Environmental Planning section of the Planning Deparlment.

The report states ?hat !he proposed projec! has the potential to affect native Coastal Prairie grassland, native bunchgrass, small wet meadow areas as well as native oak trees.

A. The California Deparlment of Fish and Game considers coastal prairie to be rare and warranting protection. The County of Santa Cruz also considers coastal prairie as sensitive habitat. Some coastal prairie will be impacted by the project, the amount and location of which is determined by the alignment of the driveway. This alignment has been designed to minimize the impacts to prairie by utilizing the alignment of an existing 8' wide path for the proposed driveway as well as siting the proposed structures outside of the areas designated as prairie. The proposed project with this driveway alignment is projected to permanently affect 15,345 sf (.35 acres) of prairie habitat, 4,885 sf (.11 acres) of mixed grassland, and 5,950 sf (.14 acres) of mixed non-native / native grassland. In addition, 11,968 sf (.28 acres) of prairie habitat and 6,311 sf (.15 acres) of mixed grassland and mixed non-native / native grassland will be temporarily affected by site work.

   There are two alternate driveways alignments that were analyzed for project impacts. There is a 1' "non-access strip" at Kamian Street at the entrance to the site. The project proposes to switch this "non-access" strip to the Jennifer Drive entrance to the site. If the switching of the non-access strip is not approved, the entrance to the property will be from Jennifer Drive (see Attachment 5, sheet C-3), and there will be an additional 5,400 sf (.12 acres) of permanent impacts for a total of approximately 31,580 sf (.72 acres), and 2,200 sf (.05 acres) of temporary impacts for a total of 20,479 sf (.47 acres). Mitigations to ensure impacts are minimized include installation of temporary fencing along the construction limits prior to construction to contain disturbance; prohibiting storage of construction materials, equipment and parking outside of the designated work area; re-vegetation of areas disturbed during construction with native plant species compatible with the prairie habitat; implementation of a prairie management plan to manage and enhance prairie habitat at a 4:1 ratio; installation of plastic mesh fencing along the construction limits of the drainage line and salvaging of prairie

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

sod blocks at the drainage excavation which can be used to restore the area as these species will readily re-root. Based upon the relatively small disturbance of coastal prairie in comparison to the amount of the coastal prairie onsite, and the opportunity ***for*** onsite enhancement of the existing grasslands at a 4:1 ratio, the impact is less than significant.

In addition, part of this project is to recognize the 1999 unpermitted grading and the associated disturbance. The area graded in 1999 is now identified as mixed non-native grassland / native grassland; mixed non-native and native grassland with French broom and / or cotoneaster; and bare. The botanical report states that the mixed-non native / native grassland areas were a result of the prior disturbance and the erosion control mix which was placed on site. This area represents approximately 50,036 sf (1.15 acres). As part of this project, the applicant will he required to include this entire area as part of the prairie management plan to mitigate for the loss of what may have been there. **A** 4:1 ratio for enhancement and replacement will be required.

The management plan will include techniques such as mowing at certain times throughout the year to influence the reproductive success of native grassland species and enhance the ability of native species to complete with non-native species. The management plan will also include removal of non-native species such as French broom and cotoneaster.

B. The botanical report has identified two small wet meadow areas (approximately 200 sf and 800 sf) near approximately sta 11+50 on sheet C-2 where an intermittent drainage traverses the property. The proposed driveway will be constructed within 8 feet of the larger wet meadow and approximately 110 feet from the smaller wet meadow. According to the report, the wet meadow probably meets the definition of a wetland due to the presence of positive wetland hydrology (drainage swale), the dominance of hydropyhtic vegetation, and likely hydric soil conditions. The standard setback required from a wetland per County Code Section 16.30 is 100'. The findings for a riparian exception can be made to allow the proposed access to pass within 8 feet of the wet meadows; based on the special circumstances of having to balance two competing biotic management goals. The driveway was proposed near the larger wet meadow in order to follow the alignment of an already disturbed pathway to reduce the disturbance to the coastal prairie grassland. There is not an alternative alignment of the driveway that would result in less disturbance to coastal prairie. Since the driveway follows the alignment of the pathway, the grading in this area will be minimal. If the driveway were relocated to be further from the wet-meadow, the result would be a greater loss of coastal prairie grassland. Mitigations to reduce the impacts from disturbance close to the wet meadow to a less than significant level include: installation of silt fencing and construction fencing along the construction limits; installation of a culvert to allow seasonal waters to flow unimpeded under the

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

driveway and downstream to the wet meadow; and keeping construction materials, vehicles and equipment away from the wet meadow. Improvement of the existing 8-foot wide trail to accommodate the swale and seasonal wetlands is not anticipated to degrade or affect these resources. Given this lack of negative impact and the characteristics of the wet-meadow, it is more desirable to conserve Coastal Terrace Prairie than relocate the driveway further from the meadow. Therefore, the findings for *a* Riparian Exception can be made.

C. The proposed project will include the removal of 17 mature trees for the construction of the driveway and for fuel management around the shop and house. Fifteen of the trees proposed to be removed are native oak trees between 8 and 18 inches in diameter, some of which are a locally unique species, called Shreve oak (Quercus parvula shrevei). Shreve oak is not a special status species protected by State or Federal regulations. The project will also require limbing of trees and possibly trenching within root zones. All of the trees proposed to be removed fall within the 30' tree removal zone required by the local fire department. The tree removal plan has been confirmed with Central Fire Protection District in the field. To ensure that impacts to trees are minimized temporary construction fences along the dripline of the native trees will be required and all storage of construction materials, parking of vehicles and construction equipment shall be stored outside of the dripline of trees to be retained. Where trenching is to occur within the dripline of the native trees, a certified arborist shall supervise the pruning and root cutting. In addition to the temporary measures, any oak tree removed will require replacement oak trees to be replanted at a 3:1 ratio (45 trees) which will be required to be maintained and monitored for survival for a period of seven years. Also, in order to increase the value of wildlife and forested habitat, snags and downed logs shall be retained.

The majority of the parcel is identified in the botanical report as mixed oak woodland, and large areas of mixed oak woodland are contiguous on the parcel. The loss of ***15*** oak trees with a 3:1 replacement requirement is therefore not expected to create a significant impact.

3.	Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?			X	

The project does not propose any activity that will restrict or interfere with movement of migratory fish or wildlife species.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
4. Produce nighttime lighting that will illuminate animal habitats?			X	

Exterior lighting on the proposed project will not result in a significant impact to any animal habitat.

5. Make a significant contribution to the reduction of the number of species of plants or animals?		X		

As discussed above (see comments C-1 & C-2), with implementation of recommended mitigation measures, the project would not be likely to adversely affect or cause a reduction in any species of wildlife.

6. Conflict with any local policies or ordinances protecting biological resources (such as the Significant Tree Protection Ordinance, Sensitive Habitat Ordinance, provisions of the Design Review ordinance protecting trees with trunk sizes of 6 inch diameters or greater)?			X	

See comments C-1 & C-2.

7. Conflict with the provisions of an adopted Habitat Conservation Plan, Biotic Conservation Easement, or other approved local, regional, or state habitat conservation plan?				

There are no conservation plans or biotic conservation easements in effect or planned in the project vicinity.

D. Energy and Natural Resources

Does the project have the potential to:

1. Affect or be affected by land designated as "Timber Resources" by the General Plan?		X		

Parcel 040-081-09 is partially mapped as Timber Preserve. The proposed home and related grading are located on the non-timber portion of the property, which is consistent with General Plan Policy 5.12.7. Also only one single family dwelling with related accessory structures is proposed, in conformance with General Plan Policy

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
5 12.2				
2. Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?				X

The project site does not contain any land designated as agricultural resource

3. Encourage activities that result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful manner?			X	

The project will no! involve !he use of large amounts of fuel, water, and energy. or the use of these resources in a wasteful manner.

4. Have a substantial effect on the potential use, extraction, or depletion of a natural resource (i.e., minerals or energy resources)?			X	

The project will not include or require the substantial extraction or consumption of minerals, energy resources, or other natural resources.

E. Visual Resources **and** Aesthetics
Does the project have the potential to:

1. Have an adverse effect on a scenic resource, including visual obstruction of that resource?			X	

Overall, the current visual setting is an open terrace and oak studded hillside within a visual context of single-family dwellings. The proposed new home will interrupt this view. However, the home has been designed to comply with the General Plan policies 8.6.5 and 8.6.6 to "encourage design that addresses the neighborhood and community context" and to assure incorporation of "design elements that are appropriate to the surrounding uses and the type of land use planned for the area." Specifically, at this property, this means that the ridge top will be avoided in the development, the trees on the ridge will remain, the tank will be located so that it is screened by the trees, and the site will be landscaped. Further, the color of the buildings and the retaining walls will be required to be earth-tones in the range of the colors of the hillside and ridge backdrop, and non-reflective materials will be required to be used in the glazing and roofing. A single family dwelling on this large parcel is compatible with the neighborhood context.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
2. Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings?		X		

The only designated scenic corridor that could be impacted by the proposed grading is the Highway 1 corridor. Staff has traveled the Highway 1 corridor in the vicinity of the project site and has concluded that the site, including the proposed home and tank site, will not be visible from this corridor.

In addition, though the property is adjacent to State Park Property to the North, the development is not visible from the park. County policies protect only public, rather than private, view sheds.

3. Degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridgeline?			X	

The proposed development will not create a substanlial change in topography or otherwise alter any significant natural features. The proposed house is located below the ridgeline, and in fact was relocated off the ridge, which was the location of the original proposal.

4. Create a new source of light or glare which would adversely affect day or nighttime views in the area?			X	

The amount of light associated with the development will not significantly degrade nighttime views.

5. Destroy, cover, or modify any unique geologic or physical feature?			X	

There are no unique geological features on or adjacent to the site that would be destroyed, modified or covered by the project.

F. Cultural **Resources**

Does the project have the potential to:

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
1. Cause an adverse change in the signilicance of a historical resource as defined in CEQA Guidelines 15064.5?			X	

No designated historical resources are present on the project site.

2. Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5?			X	

An archaeology report was prepared in 1980 by Archaeological Resource Service as part of previous proposed project. The one potential cultural resource area identified in that report will not be disturbed by the proposed project as it is located approximately 500' away from the proposed driveway.

3. Disturb any human remains, including those interred outside of formal cemeteries?			X	

See comment F-2, above. Also, pursuant to section 16.40.040 and 16.42.100 of the County Code, if at any time any artifact or other evidence of a historical archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The Drocedures established in Section 16.40.040 and 16.42.100 should be observed

4. Directly or indirectly destroy a unique paleontological resource or site?			X	

No paleontological resources have been identified on the project site

G. Hazards and Hazardous **Materials**
Does the project have the potential to:

1. Create a significani hazard to the public or the environment as a result of the routine transport, storage, use, or disposal of hazardous materials, not including gasoline or other motor fuels?			X	

The proposed project will not involve handling or storage of hazardous materials

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
2. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X

The project site is not listed as a known hazardous materials site

3. Create a safety hazard for people residing or working in the project area as a result of dangers from aircraft using a public or private airport located within two miles of the project site?				X

The parcel and the project are not located within the Airport Clear Zones and safety hazards for people residing in the project area are low.

4. Expose people lo elecIro-magnetic fields associated with electrical transmission lines?				X

There are no high-voltage transmission lines on the project site

5. Create a potential fire hazard?			X	

The project design will incorporate all applicable fire safety code requirements and will include fire protection devices as required by the local fire agency. Sheet C-8 (Attachment 6) also shows the Fire Protection Zones to be implemented for tree removal and fuel management.

6. Release bio-engineered organisms or chemicals into the air outside of project buildings?				X

The project will not involve processes which could result in the release of bio-engineered organisms or chemical agents.

H. Transportation/Traffic

Does the project have the potential *to.*

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
1. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., substantial increase in either the number of vehicle trips. the volume to capacity ratio on roads, or congestion at intersections)?			X	

Traffic from the proposed project, a single family dwelling, will add approximately one peak hour trip to area roads. This will not affect the existing traffic load and capacity of streets and intersections in the project vicinity.

2. Cause an increase in parking demand which cannot be accommodated by existing parking facilities?			X	

Adequate parking exists on the project site for the proposed project The project complies with parking requirements.

3. Increase hazards to motorists bicyclists, or pedestrians?			X	

The proposed project will comply with current road design requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians.

4. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), **a** level of service standard established by the county congestion management agency for designated intersections, roads or highways?			X	

The proposed project will generate 1 additional peak period trips per day (1 peak period trip per dwelling unit), which will not adversely affect intersections, roads, or highways in the project area.

I. Noise

Does the project have the potential to:

1. Generate a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

The addition of the noise associated with one single family dwelling will not create a significant permanent increase in the noise levels in the project vicinity.

2.	Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?		X	

Noise levels ai the project site are not anticipated to exceed established standards

3.	Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X	

Noise generated during construction for the proposed project will increase the ambient noise levels for adjoining areas. Given the limited duration *of* this construction related impact, it is considered to be less lhan significant.

J. Air **Quality**

Does the project have the potential to:
(Where available, the significance criteria established by the MBUAPCD may be relied upon to make the following determinations).

1.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X	

The proposed project does not include activities that could violate air quality standards, except for the additional traffic associated with the project, which is a less than significant impact to air quality.

2.	Conflict with or obstruct implementation of an adopted air quality plan?		X	

The proposed project does not include activities that could conflict with or obstruct any adopted air quality plan.

3.	Expose sensitive receptors to substantial pollutant concentrations?		X	

The proposed project does not include activities that could generate a substantial concentration of pollutants.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
4. Create objectionable odors affecting a substantial number of people?			X	

The proposed project does not include activities that could emit potentially objectionable odors.

K. Public Services and Utilities

Does the project have the potential to:

1. Result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service raiios. response times. or other performance objectives for any of the public services:				
a. Fire protection?			X	

While the project represents a small incremental contribution to the need for services, this project meets the standards and requirements of the local fire agency. The project will include all fire safety features required by the local fire agency.

b. Police protection?			X	

While the project represents an incremental contribution to the need for services, the project will not create a significant demand for new services, nor will it require additional personnel.

c. Schools?			X	

While the project represents an incremental contribution to the need for school services, the proposed development will be subject to the payment of school impact fees to help offset the impacts of the increase in services.

d. Parks or other recreational activities?			X	

While the project represents an incremental contribution to the need for services, the project will not create a significant demand for new services. Additionally, parks capital improvement fees for the proposed development help offset the impacts of the incremental increase in public parks usage and needs generated by the project.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
e. Other public facilities; including the maintenance of roads?		X		

Parcel 040-081-06 has a designation of park site "D". Barry Samuel, Director of Parks, Open Space and Cultural Services has reviewed the proposed project and has determined that the "project does not trigger the park site review process."

State Parks staff has also indicated that they are not interested in acquiring the subject properly.

While the project represents an incremental contribution to the need for services, the project will not create a significant demand for new services.

2. Result in the need for construction of new storm water drainage facilities or expansion of existing facilities. the construction of which could cause significant environmental effects?		X		

The proposed drainage facilities for the project includes the construction of new onsite detention systems, storm drain lines and dispersion trenches. While the construction of the storm drain lines will disturb some of the areas of Coastal Terrace Prairie and mixed grassland, the project conditions will include mitigation for disturbed habitat. Mitigation will consist of a prairie management plan to manage and enhance existing prairie at a ratio of 4:1. This management plan will include cutting the grassland / prairie sod to a depth of 1 foot and removing and storing the sod in blocks for replacement once the trench is backfilled. This mitigation has been used in similar circumstances with successful outcome.

3. Result in the need for construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

The project will contain an onsite well and contain septic on-site, which are adequate to accommodate the relatively light demands of this project. The project will not necessitate expansion of wastewater facilities.

4. Cause a violation of wastewater treatment .standards of the Regional Water Quality Control Board?			X	

The project's wastewater flows will be very light and will not cause a violation of

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

wastewater treatment standards

5. Create a situation in which water supplies are inadequate to serve the project or provide fire protection? ____ ____ ____ X ____

The water service will be adequate for fire suppression at the site. Additionally, the local fire agency has reviewed and approved the plans, assuring conformity with fire protection standards.

6. Result in inadequate access for fire protection? ____ ____ ____ X

The project access has been designed in accordance with local fire agency requirements and has been reviewed and approved by the local fire agency.

7 Make a significant contribution to a cumulative reduction of landfill capacity or ability to properly dispose of refuse? ____ ____ ____ X

The small volume of waste generated by the proposed development will not significantly reduce landfill capacity.

8. Result in a breach of federal, state, and local statutes and regulations related to solid waste management? ____ ____ ____ X

The project will not include any activity that would result in a breach of statutes or regulations related to solid waste management.

L. Land Use, Population, and Housing

Does the project have the potential to:

1. Conflict with any policy of the County adopted for the purpose of avoiding or mitigating an environmental effect? ____ ____ ____ X ____

Refer to L-2.

2. Conflict with any County Code regulation adopted for the purpose of avoiding or mitigating an environmental effect? ____ ____ ____ X ____

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

One of the stated purposes of the Sensitive Habitat ordinance (County Code Section 16.32) is to minimize the disturbance of biotic communities which are rare or especially valuable. Given the septic and slope constraints of this site, the proposed development has minimized disturbance of the Coastal Prairie and native bunchgrass, even though .35 acres of prairie and .25 acres of mixed grassland will be permanently impacted and .28 acres of prairie and .14 acres of mixed grassland will be temporarily impacted. (If the project access is required from Jennifer Drive rather than Kamian Street, .72 acres of grassland will be permanently affected and .47 acres will be temporarily affected). Impacts to sensitive habitat will also be minimized with the implementation of an erosion control plan, construction fencing to contain construction related disturbance, as well as a Coastal Prairie management plan. The Coastal Prairie management plan that is proposed has benefits associated with it. These benefits include removal of invasive non-native plant species, management of the existing native grassland, and establishment of increased area of native grassland. Based on the constraints and associated benefits with the proposed mitigations, the disturbance of the biotic communities is consistent with the Sensitive Habitat Ordinance and findings can be made to approve a riparian exception. The project complies with all regulations.

General Plan Sections 6.3.9 and 8.2.2, as well as Code Section 16.22.050 require site design to minimize grading. The property is heavily constrained by septic, biotic and slope issues. Suitable septic disposal is not available on the flatter portion of the property due to problematic soil and percolation rates. Given these constrainis, the building site was located on a sloping portion of the parcel at the end of an approximately 2000' driveway. This generates approximately 1,880 cubic yards of cut and 2,300 cubic yards of fill activity. The building itself does not involve substantial excavation or fill, and most of the grading is due to the driveway. The project plans have been revised to incorporate retaining walls to reduce the grading and site disturbance. Additionally, the fire-truck turn around has been re-configured to additionally reduce grading and disturbance.

3.	Physically divide an established community?	____	_____X_____	____	

The project will not include any element that will physically divide an established community.

4.	Have a potentially significant growth inducing effect, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	____		X	

The proposed project is designed at the density and intensity of the development indicated by the General Plan and Zoning designations of the parcel The applicant has

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable

not requested an increase in density that would allow more units than are currently designated for the site.

The proposed project does not involve extensions of utilities such as water, sewer, or new road systems into areas not designated for such services and is consistent with the County General Plan. The project will not include any substantial growth that is not consistent with County planning goals.

5. Displace substantial numbers of people, or amount of existing housing, necessitating the construction of replacement housing elsewhere? ____ X

The proposed project will entail a gain in housing units (one) and will not involve demolition of any existing housing units.

M. Non-Local Approvals

Does the project require approval of federal, state, or regional agencies? Yes ____ No X

N. Mandatory Findings **of** Significance

1. Does the project have the potential to degrade the quality of the environment. substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant, animal, or natural community, or eliminate important examples of the major periods of California history or prehistory? Yes ____ No X

2. Does the project have the potential to achieve short term, to the disadvantage of long term environmental goals? (**A** short term impact on the environment is one which occurs in a relatively brief, definitive period of time while long term impacts endure well into the future) Yes ____ No X

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact or No Impact	Not Applicable
3. Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, and the effects of reasonably foreseeable future projects which have entered the Environmental Review stage)?		Yes	No X	
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		Yes ____	No X	

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED*	N/A
Agricultural Policy Advisory Commission (APAC) Review			X
Archaeological Review		X	
Biotic Report/Assessment		X	
Geologic Hazards Assessment (GHA)			X
Geologic Report			X
Geotechnical (Soils) Report		X	
Riparian Pre-Site			X
Septic Lot Check			X
Other:			

'Attach summary and recommendation from completed reviews

List any other technical reports or information sources used in preparation of this initial study:

Geolechnical Investigation prepared by Haro, Kasunich & Associates, dated May 24, 2006

- Driveway Grading and Drainage Plans prepared by Roper Engineering, dated November 28 2006

Botanical Report prepared by Biotic Resources Group, dated September 28, 2005 and Addenda lo Botanical Report dated July 27, 2006 and February 23, 2007.

ENVIRONMENTAL REVIEW ACTION

On the basis of this initial evaluation:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

_X_ I find that although the proposed project could have a significant effect on the environment, there will not be a significani effect in this case because the mitigation measures described below have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

___ I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

4/11/07
Date

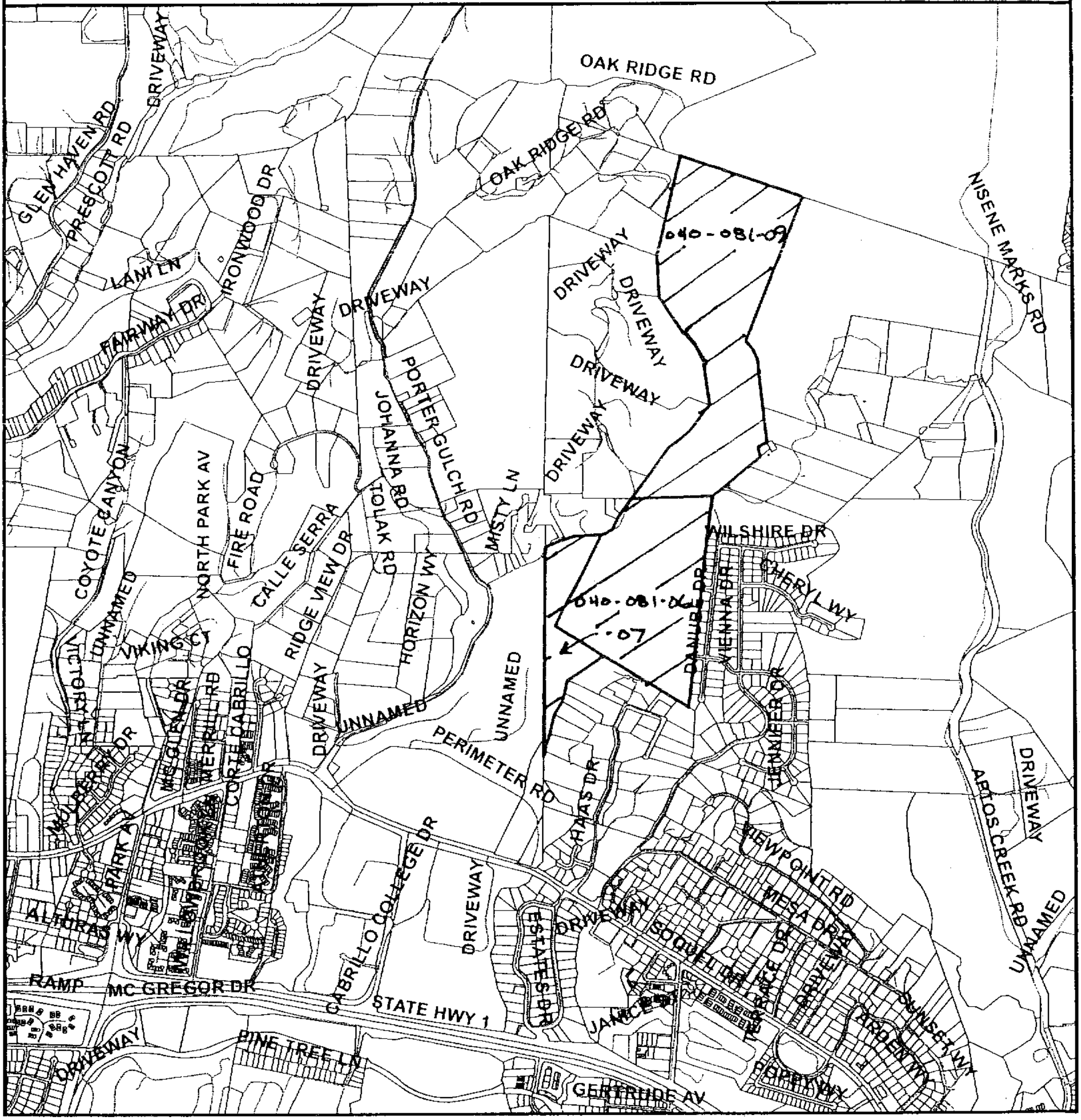
Signature

Paia Levine
For: Claudia Slater
Environmental Coordinator

Attachments:

1 Vicinity Map
2 Assessor's Parcel Map
3 Map of Zoning Districts and General Plan Designations
4 Site, Driveway, Grading and Drainage Plans (Sheets C-1, C-2, C-4 and C-5, C-6, C-7 dated November 28, 2006) by Roper Engineering
5 Alternative Driveway Plan (Sheet C-3, dated November 28, 2006) by Roper Engineering
6 Fire Protection Zones (Sheet C-8, dated November 28, 2006) by Roper Engineering
7 Geotechnical Report Review Letter prepared by Kent Edler, Civil Engineer, dated Oclober 10 2006
8 Geotechnical Investigation prepared by Haro, Kasunich & Associales, daled May 24, 2006.
9 Presence-Absence Survey Report for the Ohlone Tiger Beetle, dated April 24, 2001 by Entomological Consulting Services, Ltd
10 Environmental Health Services Approval, dated March 2, 2007.
11 Bolanical Report prepared by Biotic Resources Group, dated September 28. 2005
12 Botanical Report Addendum by Biotic Resources Group dated July 27, 2006
13 Botanical Report Addendum by Biotic Resources Group dated February 23, 2007
14. Comments received during review period, on file at the Planning Depantment.

LOCATION MAP



Legend

040-081-06, *-07,-09*

Assessors Parcels

0 550 1,100 2,200 3,300 4,400

Feet

Environmental Review Inital Study

ATTACHMENT 1

APPLICATION 05-0407

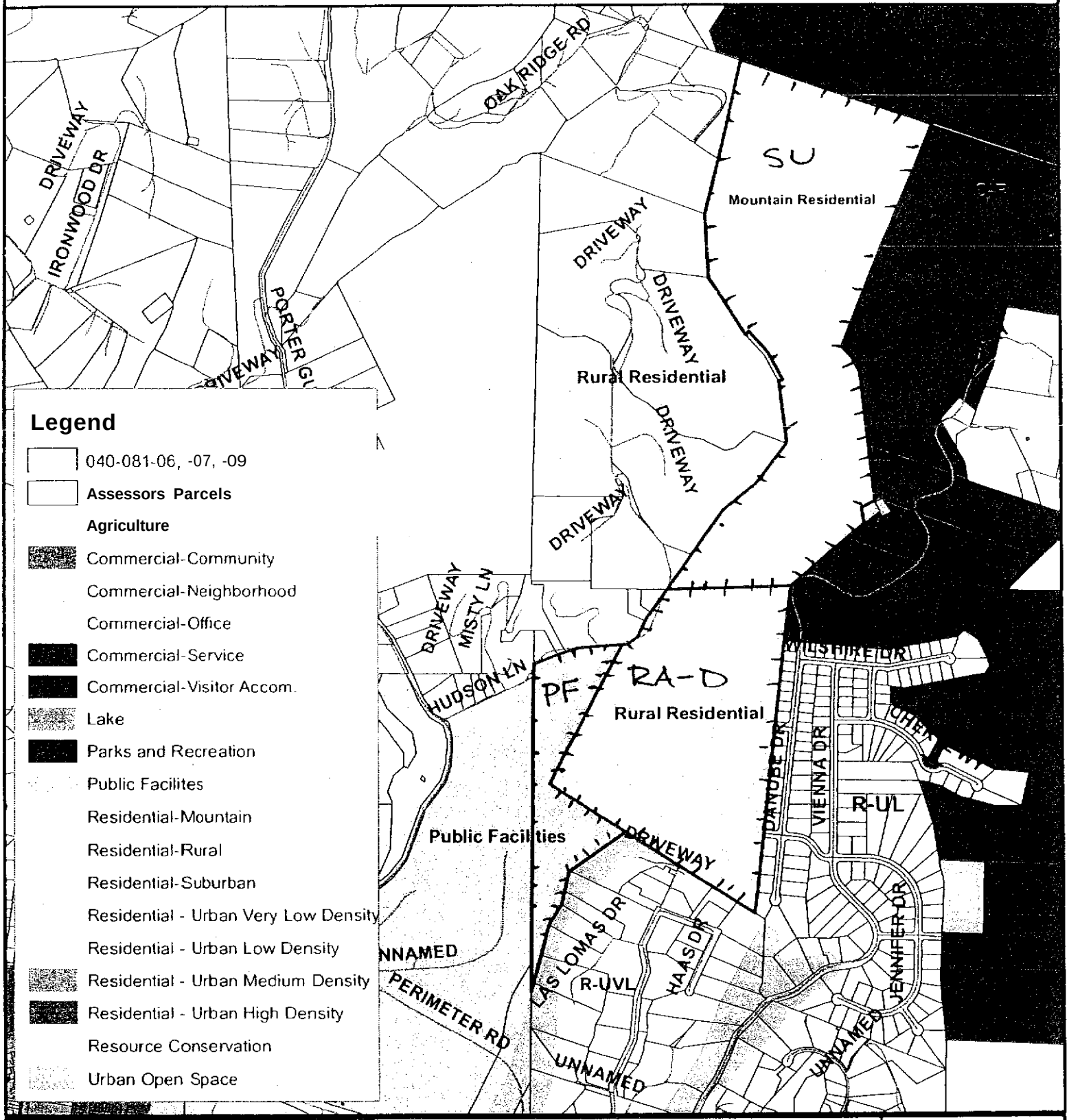
Map crealed **by** JLD
February *2007*

Environmental Review Inital Study

ATTACHMENT 2

APPLICATION 05-0407

ZONING & GENERAL PLAN DESIGNATIONS

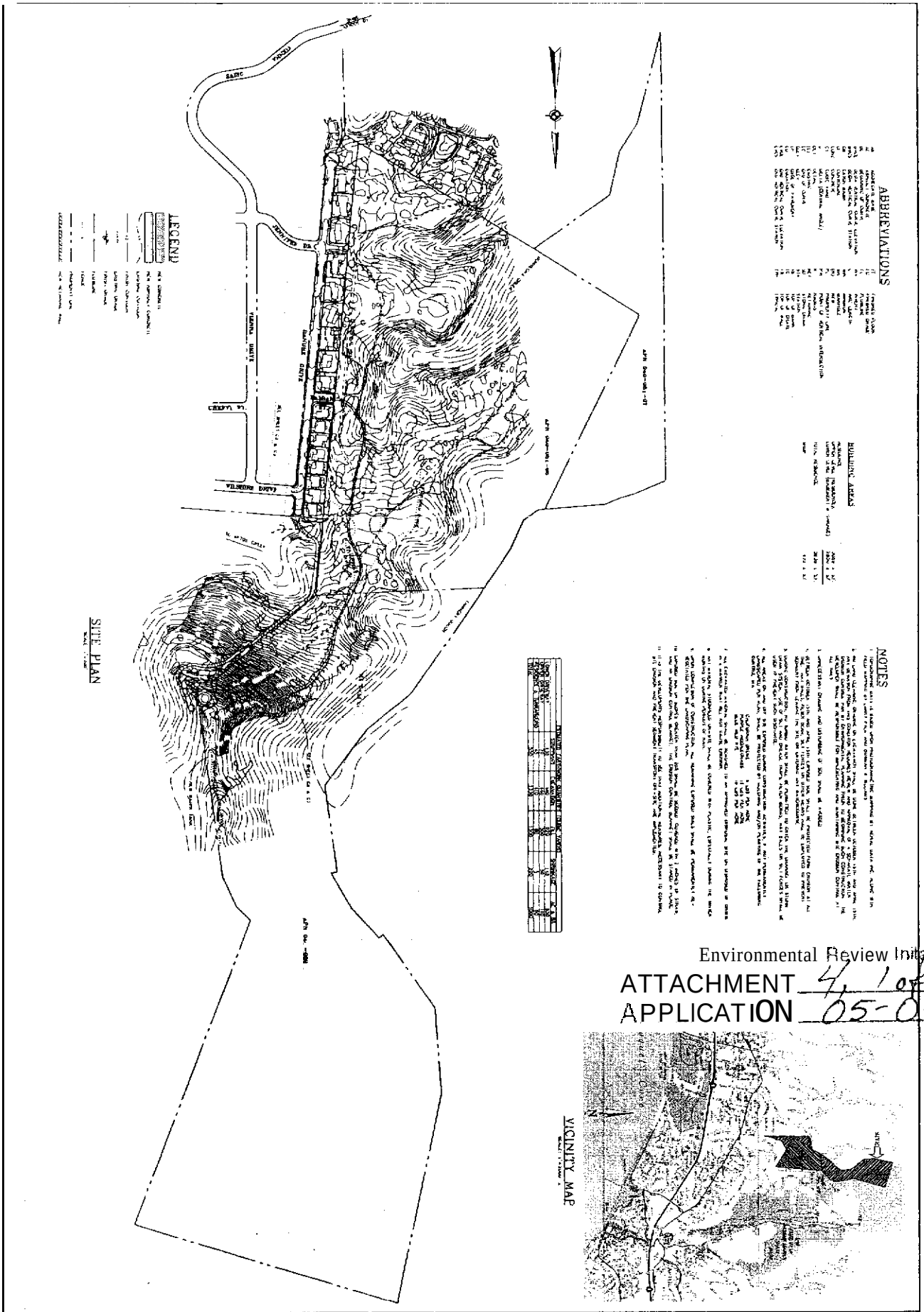


THE COUNTY OF SANTA CRUZ 1850

Environmental Review Inital Study
ATTACHMENT 3
APPLICATION 05-0407

0 360 720 1,440 2,160 2,880
Feet

Map created by JLD
February 2007



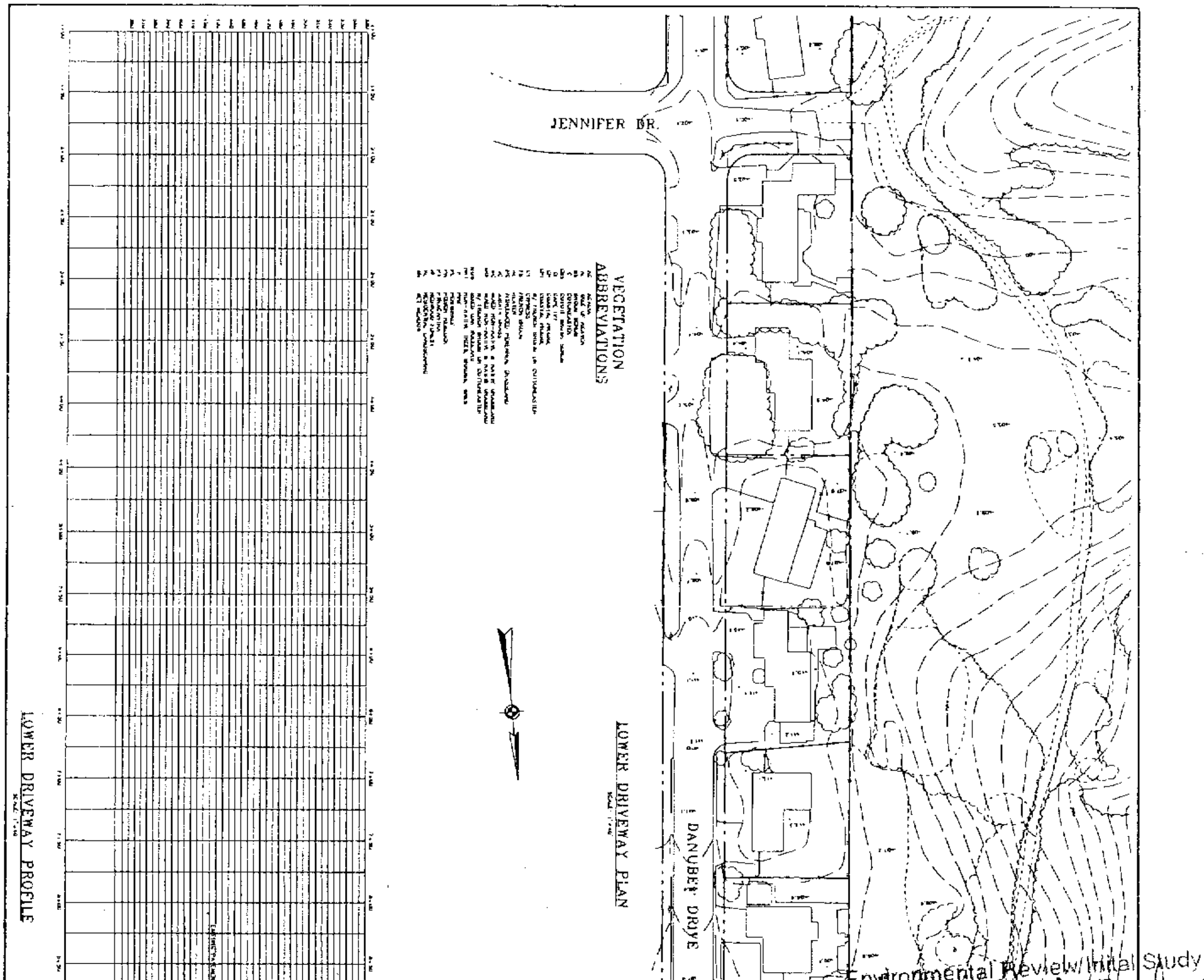
Environmental Review Inital Study
ATTACHMENT 4, 1 of 6
APPLICATION 05-0407

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

SITE PLAN

C1

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5309 FAX jeff@roperengineering.com

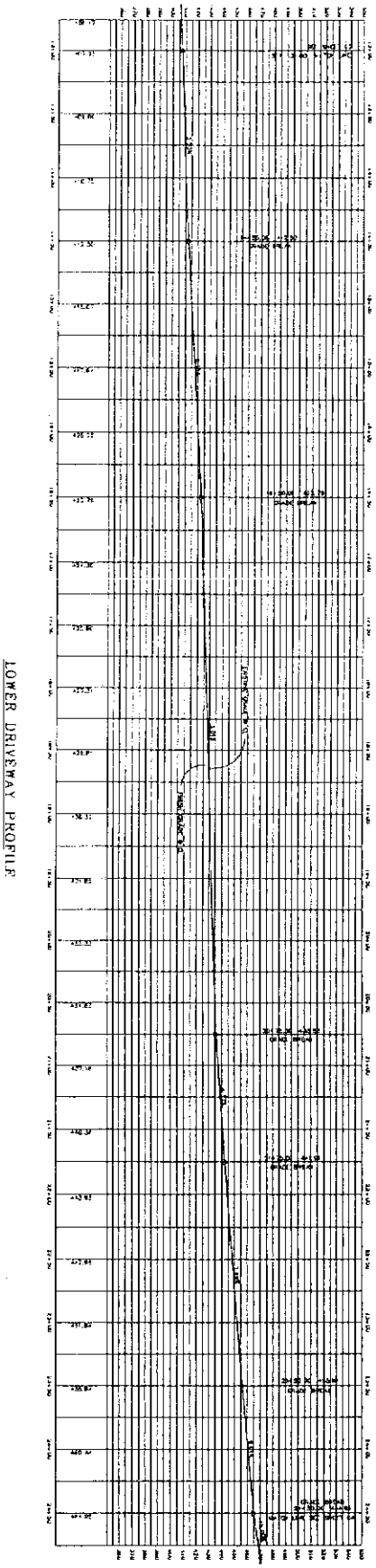


NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

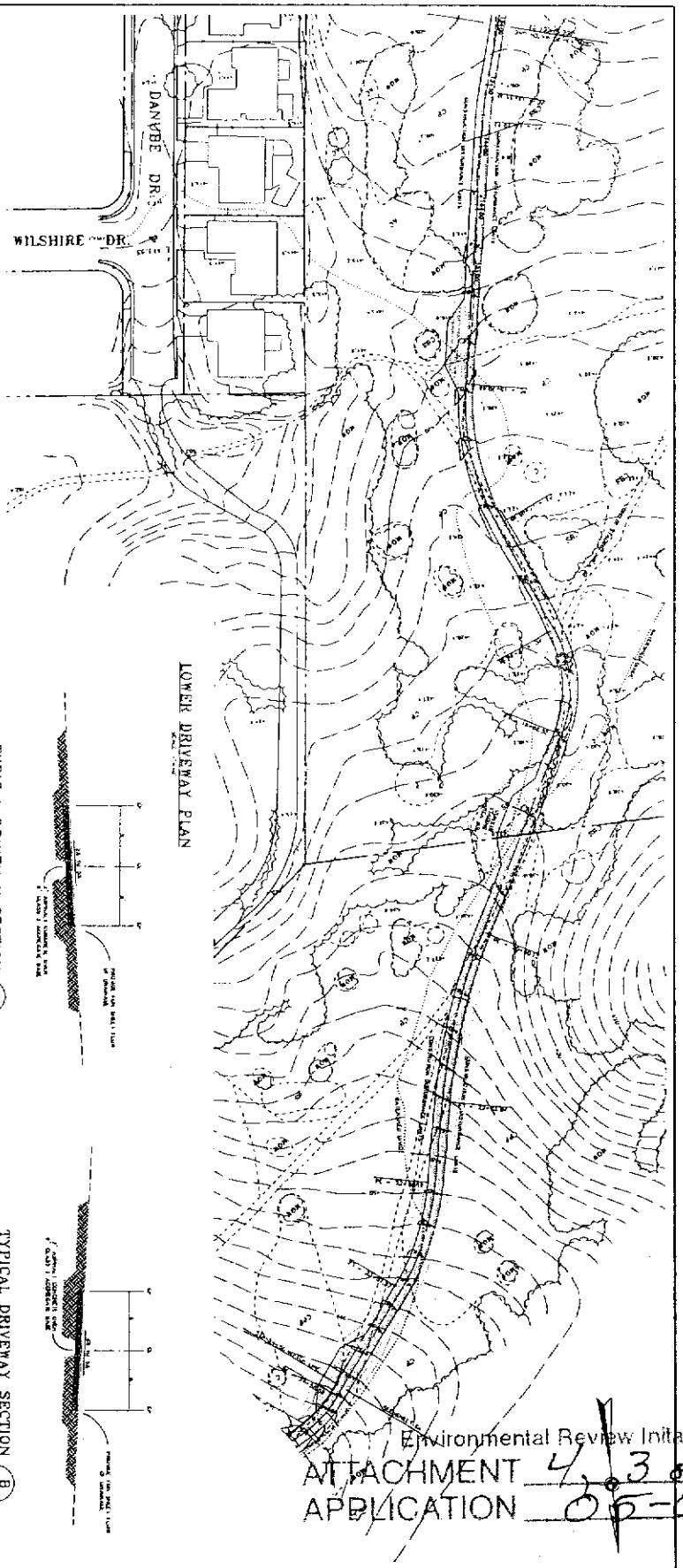
LOWER DRIVEWAY PLAN & PROFILE

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com

C2



LOWER DRIVEWAY PROFILE



LOWER DRIVEWAY PLAN

TYPICAL DRIVEWAY SECTION (A/C3)

TYPICAL DRIVEWAY SECTION (B/C3)

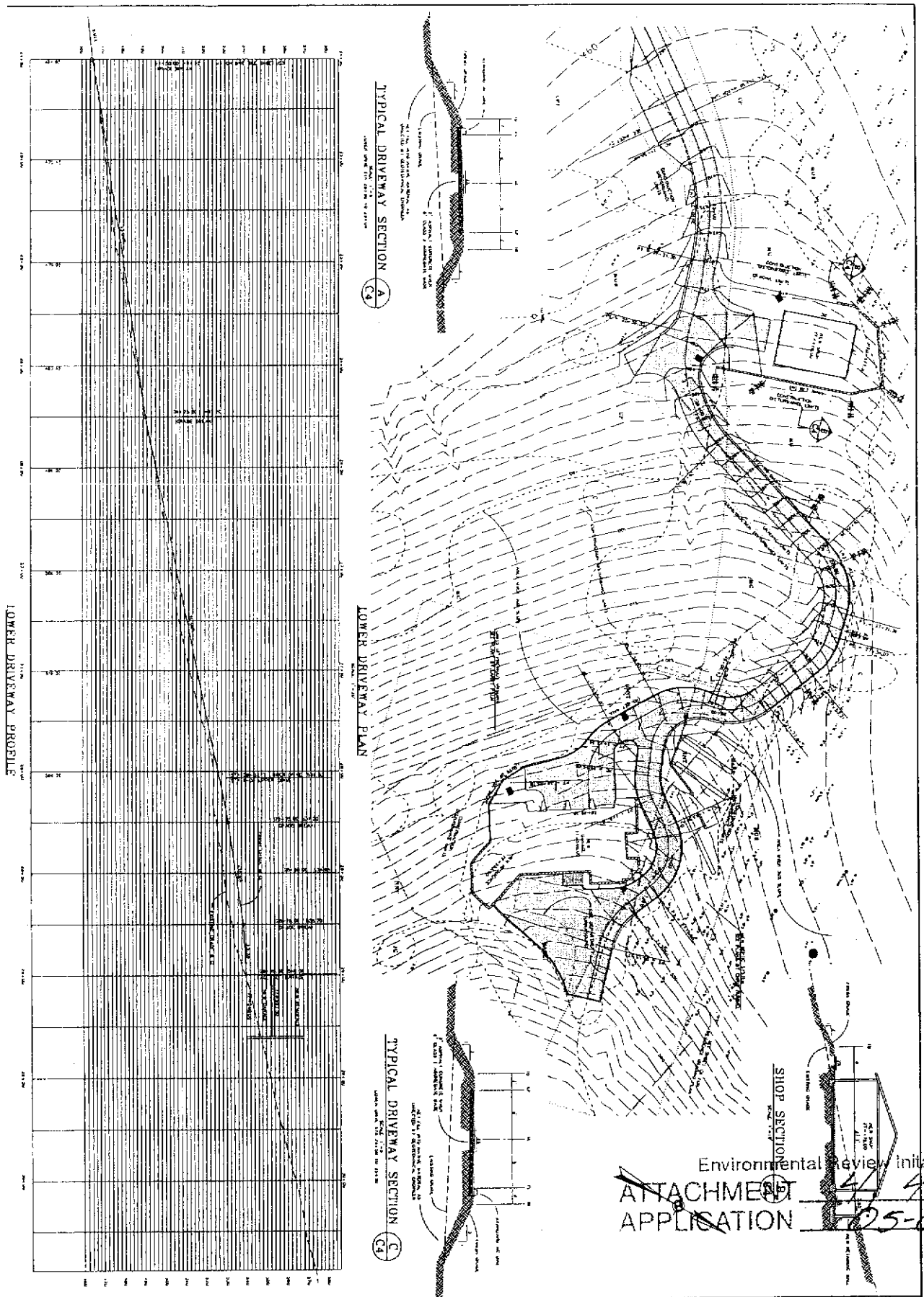
Environmental Review Inital Study
ATTACHMENT 4, 3 of 6
APPLICATION 05-0407

C4

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

LOWER DRIVEWAY PLAN & PROFILE

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com



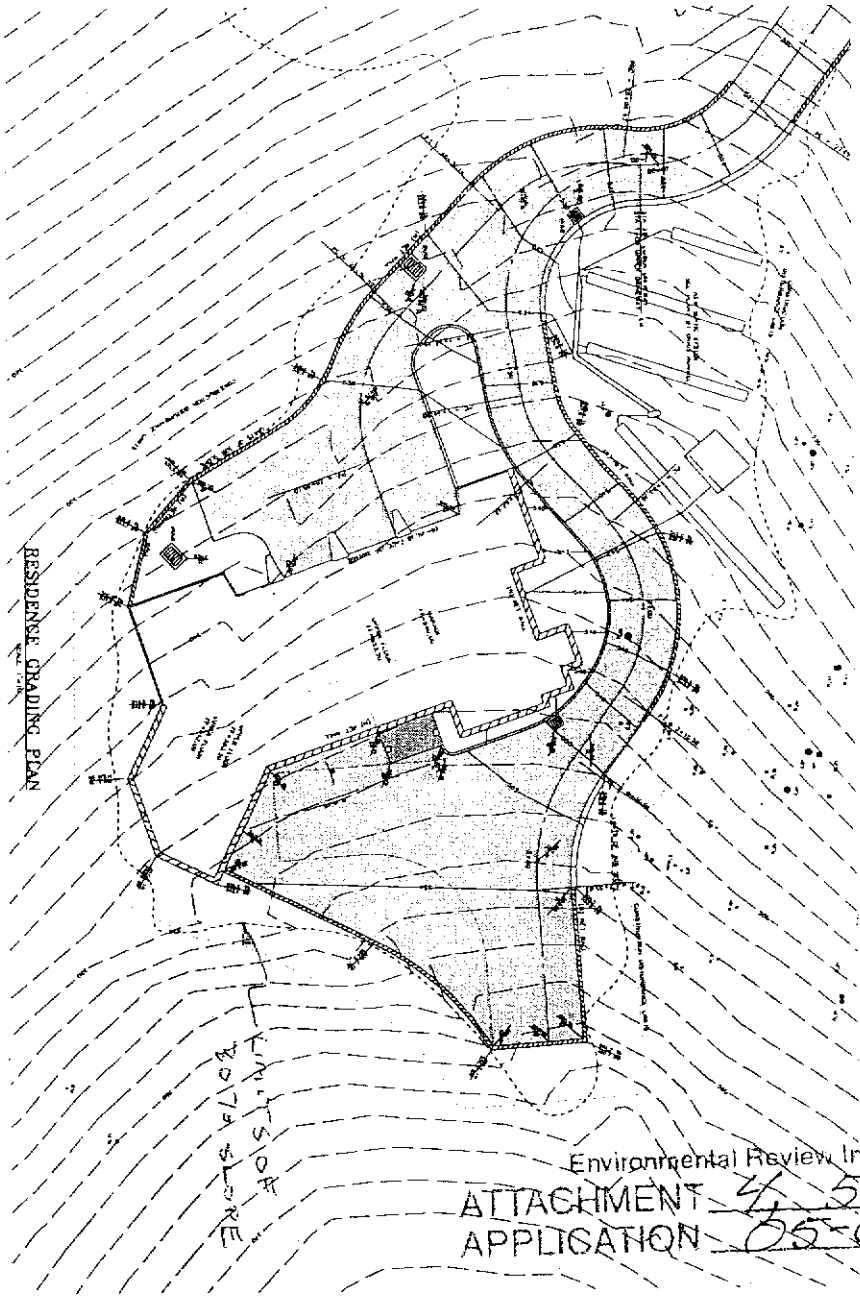
Environmental Review Inital Study
ATTACHMENT 4 4 of 6
APPLICATION 25-0407

C5

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

LOWER DRIVEWAY PLAN & PROFILE

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5309 FAX jeff@roperengineering.com



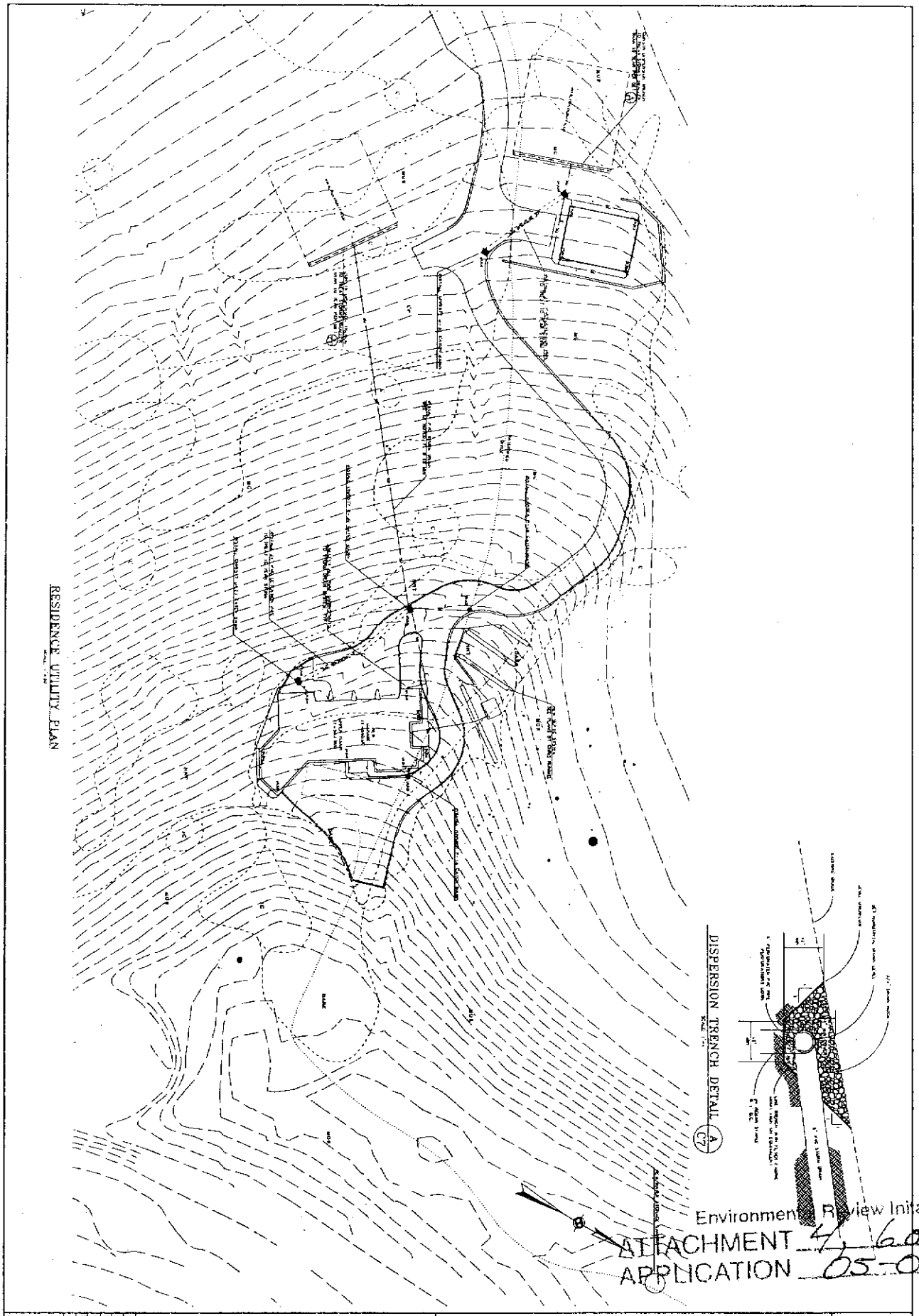
Environmental Review Inital Study
ATTACHMENT 4 5 of 6
APPLICATION 05-0407

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

RESIDENCE GRADING PLAN

C6

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jill@roperengineering.com



Environmental Review Inital Study
ATTACHMENT 4 6 of 6
APPLICATION 05-0407

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

RESIDENCE UTILITY PLAN

C7

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX

Environmental Review Initial Study

ATTACHMENT 5

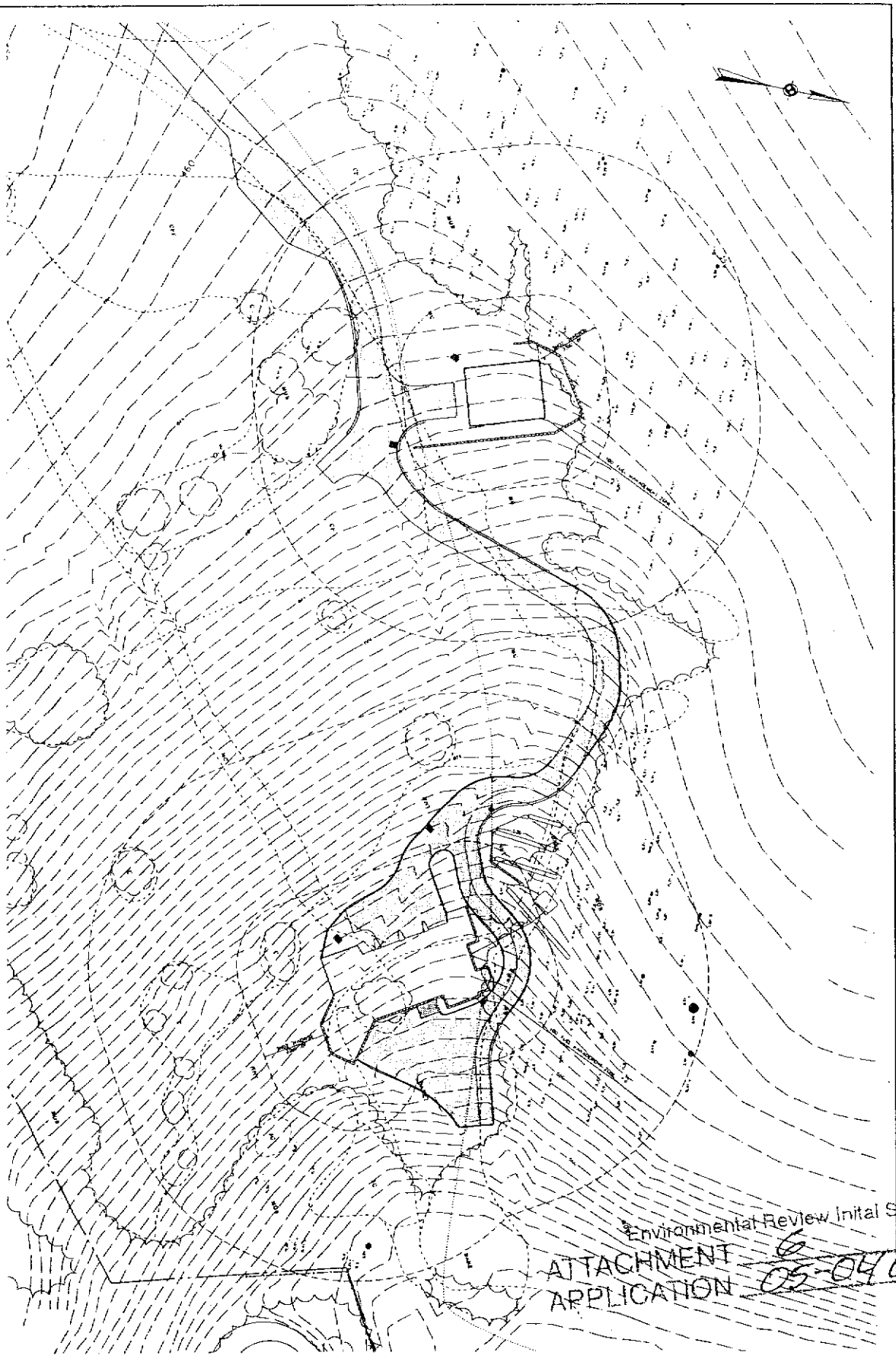
APPLICATION 05-0707

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-06 & 09

LOWER DRIVEWAY ALTERNATE PLAN & PROFILE

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD, SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5309 FAX jeff@roperengineering.com

C3



FIRE PROTECTION ZONES

LEGEND

Environmental Review Inital Study
ATTACHMENT 6
APPLICATION 05-0407

NEW RESIDENCE FOR
STEPHEN & PHYLLIS CARMICHAEL
APN 040-081-05 & 09

FIRE PROTECTION ZONES

C8

ROPER ENGINEERING
CIVIL ENGINEERING & LAND SURVEYING
444 AIRPORT BLVD. SUITE 206 WATSONVILLE, CA 95076
(831) 724-5300 PHONE (831) 724-5509 FAX jeff@roperengineering.com

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

October 10, 2006

Hamilton Swift - Attn: Diedre Hamilton
1509 Seabright Ave, #A1
Santa Cruz. CA, 95062

Subject: Review **of Geotechnical investigation by Haro, Kasunich & Associates**
Dated May 24, 2006; Project #: **SC9054**
APN 040-081-06, -07. ***-09,*** Application #: **05-0407**

Cear Applicant:

The purpose of lhis letter is to inform you lhat the Planning Department has accepted the subject report and the following items shall be required:

1. All construction shall comply with the recommendations of the report

2. Final plans shall reference the report and include a statement that the project shall conform to the report's recommendations.

3. Prior to building permit issuance a pian review letter shall be submitted to Environmental Planning. The author of the report shall write the plan review *letter*. The letter shall slate thai the project plans conform to the report's recommendations.

After building permit issuance Ihe soils engineer *must* remain involved *with* the *project* during construction. Please review the Notice *to Permits* Holders (attached).

Our acceptance of the report is limited to its technical content. Other project issues such as zoning, fire safety, septic or sewer approval, etc. may require resolution by other agencies.

Please submit two copies of the report at the time of building permit application.

Please call the undersigned at (831) 454-3168 if we can be of any further assistance.

Sin
Kent Edler
Civil Engineer

Environmental Review Inital Study
ATTACHMENT 7
APPLICATION 05-0407

Cc: S 8 P Carmichael Enterprises Inc., Owner
Haro. Kasunich & Associates

(over)

SUPPLEMENTAL GEOTECHNICAL INVESTIGATION

For
Proposed Carmichael Residence
Kamian Way
Santa Cruz County, California

Prepared For
Steve Carmichael
San Jose, California

Prepared By
HARO, KASUNICH AND ASSOCIATES, INC.
Geotechnical & Coastal Engineers
Project No.SC9054
May 2006

Project No. SC9054
24 May 2006

MR. STEVE CARMICHAEL
4125 Blackford Avenue, Suite 250
San Jose. California 95117

Subject: Geotechnical Investigation

Reference: Proposed Carmichael Residence and Detached Shop
Off Kamian Way
APN 040-081-06 8 08
Santa Cruz, California

Clear Mr. Carmichael:

At your request, we have performed a supplemental geotechnical investigation for the referenced project site. A Geotechnical Investiqation-Carmichael Residence dated 18 August 1999 was previously prepared for referenced project by Steven Raas 8 Associates, Inc.

The purpose of our investigation was to update the previous geolechnical investigation for the project site as well as provide supplemental field exploration and design criteria for the current resident building envelope location as well as the proposed shop located downslope of the residence.

This report also formally acknowledges that Haro, Kasunich and Associates will take full responsibility for the geotechnical aspects of the project and become the geotechnical engineers of record.

The accompanying report presents our conclusions and recommendations, as well as the results of the geotechnical investigation on which they are based.

If you have any questions concerning the data or conclusions presented in this reporl please call our office

Environmental Review Inital Study
ATTACHMENT 8, 2 of 14
APPLICATION 05-0407

Very truly yours,

HARO, KASUNICH & ASSOCIATES, INC.

Rick L. Parks
G.E. 2603

REGISTERED PROFESSIONAL ENGINEER
RICK L. PARKS
No. 2603
Exp. 31 Dec 06
GEOTECHNICAL
STATE OF CALIFORNIA

RLP/dk
Copies: 2 to Addressee
4 to Hamilton Swift, Attn: Ms. Deidre Hamilton

116 EAST LAKE AVENUE • WATSONVILLE, CALIFORNIA 95076 • (831) 722-4175 • FAX (831) 722-3202

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our investigation, the proposed project appears compatible with the site, provided the following recommendations are incorporated into the design and construction of the proposed project

Based upon site topography and the subsurface profile encountered in our exploratory borings, the proposed residence should be supported by a drilled pier and grade beam system The detached shop situated at the base of the knoll may be founded upon conventional spread footings

The site soils are susceptible to erosion when subjected to concentrated runoff. Portions of the topographic knoll above the building envelopes have been eroded with rills and gullies present. The most affective method to correct existing erosion features and prevent future erosion will be to control surface runoff. Site grading for the residence and detached shop should collect and convey surface runoff to an energy dissipater system situated upon the near level slope below the topographic knoll. Existing erosion features should be graded and replaced with site silty sands redensified as engineered fill.

A pavement section for the access driveway has not yet been developed. We will work with Ihe project civil engineer to design a pavement section accommodating the potentially expansive soils underlying a significant portion of the access driveway. The following recommendations should be used as guidelines for preparing project plans and specifications:

Site Grading

1 The geotechnical engineer should be notified at least lour (4) working days prior to any site clearing or grading so that Ihe work in the field can be coordinated wiih the grading contractor and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owner's responsibility lo make the necessary arrangements for these required services.

2 Where referenced in this report Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557 -- Current.

3 Areas to be graded should be cleared of all obstructions including loose fill. building foundations, trees not designated to remain, or other unsuitable material

Existing depressions or voids created during site clearing should be backfilled with engineered fill

4. Cleared areas should then be stripped of organic-laden topsoil. Stripping depth should be from 2 to 4 inches. Actual depth of stripping should be determined in the field by the geotechnical engineer. Strippings should be wasted off-site or stockpiled for use in landscaped areas if desired.

5. Areas to receive engineered fill should be scarified to a depth of 6 inches, moisture conditioned, and compacted to at least 90 percent relative compaction. Portions of the site may need to be moisture conditioned to achieve a suitable moisture content for compaction. These areas may then be brought to design grade with engineered fill.

6. Engineered fill should be placed in thin lifts not exceeding 8 inches in loose thickness, moisture conditioned, and compacted to at least 90 percent relative compaction. The upper 8 inches of pavement and slab subgrades should be compacted to at least 95 percent relative compaction. The aggregate base below pavements should likewise be compacted to at least 95 percent relative compaction.

7. If grading is performed during or shortly after the rainy season, the grading conlractor may encounter compaction difficulty, such as pumping or bringing free water to the surface, in the upper surface clayey and silty sands. If cornpaction cannot be achieved after adjusting the soil moisture content, it may be necessary to over-excavate the subgrade soil and replace it wiih angular crushed rock to stabilize the subgrade. We estimate that the depth of over-excavation would be approximately 24 inches under these adverse conditions.

8. Fills should be keyed and benched into firm soil or bedrock in areas where existing slope gradienls exceed 6:1 (horizontal to vertical). Subdrains will be required in areas where keyways or benches expose potential seepage zones.

9. Soils utilized as engineered fill should:

a) Be free of wood, organic debris and other deleterious materials;

b) Not contain rocks or clods greater than 2.5 inches in any dimension;

c j Not contain more than 25 percent of fines passing the #200 sieve;

d) Have a Sand Equivalent greater than 18;

e) Have a Plasticity Index less than 15; and

f) Have an R-Value of not less than 30

10 We estimate shrinkage factors of aboul 15 percent for fhe on-site materials when used in engineered fills

11. All permanent cut and fill slopes should be inclined no steeper than 2 1 (horizontal to vertical).

12 Following grading. all exposed slopes should be planted as soon as possible with erosion-resistant vegetation

13 Afler the earthwork operations have been completed and the geolechnical engineer has finished his observation of the work, no further earthwork operations shall be performed except with Ihe approval of and under the observation of the geolechnical engineer

Foundations

14. Based upon site topography and the subsurface soil profile encountered in our exploratory borings, the proposed residence and driveway retaining walls should be supported by a drilled pier and grade beam system. The detached shop situated at the base of the knoll may be founded upon conventional spread footings

Spread Footings for Detached Shop

15. All foolings should be founded at least 18 inches below the lowest adjacent grade and be embedded at least 12 inches into undisturbed, non-expansive, native soil. Actual fooling depths should be determined in accordance with anticipated use and applicable design standards. The footings should be reinforced as required by the siruclural designer based on the actual loads transmitted to the foundation

16. The foundation trenches shouid be kept moist and be thoroughly cieaned of all slough or loose materials prior to pouring concrete. In addition, ail footings located adjacent io other footings or utility trenches should have their bearing surfaces founded below an imaginary 1.5:1 plane projected upward from the bottom edge of the adjacent footings or utility trenches.

17. The footings should be embedded deeper. such that the base is at least 10 feei horizontally from the surface of the nearest adjacent slope.

18. Foundations designed in accordance with the above may be designed for an allowable soil bearing pressure of 2,000 psf for dead plus live loads. This value may be increased by one-third to include short-term seismic and wind Icads.

19. Total and differential settlements under the proposed light shop building loads are anticipated to be less than 1 inch and ½ inch respectively.

20. Lateral load resistance for structures supported on footings may be developed in friction between the foundation bottom and the supporting subgrade. A friction coefficient of 0.35 is considered applicable.

Drilled Piers

21. The proposed residence and driveway retaining walls should be supported by drilled piers

22. Drilled piers should be at least 18 inches in diameter and be embedded at least 8 feet into firm, undisturbed native soil.

23. Piers constructed in accordance with the above may be designed for an end bearing capaciiy of 4,000 psf plus a one third increase for short term loading.

24. For passive lateral resistance, an equivalent fluid pressure of 300 psf may be assumed lo act against two pier diameters. The upper 3 feet of engineered fill or undisturbed native soil should be neglected when computing passive resistance.

25. Prior io placing concrete, all foundation excavations should be thoroughly cleaned. The foundation excavations must be observed by the geotechnical engineer or his representative prior to placing concrete.

Retaining **Walls** and Lateral Pressures

26. Retaining walls should be supported by drilled pier and grade beam foundations as previously outlined. Retaining walls should be designed to resist both lateral earth pressures and any additional surcharge loads. Walls up *io* 8 feet high should be designed to resist an active equivalent fluid pressure oi 35 pcf for level backfills. and 50 pcf for sloping backfills inclined up to 2:1 (horizontal to vertical). Restrained walls should be designed io resist uniformly applied wall pressure of 23 H psf for level backslopes The walls should also be designed to resist one half *of* any surcharge loads imposed on the backfill behind the walls. Structural retaining walls including access driveway retaining walls should also be designed for a seismic surcharge of 16H psf acting at 0.6 H.

27. The above lateral pressures assume lhat the walls are fully drained to prevent hydrostatic pressure behind the walls. Drainage materials behind the wall should consist oi Class 2 Permeable Material (Caltrans Specification 68-1.025) or an approved equivalent. The drainage material should be at least 12 inches thick. The drains should extend from the base of the walls to within 12 iriches of the top of the backfill. A

perforated pipe should be placed (holes down) about 4 inches above the bottom of the wall and be lied to a suitable drain outlet Wall backdrains should be plugged at the surface with clayey material to prevent infiltration ol surface runoff into the backdrains

Slabs-on-Grade

28 We recommend that proposed slabs-on-grade he supported on at least 8 inches of non-expansive (PI ≤ 15) granular material compacted to at least 95 percent relative compaction

The project structural designer should determine the appropriate slab reinforcing and thickness, in accordance with Ihe anticipated use and loading of the slab. However, we recommend that consideration be given to a minimum slab thickness of 5 inches and steel reinforcement necessary to address temperature and shrinkage considerations. It is recommended that rebar in lieu of wire mesh be used for slab reinforcement. The steel reinforcement should be held firmly in the vertical center of the slab during placement and finishing of the concrete with pre-cast concrete dobies.

Where floor dampness must be minimized or where floor coverings will be installed, concrete slabs-on-grade should be constructed on a capillary break layer at least 4 inches thick, covered with a membrane vapor retarder. Capillary break material should be free-draining, clean, angular gravel such as ¾-inch drainrock. The gravel should be

washed io remove fines and dust prior to placement on the slab subgrade. The vapor retarder should be a high quality membrane at least 10 mil think and puncture resistant. An acceptable product for use as a vapor retarder in the Stego Wrap IO-mil Class A vapor retarder system manufactured by Stego Industries. LLC. Provided the Stego Wrap system is installed per manufacturer's recommendations, the concrete may be poured directly upon the Stego Wrap Vapor Retarder. The primary considerations for installing the vapor retarder are: taping all seams; sealing all penetrations such as pipe, ducting, wire, etc; and repairing all punctures.

It should be clearly understood concrete slabs are not waterproof, nor are they vapor-proof The aforementioned moisture retardant system will help minimize water and water vapor transmission through the slab, however moisture sensitive floor coverings require additional protective measures. Floor coverings must be installed according to the manufacturer's specifications. including appropriate waterproofing applications and/or any recommended slab and/or subgrade preparation. Consideration should also be given to recommending a topical waterproofing application over the slab.

29. Exterior concrete slabs-on-grade should be founded on firm, well-compacted ground consisting of at least 8 inches of non-expansive(PI< 15) granular material compacted to at least 95 percent relative compaction. Reinforcing should be provided in accordance with the anticipated use and loading of the slab. The reinforcement

should not be tied to the building foundations. These exterior slabs can be expected to suffer some cracking and movement. However, thickened exterior edges, a well-prepared subgrade including premoisiening prior to pouring concrete, adequately spaced expansion joints. and good workmanship should minimize cracking and movement

Site Drainage

30. Thorough control of runoff is essential to the performance of the project

31 Runoff must noi be allowed to sheet flow over graded slopes Berms or lined V-ditches should be constructed at the top of slopes to divert water toward suiiable collection facilities and energy dissipation devices

32. Permanent subdrains may be required adjacent io pavements or building foundations where groundwater levels are near the surface. The location and depth of these drains will need lo be determined in the field by the geolechnical engineer.

33 Surface drainage should include provisions for positive gradients so that surface runoff is not permitted to pond adjacent to foundations and pavements. Surface drainage should be directed away from the building foundations.

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34 Full roof gutters should be placed around all eaves Discharge from the roof gutters should be conveyed away from the downspouts by closed conduit Io energy dissipators situated upon the near level slope below the topographic knoll

35 The migration of water or spread of extensive root systems below foundations, slabs, or pavements rnay cause undesirable differential movements and subsequent damage to these structures Landscaping should be planned accordingly

Plan Review, Construction Observation, and **Testing**

36. Our firm should be provided the opportunity for a general review of the final project plans prior to construction so that our geotechnical recommendations rnay be properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. The recommendations presented in this report require our review of final plans and specifications prior to construction and upon our observation and, where necessary, testing of the earthwork and foundation excavations. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.

Entomological Consulting Services, Ltd.

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bugdoc@home.com • www.ecslid.com

24 April 2001

Mr. Stephen Graves
Stephen Graves & Associates
4630 Soquel Drive, Suite 8
Soquel, CA 95073

RE: APNs 040-081-06, 040-081-07, & 040-081-09
Carmichael Property in Aptos, CA
Presence-Absence Survey Report for the Ohlone Tiger Beetle

Dear Steve:

At your request, I conducted a presence-absence survey for the Ohlone Tiger beetle (*Cicindela ohlone*) at the above-referenced property owned by Mr. Steve Carmichael. This letter reports the findings of my survey and presents a brief description of the project site.

PROJECT SITE DESCRIPTION

The 142-acre property is generally located east of Cabrillo College and west of Danube Drive in Aptos. Slopes at the property range from less than 5% on the old marine terrace to greater than 50% in Tannery Gulch. Elevations range from a low of 260 feet in the southwestern corner of the property, to a high of 760 feet at the top of the ridge near the northern property boundary. The attached series of four photographs (Figures 1 – 4) illustrate conditions at the site.

The primary vegetation types observed at the site included oak woodland, coastal sage scrub, and grassland. Introduced broom (*Cytisus* sp.) has colonized much of the lower portion of the property along Danube Drive. The grassland includes a nice remnant of coastal terrace prairie, located between the slopes below the house site and the southern border. The house site, located at approximately 550 feet elevation, and the south and southwestern-facing slopes immediately below the house site exhibit considerable erosion.

Bowman et al. (1980) identified four soil types at the property. These soil types include Elkhorn-Pfeiffer and Lompico-Felton complexes in the area around Borregas Creek, Lompico-Felton complex on the steep northwest-facing slope in Tannery Gulch, Los Osos Loam along the ridge and steep slopes on the northern section of the property, and Watsonville Loam on the terrace surface and vicinity of the house site.

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BACKGROUND INFORMATION

This section summarizes available information about the taxonomy, identification, distribution, habitat, biology, and conservation of the Ohlone Tiger beetle (OTB). Information from related species of tiger beetles is often discussed, particularly when specific information for this species of concern is lacking.

Taxonomy.

Tiger beetles are generally treated as a family, the Cicindelidae, in the insect order Coleoptera; however, some entomologists prefer to recognize tiger beetles as a subfamily (Cicindelinae) or tribe (Cicindelini) of the ground beetle family, Carabidae. Thus, all of these names are encountered in the entomological literature.

The Ohlone Tiger beetle was described in 1993 by Freitag, Kavanaugh, and Morgan (1993). Dr. Richard Freitag is a coleopterist (i.e., an entomologist who studies beetles) who specializes in tiger beetles. Dr. David Kavanaugh is a coleopterist who specializes in ground beetles. Mr. Randall Morgan is a local naturalist who specializes in the flora and fauna of Santa Cruz County, and is the person who discovered the Ohlone Tiger beetle and first recognized that it might represent a new species.

Their description of this new species was based on specimens collected from three sites in west central Santa Cruz County between 1987 and 1992. Subsequent to the authors' submission of their paper, a fourth site supporting the beetle was discovered above the Vine Hill Elementary School in Scotts Valley, and a fifth site was discovered at Pogonip Park next to the UC Santa Cruz campus. In the spring of 2000, I discovered a sixth population at the Kinzli property, located at the end of Meder Street in Santa Cruz.

Species Description.

Adult tiger beetles possess elongate, cylindrical bodies. They are usually brightly colored, often with a metallic or iridescent sheen. Their eyes and sickle-shaped mandibles (i.e., jaws) are very prominent. Together, their eyes and head are wider than the thorax. They possess long, cursorial legs that are characterized by numerous spines. Adults are typically about 15-25 mm. in length.

Cicindela ohlone is most closely related to *C. purpurea*, but can be distinguished from this and related species by its overall size, the color and maculation patterns on its thorax and elytra, and its genitalic features. The OTB's body color is a brilliant green, with gold maculations. Freitag, Kavanaugh, and Morgan (1993) illustrate the maculation pattern characteristic of *C. ohlone* and the diagnostic features of its genitalia. In addition, the winter-spring activity period of the OTB is distinctive, as most tiger beetles in coastal California are active in the spring and summer months (Nagano 1980).

Larvae of tiger beetles are much more uniform in appearance than adults. They have an eruciform (i.e., grub-like) appearance. The head and pronotum are strongly chitinized, and the

fifth abdominal segment possesses a pair of medial hooks that are used as anchors to secure the larvae as they reach out from the tunnel to ambush prey. The larvae of *C. ohlone* have not been described.

Distribution.

Of the approximately 110 species of tiger beetles that have been described in North America (Boyd and Associates 1982), *Cicindela ohlone* exhibits one of the most restricted geographic ranges. It has been reported at only five locations in central and western Santa Cruz County.

Although the potential exists for it to occur in other locations in the county supporting similar habitat, todate the beetle has not been found in other similar areas checked. This species appears to be restricted to coastal terrace situations, at low to mid-elevations (less than 1,200 feet), located between the crest of the Santa Cruz Mountains and the Pacific Ocean.

Habitat.

Cicindela ohlone inhabits areas characterized by remnant stands of native grassland. California oatgrass (*Danthonia californica*) and Purple needlegrass (*Stipa pulchra*) are two native grasses known to occur at all five sites. Within these grasslands, the beetle has been observed primarily on level ground, where the vegetation is sparse or bare ground is prevalent. The substrate at each known beetle location consists of shallow, poorly drained clay or sandy clay soils that have accumulated over a layer of bedrock known as Santa Cruz Mudstone (Freitag, Kavanaugh, and Morgan 1993). The soils at all known OTB sites, as mapped by Bowman et al. (1980), are Watsonville Loams.

Biology.

Specific biological and life history information for *C. ohlone* is not known. Similarly, the egg, larval, and pupal stages of *C. ohlone* have not been described. However, all tiger beetles share some general biological characteristics, which are summarized in this section.

The diurnally active adults and larvae of *C. ohlone* are associated with sunny areas of bare or sparsely vegetated ground. Adults run rapidly in and near the larval habitat. They are strong flyers for short distances. Because they are cold-blooded, are active during the winter and spring months, and favor microhabitats that are sparsely vegetated and can become quite warm during their activity period, adults and larvae typically spend a considerable portion of their daily activity thermoregulating.

Collection records indicate that most adult *C. ohlone* are active from late January through early May. Specific dates when beetles have been observed range from January 29th through May 3rd (Freitag, Kavanaugh, and Morgan 1993; Morgan, personal communication; Arnold, personal observation).

Both adults and larvae of tiger beetles are opportunistic, preying on smaller, soft-bodied insects and invertebrates. Adults possess good visual acuity and are found on sunny glades of bare or sparsely vegetated soil, where they actively search for potential prey. In contrast, larvae

remain in their tunnels, and ambush prey that wander within their striking distance. Specific prey items of *C. ohlone* are not known, but prey for other species of tiger beetles have been identified as ants, adult and larval flies (Diptera), tiny insects, small beetles, and worms (Larochelle 1974). These and other small, soft-bodied insects and invertebrates are likely prey items of *C. ohlone*.

The larvae of most tiger beetles occur in a narrower range of microhabitats than their adult stages, probably because they tolerate less variation in many physical factors, especially soil moisture, soil composition, and temperature (Pearson 1988; Shelford 1907 and 1909). All known larvae construct a tunnel-like burrow at sites where eggs were laid by the mother beetle. Larvae of other tiger beetle species that live in grasslands typically build their tunnels at the edges of the bare or sparsely vegetated portions of the grassland where adult beetles are most commonly observed (R. Freitag, personal communication). Tunnel length varies depending on the larval developmental stage, species, season, and substrate, but ranges from 15 to 200 centimeters (Pearson 1988; Willis 1967). Larvae of some tiger beetles require two years to complete their development (Lindroth 1974).

Richard Freitag (personal communication) states that tiger beetle species related to *C. ohlone* construct larval tunnels that average about 50 centimeters (ca. 20 inches) in length. Although the tunnels of most closely related species are usually constructed perpendicular to the surface of the ground, a few are known to construct tunnels at an acute angle.

Pupation takes place in the larval burrows. The upper portion of the larval burrow is usually sealed off by the larva when its moults or prepares to pupate.

Conservation.

The three describers of this new beetle species noted that because of the beetle's apparent restriction to clay-based, marine terraces, which support native grassland remnants in the coastal mid-Santa Cruz County area, much of its former habitat within this portion of the Santa Cruz County and similar areas in neighboring San Mateo and Monterey counties, had already been converted for development or other land uses before the new beetle was recognized as a new species. For this reason, Freitag, Kavanaugh, and Morgan (1993) suggested that it was unlikely that the OTB would be found in many other places, which has turned out to be the case despite numerous searches.

Because developments or other land uses have been proposed for at least two of the six known OTB locations, the describers have advised the U.S. Fish & Wildlife Service that it should evaluate the possibility of recognizing the OTB as an endangered or threatened species. The U.S. Fish & Wildlife Service (2000) has recently proposed to recognize the OTB as an endangered species.

Nationally, two eastern taxa of tiger beetles are recognized as endangered species. Five of the 17 taxa of tiger beetles that are candidates or species of concern for federal protection under the Endangered Species Act (U.S. Fish & Wildlife Service 1994) occur in California.

SURVEY METHODS

I visited the Carmichael property six times, at approximately weekly intervals, between February 28th and April 22nd, 2001. All visits occurred on sunny days when ambient air temperatures were at least 60° F (the temperature when OTBs become active). Also, on the day of each survey visit I also stopped by the Santa Cruz Gardens site in Soquel to confirm that OTB adults were active. During my initial site visits, I surveyed the entire project site by hiking throughout it to identify areas of potentially suitable habitat for the OTB. During subsequent site visits, I focused my surveys only in those areas that I determined to represent potential habitat for the beetle, namely the portion of the property that supports coastal terrace prairie. This grassland habitat is patchily distributed on the property from the proposed house site to the southern boundary of the property.

Although my survey period occurred during the adult activity period, I also searched in appropriate portions of the property, namely areas of bare or sparsely-vegetated ground in the coastal terrace prairie, for larval burrows of the OTB. Both life stages of the beetle prefer the coastal terrace prairie habitat and the larval burrows are quite characteristic in appearance.

RESULTS AND DISCUSSION

No life stages of the Ohlone Tiger beetle nor larval burrows were observed during my six visits to the Carmichael property. My surveys at the Carmichael property began on the first day (February 28th) that I observed OTB adults in 2001 at the nearby Santa Cruz Gardens site. The last OTB adults observed at this control site were seen on April 14th, however my surveys at the Carmichael property continued through April 22nd.

The Ohlone Tiger beetle prefers barren or sparsely vegetated areas in grassland habitats dominated by bunchgrasses growing on Watsonville Loams. Other than the horse/foot trails that traverse portions of the site, the only portion of potentially suitable habitat is in the vicinity of the house site southward to the southern property line. On the south and southwestern-facing slopes below the house site, coastal terrace prairie grows on Watsonville loam in a few acres. As you continue south to the southern property line, the patches of coastal terrace prairie become fewer in number and smaller in size as they are replaced by dense brush, trees, and introduced broom.

Soils at the house site and the slopes immediately below it exhibit considerable erosion, so even though they are mapped as Watsonville loam, the erosion has probably altered the soils here in a manner that is not favorable for OTB habitation. Similarly, at the toe of the slope immediately below the house site, the soils of coastal terrace prairie habitat remained saturated until the end of March. Such wet soil conditions are not favorable to the OTB, which spends most of its life in an earthen burrow.

South of this largest patch of coastal terrace prairie, brush, trees, and broom become more prevalent. A few, smaller patches of coastal terrace prairie habitat are interspersed among the brush and trees, however these taller types of vegetation cast shadows on the prairie remnants

during the warmest part of the day when adult OTBs would be active. The OTB cold-blooded and dependent upon the ambient air temperature and sunlight to warm up and be active. It's preferred habitat is barren or sparsely-vegetated areas of sunlit ground in grassland, rather than areas characterized by dense brush, trees, or herbaceous vegetation as characterize this portion of the site.

For these reasons, I conclude that the OTB does not occur at your property. Construction of your proposed single-family residence, driveway, and other improvements will not adversely impact the beetle or its habitat and no mitigation is necessary to alleviate impacts.

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If you have any questions about my report, please contact me.

Sincerely,

Richard A. Arnold

Richard A. Arnold, Ph.D.
President

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Fig. 1 (left)
Home site at top of hill with coastal terrace prairie on slopes and in foreground

Fig. 2 (below)
Area below home site with coastal terrace prairie

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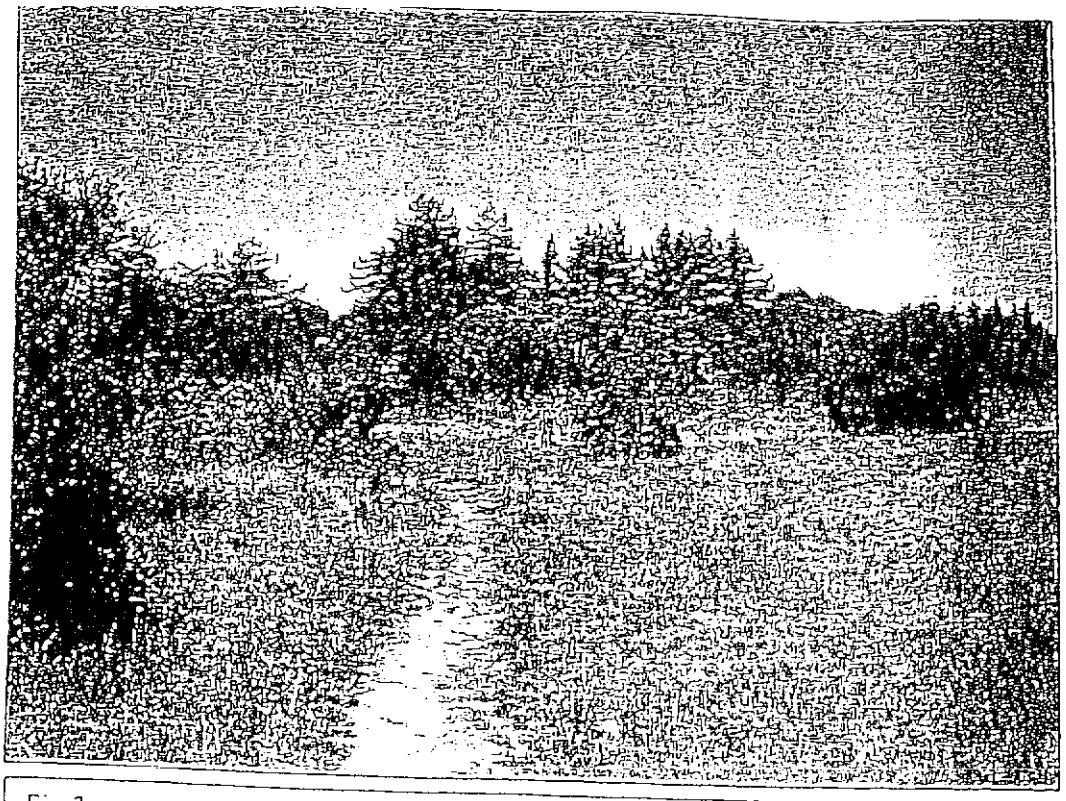

Fig. 3
Lower portion of property where brush and trees become dominant

Fig. 4
Trail through lower portion of property where brush is dominant

09:26:29 **Fri Mar 09, *2007***

03/09/07 DS4 COUNTY OF SANTA CRUZ - 3.1 I-ALPDR385
09:25:**42** BROWSE DISCRETIONARY APPLICATION COMMENTS ALSDR385

APPL.NO: 05-0407 REVIEW AGENCY: ENVIRONMENTAL HEALTH
SENT TO PLNR: 3/02/01 REVIEWER: JGS
ROUTING NO: **1** VERSION NO: **2**
COMMENTS:

COMPLETENESS COMMENT:
======== REVIEW ON FEBRUARY 16, 2007 BY **JIM** G SAFRANEK ========
The applicant's septic consultant will need to verify in the field that setbacks to the proposed road grading adjacent to the approved leachfield meets code. Submit consultant's letter to EHS **staff forreview and approval**
======== ~~UPDATED ON MARCH~~ ***2***, 2007 BY **JIM** G SAFRANEK ========
Septic consultant's letter was reviewed; project is now approved by EHS

MISCELLANEOUS COMMENT:
======== REVIEW ON FEBRUARY 16, 2007 BY **JIM** G SAFRANEK ========
NO COMMENT

PF7/8=PREV/NXT AGCY 10/11=PAGE **COMM THIS** RTNG 12/13=OTHER RTNGS-THIS AGCY
PF19-PREVIOUS SCREEN PA2-**EXIT**

Environmental Review Inital Study
ATTACHMENT 10
APPLICATION 05-0407

Biotic Resources Group

Biotic Assessments ◆ Resource Management ◆ Permitting

Carmichael Property, Aptos, CA (APN 040-081-06, 07, 09)

Botanicai Report

Prepared for

Stephen and Phyllis (armithael

Prepared by:

Biotic Resources Group

Kathleen Lyons, Plant Ecologist

September 28, 2005

2551 South Rodeo Gulch Road #12 ◆ Soquel, Californica 91073 ◆ (831) 416-4803 ◆ fax (831) 476- 4803

INTRODUCTION

This properly (APN 040-081-06, 040-081-07 and 040-081-09) is located in the Vienna Woods area of Aplos within Sania Cruz Counly. The parcel is accessed from either Jennifer Drive or Kamien Street. two public streets The property encompasses approximately 143 acres; the parcel is located in an unincorporated area of the Counly that suppons residential development (Vienna Woods subdivision), school facilities (Cabrillo College), rural residential development (Hudson Road area) arid parkland (Forest of Nisene Marks Slate Park (Figure 1)

The landowners, Stephen and Phyllis Carmichael, propose to construct a single-family iesidence on the property. The residence is proposed to access the site from Kamien Street. The proposed driveway and residenlial development area (New Residence for Slephen and Phyllis Carmichael, Site Plan, received September 27, 2005 from Roper Engineering), as depicted on Figure 2, is the focus of the bolanical reporl.

The Biotic Resources Group (Kathleen Lyons: plant ecologist) assessed the boianical resources of the proposed residentjal development area on the property periodically since 1998. In 2005. information from these assessments. as well as botanical data provided to the County by others through public hearings and correspondence: was reviewed. Site visits were conducted in spring and summer 2005 to update previously collected information and to evaluate the current residential proposal The focus of the botanical report is to document existing botanical resources on the property (with a focus on the proposed developmenl area); identify sensitive botanical resources within the proposed roadway and residential development area and recommend measures to avoid or reduce impacts lo sensitive botanical resources lo a less than significant level. as applicable.

Specific tasks conducted for this study include:

- Characterize and map the major plant community types on the properly:
- Ideniify sensitive botanical resources; including plant species of concern. on the property and within the proposed residential development areas,
- Evaluate the potential effects of the proposed residential development on sensitive bolanical resources and recommend measures to avoid or reduce such impacts.

Intended Use of this Report

The findings presented in this biological report are intended for the sole use of Stephen and Phyllis Carmichael, their representatives, and the Counly of Sania Cruz in evaluating the proposed residential developmenl for the property. The findings presented by the Biotic Resources Group in lhis report are for information purposes only; they are not intended to represent the interpretation of any State. Federal or County laws or ordinances pertaining to permitting actions wilhin sensitive habitat or endangered species. The interpretation of such laws and/or ordinances is the responsibility of the applicable governing body.

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APPLICATION 05-0402

EXISTING BIOTIC RESOURCES

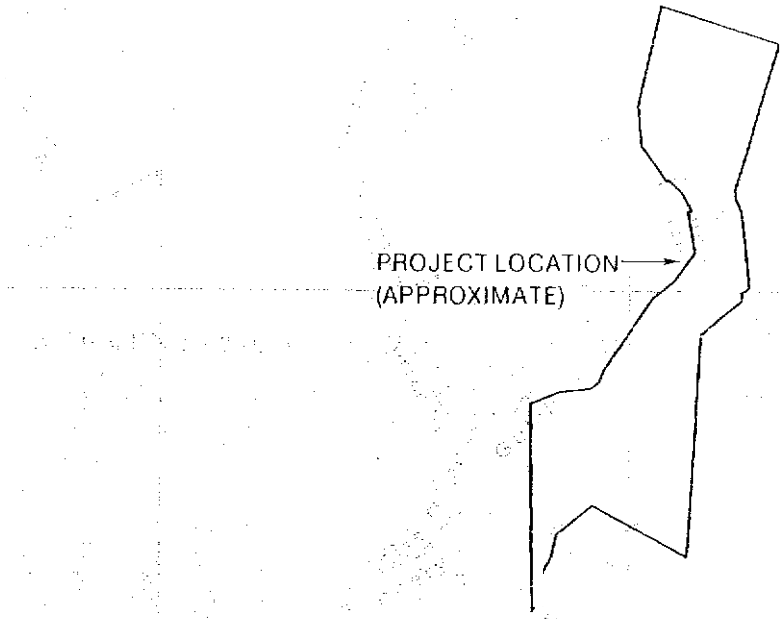
METHODOLOGY

The bolanical resources of the propeny, with a focus on the proposed residential development area: were assessed through literature review and field observations. Field surveys of portions of the property were conducted in April and June 1998. February and March 2001, May 2002. **May** 2004, and March, April and August 2005. During these site visits botanical resources within the proposed development area: including various driveway alignments, were walked (Biotic Resources Group 2000,2001,2002). The 2005 site visits were conducted on March 8, April 15, August 17 and August 25. During the 2005 field visits, old roads and trails that traverse the majority of the property were walked to refine and update previous plant community mapping. document dominant plant species and re-evaluate the property for special status plant species and habitats.

The major plant community types on the property, based on the classification system developed by CNDDB's *California Terrestrial Natural Communities* (CDFG 2003) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and as amended to reflecl site conditions, were mapped during the 2005 field surveys. Previous vegetation maps prepared by Biotic Resources Group (2001) and Kevin Contreras (2004) and aerial photos (dated 2000) were reviewed. Plant community types as recognized by CDFG were used to the greatest extent feasible, however, modifications to the classification system's nomenclature were made. as necessary, to accurately describe the sites resources, particularly for areas that were previously disturbed and the CDFG system provides no suitable classification. A formal delineation of wetlands was not conducted, however, potential wetland areas in/adjacent to the proposed residenlial development (i.e., areas along proposed driveway and at house site) were evaluated. For the project site; areas demonstrating a dominance of obligate or facultative-we1 plant species and wetland hydiology (i.e., drainage feature: such as a watercourse) were identified as "polenlial wetlands." Areas supporting FACW plant species in the absence of positive hydrological features were not considered to be polenlial wetlands. The plant communities were mapped onto a topographic base map (Figure 2). The ***Jepson** Manual* (Hickman 1993) was the principal taxonomic references used for the botanical work.

To assess the potential occurrence of special status botanical resources; previous documentstcorrespondence was reviewed and two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Invenlory (August 2005) and California Department of Fish & Game's (CDFG) RareFind database (CDFG April 2005) for the Soquel and Laurel U.S.G.S. quadrangle and surrounding quadrangles Previous reports as well as correspondence submitted to the County during previous public reviews of this property were also reviewed and include reports/letters from Morgan (June 2004a), Morgan June 2000b), Nisene Marks to the Sea (March 2004), Counly of Santa Cruz (February 2003), Hayes (November 2000), EcoSystems West (November, 2000 and 2001): and Morgan (June 1980 and 2000).

This report summarizes the findings of the botanical assessment for the proposed residential developmenl project. The potential impacts of the proposed development (i.e., creation of one single-family residence and driveway) on sensitive resources are discussed below. Measures lo reduce significant impacts to a level of less-than-significant are recommended, as applicable.



SCALE: 1" = 2,000'

NORTH

0 2,000' 4,000'

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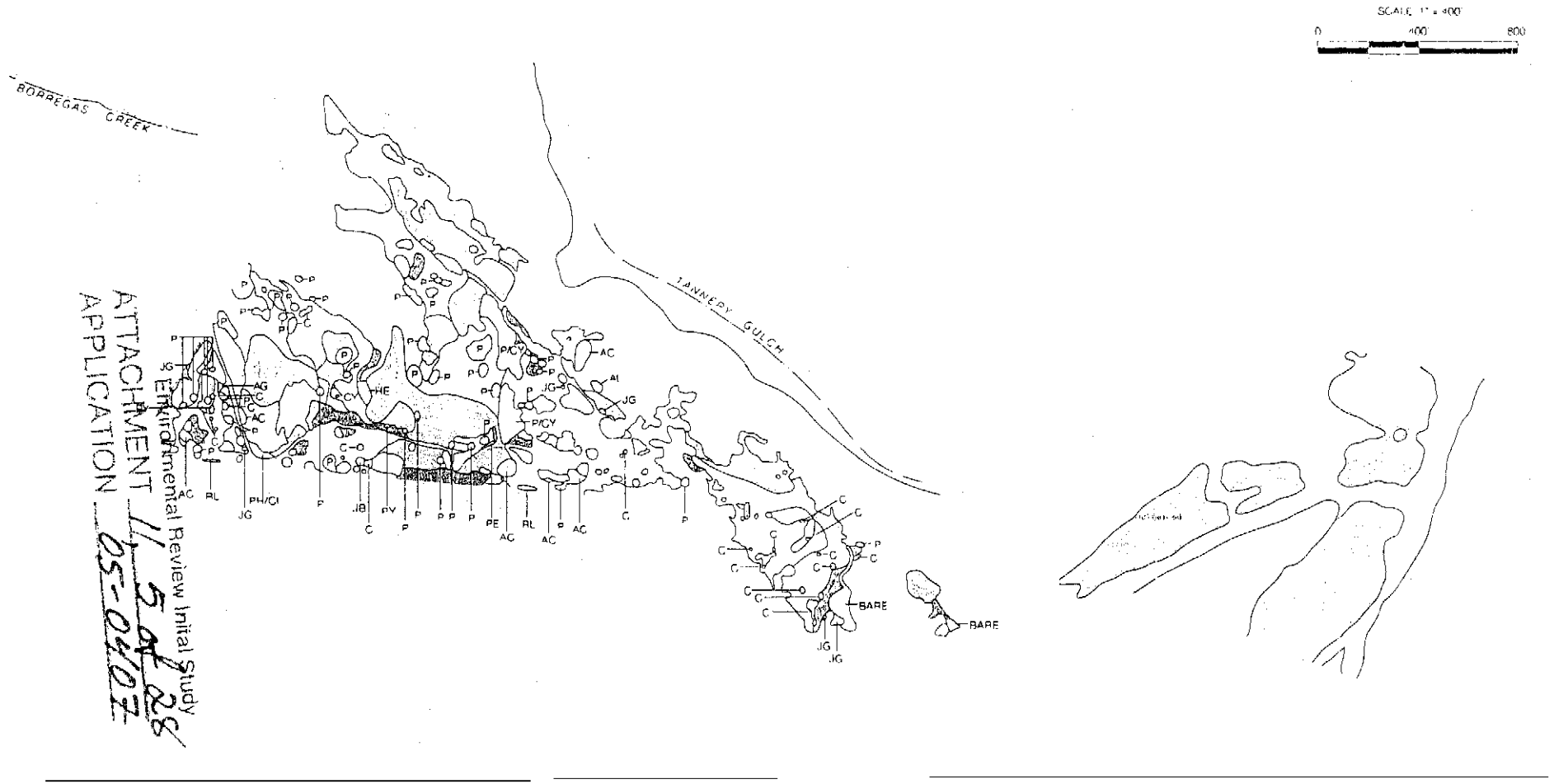
Biotic Resources Group 2551 S Rodeo Gulch # 12 • Soquel, California 95071 (831) 476-4803 • Fax (831) 476 8038	Carmichael Property Aplos California Location **Map**	Figure 1 9/05 141 *03*



Mixed Oak Woodland (including isolated oak trees)
Coyote Brush Scrub
Redwood Forest
Coastal Prairie
Coastal Prairie with French Broom and/or Cotoneaster*
Broom Scrub (including areas with Cotoneaster*)
Mixed Non-native and Native Grassland with French Broom and/or Cotoneaster*
Native Grassland
Introduced Perennial Grassland
Wet Meadow
(* in addition to areas mapped with broc

Trees: P Pine (Monterey pine, other pines)
CY Cypress
AC Acacia
AI Tree of Heaven

Shrub C Cotoneaster
PY Pyracantha
FB French Broom
JG Jubata Grass
CI Cape Ivy
PE Periwinkle
PH Poison Hemlock
HE Heather
RL Residential Landscaping

Biotic Resources Group
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Carmichael Property, Aptos, California
Vegetation Resources

Figure 2
9/05
141-03

EXISTING BOTANICAL RESOURCES

The Carmichael property lies within the outer Central Coast geographic region (Sawyer and Keeler-Wolf, 1995). The property is undeveloped, except for existing dirt roads and trails that traverse the southern portion of the property. The southern corner of the property (APN 040-081-07) abuts the upper end of Borregas **Creek,** an intermittent creek. Tannery Gulch: an intermittent tributary to Porter Gulch, travels along a portion of the western property line. These drainages are depicted **on** Figure 1

The relatively level portions of the property are mapped as Watsonville loam, 2 to 15 percent slope (177) (Soil Survey of Santa Cruz County, SCS). This soil type corresponds to areas shown as grasslands in the 1974 soil survey aerial photo. The southernmost canyon areas are mapped as Elkhorn-Pfeifer complex, 30-50 percent slopes (136) and Lompico-Felton complex, 30 to 50 percent slopes (143). This soil type corresponds to areas show as brush andior forested areas in the 7974 soil survey aerial photo. The wooded canyon areas along Tannery Gulch are mapped as Lompico-Felton complex: 50-75 percent slopes. One grass/scrub area located in the north-central portion of the propeny is mapped as Los Osos loam, 30-50 percent slopes (148). The brush and wooded areas in the northernmost portion of the property area mapped as Nisene-Aptos complex, 50 to 75 percenl slopes (158), Ben Lomond sandy loam; 50 to 75 percent slopes (112), and Ben Lomond sandy loam, 15 to 50 percent slopes (111). A copy of the soil survey map from this portion of the County is presented as Appendix **A.** Of the soil types mapped for the propeny, only Watsonville loam is considered a hydric soil (NRCS, 1992).

The distribution of vegetation types on the property is depicted on Figure 2, based on the field surveys in 2005, the review of previous plant community mapping and aerial photo interpretation. Nine primary vegetation lypes were observed on the property. These vegetation types can **be** further distinguished into plant associations The plant associations on the project site, as recognized by CDFG (CDFG, 2003) or as modified to more closely resemble site conditions on the properly. are listed on Table 1

According to the CDFG classification system, areas dominated by California oatgrass are classified as "California oalgrass bunchgrass grassland" (CDFG: 2003). As Sawyer & Keeler-Wolf consider the California oalgrass series a part of the coastal prairie, the term "coaslal prairie" was used in this report lo describe areas on the Carmichael propeny comprised of California oatgrass and associated herbaceous plants (i.e., gumplant, rush). Some portions of the propeny, such as along residenlial fences: were identified **as** "introduced perennial grassland". According to Sawyer & Keeler-Wolf, this plant series *is* considered part of coastal prairie but reflects the presence of introduced annual and perennial grass that dominate certain areas. This was observed on the Carmichael Property where extensive stands of Bermuda grass (a perennial nun-native grass) have established outward from adjacent residential areas.

The term "mixed non-native and native grassland': was selected io describe the vegetation observed on the hillside that was subject to previous land disturbances and erosion control activities. The herbaceous cover was comprised of both non-native and native grasses and forbs, yet neither appeared to reach 50% relative cover based on visual estimates of plant composition. Although not recognized in the CDFG or Sawyer & Keeler-Wolf classification systems, the "mixed grassland" term was used as it best described the composition of the vegetation in this panicular portion of the Camichael property. The "mixed erassland" classification has been used by others to describe similar site conditions (Barbour & Major 1982).

The propeny also supporls numerous occurrences of non-native trees. shrubs and vines. These occur as tree groves: such as groves of non-native pine?acacia and cypress, as well as isolated specimens of these iree

CNDDB Code	Vegetation Type	Plant Association
32.060.17	Coyote Brush Scrub	Coyote brush - Poison **oak**
32.180.00	Broom Scrub	Fiench broom. Cotoneaster
41.270.00	Coastal Prairie'	California oatgrass - Purple needlegrass –Slender rush – Wild oat
None	Mixed Non-Native **and** Native Grassland'	False brome – rattlesnake grass – **purple** needlegrass
42.050.00	Introduced Perennial Grassland	Bermuda grass – Canary grass
45.300.00	Wet Meadow[2]	Nutgrass – Curly dock
71 100 10	Mixed Oak Woodland	Coasi live oak – Shreve oak / Poison oak – Coffee berry
86.100.17	Redwood Forest	Coast redwood – Douglas fir
None	Non-native Tree Groves Isolated Trees and Shrubs[1]	Monterey pine – Acacia- Cypress / Cotoneaster - French Broom

2003)

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Figure 3. View of coastal prairie in central portion of property in August 2005. The vegetation is characterized by the presence of California oatgrass, a perennial bunchgrass.

figure 3. View of coastal prairie in central portion of property in August 2005. The vegetation is characterized by the presence of California oatgrass, a perennial bunchgrass.

Forbs (herbaceous. non-grass species) are also prevalent within coaslal prairie, with many species being considered "spring wildflowers'. On the Carmichael properly. commonly observed native forbs include soap planl (*Chlorogalum pomeridianum)*, blue-eyed grass (*Sisyrinchium bellum)*, sky lupine (*Lupinus nanus*), sun c u p (*Camissonia ovata)*, owls clover (*Castilleja densiflora)*, gumplant (*Grindelia hirsutula*), and common tarweed *(Madra exiguaj.* Lesser amounts of golden brodiaea (*Triteleia ixioides*), dwarf brodiaea *(Brodiaea elegans)*, skunkweed (*Navarretia squarrosa)*, and yellow Mariposa lily (*Calochortus luteus)* were also observed. The southernmost prairie on the properly was observed to support large-flowered star tulip (*Calochortus uniflorus)* in 1980 (Morgan, 1980). Non-native forbs are also prevalent in the prairie, including English plantain (*Plantago lanceolata)*, filaree (*Erodium botrys*), filago (*Filago gallica)*, hairy cat's ear (*Hypochaeris radicata)*, smooth cat's ear (*Hypochaeris glabra)*, subterranean clover (*Trifolium subterraneum)*, shamrock clover (*Trifolium dubium)*. sheep sorrel (*Rumex acetosella)*, narrow-leaved flax (*Linum bienne)*, narrow-leaved clover *(Trifolium angustifolium)*, scarlet pimpernel (*Anagallis arvensis)*, common vetch *(Vicia angustifolia)*, and silver sheath knotweed (*Polygonum argyrocolean)*

French broom (*Genista monspessulanus)*, an invasive: non-native plant species?was also noted within the coaslal prairie and *in* the grassland/brush/woodland interface. Also occurring in/along the edges of prairie areas is non-native cotoneaster (*Cotoneaster* sp.). Where these species form significant cover amid the prairie, these areas are mapped as "coastal terrace prairie with French broom and/or cotoneaster", as depicted on Figure 2. ***An*** areas of prairie infested with French broom is depicted in Figure 4

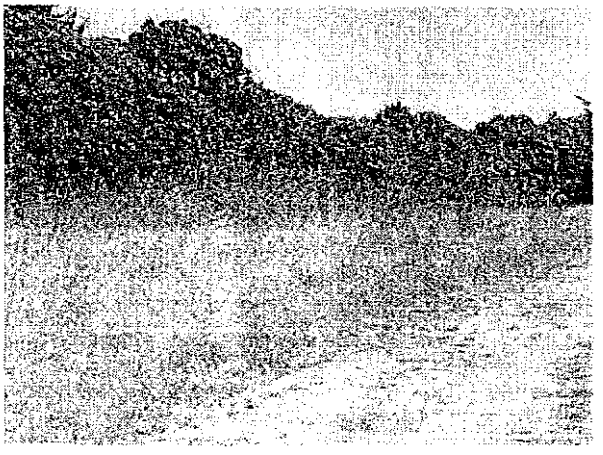

Figure 4. View of prairie area invaded by French broom. a non-native shrub. neai the area proposed for the driveway and septic leach field (August 2005).

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Mired Non-native and Native Grassland

The property supports areas that are a mixture of non-native and native grasses and forbs. These areas were found in previously disturbed portions of the property where erosion control measures were implemented. This area was seeded with an erosion control **mix** in 1996 and previous field surveys documented the presence of old straw mulch that was used for erosion control (Biotic Resources Group, 2000). These previous disturbed areas are dominated by non-native planl species, presumably many originated from the erosion control seeding. Dominant plant species observed in May 2002 and again in spring and summer 2005 Include non-native (planted?) false brome (*Brachypodium distachylon)*, Italian ryegrass, wild oat (*Avena* **sp.),** rattail fescue (*Vulpia myuros)*, barnyard foxtail (*Hordeum murinum* ssp. *leporinum*), and rattlesnake grass. Surveys by others found false brome to be co-dominant on the slope

(Morgan: 2004b) Other species observed include narrow-leaved clover. deerweed (*Lotus scoparius*), European hairgrass (*Aira caryophyllea*). English plantain, and narrow-leaved flax. Native species were very scattered in this area: yet American vetch (*Vicia americana*), gumplant, western rush, California poppy (*Eshscholzia californica*), and annual lupine (*Lupinus nanus*) were observed. Morgan (2004a) found thal the only area on the property dominated by non-native grasses is in the upper northwest and western portions in areas proposed for the driveway, home and outbuilding. Scattered patches of purple needlegrass also occur in the area; possible remnants of the pie-erosion treated condition. The character of this habitat is depicted in Figure 5.

Invasive, non-native plant species also occur within the grassland. including some dense occurrences of French broom. cotoneaster, and jubata grass (Coyredel-io *jubata*). In 1980, ihis hillside area was observed to support a colony of Gairdner's yampah (*Perideridia gairdneri*), a locally uncommon species (Morgan 1980), however this species has not been observed on the site since that time (Morgan 2004b).

Mixed gradand on slope

Figure 5 View of hillside which supports mixed non naiive and native gradand. areas was previously disturbed and subjected to erosion control treatments, including seeding (August 2005)

Introduced Perennial Grassland

This grassland type was observed along the eastern property line, where the grassland abuts the adjacenl residential lots. The grassland along the properly line has been repeatedly disturbed: as evidenced by mowing deposition of organic and inorganic debris and some planted/naturalized garden plantings. The dominant planl species within lhis grassland lype are perennial, non-native grasses, particularly large expenses of Bermuda grass (*Cynodon dactylon*). Associated planl species in these areas include rattlesnake grass, soft chess, wild oat and English plantain. Garden (? escaped) planlings include naked ladies (*Amaryllis belladonna*), bearded iris (*Iris germanica*), and calla lily (*Zanedeschia aethipica*). The characler of this erassland lype is depicted in Figure 6.

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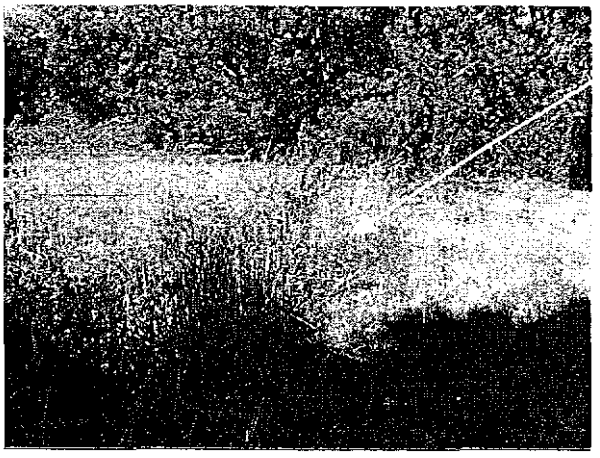
figure 6 View of introduced perennial gradand, dominated by Bermuda grass and non naiive garden plantings (August 2005)

Wet Meadow

The portion of the property adjacent to the proposed residenlial developmen! was observed lo supporl two small seasonal wetland areas (wet meadows). These areas occur along an intermittent drainage that traverses the central portion of the property. **A** drainage pipe enters the property between Kamien Street and Wilshire Drive and empties area runoff into a small drainage swale. The majority of the drainage was devoid of vegetation and flows beneath a canopy of **oaks** and coyote brush scrub. In one location: the road traverses a low area of coyote brush scrub that Is likely wet during winter months, as evidenced by the placement of hoards along the portion of the trail The two vegetated low-lying areas thal appear lo hold water longer thal other areas supports plant species typical of a wet meadow. The areas are dominated by hydrophytic plant species of nutgrass (*Cyperus eragrostis*), velvel grass and curly dock (*Rumex crispus)*, as well as mesophytic species of spreading rush: Italian ryegrass, and Bermuda grass, as depicted in Figure 7. 'These small patches likely meet ihe definition of wetlands due to the presence of positive wetland hydrology (drainage swale), the dominance by hydrophytic vegetation, and likely, hydric soils conditions.



Band of wet meadow vegetation along intermittent drainage.

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Figure 7. View of small wet meadow patch downstream of existing culvert/drainage pipe. Vegetation is comprised of nutgrass, velvet grass and curly dock (August 2005).

Coyote Brush Scrub

The central and southeastern portion of the propeny suppons large expanses of coyote brush scrub. The scrub is dominated by coyole brush (*Baccharis pilularis)* and poison oak (*Toxicodendron diversilobum)* with lesser amounts of California blackberry (Rubus *ursinus)*, coffee berry *(Rhumnus californica)* and

French broom. The scrub abuts areas of coastal prairie, oak woodland and broom scrub In some areas, such as in the southeastern portion of the properly, openings between the shrubs were observed to support patches of California oatgrass and purple needlegrass The scrub also supports young oaks (*Quercus agrifolia* and *Q parvula var. shrevei*) and pine (*Pinus* sp) trees. In some localions the scrub supports patches of other invasive: non-native plant species, such as periwinkle *(Vinca major)*, poison hemlock (*Conium maculatum*), Cape ivy (*Delaireia odorata)*, heather (*Erica sp.)* as well as French broom and coloneaster Coyote brush scrub located along the edge of the existing road is depicted in Figure 8.

Figure 8. View of coyote brush scrub, abutting coastal prairie, dominated by coyote brush (August 2005).

The northernmost portion of the property also supports coastal scrub: as depicled on Figure 2. Based on a review of the vegetation signature of aerial photos. views of the area from adjacent public roads, and a field check of similar habitat along nearby Hudson Road. these scrub areas are dominated by coyote brush: coffee berry, poison **oak,** and California blackberry Also observed **in** ihis mapped type include black sage *(Salvia mellifera)*, sticky monkey flower (*Mimulus aurantiacus)* and scattered occurrences of brittle-leaved manzanita (*Arctostaphylos tomentosa ssp. crustacea)*.

Broom Scrub

The properly supports areas that have been colonized by dense stands of French broom, an invasive, non-native shrub. Most of the areas dominated by broom occur along dirt roads **and** trails, some occur in areas depicted as grassland in the 1974 soil survey aerial and mapped as grassland in 1998 and 2001. In addition to French broom, the non-native shrub coloneaster is oflen presenl. In some areas the understory includes scallered occurrences of California oatgrass as well as other herbaceous species typical of grasslands, supporting the idea that many of the broom scrub areas were previously a grassland plant community type (as depicied in the 1974 aerial photos).

Mixed **Oak Woodland**

The properly supports aieas that are vegetated with oak woodland as well as isolated oak trees. The tree cover is comprised of both coast live oak (*Quercus agrifolia)* and Shreve *oak* (*Quercus parvula* var. *shrevei*) and possibly hybrids of the two species. Due **to** the intermixed distribution of the **two** oak species and that neither species appeared to have a dominance properly-wide (based on preliminary visual estimates), the woodland areas were considered to meet the definition of "mixed oak woodland". Other trees species are scattered within the woodland and include Douglas fir (*Pseudostuga menziesii)*, California bay (*Umbellularia californica)*, and Monterey pine (*Pinus radiata)*. In addition lo the

Monterey pine, other non-native trees intermix with the woodland. including Monterey cypress (*Cupressus macrocarpa)* and Torrey pine (*Pinus torreyana).* Common shrubs within the woodland include poison oak. coffee berry, snowberry (*Symphoricarpos* sp), and California blackberry Grasses and forbs are common in the understory and include wild oat, blue wild rye (*Elymus glaucus),* miner's lettuce (*Montia perfoliata),* bedstraw (*Gallium* sp.), California brome (*Bromus carinatus),* hair, honeysuckle (*Lonicera hispidula),* California bottlebrush grass (*Elymus californicus),* and sanicle (*Sanicula crassicaulis).* Scattered occurrences of jubata grass arid French broom also occur in the woodland. Occurrences of brittle-leaved manzanita (*Arctostaphylos tomentosa ssp. crustacea)* were observed along the woodland/grassland interface west of the water **lank.** Figure 4 displays the typical appearance of the properties oak woodland where is abuts the prairie.

Redwood Forest

The canyon areas of the property (i.e., areas abutting portions of Borregas Creek and Tannery Gulch and canyons in the northernmost portions ofthe property) are vegetated by redwood forest. Tree species are dominated by coast redwood (*Sequoia sempervirens),* with associates of Douglas fir, tan oak (*Lithocarpos densiflora),* and California bay. The understory includes shrubs of coffee berry, Ocean spray (*Holodiscus discolor),* poison oak, Califlornia blackberry, and toyon (*Heteromeles arbutifolia).*

Non-Native Tree Groves, Isolated Trees and Shrubs

The property supports numerous groves/occurrences of noli-native trees, shrubs and vines. The dominant non-native trees species is Monterey pine; others are green wattle acacia (*Acacia dealbata*), Bailey acacia (*Acacia baileyana),* Torrey pine: and Monterey cypress. These tree groves are prevalent within the central and southeastern portion of the property and rnay have been previously planted or naturally established from nearby landscaped areas Other non-native trees that are scattered on the properly include locust (*Robinia* sp.), and walnut (*Juglans* sp.). In addiion to the trees: numerous other non-native plants arc presenl, including French broom, cotoneaster. pyracaniha (*Pyracantha* sp.). Cape ivy, poison hemlock, heather, periwinkle; and some residential landscaping (associated with adjacenl properties) 'The location of the major occurrences *of* these species is depicted on Figures 2 and 3.

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SENSITIVE BIOTIC RESOURCES

Sensitive Habitats

Sensitive habitats are defined by local; Slate, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat lypes, and/or provide high biological diversity

The wet meadow community type has been documented in two locations in the vicinity of the proposed residential development and, based on field observations, meets the definition of a wetland as per federal definitions (Environmental Laboratory 1987) and Santa Cruz County Code (Section 16.302Sensitive Habitat Protection, 16.32.040 Definitions). The proposed residential development, however, would not directly affect either of these two small wetland areas.

The property also supports areas of coastal prairie: including areas of prairie that are infested with French broom and cotoneaster. CDFG considers California oatgrass bunchgrass grassland (a type of coastal prairie)

as a rare plant community worthy of consideration by the CNDDB (CDFG, 2003) As such, coastal prairie meets the requirement of a sensitive habitat under Santa Cruz County Code Section 16 302 Sensitive Habitat Protection, 16.32040 Definitions. The pioposed residential development will affect approximately 0 25 acre of prairie for improvements to an existing roadway (driveway to the residence) and related residential conslruction activities

In 2001, the California Oak Woodland Conservation Act was passed. This act formally recognizes the role of oak woodlands as wildlife habilal, erosion control: and sustaining water quality. The Act encourages voluntary, long-term private stewardship and conservation of oak woodland **by** landowner and provides financial incentives. through the Wildlife Conservation Hoard (WCB), *to protect* and promote biologically functional oak woodlands (Sierra Foothill Research & Extension Center, 2004). The WCB is authorized to award cost-share incentives to private landowners who enter into long term agreement to implement management practices that benefit oak woodlands. Funds can be used for the purchase of easements, restoration activities or enhancement projects. In a related action, effective **January** 2005, the Stale amended CEOA **wilh** the addition of Public Resources Code 21083.4 This code requires that counties consider the significance of oak woodland conversions under CEQA and adopt an oak woodland management plan pursuant to the Oak Woodlands Conservation Act that contains measures to minimize impacts to oak woodlands along riparian zones, near wetlands and those that contain snags or other features used by wildlife. If significant impacts are determined under CEOA, miligation alternatives may include conserving **oaks** through the use of conservation easements (2:1 ratio: conserved to impacted), restoration of former oak woodland area (2:1 ratio)! contribution to the Oak Conservation Fund established under CDFG. or other miligation measures developed by the county. If a planting program is implemenled, replanting shall be at a 3 1 ratio (tree replacement) with requirements for planting maintenance and monitoring for seven years The pioposed residenlial development will affect approximately 0.05 acre of oak woodland for improvements to an existing roadway (driveway to the residence) and related residential conslruction.

Special **Status Plant** Species

Plant species of concern subject to CEQA review include those lisled by either the Federal or State resource agencies as well as those identified **as** on CNPS List 1B. The search of the CNPS and CWDDB inventories resulted in sixteen special status plant species with potential to occur in the project area: based on an evaluation of site conditions. These species are lisled on Table 2.

Grasslands within the County have been documented to provide habitat for several special status plant species. Occuirences of San Francisco popcorn flower (*Plagiobothrys diffusus)*, Choris's popcorn flower (*Plagiobothrys chorisianus var. chorisianus)*, Sania Cruz clover (*Trifolium buckwestiorum*), and Santa Cruz tarplant (*Holocarpha macradenia*) are known from similar grassland habitat within the County. None of lhese species have been previously recorded from the Carmichael properly (Morgan 1980, Biotic Resources Group 2000 and 2001, Morgan 2000 and Morgan 2004a and 2004b), nor were any of these species observed on the site during the spring and summer 2005 field visits (i.e., in March. April and August 2005). Other special slatus grassland species that occur within the County include robust spineflower, Monterey spineflower, and saline clover. These species have not been recorded from the site and the site does not appear to have suitable habitat conditions (i.e., lack of sandy substrates for spineflower, lack of saline wetlands for saline clover or other saline-substrate dependent species). The previous reports that document the polenlial for special status planl species include:

1 7980 Biotic Report (R.Morgan): Surveys were conducted in May and June 1980 for APN 040-081-06 and 09. No lisled plants were observed, including a specific statement that Sanla Cruz tarplant was not observed.

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and was observed in the oak woodland during the 2005 surveys by Bioiic Resources Group. No individuals were observed within the proposed developmenl area

The project site has been documented to supporl plant species thal aie considered "locally unique". These species are often common elsewhere in the region and/or state, but have limited distribution in the County. These species have no State or Federal listing. nor are they Identified on any list maintained by CNPS, and typically, rrceive no protection under CEQA. They can he considered "sensitive" under the County's Sensitive Habitat Ordinance

1. Large-flowered star tulip (*Calochortus uniflorus)* was observed in the southernmost grassland (APN 040-081-06) by Morgan in 1980; this species is presumed extant and *is* located oulside the proposed development area.
2. Many-flowered brodiaea (*Brodiaea multiflora)* was observed in flat grasslands in APN 040-081-09 by Morgan in 1980. Morgan reports that the colony was not observed in 2000 and presumes the plants have died out or been extirpated (Morgan, 2000).
3. Hooded ladies- tresses (*Spiranthes romanzoffiana*) were observed in grassland in the southern portion of APN 040-081-06 (outside the proposed development area) by Morgan in 2000.

Other survey information is provided by Hayes (field survey in 2002? letter dated November 19, 2000? to County Planning Dept), EcoSystems West (field survey in August 2000, letter dated November 7, 2000 lo County Planning Dept) and Biotic Resources Group (field surveys in April and June 1998, February and March 2001, Mav 2002, letter reports dated August 28,2000: April 18, 2001, October 5, 2001 and May 23. 2002 to Stephen Graves & Associates). All of these surveys failed lo document any special slatus plant species (i.e., planls identified as Stale listed, Federally listed *or* CNPS List 1B) from the proposed development area.

Based on this information, it appears that grasslands in the southern portion of APN 040-081-06 and the flat areas of APN 040-081- 09 have been documented to support locally unique plant species. Although Morgan stales that the colonies of many-flowered brodiaea (locally-unique species) and Gairdner's yampah (List 4 species) in the grassland of APN 040-081-09 may have died out *or* been extirpated, there is still potential for their presence, particularly with future grassland management activities. There is still

polenlial for the presence of large-flowered star tulip and hooded ladies tresses within the southern portion of APN 040-081-06. Under the County's Sensitive Habitat Ordinance, these areas would warrant protection

Table 2. List of Special Status Plant Species with Potential to Occur on the Carmichael Properly, Santa Cruz County, California

Species	CNPS	State Status	Federal Status	Habitat Type Known Occurrence in Vicinity? Potential Occurrence on Site?
Bent-flowered fiddleneck (*Amsinkia lunaris*)	List 1B	None		Grasslands Historic records from Scott's Valley area (Polo Ranch) Not observed on Carmichael property
Hooker's manzanita (*Arctostaphylos hookeri*)	List 1B	None	None	Maritime chaparral on sandy slopes: often intermixed with oak woodland No suitable habitat on Carmichael property
Santa Cruz manzanita (*Arctostaphylos andersonii*)	List 1B	None	None	Maritime chaparral **and** intermixes with **woodlands** Recorded from forested **areas** in Nisene Marks **State Park and** Redwood Drive area Not observed in Carmichael property
Congdon's tarplant (*Centromadia parryi* ssp. *parryi*)	List 1B	None	None	Grasslands. often moist areas No records from **Sania** Cruz County; known from Monterey County None observed **during** August 2005 **survey** of proposed development area or **any** previous surveys
Robust spineflower (*Chorizanthe robusta var. robusta*)	List 1B	None	**Endangered**	Sandy **slopes.** often intermixed with **oak** woodland/maritime chaparral Known **from** Market Street **aiea and** Pogonip in Santa Cruz, end of Paul **Sweet Road,** Freedom Blvd aiea of **Aplos** Not observed unlikely to **occur due** to lack of suitable habitat
Monterey spineflower (*Chorizanthe pungens var.pungens*)	List 1B	None	Endangered	Sandy **slopes,** oflen intermixed with **oak** woodland/maritime chaparral Known **from** Freedom **Blvd** and greater Mar Monte area of **Aptos** Not observed, unlikely to occur due to lack of suitable **habilal**
Santa Cruz tarplant *Holocarpha macradenia*)	List 1B	Endangered	Threatened	Grasslands Known from Arana **Gulch** Greenbelt. Twin **Lakes State** Beach (upper **Schwann** Lagoon). Anna Jean **Cummings** Park (Soquel). Fairway **Drive Area (Soquel)** and Watsonville Not observed on property from any previous survey. **Potential** habitat in less disturbed portions **of** grassland/prairie, however, **dense**

Table 2. List of Special Status Plant Species with Potential to Occur on the Carmichael Property. Santa Cruz County, California

Species	CNPS	State Status	Federal Status	Habitat Type Known Occurrence in Vicinity? Potential Occurrence on Site?
				cover of non-native species reduces potential for this species None observed during August 2005 survey of proposed development area or any previous surveys
Kellogg's horkelia *(Horkelia cuneata ssp. sericea*	List 1B	None	Species of Special Concern	Oak woodland and edges of grasslands None observed during August 2005 survey of proposed development area or any previous surveys
Santa Cruz Mountains beardtongue *(Penstemon rattanii var. kleei*	List 1B	None	None	Sandy soil in chaparral or burned chaparral Historic (1922) collection from headwaters of Aptos Creek Not observed in any previous survey, unlikely to occur due to lack of suitable habitat
Michael's piperia *(Piperia michaelii)*	List 1B	None	Species of Special Concern	Grasslands, often on coastal terrace deposits Know from coastal bluff along Highway 1 Not observed in any previous survey
San Francisco popcorn flower *(Plagiobothrys diffusus)*	List 1B	Endangered	Species of Special Concern	Seasonally moist grasslands/prairie Known from west side of Santa Cruz, along Graham Hill Road, Scott's Valley and Fairway Drive area of Soquel Not observed on property from any previous survey. Potential habitat may occur in moist undisturbed prairie yet not within proposed development area. None observed during March or April 2005 survey of proposed development area or any previous surveys
Artist's popcorn flower *(Plagiobothrys chorisianus var. chorisianus)*	List 1B	None	None	Seasonally moist grasslands/prairie Recorded from Arana Gulch Greenbelt and Glenwood area of Scott's Valley Not observed, potential habitat in moist grassland areas, however, dense cover of non-native species reduces potential for this species None observed during March or April 2005 survey of proposed development area or any previous surveys
Maple-leaved checkerbloom *(Sidalcea malachroides)*	List 1B	None	None	Grasslands, often on coastal terrace deposits None observed during August 2005 survey of proposed development area or any previous surveys
San Francisco campion *(Silene verecunda ssp.*	List 1B	None	Species of Special	Grasslands, often on coastal terrace deposits None observed during March or April 2005

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Table 2. List of Special Status Plant Species with Potential to Occur on the Carmichael Property, Santa Cruz County, California

Species	CNPS	State Status	Federal Status	Habitat Type Known Occurrence in Vicinity? Potential Occurrence on Site?
verecunda)			Concern	[redacted] proposed development area or any previous survey
Santa Cruz Clover *(Trifolium buckwestiorum)*	List 1B	None	None	Seasonally moist grasslands/prairie Known from Soquel, Graham Hill Road area and Glenwood area of Scott's Valley Not observed on property from any previous survey. Potential habitat may occur in undisturbed prairie yet not within proposed residential development area
Saline clover *(Trifolium depauperatum var. hydrophilum)*	List 1B	None	None	Mesic grasslands alkaline Known from Soda Lake area Not observed in any previous survey, unlikely to occur due to lack of suitable habitat

CNPS Status:

List 1B: These plants (predominately endemic) are rare through their range and are currently vulnerable or have a high potential for vulnerability due to limited or threatened habitat, few individuals per population, or a limited number of populations. List 1B plants meet the definitions of Section 1901, Chapter 10 of the CDF&G Code. List 4: List 4 is a watch list of plants with limited distribution in the state that have low vulnerability and threat at this time. These plants are uncommon, often significant locally, and should be monitored.

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IMPACT AND MITIGATION DISCUSSION

IMPACT CRITERIA

The thresholds of significance presented in the California Environmenial Quality Act (CEQA) were used to evaluate project impacts and to determine if the pioposed development of the single-family residence (with driveway) poses significant impacts lo botanical resources. In addiiion, Sanla Cruz County Code was also used to develop the significance criteria. For this analysis. significant impacls are those that substantially affect either:

- A plant species (or its habitat) listed or proposed for listing by Staie or Federal governments as rare or endangered (e.g., none recorded on site);
- A plant considered rare (i.e., List IB) by CNPS (none recorded on site);
- A habitat regulated by State or Federal law (wetlands);
- A habitat recognized as sensitive by Santa Cruz Couniy (e.g., coastal prairie, wetlands);
- A hahitat recognized as sensitive hy CDFG (coastal prairie, oak woodlands)

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed development of the single-family residence, with access from Kamien Street, was evaluaied as to potential direct and indirect impacts to sensitive botanical resources. Examples of direct impacts are the removal of habitat for house and driveway construction and related residential activities Examples of indirect impacts include the potential disturbance to sensitive habitats fiom discharge of development run-off into natural areas and the introduction/spread of invasive; non-native plant species into natural habitats.

The review of potential impacts lo botanical resources is limited to the use of the existing dirt road (improved for a driveway: with access from Kamien Street) and house development as depicted on *New Residence for Stephen & Phyllis Carmichael,* Roper Engineering; received September 27. 2005).

The proposed project will result in the removal of approximately 0.25 acre of coastal prairie through driveway and resideniial construction. These areas are depicted on Figure 3. Residential land uses may affeci retained coaslal prairie on the property through the introduction and/or spread of invasive non-native plani species. Dut to the limited distribution of this plant community type within the State and its status as a rare habitat by CDFG (CDFG *2003)* and sensitive habitat by Santa Cruz County: removal of this habitat is considered a significant impact. This impaci can be mitigated wiih successful implementation of miligation measures BIO-1a, BIO-1b and BIO-5. Areas proposed for coastal terrace management are depicted on Figure 4

The residential construction work will not impaci any special status plant species. Implementation of coastal prairie habital management activities (mitigation measure BIO-1b), if implemented in the southern portion of the properly, has the potential to impaci two locally unique plant species if such species are still present on site. Although this is not considered a significant impact under CEQA thresholds, a measure is identified (mitigation measure BIO-2) to avoid impacts to these locally unique species.

The iesidential construction work will riot directly impact any wetlands, however indirect impacts to a wetland down slope of the driveway may occur if drainage is blocked or impeded to the area or if construction materials are inadvertently side cast into the wetland Due to this plant community types status as a sensitive habitat by Santa Crur County, impacts to this habitat is considered a significant impact This impact can be mitigated with successful implementation of miligation measure BIO-3

Project construclion work will occur within the dripline of native oaks and some oak trees may be removed for driveway and residential construction. Due to the value of oak woodlands as wildlife habitat, for erosion control, and sustaining water quality, as recognized by the State in PRC 21083.4, removal of oak trees is considered a significant impact This impact can be mitigated with successful implementation of mitigation measure BIO-4

Impact BIO-1 Direct and Indirect Impact to Coastal Prairie **from Residential** Development. The development of the driveway and a small portion of the residence (garage area) will occur/cross erassland areas that ate considered coastal prairie. As the CDFG considers this plani community to be rare and warranting protection and the County considers it a sensitive habitat, removal of prairie habiiat is considered a significant impact. In total, the project will directly affect approximately 10,900 square feet (0.25 acre) of coastal prairie (including prairie areas infested with French broom and cotoneaster).

The projecl applicant's driveway alignment, with access from Kamien Street would traverse coastal prairie The driveway is proposed to be 12-feet wide Approximately 1,100 linear feet of coastal prairie (comprised of approximately 200 linear feet of prairie with French broom) and 900 linear feet of prairie within the existing road). affecting up *to* approximately 9,600 square feet of this plant community will be affected lhese quantities assume a finished 12-foot wide construction area in undisturbed prairie and an 8-foot wide disturbance area along the existing toad. Please note that these impacl quantities are approximate and assume a disturbance width of up to tight feet along the existing roadway. There may be some areas where the impact would be less (i e., areas where the existing roadway has wider bare aieas and less prairie). The area proposed for the septic leach field and driveway turnaround also supports coasial prairie. Approximately 1.300 square feel of prairie will be affected in this area. In total: approximately 10,900square feet (0 25 acre) of prairie will be directly affected by the proposed development

The area proposed **for** the house site is located on the hillside that was previously graded and seeded for erosion control. This hillside supports mixed non-native and grassland; some areas support dense areas of French broom and jubata grass. Patches of purple needlegrass, a native bunchgrass, also occur in this area. Successful implementation of mitigation measures BIO-1a and BIO-1b will reduce impacts to coastal prairie and native grass stands within the mixed grassland lo a less than significant level.

> **Recommended Mitigation BIO-1a.** Residential development shall be designed to avoid and minimize impacls to the prairie habitat. Where prairie habitat is impacted !here shall be a prairie management plan implemented (see measure BIO-1b, below). All prairie that is located outside of the development **arm** shall be preserved as undeveloped open space.
>
> Prior to any site grading and/or construction, install temporary construclion fence along the outer edge of the work area such thai impacts to the prairie can be avoided/minimized. Areas outside of the work area shall not be disturbed by construction activities. All storage of construction materials: parking of vehicles and related equipment. shall be prohibited within the prairie that is to be retained.

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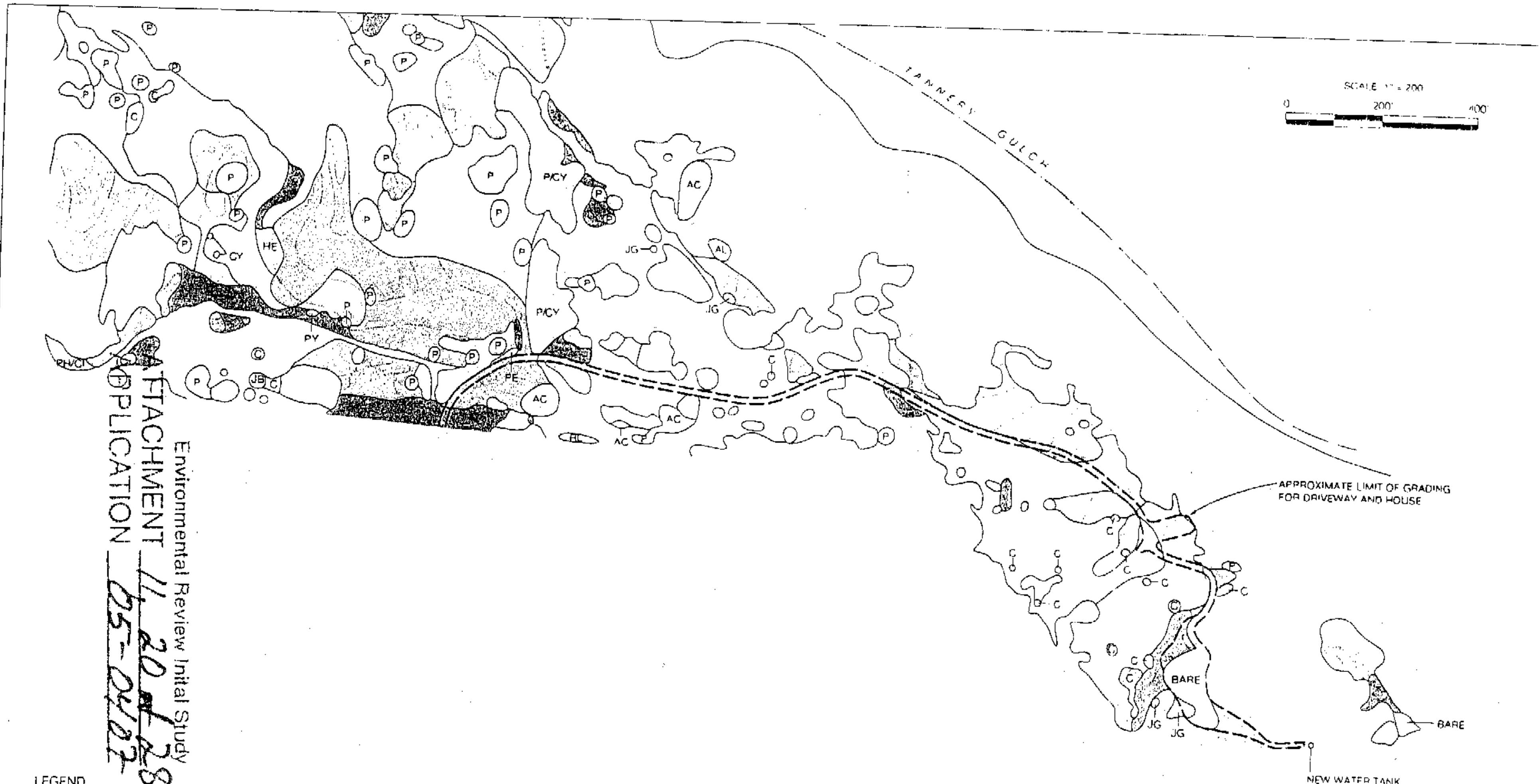

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LEGEND

- Mixed Oak Woodland (including isolated oak trees)
- Coyote Brush Scrub
- Redwood Forest
- Coastal Prairie
- Coastal Prairie with French Broom and/or Cotoneaster*
- Broom Scrub (including areas with Cotoneaster*)
- Mixed Non-native and Native Grassland with French Broom and/or Cotoneaster*
- Mixed Non-native and Native Grassland
- Introduced Perennial Grassland
- Wet Meadow
- Non-native Trees, Shrubs, Vines (*in addition to areas mapped with broom and cotoneaster)

Trees: P Pine (Monterey pine, other pines); CY Cypress; AC Acacia; AL Tree of Heaven

Shrubs: C Cotoneaster; PY Pyracantha; FB French Broom; JG Jubata Grass; CI Cape Ivy; PE Periwinkle; PH Poison Hemlock; HE Heather; RL Residential Landscaping

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Carmichael Property, Aptos, California
Vegetation Resources - Driveway and House

Figure 3
9/05

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Management Actions

- Remove/Control Invasive, Non-native Plant Species (eg., French broom, cotoneaster, acacia, pampas grass, poison hemlock - encompasses approximately 2.2 acres)
- Mixed Oak Woodland (including isolated oak trees)
- Coyote Brush Scrub
- Redwood Forest
- Coastal Prairie
- Coastal Prairie with French Broom and/or Cotoneaster*
- Broom Scrub (including areas with Cotoneaster*)
- Mixed Non-native and Native Grassland with French Broom and/or Cotoneaster*
- Mixed Non-native and Native Grassland
- Introduced Perennial Grassland
- Wet Meadow
- Non-native Trees, Shrubs, Vines (in addition to areas mapped with broom and cotoneaster)

Trees: P Pine (Monterey pine, other pines); CY Cypress; AC Acacia; AL Tree of Heaven

Shrubs: C Cotoneaster; PY Pyracantha; FB French Broom; JG Jubata Grass; CI Cape Ivy; PE Periwinkle; PH Poison Hemlock; HE Heather; RL Residential Landscaping

Carmichael Property, Aptos, California
Prairie Areas Recommended for Immediate Management

Figure 4
9/05
1+1.03

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Areas disturbed during construction shall be revegetated with locally obtained native plant species compatible wiih the prairie habitat.

Recommended Mitigation BIO-1b. As mitigation for the removal of 0.25-acre coastal prairie and native bunchgrasses within the mixed grassland for residential development and potential indirect impacts to the prairie from resideniial uses on ihe property, the landowner shall develop and implement a prairie management plan io manage and enhance a minimum of 1.0 acre of existing prairie. The plan shall provide for the management of native species and shall include removal/control of invasive, non-native species and a mowing and/or grazing regime. This represents a 4:1 ratio of management/enhancement to impact.

Areas recommended for management/enhancement are depicied on Figure 5; these areas are prairie currenrly infested with French broom and/or cotoneaster and/or areas where locally unique plani species have been previously recorded (i.e., southern portion of property). Figure **5** depicts approximately 2.5 acres of prairie thai is recommended for management action.

The prairie manapemeni plan shall include, ai a minimum, the following items:

a. Ideniify high, moderate and low priority areas for management. based on plani species composition and threats from invasive; non-native plant species
b. Ideniify **a** schedule for implementing the management actions. based on priorities established in a , above.
c. Specify short-term inanagemeni actions (i.e., removal/control of broom planis, mechanical mowing and/or grazing) and long-term maintenance (i.e., seasonal removal, mowing andiot grazing) ihat will preserve and manage the prairie areas.
d Techniques required to be implemented in prairie management areas (i.e., seasonal mowing grazing, other methods), including intervals or treatment.
e Identify techniques to bc implemented for removal/control of invasive, non-native plant species from prairie managemeni areas (if different from c , above).
f. Methods for monitoring effectiveness of management aciions (i.e., establishmeni of on-siie prairie reference plots and monitoring locations)
g. Performance siandards for management areas (i.e., species diversity, plani species composition, plant cover, percent cover of invasive plants) based on reference plots
h. Recommendations for overall management of grassland resources (i.e., fire protection mowing along adjacent residences, removal/control of other invasive plani species).
i. Reporting guidelines.
j. **Adaptive** management actions and remedial activities.

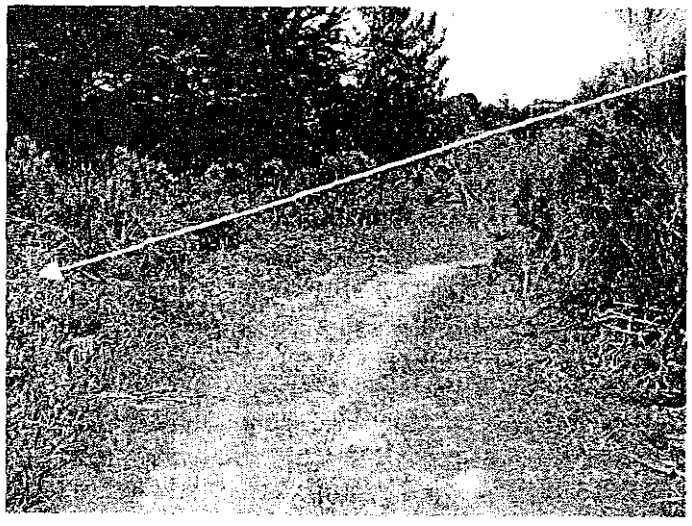
No livestock shall be corralled, boarded or grazed on the prairie of the property unless grazing is identified as part of a Couniy-approved prairie hahitat management tool. The restriction on livestock use shall be in place until a prairie management plan is reviewed and approved by ihe Couniy Planning Department. If the management plan identifies grazing of the prairic as a management tool, the restriction shall bc removed.

Impact BIO-2. Direct and Indirect Impact to Special Status Plant Species. No special status plant species currently exist within the proposed house development area, based on surveys conducted by Bioiic Resources Group and others. Morgan stairs that surveys subsequent to his 1980 survey found Gairdner's yampah (*Perideridia gairdneri)* (List 4 species) on the slope adjacent io ihe water **tank.**

Morgan stated that the colony was no longer presenl due to site disturbances and presumes the plants haw died out or been extirpated (Morgan 2004). The southern grasslands in APN 040-083-06 may still support two other List 4 plant species: large-flowered star tulip and hooded ladies tresses Although this is not considered a significant impact under **CEOA** thresholds. implementation of mitigation measure BIO-2. below will avoid impacts to these locally unique species. if they are still present on the site.

> Recommended Miligalion **BIO-2:** No clearing or modification of vegetation within the grasslands of the southern portion of APN 040-081-06 (including the County-approved prairie habitat management plan) shall be permitted without a focused survey for these species. with the survey results reviewed and approved by the Planning Department. If such species are located. impacts to such spectes shall he avoided during prairie management activities.

Impact BJO-3. Direct and **Indirect Impact to Wet Meadow Habitat.** Driveway improvements will not directly impact the two patches of wet meadow, however the driveway will cross **a** low area **and** may interrupt seasonal flows through ihis area depending on the roadway design. Construction activities may impact the wet meadow area if conslruction materials are inadvertently side cast into ihe area. This area is depicted in Figure 9. Successful implementation of mitigation measure BIO-3 will reduce impacts to the wet meadow to **a** less than significant level.



Approximate location of wet meadow

figure 9. View of existing road at low area; patch of wet meadow habitat is downstream (to the left) of existing road. Photo dated July 2004.

> Recommended Miligation **BJO-3.** Where the driveway crosses the low point (just upstream of the wet meadow patch), the driveway should he designed lo avoid any impact to the wet meadow Culverts or drains shall be used lo allow all seasonal waters (surface and subsurface) to flow unimpeded under the driveway and lo downstream wet meadow area.
>
> Prior tu conslruction; install temporary consiruciion fence along the outer edge of the work area such thal impacts to the wet meadow are avoided. Areas outside of the work area shall not be disturbed by construction activities. All storage of construction materials, parking of vehicles and related equipment: shall be prohibited within the wet meadow that is lo be retained.
>
> During construction; sediment conlrol shall be implemenled (i.e., silt fencing, etc.) and all dislurbed areas shall be revegetated with locally obtained native plant species compatible with the wet meadow **area.**

If necessary, the landowner should secure any permits from regulatory agencies prior to any roadway improvements. If applicable, the U.S. Army Corps of Engineers (USACOE) should be consulted to determine if portions of the wet meadow are subject to their regulatory jurisdiction. At present: the placement of fill within isolated wetlands is not regulated by the USACOE. The landowner shall also implement any additional measures to avoid and/or mitigate impacts to wetland resources, as required by the County under the County's Sensitive Habitat Ordinance.

Impact BIO-4. Direct Impacts to Native Oak Trees During Construction. The development of the residence; Including the driveway, will require removal and/or limbing of native oak trees that occur along the driveway and adjaceni to the house site. Other improvements may also require trenching within the root zone of trees lo be retained. Successful implementation of mitigation measures BIO-4a and BIO-4h will reduce impacts lo native oaks to a less than significant level.

Recommended **Miligation BIO-4a.** The landowner should refrain from culling oak trees and snags on the property that occur outside the development area to only what is necessary if sudden oak death or other disease must be contained or if a tree poses an imminent threat to human safety. Retaining snags and downed logs for wildlife habitat, and an intact forest habitai greatly increases the values for wildlife and maintains movement corridors with other forested habitats surrounding the properly This action is consistent with PRC 21083.4.

Recommended **Mitigation BIO-4b.** To avoid impacts to oak trees that are located adjacent to residential development activities, the landowner shall install temporary consiruction fences along the outer edge of the work area where the work area is within the dripline of native trees. Areas outside *of* the work area shall not be disturbed by construclion activities. All storage of construction materials, parking of vehicles and trenching equipment, shall be prohibited within the dripline of trees to be retained. Anv oak trees removed during conslruclion replacement trees (same species, minimum 5-gallon size) should be planted ai a 3:1 replacement ratio, consistent with PRC 21083.4. The plantings shall be maintained to ensure survival for a minimum of seven years.

Where trenching is lo occur within the dripline of native oaks, a certified arborist shall supervise all tree pruning and root cutting. The arborist shall instruct the landowner, or their contractor, on measures lo minimize root disturbances io the trees, including hand culling of all tree roots greater than 3 inches in diameter. The landowner, or their contractor, shall implement tree protective field measures as recommended by the arborisl. A conslruclion vehicle parking and staging area shall be delineated on the project plans and in the field so that storage of construction equipment and overnight parking of construction vehicles is confined io a designated area which is ai least partially identified with temporary fencing. The condition of the tree-protection fencing shall be checked on a weekly basis and repaired within 24 hours if damage is noted. If damage io any trees occurs, a remediation program shall be developed by a certified arborist and implemented according to the arborist's supervision and direction. The certified arborist shall monitor success of these remedial measures for a minimum of one year after construction. If trees die or show significant decline in their health during this time, the landowner shall implement a tree replacement program, replacing dead/dying trees ai a 3:1 replacement ratio.

Impact BIO-5. **Indirect Imparts** to Natural **Habitats by the Introduction/Spread of Invasive, Non-Native Plant Species.** If the landowner utilizes invasive, non-native plant species in their landscaping, these species may Infest undeveloped area: of the parcel, including the wet meadow, oak woodland and coastal prairie Successful implementation of mitigation measure BIO-5 will reduce impacts to coastal prairie to a less than significant level.

Recommended Mitigation BIO-5. The landowner shall not utilize invasive, non-native plant species for landscaping Plant species that should not be used on the property include all species identified by the California Invasive Plant Council (Cal-IPC). This list includes: all brooms (i e., Fiench broom: Spanish broom and Scotch broom), periwinkle (*Vinca* sp.), Cape (or German) ivy, English ivy, Algerian ivy, acacia (all kinds), eucalyptus (all **kinds):** all pines, cotoneaster, and pyracantha. See www.cal-ipc.org for a complete listing of invasive plants thai should not **be** used in landscaping.

If evidence of the fungus responsible for Sudden Oak Death (*Phytophthora* sp.) is detected on ihe property, the homeowner shall implement measures to prevent/control the spread of this fungus both on and off-site. The homeowner shall be responsible for implementing the most current disease-preventing measures for the use. storage andior transporting of oak firewood as a means of minimizing the spread of the disease within the County and the Stale of California. Preventative and treatment measures should also be implemented as recommended. Current information on this disease and recommended treatments is available through the University of California Cooperative Extension. Sudden Oak Death website (http://cemarin.ucdavis.edu).

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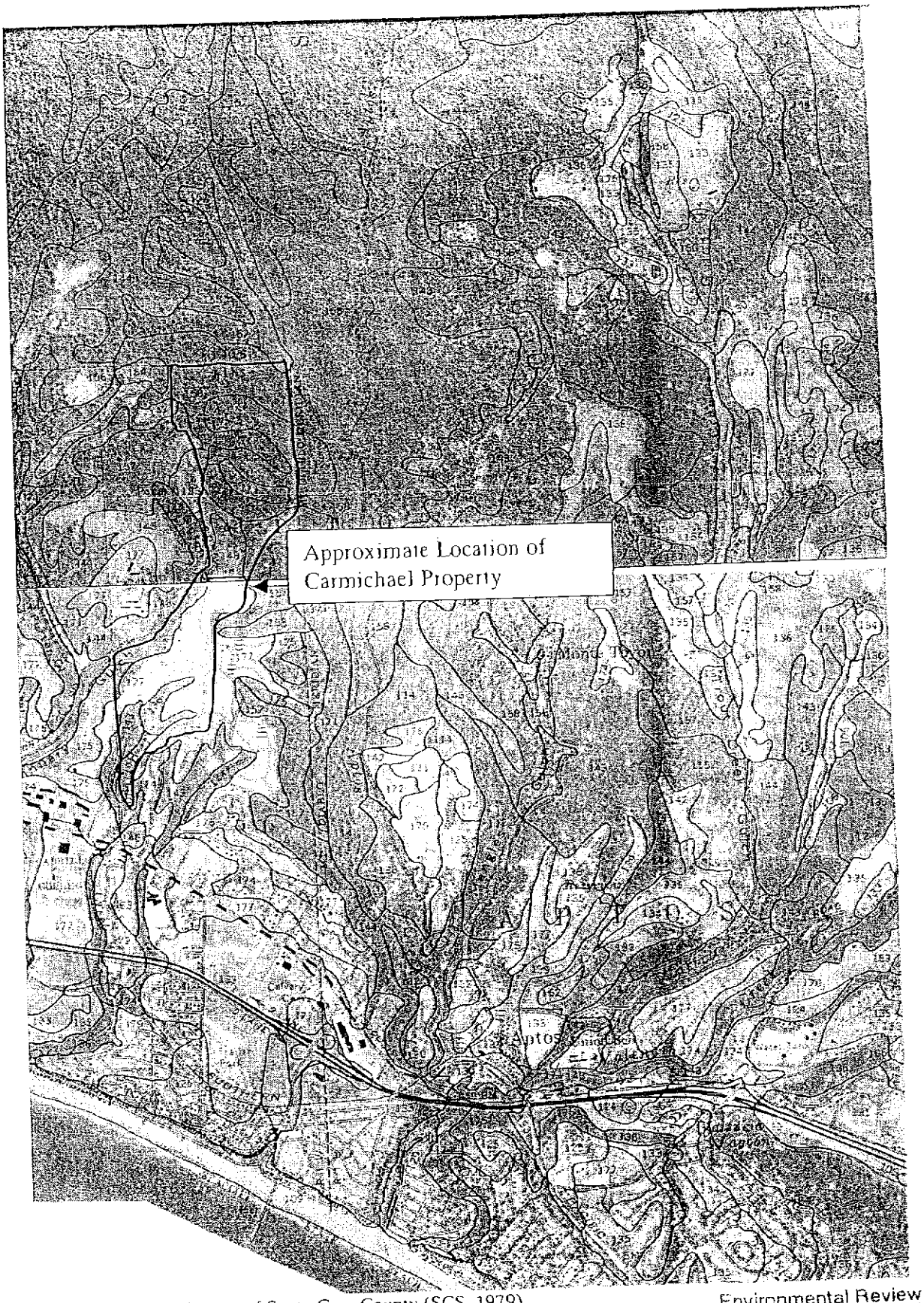
Appendix A – Soils Map



Map Source: Soil Survey of Santa Cruz County (SCS, 1979)

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Biotic Resources Group
Biotic Assessments ◆ Resource Management ◆ Permitting

Addendum to Botanical Report

(armithael Property, Aptos, CA
(APN 040-081-06, 07, 09)

Prepared for
Stephen and Phyllis Carmichael

Prepared by:
Biotic Resources Group
Kathleen Lyons, Plant Ecologist

July 27, 2006

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INTRODUCTION

This repon is an addendum to the Botanical Repon for the Carmichael Property (APN 040-081-06. 040-081-07 and 040-081-09). The previous repon (*Carmichael Property, Aptos, CA Botanical Report*, Biotic Resources Group. September 28, 2005) was submitted to the County of Santa Cruz for Application 05-0407 and was deemed adequate for completion of the application The addendum provides information requested by the County on botanical resource issues relative to the applicalion (*Memorandum dated November 2, 2005 from Paia Levine to Keni Edler, County of Santa Cruz Planning Department*) and revisions to the Botanical Report based on revisions to the project site plan

METHODOLOGY

The Biotic Resources Group (Kathleen Lyons. plant ecologist) reviewed the revised site plan (*Residence for Stephen and Phyllis Carmichael, Site Plan*, Roper Engineering, dated July 2006). This review was focused on refining areas of impact from the proposed driveway. which has been revised to include four turnouts between Xarnien Sireet and the proposed residence In addition. a lree survey of 100-foot fuel management zones around rhe proposed shop and residence was also reviewed (*Additional Tree Locations*, Robert L DeWitt & Associates Inc . dated May 10. 2006) This review was focused on potential impacts to sensitive botanical resources from anticipated fuel management activities within these zones This addendum also evaluates temporary, conrrrucrion-related impacts to sensitive habitats froin the proposed driveway and shophesidence construction.

RESULTS

Review of Revised Site Plan

In response to comments fiom the County arid Centra! Fire. the site plan has been amended to include four driveway turnouts. In addition, four construction staging areas have been identified The turnouts and staging area were sited to minimize impacts to sensitive botanical resources, ihese areas are depicted on Figure 3A (anached) as well as on the engineering plans prepared by Roper Engineering. Figure 3A also shows the alternative driveway route froin Jennifer Drive.

In the Botanical Report, dated September 28, 2005, approximately 10,900 square feet (0.25 acre) of coastal prairie (including prairie areas infested with French broom and cotoneaster) was determined to be impacted from the proposed project (Impact BIO-1). In addition, the project was determined to impact patches of native bunchgrasses that grow amid grassland otherwise dominated by non-native species (areas mapped as mixed grassland and native grassland). These quantities have been revised based on the revised sire plan and are outlined in Table 1. below Permanent impacts are those occurring in areas to he paved or built upon (i.e., shop and residence) Based on the revised site plan. 15,345 square feet (0.35 acre) of prairie habitat (a sensitive habitat) will be permanently affected by the proposed project. In addition, site work will affect 4,885 sq. ft (0.11 acre) of mixed grassland and 5,950 square feet (0.14 acre) of mixed non-native/native grassland

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Temporarily impacted areas are those that may be disturbed during construction (i.e. construction access, minor side casting during grading) but would not be paved or built upon and would be revegetated following construction. Areas within the construction disturbance limits include areas adjacent to the driveway and buildings, septic leach line areas: and areas designated for underground drainage lines and dispersion trenches. The site plan designates a 5-foot construction disturbance limit for improvements within/adjacent to coastal prairie and mixed grassland and a 10-foot construction disturbance limit for improvements within/adjacent to other habitats. Orange construction fencing would be placed at the edge of these construction disturbance limits to confine construction activities to these designated areas. Based on the revised site plan, 11,968 square feet (0.28 acre) of prairie habitat (a sensitive habitat) will be temporarily affected by the proposed project. In addition, site work will temporarily affect 6,311 sq. ft. (0.15 acre) of mixed grassland and mixed non-native/native grassland. These impacts are summarized in Table 1, below.

Table 1. Impacts to Prairie (Sensitive Habitat) and other Grassland Types, Carmichael Property, June 2006

Plant Community Type	Sheet C2 (Station 9+15 to 14+50)	Sheet C4 (Station 14+50 to 24+50)	Sheet C5 (Station 24+50 to 28+00, including house and septic area)	TOTAL
Permanent Impacts				
Coastal Prairie	2,648 sq. ft.	8,044 sq. ft.	1,996 sq. ft.	12,680 sq. ft.
Coastal Prairie with French Broom	0	1,760 sq. ft.	905 sq. ft.	2,665 sq. ft.
Total Prairie	**2,648 sq. ft.**	**9,804 sq. ft.**	**2,901 sq. ft.**	**15,345 sq. ft. (0.35 acre)**
Other Grassland Types				
Mixed Grassland	0	0	4,885 sq. ft.	4,885 sq. ft. (0.11 acre)
Mixed Non-native and Native Grassland	0	0	5,950 sq. ft.	5,950 sq. ft. (0.14 acre)
Total Other Grassland	0	0	10,835 sq. ft.	10,835 sq. ft. (0.25 acre)
Temporary Impacts				
Coastal Prairie	1,680 sq. ft.	5,512 sq. ft.	1,276 sq. ft.	8,468 sq. ft.
Coastal Prairie with French Broom	450 sq. ft.	2,460 sq. ft.	638 sq. ft.	3,548 sq. ft.
Total Prairie	**2,130 sq. ft.**	**7,9724 sq. ft.**	**1,914 sq. ft.**	**11,968 sq. ft. (0.28 acre)**
Other Grassland Types				
Mixed Grassland	0	0	4,030 sq. ft.	4,030 sq. ft. (0.09 acre)
Mixed Non-native and Native Grassland	0	0	2,281 sq. ft.	2,281 sq. ft (0.05 acre)
Total Other Grassland	0	0	6,311 sq. ft.	6,311 sq. ft. (0.14 acre)

If the alternative driveway alignment (from Jennifer **Drive)** is selected. coastal prairie areas will be impacted between Jennifer Drive **and** where the driveway would join the proposed alignment (see Figure 3A). Table 2 lists the permanent and temporary impact to coastal prairie, based upon a 12-foot wide roadway and a 5-foot construction disturbance limit area.

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Table 2. Imparts to Prairie (Sensitive Habitat) from Alternative Driveway Alignment (Jennifer Drive to Proposed Alignment Route), Carmichael Property, June 2006

Permanent Impacts	5,400 sq. ft. (0.12 acre)
Temporary Impacts	2,200 sq. ft. (0.05 acre)

The Botanical Repon (September 28, 2005) identified mitigation measures to minimize and compensate for the direct and indirect impacts to coastal praine and native grass stands within the mixed grassland. Mitigation BIO-1b recommends implementation of a prairie management plan to manage and enhance extant prairie on the property at a minimum 4:1 ratio of management/enhancement to direct impact Eased on the revised site plan and the permanent impacts listed in Table 1. a minimum of 1.4 acres of extant praine would require management/enhancement to compensate for impacts to coastal prairie An additional0 **44-acre** of extant prairie would require management/enhancement to compensate for impacts to mixed grassland, yielded a toial managemeni area of 1 85 acres. These mitigation recommendations are listed in Table 3 The Botanical Repon (Figure 4) identified ?.? acre: of prairie (including areas infested with invasive, non-native species) that were suitable for habitat management and enhancement

Table 3. Recommended Mitigation for Permanent Impacts to Prairie (Sensitive Habitat) and Mixed Grassland, Carmichael Property

Plant Community Type	Area Permanently Impacted	Mitigation Ratio (managed/enhanced: impact)	Area of Mitigation Required
Coastal Prairie (including areas with French Broom	15, 345 sq. ft. (0.35 acre)	4:1	61,380 sq. ft. (1.41 acres)
Mixed Grassland	4,885 sq. ft. (0.11 acre)	4:1	19,540 sq. ft. (0.44 acre)
TOTAL	20,230 sq. ft. (0.46 acre)	4:1	80,920 sq. ft. (1.85 acres)

An additional mitigation measure is recommended to minimize temporary construction activities from the placement of the underground drainage line (from the residence to the dispersion trench) This measure identifies sod cutting, sod stockpiling and sod replacement lor this construction **work.** as described below

> **Mitigation Measure BIO-1c.** The construction limits for the drainage line. where they occur within the coasial prairie arid mixed grassland, will be staked in the field by the contractor Protective plastic mesh fencing shall be installed along the perimeter of the construction work area All work (e.g., trenching. equipmeni access. eic.) shall occur within the designated drainage **Unit** area. **as** depicted on Sheet C5 of the site plan. The project biologist will field check the staking and fencing prior to any construction work The construction crew shall cut the grassland/prairie sod to an average depth of **1** foot and remove the sod in blocks that are suitable lor salvage and transplanting. Depending upon soil moisture. the sod may be hand watered prior to excavation. thus easing excavation work and maintaining cohesiveness of the salvaged grassland/prairie blocks The salvaged grassland/prairie blocks. and any other excavated soil materials. shall be placed on permeable landscape fabric adjacent to the excavation area. Materials shall not be side cast onto adjacent grassland/prairie. Salvaged grassland/prairie blocks shall he kept moist during the construction operation. Drainage line construction work shall be study

implemented as quickly as possible to minimize the mortality of the salvaged materials Following placement of the drain line. the excavated area shall be partially backfilled with native soil tamped slightly, and the grassland/prairie blocks re-installed The finished grade of the excavated area shall match the surrounding grade. Native soil from the excavated trench shall be used to fill areas between the blocks to create a uniform surface The site will be hand watered following the completion of all transplanting work The project biologist shall conduct a final inspection of the site and approve the condition of the prairie transplant work prior to the contractor's release from the work site. The project biologist will prepare a letter documenting the salvage and transplanting operation for the property owner(s) submittal to the County.

Review of Residential Area Drainage System

The site plan specifies underground drain lines and two dispersion trenches that are designed to allow both infiltration and dispersion of development-related runoff. One trench is proposed in a mixed grassland area southwest (downslope) of the shop building. A second dispersion trench is proposed in a patch of scattered **oaks** and scrub east of the shop and driveway. According to the project engineer. runoff that does not infiltrate the ground will disperse from the trench and surface flow onto the down slope grassland/prairie This is expected to **occur** during significant rainfall events The surface runoff will be dispersed along a 50-foot long trench/dispersion feature, such that surface erosion is not expected. The additional water discharge is not expected to significantly impact the character of the down slope prairie the discharge will be limited to high rainfall events when the area is already hydrated and as the dominant plant species within the prairie (i.e.. California oatgrass, slender rush. western rush) are adapted to seasonally-saturated soil conditions (i e during the winter months)

Tree Removal

The rite plan identifies two oak trees for removal to accommodate the proposed driveway. These trees (an 18-inch dbh coast live oak and a I@-inchdbh Shreve oak) are located near the proposed residence. No other trees are slated lot removal as pan of the driveway and house construction work. As discussed in Impact BIO-4 of the Botanical Repon, several trees are located adjacent Io the driveway and some will need to he limbed to provide vehicle clearance The Botanical Repon identified two mitigation measures to minimize arid compensate for potential impacts to native **oaks:** these two measures are still applicable to the plan. **As** compensation for the removal of oaks for the development. Mitigation Measure BIO-4b identifies a 3:1 tree replacement program Figure 3A depicts three oak tree re-planting areas that could accommodate planted oak trees; these areas are currently supporting French broom scrub and coyote brush scrub that are proposed for temporary construction staging. Following completion of construction, these area would be suitable for replanting with oak trees

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Fuel Management Areas Around Structures

Central Fire Department has requested a 100-foot fuel management area around the two proposed structures (i.e., shop and residence). The two fuel management areas are depicted on Figure 3A. The fire suppression plan for woodland habitat within the 100-foot zones includes creating a 30-foot wide tree/shrub clearance area around each structure and tree limbing and dead tree/shrub removal between 30 feet and 100 feet As depicted on Figure ;A. approximately one half of the 100-foot management area around the proposed shop building suppons oak woodland. Similarly,

approximately one half of ihe inanagemeni area around ihe proposed residence suppons oak woodland

Within the 0'-30' fuel management zone, all trees and shrubs will be removed Grassland areas in this zone will be seasonally mowed to control fuel loads.

Within the 30'-100' fuel management tone, management actions include limbing and trimming all trees to create six feet ground to canopy clearance (per tree) and vertical spacing between trees Dead trees and louse fuels (i.e., dead woody brush) would also be removed from this zone Where grassland occur:, within the 30' 100' zone. these areas will be seasonally mowed

In May 2006. Robert L. DeWitt & Associates, Inc. surveyed all trees greater than 8 inches in diameter within these two management zones. Tables 4 and 5 list the trees: by species and diameter. surveyed within the shop and house management areas, respectively Within the shop management area: a total of 100 trees were recorded~Tree spacing ranges from 2 feel to over 20 feet.with the average spacing between 8 and 12 feet A total of 96 oaks. one bay. two Douglas firs, and 1 madrone were recorded ('Table 4) Within the house inanagemeni area: a iotal of 81 trees were recorded (Table 5) Tree spacing also ranges from ? feei to over 20 feet with the average spacing approximately 10 feet. A total of 56 oaks, 23 Douglas firs. and 2 madrones were recorded (Table 5) Both areas support understory shrubs. Most of these shrubs occur ai the woodland/grassland interface Within the dense iree canopy, shrub understory is relatively sparse

Within ihe 0'-30'-fuel inanagemeni zone: a total of 11 irees will he removed. nine of ihese trees are oak trees These nine trees are depicied on Figure 3B and includes the two oaks previously discussed as being removed io accommodate the driveway

Within the 30'-100' fuel inanagemeni zone, shrubs and trees will require limbing io prevent fuel laddering inlo the tree canopy. dead limbs will also need to be removed Based on field observations, no mature trees will need to he removed within this zone.

As no special status plant species were observed from these managemeni areas and ihe management areas are a small component of the overall oak woodlands on the property (as visually depicted on Figure 3A), the proposed fuel management activities are not expected to result in significani impacis to ihe woodland resources on the property. Consistent with Impact BIO-4 regarding oak tree removal. the oaks removed within the 0'-30' *fuel* management iont should be replaced at a 3:1 replacement ratio. Figure 3A depicts thsee oak tree-replanting areal that could accommodate 27 planted oak trees (i e,.9 trees removed x 3 = 27 planted trees).

Seasonal mowing/weed-whipping of ihe grassland portions of the fuel management areas is consistent with management techniques for naiive grassland and coasial prairie. Seasonal mowing/weed-whipping if conducied in early spring and late summer io a height of 4-6 inches, will provide long-term benefits to the prairie by reducing ihe cover of annual, non-native grass species. such as ranlesnake grass (*Briza sp.)* and non-native forbs, such as cat's ear (*Hypochoeris sp.)* Early spring (i.e., late March – April) mowing/weed-whipping will avoid impacts tu newly emerging prairie forbs. such as blue-eyed grass, gumplant and brodiaea, yei will mow down non-native grass head prior to their flowering/seed sei. A later summer mowing/weed-whipping would occur after flowering/seed sei of the naiive grasses and forbs. such thai no significant impacts io these species are expected. Seasonal mowing/weed-whipping will also discourage ihe growth/spread of woody species into the grassland/prairie areas, thus providing a long-term benefit to ihe grassland

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Table 4. Trees Surveyed, **by Diameter; within Proposrd** 100-Foot **Fuel Management Area, Shop Area**

	Oaks									Bay	Douglas Fir		Madrone	Total
Shop Area	8"	10"	12"	14"	16"	18"	22"	24"	28"	10"	30"	12"	8"	
	33	22	18	11	5	2	2	1	2	1	1	1	1	100

Table 5. Trees Surveyed within Proposed 100-Foot Fuel Management Area, House Area

	Oaks						Douglas Fir											Madrone	Total
House Area	8	10	12	14	16	18	8	10	12	14	16	18	20	24	30	40	42	8	
	21	16	12	4	1	2	2	3	1	3	2	7	1	1	1	1	1	2	81

Coastal Prairie Management

The Botanical Repon (Impact BIO-2) slated thai the southern portion of the property (outside of the proposed developmen! area: yet within areas proposed for managemeni and enhancement) might support three CNPS List 4 plant species: Gairdner's yampah, large flowered star tulip, and hooded ladies tresses Focused surveys for these species were recommended prior to implementation of prairie management and enhancement actions to ensure management actions do not inadvertently impact ihese species (if presenl) Impacts could occur if the planis were trampled during the removal of French broom or other invasive plant **species.** or if the List 4 planis were mowed or browsed while in flower. If these List 4 plants are found on the site. management aciions can be implemented to avoid direct impacts io these occurrences Protective features should be erected around ihe colonies to prevent trampling and browsing when the planis are in spring growth, however. implementation of the prairie management actions (i e . seasonal mowing and/or grazing and removal of invasive planis) will result in long-term benefits io the habitat of these specie: through the removal/reduction of competing annual non-native grasses and forbs and invasive woody species (i e . French broom and cotoneaster).

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ATTACHMENT 12, 7 of 9
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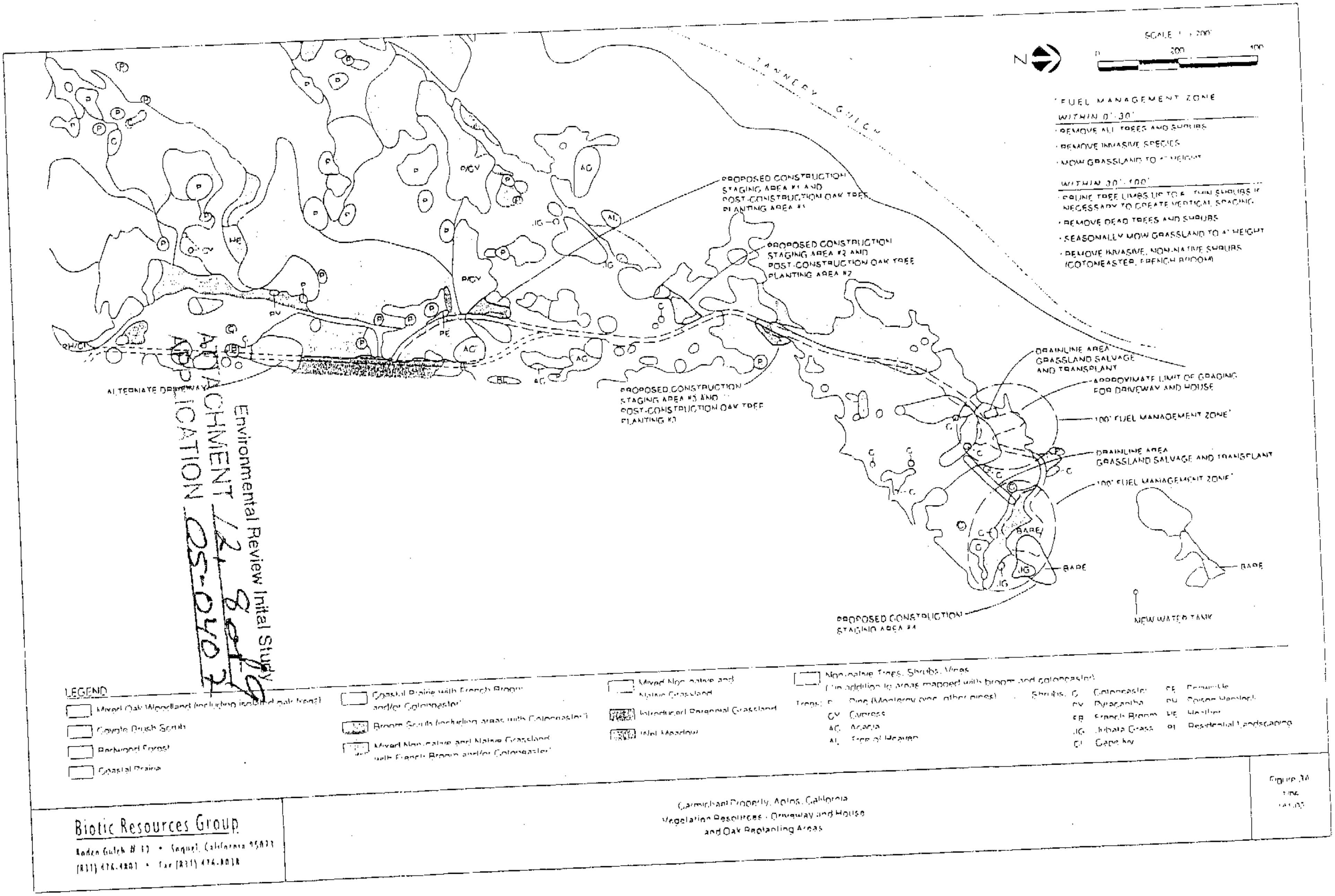
SCALE 1" = 200'
N
FUEL MANAGEMENT ZONE
WITHIN 0'-30'
REMOVE ALL TREES AND SHRUBS
REMOVE INVASIVE SPECIES
MOW GRASSLAND TO 4" HEIGHT
WITHIN 30'-100'
PRUNE TREE LIMBS UP TO 6'. THIN SHRUBS IF NECESSARY TO CREATE VERTICAL SPACING
REMOVE DEAD TREES AND SHRUBS
SEASONALLY MOW GRASSLAND TO 4" HEIGHT
REMOVE INVASIVE, NON-NATIVE SHRUBS (COTONEASTER, FRENCH BROOM)
TANNERY GULCH
PROPOSED CONSTRUCTION STAGING AREA #1 AND POST-CONSTRUCTION OAK TREE PLANTING AREA #1
PROPOSED CONSTRUCTION STAGING AREA #2 AND POST-CONSTRUCTION OAK TREE PLANTING AREA #2
PROPOSED CONSTRUCTION STAGING AREA #3 AND POST-CONSTRUCTION OAK TREE PLANTING #3
PROPOSED CONSTRUCTION STAGING AREA #4
DRAINLINE AREA GRASSLAND SALVAGE AND TRANSPLANT
APPROXIMATE LIMIT OF GRADING FOR DRIVEWAY AND HOUSE
100' FUEL MANAGEMENT ZONE
DRAINLINE AREA GRASSLAND SALVAGE AND TRANSPLANT
100' FUEL MANAGEMENT ZONE
BARE
BARE
BARE
NEW WATER TANK
ALTERNATE DRIVEWAY
LEGEND
Mixed Oak Woodland (including isolated oak trees)
Coyote Brush Scrub
Redwood Forest
Coastal Prairie
Coastal Prairie with French Broom and/or Cotoneaster
Broom Scrub (including areas with Cotoneaster)
Mixed Non-native and Native Grassland with French Broom and/or Cotoneaster
Mixed Non-native and Native Grassland
Introduced Perennial Grassland
Wet Meadow
Non-native Trees, Shrubs, Vines (in addition to areas mapped with broom and cotoneaster)
Trees: P Pine (Monterey pine, other pines)
CY Cypress
AC Acacia
AL Tree of Heaven
Shrubs: C Cotoneaster
PY Pyracantha
FB French Broom
JG Jubata Grass
CI Cape Ivy
PE Periwinkle
PH Poison Hemlock
HE Heather
RL Residential Landscaping
Biotic Resources Group
Carmichael Property, Aptos, California
Vegetation Resources - Driveway and House and Oak Replanting Areas
Figure 30
Environmental Review Inital Study
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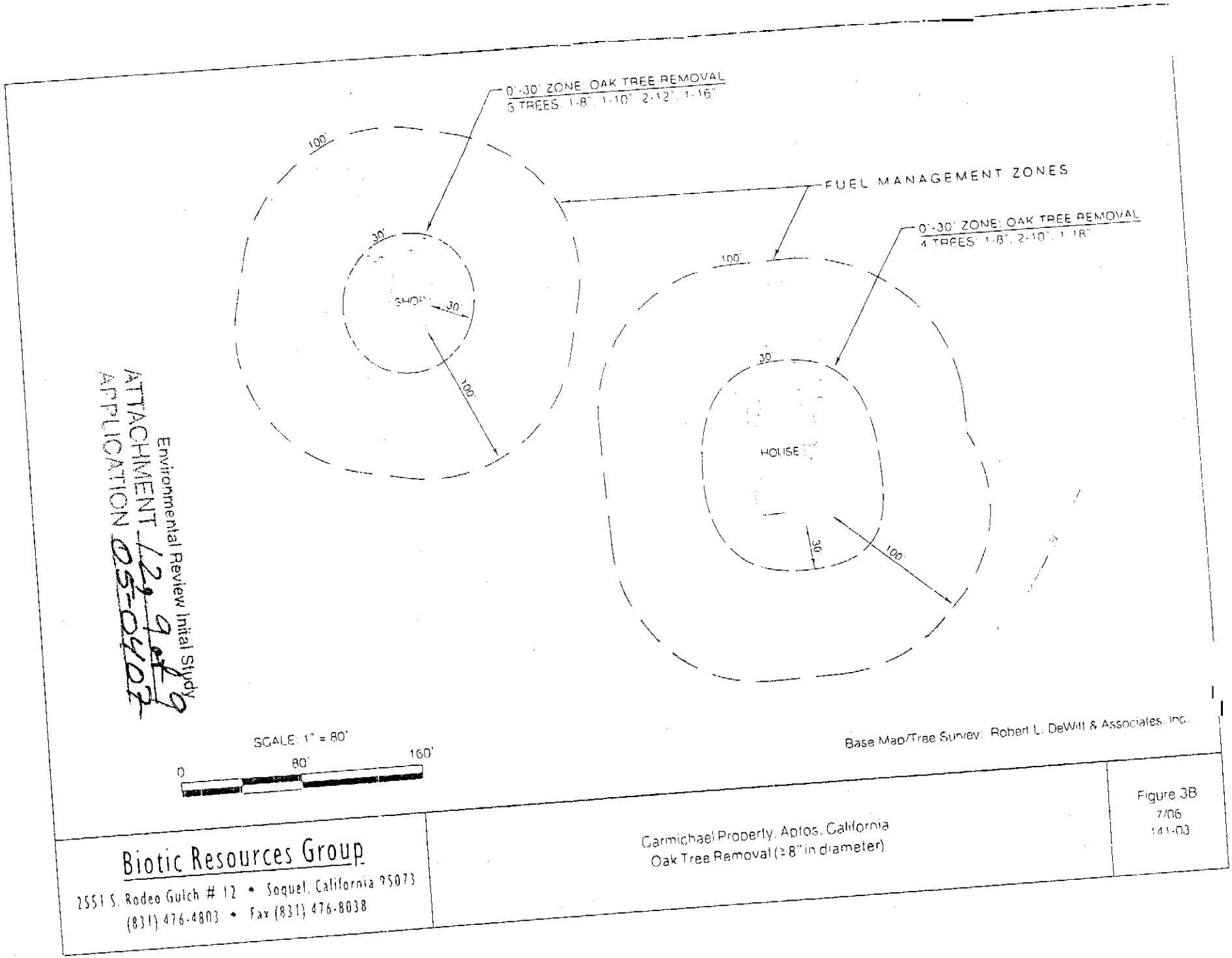

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Biotic Resources Group
Biotic Assessments ◆ Resource Management ◆ Permitting

Updated Addendum to Botanical Report

Carmichael Property, Aptos, CA
(APN 040-081-06, 07, 091

Prepared for
Stephen and Phyllis Carmichael

Prepared by:
Biotic Resources Group
Kathleen Lyons, Plant Ecologist

February 23, 2007

2551 South Rodeo Gulch Road #12 ◆ Soquel, California 95073 ◆ (831) 476-48003 ◆ fax (831) 416-8038

INTRODUCTION

This report is an updated addendum to the Botanical Report for the Cannichael Propeny (APN 040-081-06. 040-081-07 and 040-081-09). The previous repon (*Carmichael Property, Apros, CA Botanical Report,* Biotic Resources Gronp, September 28, ***2005)*** was submitted to the County of Santa Cruz for Application 05-0407 and was deemed adequate lor completion of the application. The addendum provides information requested by the County on botanical resource issues relative **lo** the application (*Memorandum doted November 2, 2005 from Paia Levine to Kent Edler, County of* **Sonia** *Cruz Planning Department)* and revisions to the Botanical Repon based on revisions to the project site **plan.** This updated addendum is based upon the development plans dated November 28, 2006.

METHODOLOGY

The Biotic Resources Group (Kathleen Lyons, plant ecologist) reviewed the revised site plan (*Residence for* ***Stephen*** *and Phyllis Carmichael, Site Plan,* Roper Engineering; dated November 28, 2006) This review was focused on refining areas of impact from the proposed driveway, which has been revised to include four turnouts between Kamien Street and the proposed residence In addition, a tree survey of 100-foot fuel management zones around the proposed shop and residence was also reviewed (*Additional Tree Locations,* Robert L. DeWitt & Associates, Inc., dated May 10. 2006) This review was focused on potential impacts to sensitive botanical resources from anticipated fuel management activities within these zones. This addendum also evaluates temporary, construction-related impacts to sensitive habitats fiom the proposed driveway and shop/residence construction.

RESULTS

Review of Revised Site Plan

In response to comments from the County and Central Fire. the site plan has been amended to include lour dnveway turnouts. In addition. four construction staging areas have been identified The turnouts and staging aieas were sited to minimize impacis io sensitive botanical resources; these areas are depicted on Figure ?A (anached) as well as on the engineering plans prepared by Roper Engineering. Figure **3A** also shows the alternative driveway route fiom Jennifer Drive.

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Mixed Grassland	0	0	4,885 sq. ft.	4,885 sq. ft. (0.11 acre)
Mixed Non-native and Native Grassland	0	0	5,950 sq. ft.	5,950 sq. ft. (0.14 acre)
Total Other Grassland	0	0	10, 835 sq. ft.	10, 835 sq. ft. (0.25 acre)
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If the alternative dnveway alignment (from Jennifer Drive) is selected coastal praine areas will be impacted between Jennifer Drive and where the driveway would join the proposed alignment (see Figure 3A). Table 2 lists the permanent and temporary impact to coastal prairie based upon a 12-foot wide roadway and a 5-fool construction disturbance limit area.

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APPLICATION 05-0402

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Temporary Impacts	2,200 sq. ft. (0.05 acre)

The Botanical Report (September 28, 2005) identified mitigation measures to minimize and compensate for the direct and indirect impacts to coastal prairie and native grass stands within the mixed grassland Mitigation BIO-1b recommends implementation of a prairie management plan to manage and enhance extant prairie on the property at a minimum 4:1 ratio of management/enhancement to direct impact. Based on the revised site plan and the permanent impacts listed in Table 1. a minimum of 1.4 acres of extant prairie would require management/enhancement to compensate for impacts to coastal prairie. An additional 0.44-acre of extant prairie would require management/enhancement to compensate for impacts to mixed grassland, yielded a total management area of 1.85 acres. These mitigation recommendations are listed in Table 3. The Botanical Report (Figure 4) identified 2 2 acres of prairie (including areas infested with invasive. non-native species) that were suitable for habitat management and enhancement

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implemented as quickly as possible to minimize the mortality of the salvaged materials. Following placeineni of the drain line, the excavated area shall be panially backfilled with naiive soil. tamped slightly: and the grassland/prairie blocks re-installed. The finislied grade of the excavated area shall match ihe surrounding grade. Native soil from the excavated trench shall be used io fill areas between the blocks to create a uniform surface. The site will be hand watered following the completion of all transplanling work. The project biologisi shall conduct a final inspection of the site and approve the condition of the prairie transplant work pnor to ihe contractor's release from the work site. The project biologist will prepare a letter documenting the salvage and transplanting operation lor the property owner(s) submittal to the County.

Review of Residential Area Drainage System

The site plan specifies underground drain lines and two dispersion trenches thai are designed to allow both infiltration and dispersion of development-related runoff. One trench is proposed in a mixed grassland area southwest (down slope) of the shop building. A second dispersion trench is proposed in a paich of scattered oaks and scrub east of the shop and driveway. According to the project engineer. runoff thai does not infiltrate the ground will disperse from the trench and surface flow onto the down slope grassland/prairie. This is expected to occur during significant rainfall events. The surface runoff will be dispersed along a 50-foot long trench/dispersion feature. such that surface erosion is not expected. The additional water discharge is not expected to significantly impact the character of the down slope prairie the discharge will he limited io high rainfall events when the area is already hydrated and as the dominant plant species within the prairie (i e , California oaigrass. slender rush. western rush) are adapted to seasonally-saturated soil conditions (i.e , during the winter months)

Tree Removal

The site plan identifies two oak trees for removal to accoinmodate the proposed driveway These trees (an 18-inch dbh coast live oak and a IO-inch dhh Shreve oak) are located near the proposed residence. No other irees are slated for removal as pan of the driveway and house construction work As discussed in Impact BIO-4 of the Botanical Repon. several trees are located adjaceni io the driveway and some will need to be limbed to provide vehicle clearance. The Botanical Report identified two mitigation measures to minimize and compensate for potential impacts to native oaks; these two measures are still applicable to the plan. As compensation for the removal of oaks for the development. Mitigation Measure BIO-4b identifies a 3:1 tree replacement prograin. Figure 3A depicts three oak tree re-planting areas that couia accommodate planted oak trees: these areas are currently supporting French hrooin scrub and coyote brush scrub that are proposed for temporary construction staging. Following completion of construction, these areas would be suitable for replanting with oak trees.

Fuel Management **Areas Around** Structures

Central Fire Depanment has requesied a 100-foot fuel management area around the two proposed structures (i.e., shop and residence). The two fuel management areas are depicted on Figure 3A. The fire suppression plan for woodland habitat within the 100-foot zones includes creating a 30. foot wide tree/shrub clearance area around each structure and tree limbing and dead tree/shrub removal between 30 feet and 100 feet As depicted on Figure 3A, approximately one half of the 100-fool management area around the proposed shop building supports oak woodland. Similarly,

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approximately one half of the management area around the proposed residence suppons oak woodland.

Within the 0'-30' fuel management zone. all trees and shrubs will be removed. Grassland areas in this zone will be seasonally mowed to control fuel loads.

Within the 50'-100' **fuel** management zone; management actions include limbing and trimming all trees to create six feet ground to canopy clearance (per tree) and vertical spacing between trees Dead trees and loose fuels (i.e., dead woody brush) would also be removed froin this zone. Where grassland occurs within the 30'-100' zone; these areas will he seasonally mowed.

In May 2006, Robert L. DeWitt & Associates. Inc surveyed all trees greater than 8 inches in diameter within these two management zones. Tables 4 and 5 list the trees; by species and diameter: surveyed within the shop and house management areas; respectively. Within the shop management area. a total of 100 irees were recorded~Tree spacing ranger from 2 feel to over 20 feet: with the average spacing henveen 8 and 12 feet. **A** total of96 oaks, one bay, two Douglas firs: and I madrone were recorded (Table 4). Within the house management area: a total of 81 trees were recorded (Table 5). Tree spacing also ranges from 2 feet to over *20* feet. with the average spacing approximately 10 feet. A total of 56 oaks: 23 Douglas firs. and *2* madrones were recorded (Table 5). Both areas suppon understory shrubs Most of these shrubs occur at the woodland/grassland interface. Within the dense tree canopy. shrub understory is relatively sparse.

Within the 0'-30'-fuel management zone, a total of 17 trees will be removed: fifteen of these trees are oaks and two are Douglas firs. These fifteen oak trees are depicted ***on*** Figure 3B; the fifteen oak trees include the two oaks previously discussed as being removed io accommodate the driveway.

Within the 30'-100' fuel management zone, shrubs and trees will require limbing to prevent fuel laddenng into the tree canopy; dead limbs will also need to be removed. Based on field observations: no mature trees **will** need to be removed within this zone.

As no special status plant species were observed from these management areas and the management areas **are** a small component ofthe overall oak woodlands on the property (as visually depicted on Figure 3A), the proposed fuel manageinent activities are not expected to result in significant impacts to the woodland resources on the property. Consistent with Impact BIO-4 regarding oak tree removal; the oaks removed within the 0'-30' fuel management zone should be replaced at a 3:1 replacement ratio. Figure 3A depicts three **oak** tree-replanting areas that could accommodate 45 planted oak trees (i.e., 15 oak trees removed x 3 = 45 planted trees).

Seasonal mowing/weed-whipping of the grassland ponions of the fuel management areas is consistent with management techniques for native grassland and coastal prairie. Seasonal mowing/weed-whipping if conducied in early spring and late summer to a height of 4-6 inches, will provide long-lenn benefits io the praiiie by reducing the cover of annual. non-native grass species: such as rattlesnake grass (*Briza sp.)* and non-native forbs. such **as** cat's ear (*Hypochaeris sp.)*. Early spring (i.e., late March – April) mowing/weed-whipping will avoid impacts to newly emerging prairie forbs, such as blue-eyed grass, gumplant and brodiaea. yet will mow down non-native grass head prior to their flowering/seed set. **A** later summer mowing/weed-whipping would occur after flowering/seed set of the nalive grasses and forbs. such that no significant impacts to these species are expected. Seasonal mowing/weed-whipping will also discourage the

growth/spread of woody species into ihe grassland/prairie aieas thus providing a long-term benefit to the grassland

Table 4. Trees Surveyed, by Diameter, within Proposed 100-Foot Fuel Management Area, Shop Area

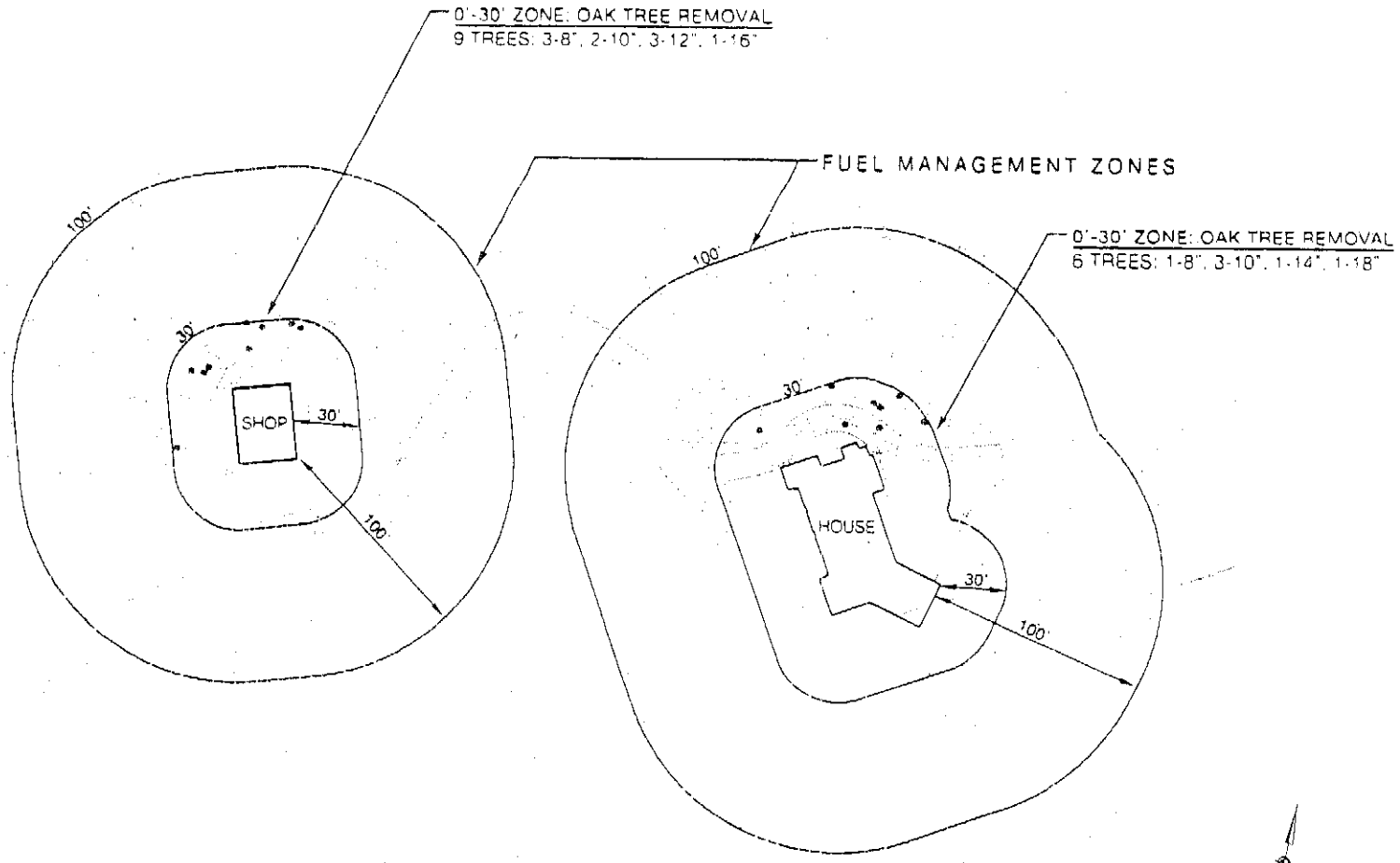
	Oaks									Bay	Douglas Fir		Madrone	Total
Shop Area	8"	10"	12"	14"	16"	18"	22"	24"	28"	10"	30"	12"	8"	
	33	22	18	11	5	2	2	1	2	1	1	1	1	100

Table 5. Trees Surveyed within Proposed 100-Foot Fuel Management Area, House Area

	Oaks						Douglas Fir											Madrone	Total
House Area	8	10	12	14	16	18	8	10	12	14	16	18	20	24	30	40	42	8	
	21	16	12	4	1	2	2	3	1	3	2	7	1	1	1	1	1	2	81

Coastal Prairie Management

The Botanical Repon (Impact BIO-2) stated that the southern portion of the propeny (outside of the proposed development area yet within areas proposed for management and enhancement) might support three CNPS List 4 plant species: Gairdner's yampah, large flowered star tulip. and hooded ladies tresses. Focused surveys for these species were recommended prior to implementation of prairie manageinent and enhancerneni actions to ensure management actions do not inadvertenily impact these species (if present). Impacts could occur if the plants were trampled during the removal of French brooin or other Invasive plant **species,** or if the List **4** plants were mowed or browsed while in flower If these List 4 plants **are** found on the site; management actions can be implemented to avoid direct impacts to these occurrences. Protective features should he erected around the colonies to prevent trampling and browsing when the plants are in spring growth, however: implementation of the prairie management actions (i.e., seasonal mowing andior grazing and removal of invasive planls) will result in long-tern, benefits to the habitat of these species through the removal/reduction of competing annual non-native grasses and forbs and invasive woody species (i.e . French broom and cotoneaster)



Environmental Review Initial Study
ATTACHMENT 13 & 14
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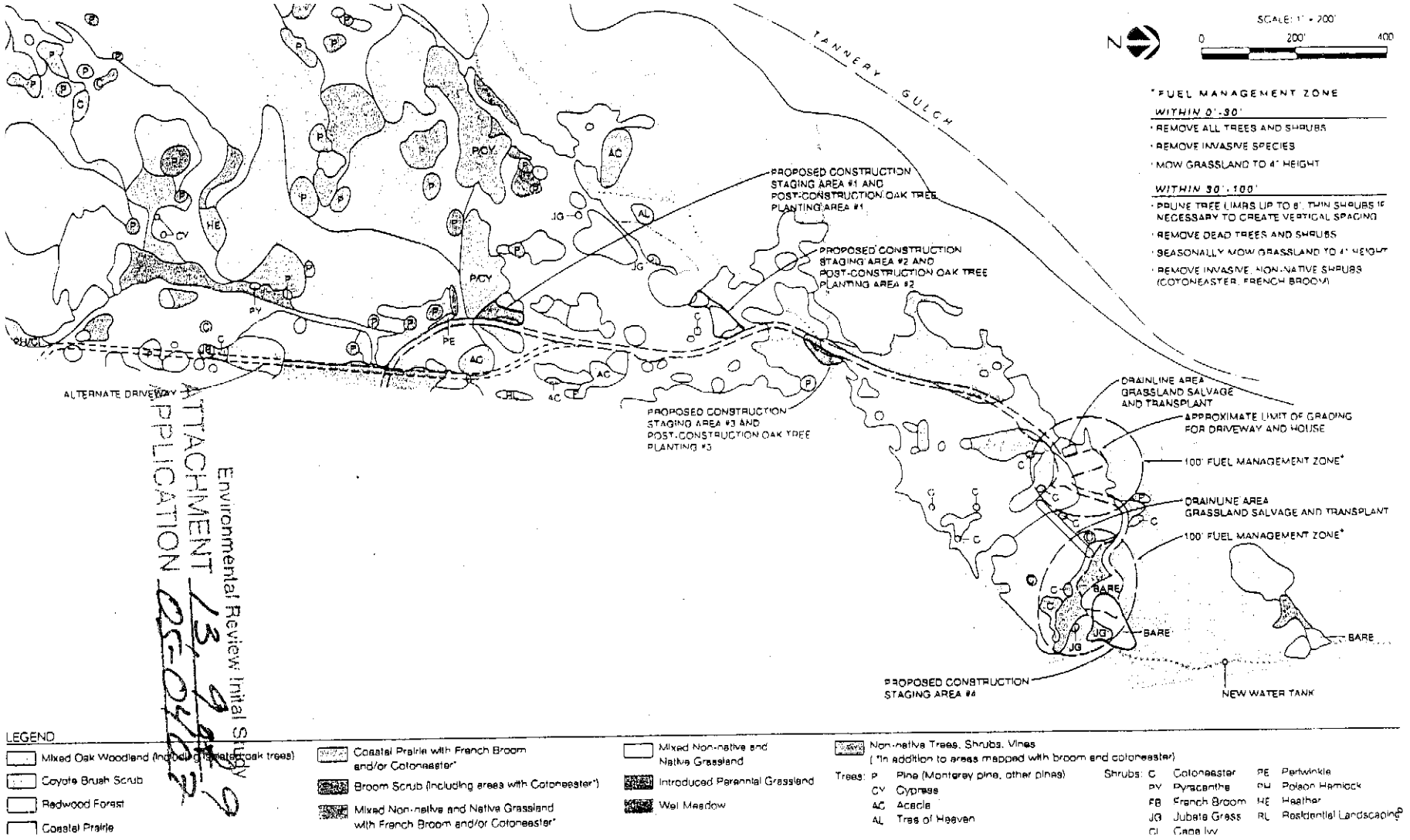
Base Map/Tree Survey: Robert L. DeWitt & Associates, Inc.
Site Plan - dated November 2006

Biotic Resources Group
2551 S. Rodeo Gulch # 12 • Soquel, California 95073
(831) 476-4803 • Fax (831) 476-8038

Carmichael Property, Aptos, California
Oak Tree Removal (≥ 8" in diameter)

Figure 3B
2/07
141-03



Biotic Resources Group
Rodeo Gulch # 12 • Soquel, California 95073
(831) 476-4801 • Fax (831) 476-8038

Carmichael Property, Aptos, California
Vegetation Resources - Driveway and House and Oak Replanting Areas

RIPARIAN EXCEPTION FINDINGS

1. THAT THERE ARE SPECIAL CIRCUMSTANCES OR CONDITIONS AFFECTING THE PROPERTY.

The subject parcel is limited by the septic location as well as other biotic issues such as native coastal prairie grassland, which define and limit *the* location of the driveway as well as the proposed structures to the northern portion of the parcel. The only legal access to the building envelope is from the terminus of Kamian Street (or Jennifer Drive if removal of 1' non access strip at Kamian is not approved) along a path that passes within 10' of a wet-meadow. If a 100' set back from the wet meadows is required, there would not be access to the building site.

2. THAT THE EXCEPTION IS NECESSARY FOR THE PROPER DESIGN AND FUNCTION OF SOME PERMITTED OR EXISTING ACTIVITY ON THE PROPERTY.

See comment #1 above. Without the granting of this riparian exception, there will not be any access to the building site.

3. THAT THE GRANTING OF THE EXCEPTION WILL NOT BE DETRIMENTAL TO THE PUBLIC WELFARE OR INJURIOUS TO OTHER PROPERTY DOWNSTREAM OR IN THE AREA IN WHICH THE PROJECT IS LOCATED.

This project does not propose any work associated with the riparian area that would be detrimental to the public welfare. Additionally, there are no properties immediately downstream or in the area where the project is located.

4. THAT THE GRANTING OF THE EXCEPTION, IN THE COASTAL ZONE, WILL NOT REDUCE OR ADVERSELY IMPACT THE RIPARIAN CORRIDOR, AND THERE IS NO FEASIBLE LESS ENVIRONMENTALLY DAMAGING ALTERNATIVE.

This project is not located within the Coastal Zone.

5. THAT THE GRANTING OF THE EXCEPTION IS IN ACCORDANCE WITH THE PURPOSE OF THIS CHAPTER, AND WITH THE OBJECTIVES OF THE GENERAL PLAN AND ELEMENTS THEREOF, AND THE LOCAL COASTAL PROGRAM LAND USE PLAN.

An initial study was prepared for the proposed project and a subsequent Negative Declaration (with mitigations) was issued. The analysis shows that the project will not create any potential for adverse environmental effects on wildlife resources. In addition, drainage has been designed on site to allow continued flow of subsurface water to the wetland.

05-0407

EXHIBIT D

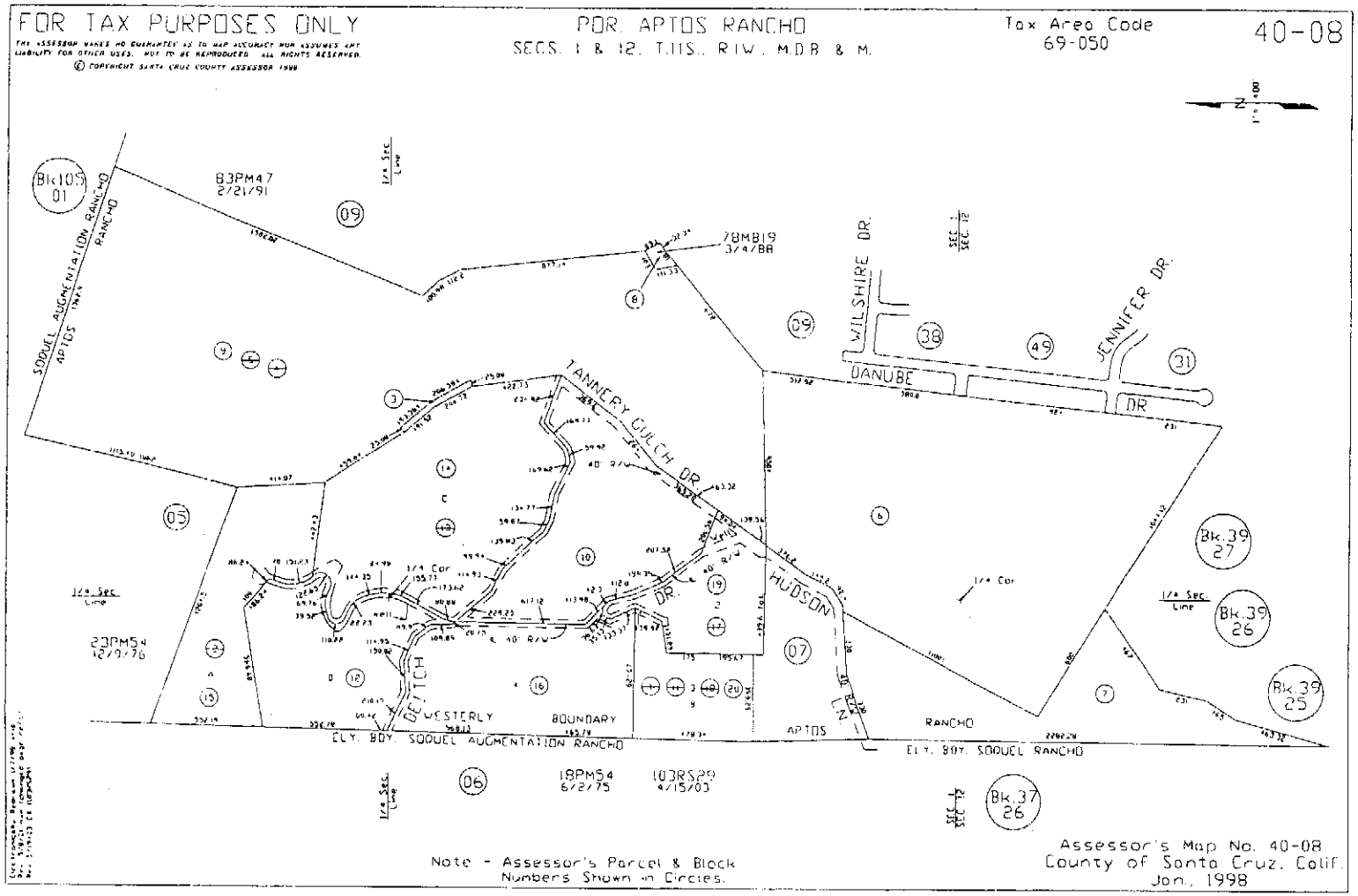


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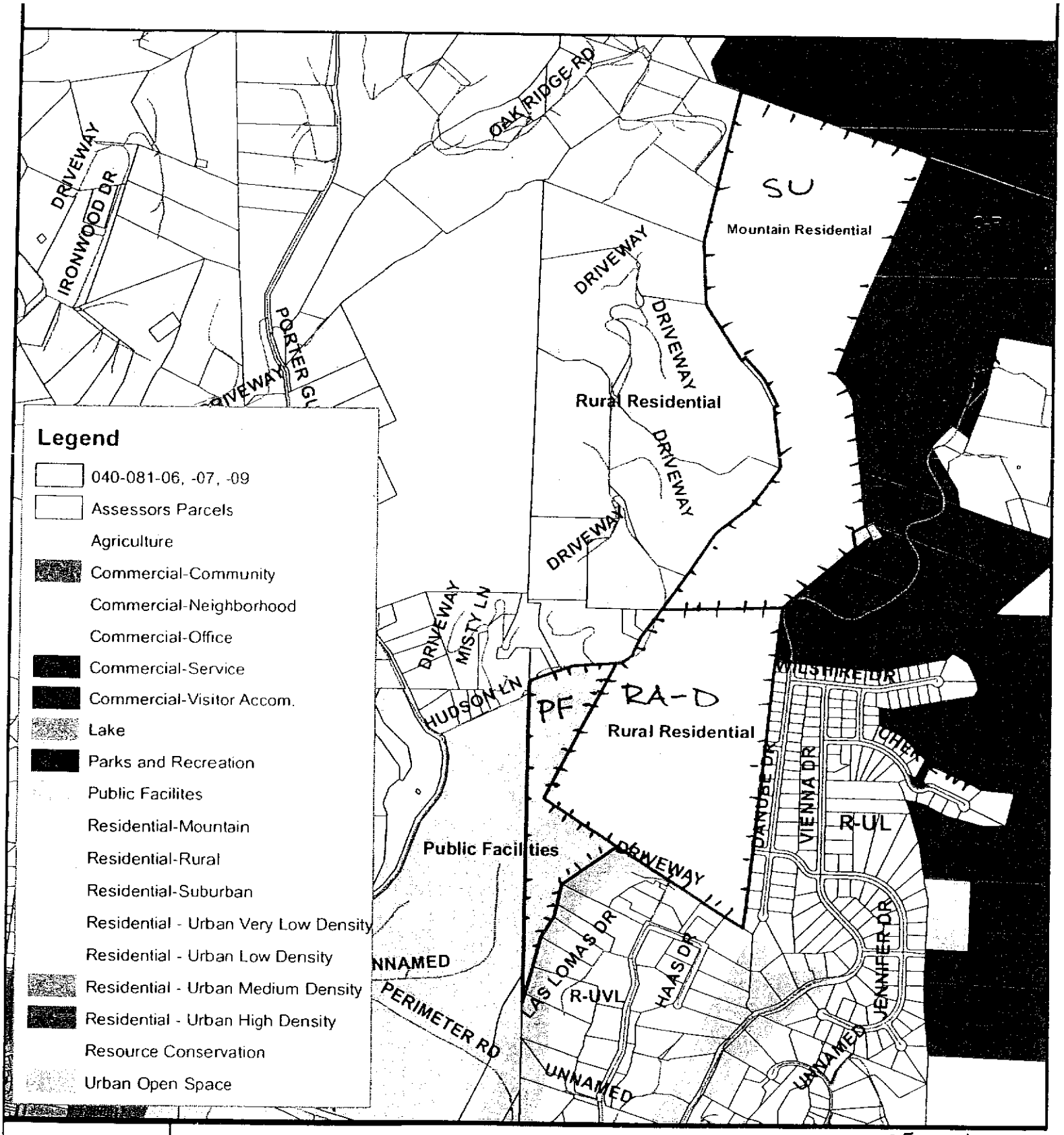
EXHIBIT E

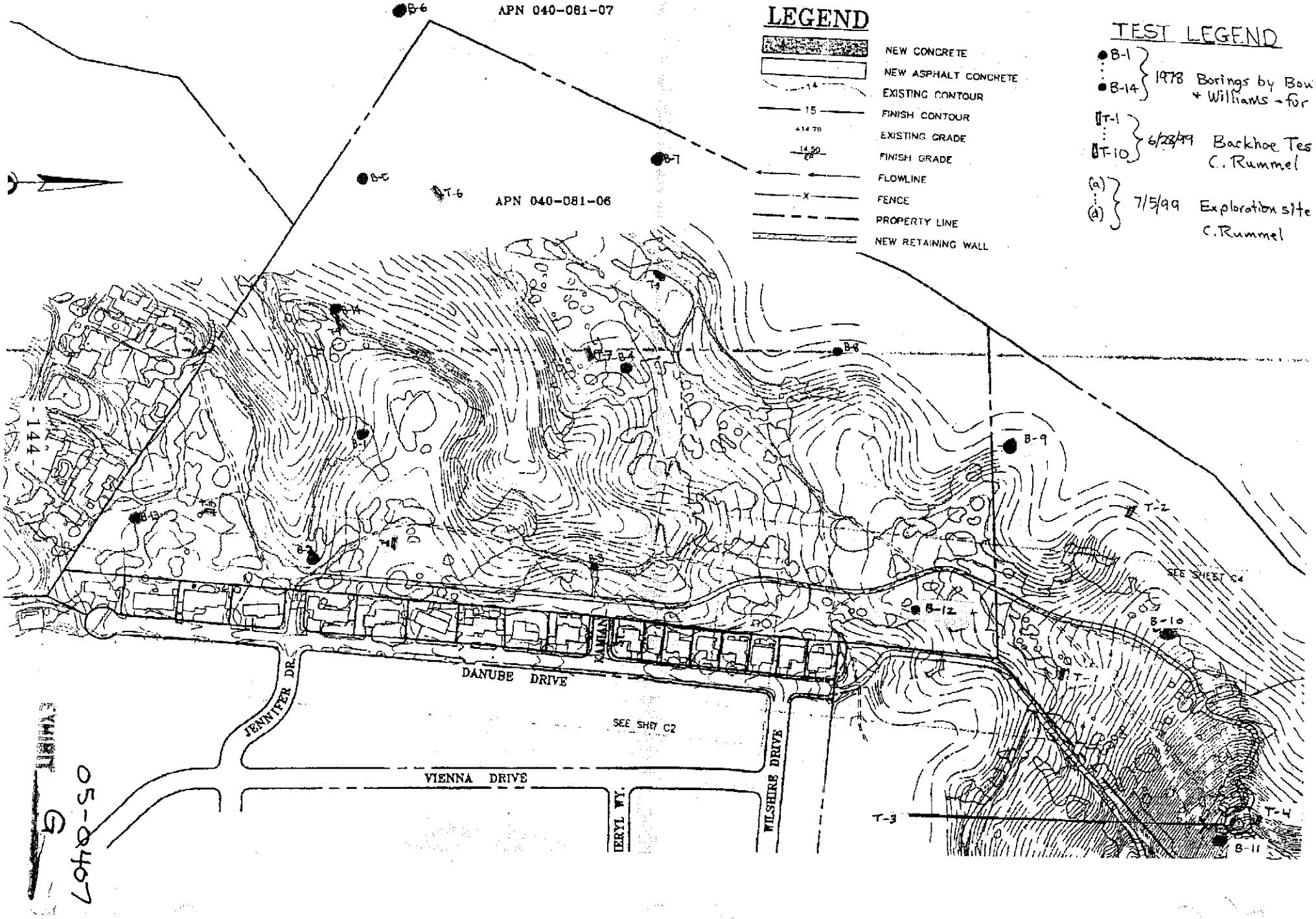
ZONING & GENERAL PLAN DESIGNATIONS



05-0407
EXHIBIT F

0 360 720 1,440 2,160 2,880 Feet

Map created by JLD
February 2007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APN 040-081-06
LEGEND
NEW CONCRETE
NEW ASPHALT CONCRETE
EXISTING CONTOUR
FINISH CONTOUR
EXISTING GRADE
FINISH GRADE
FLOWLINE
FENCE
PROPERTY LINE
NEW RETAINING WALL
TEST LEGEND
B-1 B-14 1978 Borings by Bow + Williams - for
T-1 T-10 6/28/99 Backhoe Tes C. Rummel
(a) (a) 7/5/99 Exploration site C. Rummel
DANUBE DRIVE
JENNIFER DR.
VIENNA DRIVE
BERYL WY.
WILSHIRE DRIVE
SEE SHEET C2
SEE SHEET C4
-144-
05-8407