CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

W 9d

ADDENDUM

DATE: October 4, 2007

TO: Commissioners and Interested Parties

FROM: South Central Coast District Staff

SUBJECT: Agenda Item 9d, Application No. 4-07-022 (Bunes) Malibu, Los Angeles County Wednesday, October 10, 2007

The purpose of this addendum is to modify the project description and summary of staff recommendation, add to special conditions, and modify project findings.

Note: ~~Strikethrough~~ indicates text to be deleted from the September 20, 2007 staff report and underline indicates text to be added to the September 20, 2007 staff report.

1.) The following should be added to the Project Description on Page 1 of the September 20, 2007 staff report.

PROJECT DESCRIPTION: Slope repair consisting of removal and recompaction of approximately 1,667 cu. yds. of soil, 441 cu. yds. of fill, construction of drainage berm and installation of a 225 ft. long, 12 inch in diameter drainage pipe with dissipation device~~.~~ in follow-up to an emergency permit.

2.) The summary of staff recommendation on Page 1 of the September 20, 2007 staff report shall be modified as follows:

Staff recommends **APPROVAL** of the proposed project with **Seven (7) SPECIAL CONDITIONS** regarding (1) geologic recommendations, (2) drainage system maintenance, (3) ~~erosion control plan~~ habitat impact mitigation, (4) revegetation plan, (5) assumption of risk, (6) deed restriction, and (7) removal of natural vegetation.

3.) The following changes should be made to the Project Description and Background of the September 20, 2007 staff report.

A. Project Description and Background

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The applicant is proposing to repair slope failure adjacent to an existing single-family residence at 229 Lorine Lane, Malibu (APN 4453-018-029). The applicants applied for and were granted an emergency permit, 4-07-058-G, issued on June 27, 2007 ~~for the same slope repair, but the slope repair has not yet commenced.~~ and the slope repair has been completed.

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Disturbance due to the placement of the drainage pipe will be limited to an area approximately ~~0.004 acres or 170~~ 215 square feet. No access roads are proposed for the placement of the drainage pipe and hand removal of vegetation will occur for placement of the pipe. No oak trees are located on the property.

4.) The following paragraph should be added after the last paragraph in Special Condition Two (2) on Page 3 of the September 20, 2007 staff report:

2. Drainage System Maintenance

Add after the last paragraph of the condition:

The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

5.) The following paragraph shall be added after the last paragraph in Special Condition Four (4) on Page 6 of the September 20, 2007 staff report:

4. Revegetation Plan

Add after the last paragraph of the condition:

The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

6.) Special Condition Three (3), Erosion Control Plans, shall be deleted and replaced with the following Habitat Impact Mitigation condition on Page 4 of the September 20, 2007 staff report:

standards are not met within 10 years, the applicant shall submit an application for an amendment to the coastal development permit for an alternative mitigation program and shall implement whatever alternative mitigation program the Commission approves, as approved.

The habitat restoration work approved in the restoration plan shall be carried out within 90 days of issuance of the coastal development permit.

2) Open Space Deed Restriction

No development, as defined in section 30106 of the Coastal Act, shall occur in the habitat restoration area, as shown on the habitat restoration site plan required pursuant to (A)(1) above.

Prior to the issuance of the coastal development permit, the applicant shall submit evidence that the applicant has executed and recorded a deed restriction (if the applicant is not the owner, then the applicant shall submit evidence that the owner has executed and recorded the deed restriction), in a form and content acceptable to the Executive Director, reflecting the above restriction on development and designating the habitat restoration area as open space. The deed restriction shall include a graphic depiction and narrative legal descriptions of both the parcel on which the restoration area lies and the open space area/habitat restoration area. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

3) Performance Bond

Prior to the issuance of the permit, the applicant shall post performance bonds to guarantee implementation of the restoration plan as follows: a) one equal to the value of the labor and materials; and b) one equal to the value of the maintenance and monitoring for a period of 5 years. Each performance bond shall be released upon satisfactory completion of items (a) and (b) above. If the applicant fails to either restore or maintain and monitor according to the approved plans, the Coastal Commission may collect the security and complete the work on the property.

B. Habitat Conservation

Prior to the issuance of the coastal development permit, the applicant shall (or, if the applicant is not the owner of the habitat conservation site, then the owner of the habitat conservation site shall) execute and record an open space deed restriction in a form and content acceptable to the Executive Director, over the entirety of a legal parcel or parcels containing chaparral ESHA. The chaparral ESHA located on the mitigation parcel or parcels must be of equal or greater area than the ESHA area impacted by the proposed development, including the fuel modification/brush clearance areas. No development, as defined in section 30106 of the Coastal Act, shall occur on the mitigation parcel(s) and the parcel(s) shall be preserved as permanent open space.

recompact approximately 1,667 cubic yards of soil, add 441 cubic yards of fill, and install a 225 ft long drainage pipe with dissipation device, which would result in some loss of ESHA habitat area for the location of the drainage pipe and dissipation device. A total of approximately 215 square feet of ESHA outside of the fuel modification zone will be disturbed for placement of the drainage pipe and dissipation device, including 50 square feet for the dissipation device and 165 square feet for the 12 inch drainage pipe. About 60 square feet of the drainage pipe will be located within the fuel modification zone of the existing single family residence. As single family residences and associated drainage facilities do not have to be located within ESHAs to function, the Commission does not consider these uses to be dependent on ESHA resources. Application of Section 30240, by itself, would require denial of the project, because the project would result in significant disruption of habitat values and is not a use dependent on those sensitive habitat resources.

However, the Commission must also consider Section 30010, and the Supreme Court decision in *Lucas v. South Carolina Coastal Council* (1992) 505 U.S. 1003, 112 S.Ct. 2886. Section 30010 of the Coastal Act provides that the Coastal Act shall not be construed as authorizing the Commission to exercise its power to grant or deny a permit in a manner which will take private property for public use. Application of Section 30010 may overcome the presumption of denial in some instances. The subject of what government action results in a "taking" was addressed by the U.S. Supreme Court in *Lucas v. South Carolina Coastal Council.* In *Lucas*, the Court identified several factors that should be considered in determining whether a proposed government action would result in a taking. For instance, the Court held that where a permit applicants have demonstrated that they have a sufficient real property interest in the property to allow the proposed project, and that project denial would deprive his or her property of all economically viable use, then denial of the project by a regulatory agency might result in a taking of the property for public use unless the proposed project would constitute a nuisance under State law. Other Supreme Court precedent establishes that another factor that should be considered is the extent to which a project denial would interfere with reasonable investment-backed expectations.

The Commission interprets Section 30010, together with the *Lucas* decision, to mean that if Commission denial of the project would deprive an applicant's property of all reasonable economic use, the Commission may be required to allow some development even where a Coastal Act policy would otherwise prohibit it, unless the proposed project would constitute a nuisance under state law. In other words, Section 30240 of the Coastal Act cannot be read to deny all economically beneficial or productive use of land because Section 30240 cannot be interpreted to require the Commission to act in an unconstitutional manner.

In the subject case, the existing single family residence was built in 2000 pursuant to an exemption (4-98-097-X) granted by the Coastal Commission to replace a single family residence destroyed by fire. The slope repair is necessary to ensure the structural integrity of the residence. The Commission finds that in this particular case, in order to avoid deprivation of all economic use of the property by rendering the single family residence uninhabitable and unsafe, installation of the drainage pipe within ESHA is necessary in order to remediate the active slope failure adjacent to the residence. The Commission finds, therefore, that outright denial of the slope repair and installation of the drainage device would deny all residential use and would interfere with reasonable investment-backed expectations and deprive the property of all reasonable economic use.

companies, because of differences in the strategies employed in planning the restoration (for instance, determining the appropriate number of plants or amount of seeds used per acre) as well as whether all of the restoration planting, monitoring and maintenance was carried out by the consultant or portions are subcontracted. Additionally, the range of cost estimates reflect differences in restoration site characteristics including topography (steeper is harder), proximity to the coast (minimal or no irrigation required at coastal sites), types of plants (some plants are rare or difficult to cultivate), density of planting, severity of weed problem, condition of soil, etc. Larger projects may realize some economy of scale.

Staff determined the appropriate mitigation for loss of or chaparral ESHA should be based on the actual installation of replacement plantings on a disturbed site, including the cost of acquiring the plants (seed mix and container stock) and installing them on the site (hydroseeding and planting). Three cost estimates were obtained for the installation of plants and seeds for one-acre of restoration. These estimates were $9,541, $12,820, and $13,907 per acre of plant installation. The Commission finds it appropriate to average the three estimates of plant installation to arrive at the reasonable in-lieu fee to mitigate for the loss of ESHA associated with the approval of development within an ESHA. Based on this averaging, the required in-lieu fee for habitat mitigation is $12,000 (rounded down from the average figure of $12,089 to simplify administration) per acre of habitat.

The Commission finds that the in-lieu fee of $12,000 per acre is appropriate to provide mitigation for the habitat impacts to ESHA areas where all native vegetation will be removed. In the case of new single family residence, such areas typically include building site, the "A" zone required for fuel modification, and off-site brush clearance, if required, and where vegetation will be significantly removed and any remaining vegetation will be subjected to supplemental irrigation (the "B" zone or any other irrigated zone required for fuel modification). In these areas, complete removal or significant removal of ESHA, along with irrigation completely alters the habitat and eliminates its value to the native plant and animal community. Similarly in the subject case, the applicant will remove or disturb approximately 215 square feet of ESHA outside of the fuel modification zone adjacent to the existing residence. The appropriate in-lieu fee calculation would then be based on $12,000 per acre

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Hearing Date:	10/10/07

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STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-07-022

APPLICANT: Robert Bunes and Gail Weingart Bunes

PROJECT LOCATION: 229 Lorine Lane, Malibu (Los Angeles County)

PROJECT DESCRIPTION: Slope repair consisting of removal and recompaction of approximately 1,667 cu. yds. of soil, 441 cu. yds. of fill, construction of drainage berm and installation of a 225 ft. long, 12 inch in diameter drainage pipe with dissipation device.

LOCAL APPROVALS RECEIVED: Review by Los Angeles County Regional Planning dated 2/8/07; Los Angeles County Department of Public Works Building and Safety Permit issued on 7/10/07; Los Angeles County Fire Department Permit for Activities in Hazardous Fire Areas dated 2/8/07; Final Fuel Modification Plan approved by the Los Angeles County Fire Department dated 9/8/98.

SUBSTANTIVE FILE DOCUMENTS: County of Los Angeles Department of Public Works Geotechnical and Materials Engineering Division Geologic and Soils Engineering Review Sheet dated 10/17/06; Limited Engineering Geologic and Geotechnical Engineering Exploration prepared by Robertson Geotechnical, Inc. dated 3/28/06; Biological Survey for Slope Repair of 229 Lorine Lane, Malibu, California prepared by Luz Torres of Christopher A. Joseph & Assoicates dated June 13, 2007.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends **APPROVAL** of the proposed project with **Seven (7) SPECIAL CONDITIONS** regarding (1) geologic recommendations, (2) drainage system maintenance, (3) erosion control plan, (4) revegetation plan, (5) assumption of risk, (6) deed restriction, and (7) removal of natural vegetation.

The applicant is proposing to remove and recompact approximately 1,667 cubic yards of soil and place approximately 441 cubic yards of fill and construct a drainage berm to repair slope failure adjacent to a single-family residence to remediate active slope failure. The project also includes the installation of a 225 ft. long, 12 inch in diameter drainage pipe above ground with a dissipater.

The standard of review for the proposed permit application is the Chapter Three policies of the Coastal Act. As conditioned, the proposed project is consistent with all applicable Chapter Three policies of the Coastal Act.

I. STAFF RECOMMENDATION

MOTION: ***I move that the Commission approve Coastal Development Permit No. 4-07-022 pursuant to the staff recommendation.***

Staff Recommendation of Approval:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution to Approve the Permit:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permitee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permitee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Plans Conforming to Geotechnical Engineer's Recommendations

By acceptance of this permit, the applicant agrees to comply with the recommendations contained in the "Limited Engineering Geologic and Geotechnical Engineering Exploration" report prepared by Robertson Geotechnical, Inc. on March 28, 2006. These recommendations shall be incorporated into all final design and construction, including recommendations concerning grading and drainage, and must be reviewed and approved by the consultant prior to commencement of development.

The final plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission relative to construction, grading, and drainage. Any substantial changes in the proposed development approved by the Commission that may be required by the consultant shall require amendment(s) to the permit(s) or new Coastal Development Permit(s).

2. Drainage System Maintenance

Prior to the issuance of the Coastal Development Permit, the applicant shall submit to the Executive Director for review and written approval, a final drainage system maintenance plan. The plan shall be reviewed and approved by the consulting engineering geologist to ensure that the plan is in conformance with the geologist's recommendations.

The plan shall include provisions for maintaining the drainage system in a functional condition throughout the life of the approved development. Such maintenance shall include the following: (1) the system shall be cleaned and repaired when necessary prior to the onset of the storm season, no later than September 30th of each year and (2) should any of the project's drainage structures fail or result in increased erosion, the applicant/landowner or successor-in-interest shall be responsible for any necessary repairs to the drainage system and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the applicant shall submit a repair and restoration plan to the Executive Director to determine if an amendment or new coastal development permit is required to authorize such work.

3. Construction Phase Erosion Control Plans

Prior to issuance of the Coastal Development Permit, the applicant shall submit two sets of final construction phase erosion control plans, prepared by a licensed geotechnical engineer, for review and approval by the Executive Director. The plans shall incorporate the criteria set forth below. All development shall conform to the approved erosion control plans:

1) The plan shall delineate the areas to be disturbed by grading or construction activities and shall include any temporary access roads, staging areas and stockpile areas. The natural areas on the site shall be clearly delineated on the project site with fencing or survey flags.

2) The plan shall specify that should grading take place during the rainy season (November 1 – March 31) the applicant shall install or construct temporary sediment basins (including debris basins, desilting basins or silt traps), temporary drains and swales, sand bag barriers, silt fencing, stabilize any stockpiled fill with geofabric covers or other appropriate cover, install geotextiles or mats on all cut or fill slopes and close and stabilize open trenches as soon as possible. These erosion measures shall be required on the project site prior to or concurrent with the initial grading operations and maintained through out the development process to minimize erosion and sediment from runoff waters during construction. All sediment should be retained on-site unless removed to an appropriate approved dumping location either outside the coastal zone or to a site within the coastal zone permitted to receive fill.

3) The plan shall also include temporary erosion control measures should grading or site preparation cease for a period of more than 30 days, including but not limited to: stabilization of all stockpiled fill, access roads, disturbed soils and cut and fill slopes with geotextiles and/or mats, sand bag barriers, silt fencing; temporary drains and swales and sediment basins. The plans shall also specify that all disturbed areas shall be seeded with native grass species and include the technical specifications for seeding the disturbed areas. These temporary erosion control measures shall be monitored and maintained until grading or construction operations resume.

4. Revegetation Plan

Prior to issuance of the Coastal Development Permit, the applicant shall submit, for the review and approval of the Executive Director, a detailed Revegetation Plan and Monitoring Program, prepared by a biologist or environmental resource specialist with qualifications acceptable to the Executive Director, for all disturbed areas along the slope and all areas of the project site temporarily disturbed by grading and construction activities. The plans shall identify the species, extent, and location of all plant materials to be removed or planted and shall incorporate the following criteria:

a. Technical Specifications

The Revegetation Plan shall provide for the restoration of chaparral habitat in the project area with native plant species that are appropriate to cover all areas along the slope and where chaparral vegetation has been temporarily disturbed or removed due to construction activities shall be replanted with native plant species that are appropriate for both chaparral habitat in the same general location. The revegetation area shall be delineated on a site plan. All invasive and non-native plant species shall be removed from the revegetation area.

The plan shall include detailed documentation of conditions on site prior to the approved construction activity (including photographs taken from pre-designated sites annotated to a copy of the site plans) and specify restoration goals and specific performance standards to judge the success of the restoration effort.

The plan shall also provide information on removal methods for exotic species, salvage of existing vegetation, revegetation methods and vegetation maintenance. The plan shall further include details regarding the types, sizes, and location of plants to be placed within the mitigation area. Only native plant species appropriate for chaparral habitat and which are endemic to the Santa Monica Mountains shall be used, as listed by the California Native Plant Society - Santa Monica Mountains Chapter in their document entitled Recommended List of Plants for Landscaping in the Santa Monica Mountains dated August 2007. However, the planting must also be in conformance with planting requirements of the fuel modification plans approved by the Los Angeles County Fire Department for the single-family residence built in 2000 on the project site. All native plant species shall be of local genetic stock. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be employed or allowed to naturalize or persist on the site. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized or maintained within the property. Site restoration shall be deemed successful if the revegetation of native plant species on site is adequate to provide 90% coverage by the end of the five (5) year monitoring period and is able to survive without additional outside inputs, such as supplemental irrigation. The plan shall also include a detailed description of the process, materials, and methods to be used to meet the approved goals and performance standards and specify the preferable time of year to carry out restoration activities and describe the interim supplemental watering requirements that will be necessary.

b. Monitoring Program

A monitoring program shall be implemented to monitor the project for compliance with the specified guidelines and performance standards. The applicant shall submit, upon completion of the initial planting, a written report prepared by a qualified resource specialist, for the review and approval of the Executive Director, documenting the completion of the initial planting/revegetation work. This report shall also include

photographs taken from pre-designated sites (annotated to a copy of the site plans) documenting the completion of the initial planting/revegetation work.

Five years from the date of issuance of this coastal development permit, the applicant shall submit for the review and approval of the Executive Director, a Revegetation Monitoring Report, prepared by a qualified biologist or Resource Specialist, that certifies whether the on-site restoration is in conformance with the restoration plan approved pursuant to this Special Condition. The monitoring report shall include photographic documentation of plant species and plant coverage.

If the monitoring report indicates the vegetation and restoration is not in conformance with or has failed to meet the performance standards specified in the revegetation plan approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental restoration plan for the review and approval of the Executive Director and shall implement the approved version of the plan. The revised restoration plan must be prepared by a qualified biologist or Resource Specialist and shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

5. Assumption of Risk

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to erosion, landslide, and slope failure; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement.

6. Deed Restriction

Prior to issuance of the Coastal Development Permit, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded against the parcel governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it

authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

7. Removal of Natural Vegetation

Removal of natural vegetation for the purpose of fuel modification for the development approved pursuant to this permit shall not commence until the local government has issued a building or grading permit(s) for the development approved pursuant to this Coastal Development Permit.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. Project Description and Background

The applicant is proposing to repair slope failure adjacent to an existing single-family residence at 229 Lorine Lane, Malibu (APN 4453-018-029). The applicants applied for and were granted an emergency permit, 4-07-058-G, issued on June 27, 2007 for the same slope repair, but the slope repair has not yet commenced. The existing single family residence, built in 2000, was granted an exemption from Coastal Commission requirements (4-98-097-X) because it was built to replace a single family residence destroyed by fire. The applicant is proposing to remove and re-compact approximately 1,667 cubic yards of soil and place approximately 441 cubic yards of fill and construct a drainage berm. The project also includes the installation of a 225 ft. long, 12 inch in diameter corrugated aluminum drainage pipe with energy dissipator, anchored every ten feet with galvanized bolts and secured in place by pinning the top and bottom and driving the pipe supports vertically into the ground. The pipe will be located approximately four feet above ground.

The proposed project site is located about two miles inland within the Santa Monica Mountains less than a mile northwest from the intersection of Piuma Road and Rambla Pacifico Road (Exhibit 1). The property site is bounded by Lorine Lane to the east, single family residences to the north and south and State Park Lands to the west. The project site is located on west facing slopes with general mountainous topography and steep hillside descends below the northwest side of the property to a south trending canyon below. The recent slide area exists on the west facing portion of the slope, southwest of the house (Exhibits 2 and 3).

Outside of the fuel modification zone for the existing residence, the subject site consists of dense native vegetation including California sagebrush and chaparral on the steep sloping hillside. However, the slide area to be remediated is dominated by non-native annual grass and sparse native vegetation due to the recent slide in early 2005. Adverse impacts to sensitive habitat areas may occur on the project site due to drainage pipe placement. The area of soil removal and recompaction for slope repair is located within the fuel modification zone of the existing single family residence.

Disturbance due to the placement of the drainage pipe will be limited to an area approximately 0.004 acres or 170 cubic feet. No access roads are proposed for the placement of the drainage pipe and hand removal of vegetation will occur for placement of the pipe. No oak trees are located on the property.

B. Geologic and Wildfire Hazard

The proposed development is located in the Santa Monica Mountains, an area that is generally considered to be subject to an unusually high amount of natural hazards. Geologic hazards common to the Santa Monica Mountains area include landslides, erosion, and flooding. In addition, fire is an inherent threat to the indigenous chaparral community of the coastal mountains. Wildfires often denude hillsides in the Santa Monica Mountains of all existing vegetation, thereby contributing to an increased potential for erosion and landslides on property.

Section **30253** of the Coastal Act states in pertinent part that new development shall:

> ***(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.***
>
> ***(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.***

Geology

Section 30253 of the Coastal Act mandates that new development be sited and designed to provide geologic stability and structural integrity, and minimize risks to life and property in areas of high geologic, flood, and fire hazard. The applicant has submitted a "Limited Engineering Geologic and Geotechnical Engineering Exploration" report, prepared by Robertson Geotechnical, Inc. dated March 28, 2006. This report evaluates the nature, distribution, engineering properties, relative stability, and geologic structure of earth materials underlying a portion of the slope descending below the single family residence. The report evaluates the cause of the slide and presents alternative methods of remedial treatment.

A landslide occurred on the west facing portion of the slope southwest of the residence following above average rainfall in December 2004 and January 2005. According to the geology report, the silde was caused by increased moisture content in the variably dense, surficial materials that blanket the steep descending slope. Failure occurred due to saturation of fill, soil/colluvium and the upper portion of the weathered bedrock underlying the edge of the building area. Increased moisture is associated with the rainfall and drainage conditions along the lower patio and along the top of the slope. The nature of the area drain system and contour of the yard allowed water from the

central, south and west portions of the site to flow over the slope. Water flowing over the slope and infiltrating the stone patio surface caused slumping and erosion of the surficial materials.

The slide has resulted in steep scarps, including a very steep scarp on the order of 5 to 8 feet high, irregular shapes of the ground, and erosion. Erosion gullies across the slide area are generally on the order of 6 inches to 2 feet deep and the erosion area narrows about 30 feet below the pad grade. The surface of other portions of the descending slope is irregular due to past erosion and surficial instability. The slope is about 300 feet high and lies at gradients between 1.5:1 and .75:1.

The geologic consultants have determined that it is necessary to repair the slope failure in order to protect the structural integrity of the existing residence which is immediately upslope of the failure area. The geologic consultants have evaluated several alternatives for remedial slope repair and drainage systems, including the option currently proposed to re-grade the hillside with a compacted stabilization fill slope extended across the entire slope impacted by sliding and directing drainage away from the top of the slope. The geologic and geotechnical engineering consultant, Hugh S. Robertson, confirmed that the drainage devices proposed as part of the remedial slope repair, including the side hill drain and the size and extent of the pipe on the slope, are the best alternative for the site and the planned remedial repair (Personal Communication to staff via e-mail, dated June 27, 2007). The proposed slope remediation project includes a drainage plan for a drainage pipe 225 feet long to collect runoff from the developed area of the site and to divert water completely away from the slide area.

The geologic and geotechnical report contains several recommendations to be incorporated into project construction, including grading and earthwork, settlement, excavation erosion control, drainage and maintenance, and reviews to ensure the stability and geologic safety of the proposed project site and adjacent property. To ensure that the recommendations of the consultants have been incorporated into all proposed development the Commission, as specified in **Special Condition One (1)**, requires the applicant to comply with and incorporate the recommendations contained in the submitted geologic report into all final design and construction, and to obtain the approval of the geotechnical consultants prior to commencement of construction. Final plans approved by the consultants shall be in substantial conformance with the plans approved by the Commission. Any substantial changes to the proposed development, as approved by the Commission, which may be recommended by the consultant, shall require an amendment to the permit or a new coastal development permit.

The Commission finds that controlling and diverting run-off in a non-erosive manner away from the existing slope will also add to the geologic stability of the project site. As described above, the applicants have developed a drainage plan and propose to implement the plan as part of the project. However, a critical component of drainage plans that is not included is the maintenance and repair of the drainage devices. Therefore, in order to minimize erosion and ensure stability of the project site, and to

ensure that adequate drainage and erosion control is included in the proposed development, the Commission requires the applicant to submit drainage system maintenance, as specified in **Special Condition Two (2)**. Finally, in order to ensure that erosion is minimized during construction of the slope repair and installation of the drainage system, the Commission finds it necessary to require the applicants to prepare and implement a construction phase erosion control plan, as detailed in **Special Condition Three (3)**.

Further, the Commission finds that revegetation of graded and disturbed areas on the subject site will serve to stabilize disturbed soils, reduce erosion and thus enhance and maintain the geologic stability of the site. Therefore, **Special Condition Four (4)** requires the applicant to submit and implement revegetation plans for the portions of the project site that are disturbed as a result of this project. **Special Condition Four (4)** also requires the applicant to utilize and maintain native and noninvasive plant species compatible with the surrounding area for revegetation of the project site.

Invasive and non-native plant species are generally characterized as having a shallow root structure in comparison with their high surface/foliage weight. The Commission notes that non-native and invasive plant species with high surface/foliage weight and shallow root structures do not serve to stabilize slopes and that such vegetation results in potential adverse effects to the stability of the project site. Native species, alternatively, tend to have a deeper root structure than non-native and invasive species, and once established aid in preventing erosion. Therefore, the Commission finds that in order to ensure site stability, all slopes and disturbed and graded areas of the site shall be revegetated with appropriate native plant species, as specified in **Special Condition Four (4)**.

Due to the fact that the proposed project is located in an area subject to an extraordinary potential for damage or destruction from erosion and landslides, the Commission can only approve the project if the applicant assumes the liability from these associated risks. Through **Special Condition Five (5)**, assumption of risk, the applicants acknowledge the nature of the landslide and erosion hazard which may exist on the site and which may affect the safety of the proposed development. Moreover, through acceptance of **Special Condition Five (5)**, the applicants also agree to indemnify the Commission, its officers, agents and employees against any and all expenses or liability arising out of the acquisition, design, construction, operation, maintenance, existence, or failure of the permitted project.

For the reasons set forth above, the Commission finds that, as conditioned, the proposed project is consistent with §30253 of the Coastal Act.

C. Visual Resources

Section **30251** of the Coastal Act states:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30251 of the Coastal Act requires scenic and visual qualities to be considered and preserved. Section 30251 also requires that development be sited and designed to protect views of scenic areas, minimize alteration of landforms, and be visually compatible with the surrounding area.

In addition, the Malibu/Santa Monica Mountains LUP provides policy guidance regarding the protection of visual resources. The Coastal Commission, as guidance in the review of development proposals in the Santa Monica Mountains, has applied these policies.

P91 ***All new development shall be designed to minimize impacts and alterations of physical features, such as ravines and hillsides, and processes of the site (i.e., geological, soils, hydrological, water percolation and runoff) to the maximum extent feasible.***

P125 ***New development shall be sited and designed to protect public views from LCP- designated highways to and along the shoreline and to scenic coastal areas, including public parklands. Where physically and economically feasible, development on a sloped terrain should be set below road grade.***

P129 ***Structures should be designed and located so as to create an attractive appearance and harmonious relationship with the surrounding environment.***

P130 ***In highly scenic areas and along scenic highways, new development (including buildings, fences, paved areas, signs, and landscaping) shall:***

- ***Be sited and designed to protect views to and along the ocean and to and along other scenic features, as defined and identified in the Malibu LUP.***
- ***Minimize the alteration of natural landforms***
- ***Be landscaped to conceal raw cut slopes***

- ***Be visually compatible with and subordinate to the character of its setting.***
- ***Be sited so as to not significantly intrude into the skyline as seen from public viewing places.***

P131 Where feasible, prohibit placement of structures that will break the ridgeline views, as seen from public places

P134 Structures shall be sited to conform to the natural topography, as feasible. Massive grading and reconfiguration of the site shall be discouraged.

P142 New development along scenic roadways shall be set below the road grade on the down hill side wherever feasible, to protect designated scenic canyon and ocean views.

The property site is bounded by Lorine Lane to the east, single family residences to the north and south and State Park Lands to the west. The project site is located on west facing slopes with general mountainous topography and steep hillside descending below the northwest side of the property to a south trending canyon below. The slide area to be remediated exists on the west facing portion of the slope, southwest of the existing residence (Exhibit 2). The area to the west of the site is dominated by dense chaparral vegetation.

Repair of the slope, consisting of removal and recompaction of approximately 1,667 cubic yards of material and approximately 441 cubic yards of fill will be contained roughly within the existing recent slide area. No structures are proposed as part of the slope stabilization removal, such as retaining walls, which could have adverse visual impacts. Also part of the project, the proposed 225 foot long drainage pipe will be located 4 feet above ground on a steeply sloping west facing hillside. Although State Park Lands are located to the west of the subject site, the 12 inch in diameter drainage pipe is expected to be shielded from any public viewing points by native vegetation. An alternative was explored to bury the drainage pipe, but this alternative would have required extensive land disturbance. The Commission finds, therefore, that the project has been sited and designed to minimize landform alteration to the extent feasible.

Visual impacts associated with proposed grading of the slide area and drainage pipe can be further reduced by the use of appropriate and adequate revegetation. Therefore, **Special Condition Four (4)** requires the applicant to ensure that areas disturbed on site as a result of this project are revegetated with species that are visually compatible with the native flora of surrounding areas. Implementation of Special Condition Four (4) will soften the visual impact of the development from public view areas. To ensure that the final approved revegetation plans are successfully implemented, Special Condition Four (4) also requires the applicant to revegetate all disturbed areas in a timely manner and includes a monitoring component to ensure the successful establishment of all newly planted and landscaped areas over time.

Therefore, the Commission finds that the project, as conditioned, minimizes adverse effects to public views to and along the coast and minimizes the alternation of natural landforms. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30251 of the Coastal Act.

D. Environmentally Sensitive Habitat Areas

Section **30230** of the Coastal Act states that:

> ***Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.***

Section **30231** states:

> ***The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.***

Section **30240** states:

> ***(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.***
>
> ***(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.***

Section **30107.5** of the Coastal Act, defines an environmentally sensitive area as:

> ***"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.***

In addition, the Malibu/Santa Monica Mountains LUP provides policy guidance regarding the protection of environmentally sensitive habitats. The Coastal Commission, as guidance in the review of development proposals in the Santa Monica Mountains, has applied these policies.

> ***P57 Designate the following areas as Environmentally Sensitive Habitat_Areas (ESHAs): (a) those shown on the Sensitive Environmental Resources Map (Figure 6), and (b) any undesignated areas which meet the criteria and which are identified through the biotic review process or other means, including those oak woodlands and other areas identified by the Department of Fish and Game as being appropriate for ESHA designation.***
>
> ***P63 Uses shall be permitted in ESHAs, DSRs, Significant Watersheds, and Significant Oak Woodlands, and Wildlife Corridors in accordance with Table l and all other policies of this LCP.***
>
> ***P68 Environmentally sensitive habitat areas (ESHAs) shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Residential use shall not be considered a resource dependent use.***
>
> ***P69 Development in areas adjacent to environmentally sensitive habitat areas (ESHAs) shall be subject to the review of the Environmental Review Board, shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.***
>
> ***P72 Open space or conservation easements or equivalent measures may be required in order to protect undisturbed watershed cover and riparian areas located on parcels proposed for development. Where new development is proposed adjacent to Environmentally Sensitive Habitat Areas, open space or conservation easements shall be required in order to protect resources within the ESHA.***
>
> ***P73 The use of insecticides, herbicides, or any toxic chemical substance (with the exception of non-regulated home pesticides considered necessary for maintenance of households) shall be prohibited in designated environmentally sensitive habitats, except in an emergency which threatens the habitat itself.***

P74 New development shall be located as close as feasible to existing roadways, services, and existing development to minimize the effects on sensitive environmental resources.

P81 To control runoff into coastal waters, wetlands and riparian areas, as required by Section 3023l of the Coastal Act, the maximum rate of storm water runoff into such areas from new development should not exceed the peak level that existed prior to development.

P82 Grading shall be minimized for all new development to ensure the potential negative effects of runoff and erosion on these resources are minimized.

P84 In disturbed areas, landscape plans shall balance long-term stability and minimization of fuel load. For instance, a combination of taller, deep-rooted plants and low-growing ground covers to reduce heat output may be used. Within ESHAs and Significant Watersheds, native plant species shall be used, consistent with fire safety requirements.

Sections 30230 and 30231 of the Coastal Act require that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through, among other means, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas must be protected against disruption of habitat values.

As explained above, the proposed project consists of the remediation of an active slope failure adjacent to a single-family residence. The project site is located in the Santa Monica Mountains and the property is bounded by Lorine Lane to the east, single family residences to the north and south and State Park Lands to the west. The project site is located on west facing slopes with general mountainous topography and steep hillside descends below the northwest side of the property to a south trending canyon below. The slide area to be remediated exists on the west facing portion of the slope, southwest of the house (Exhibit 2).

The applicant submitted a *Biological Survey for Slope Repair at 229 Lorine Lane, Malibu, California*, prepared by Luz Torres, Associate Biologist, Christopher A. Joseph & Associates, dated June 13, 2007. The report confirmed that the project site and surrounding biological resources consist of chaparral intermixed with California sagebrush, along with some interspersed non-native vegetation.

For habitats in the Santa Monica Mountains, such as chaparral, there are three site-specific tests to determine whether an area is ESHA because of its especially valuable role in the ecosystem. First, is the habitat properly identified, for example as chaparral?

The requisite information for this test generally should be provided by a site-specific biological assessment. Second, is the habitat largely undeveloped and otherwise relatively pristine? Third, is the habitat part of a large, contiguous block of relatively pristine native vegetation? For those habitats that are absolutely rare or that support individual rare species, it is not necessary to find that they are relatively pristine, and are neither isolated nor fragmented.

As noted above, the Coastal Act provides a definition of "environmentally sensitive area" as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

There are three important elements to the definition of ESHA. First, a geographic area can be designated ESHA either because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as ESHA, the species or habitat must be either rare or it must be especially valuable. Finally, the area must be easily disturbed or degraded by human activities.

The first test of ESHA is whether a habitat or species is rare. Rarity can take several forms, each of which is important. Within the Santa Monica Mountains, rare species and habitats often fall within one of two common categories. Many rare species or habitats are globally rare, but locally abundant. They have suffered severe historical declines in overall abundance and currently are reduced to a small fraction of their original range, but where present may occur in relatively large numbers or cover large local areas. This is probably the most common form of rarity for both species and habitats in California and is characteristic of coastal sage scrub, for example. Some other habitats are geographically widespread, but occur everywhere in low abundance. California's native perennial grasslands fall within this category.

A second test for ESHA is whether a habitat or species is especially valuable. Areas may be valuable because of their "special nature," such as being an unusually pristine example of a habitat type, containing an unusual mix of species, supporting species at the edge of their range, or containing species with extreme variation. For example, reproducing populations of valley oaks are not only increasingly rare, but their southernmost occurrence is in the Santa Monica Mountains. Generally, however, habitats or species are considered valuable because of their special "role in the ecosystem." For example, many areas within the Santa Monica Mountains may meet this test because they provide habitat for endangered species, protect water quality, provide essential corridors linking one sensitive habitat to another, or provide critical ecological linkages such as the provision of pollinators or crucial trophic connections. Of course, all species play a role in their ecosystem that is arguably "special." However, the Coastal Act requires that this role be "especially valuable." This test is met for relatively pristine areas that are integral parts of the Santa Monica Mountains Mediterranean ecosystem because of the demonstrably rare and extraordinarily special nature of that ecosystem as detailed below.

Finally, ESHAs are limited to those areas that could be easily disturbed or degraded by human activities and developments. Within the Santa Monica Mountains, as in most areas of southern California affected by urbanization, all natural habitats are in grave danger of direct loss or significant degradation as a result of many factors related to anthropogenic changes.

The applicant proposes to remediate an active slope failure by removal and recompaction of approximately 1,667 cubic yards of material and approximately 441 cubic yards of fill. The applicant also proposes a 225 ft long drainage pipe to be located 4 feet above ground on a steeply sloping west facing hillside.

Ecosystem Context of the Habitats of the Santa Monica Mountains

The Santa Monica Mountains comprise the largest, most pristine, and ecologically complex example of a Mediterranean ecosystem in coastal southern California. California's coastal sage scrub, chaparral, oak woodlands, and associated riparian areas have analogues in just a few areas of the world with similar climate. Mediterranean ecosystems with their wet winters and warm dry summers are only found in five localities (the Mediterranean coast, California, Chile, South Africa, and south and southwest Australia). Throughout the world, this ecosystem with its specially adapted vegetation and wildlife has suffered severe loss and degradation from human development. Worldwide, only 18 percent of the Mediterranean community type remains undisturbed[1]. However, within the Santa Monica Mountains, this ecosystem is remarkably intact despite the fact that it is closely surrounded by some 17 million people. For example, the 150,000 acres of the Santa Monica Mountains National Recreation Area, which encompasses most of the Santa Monica Mountains, was estimated to be 90 percent free of development in 2000[2]. Therefore, this relatively pristine area is both large and mostly unfragmented, which fulfills a fundamental tenet of conservation biology[3]. The need for large contiguous areas of natural habitat in order to maintain critical ecological processes has been emphasized by many conservation biologists[4].

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[1] National Park Service. 2000. Draft general management plan & environmental impact statement. Santa Monica Mountains National Recreation Area – California.
[2] Ibid.
[3] Harris, L. D. 1988. Edge effects and conservation of biotic diversity. Conserv. Biol. 330-332. Soule, M. E, D. T. Bolger, A. C. Alberts, J. Wright, M. Sorice and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. Conserv. Biol. 2: 75-92. Yahner, R. H. 1988. Changes in wildlife communities near edges. Conserv. Biol. 2:333-339. Murphy, D. D. 1989. Conservation and confusion: Wrong species, wrong scale, wrong conclusions. Conservation Biol. 3:82-84.
[4] Crooks, K. 2000. Mammalian carnivores as target species for conservation in Southern California. p. 105-112 *in*: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Sauvajot, R. M., E. C. York, T. K. Fuller, H. Sharon Kim, D. A. Kamradt and R. K. Wayne. 2000. Distribution and

In addition to being a large single expanse of land, the Santa Monica Mountains ecosystem is still connected, albeit somewhat tenuously, to adjacent, more inland ecosystems[5]. Connectivity among habitats within an ecosystem and connectivity among ecosystems is very important for the preservation of species and ecosystem integrity. In a recent statewide report, the California Resources Agency[6] identified wildlife corridors and habitat connectivity as the top conservation priority. In a letter to Governor Gray Davis, sixty leading environmental scientists have endorsed the conclusions of that report[7]. The chief of natural resources at the California Department of Parks and Recreation has identified the Santa Monica Mountains as an area where maintaining connectivity is particularly important[8].

The species most directly affected by large scale connectivity are those that require large areas or a variety of habitats, e.g., gray fox, cougar, bobcat, badger, steelhead trout, and mule deer[9]. Large terrestrial predators are particularly good indicators of habitat connectivity and of the general health of the ecosystem[10]. Recent studies show that the mountain lion, or cougar, is the most sensitive indicator species of habitat fragmentation, followed by the spotted skunk and the bobcat[11]. Sightings of cougars in

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status of carnivores in the Santa Monica Mountains, California: Preliminary results from radio telemetry and remote camera surveys. p 113-123 *in*: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Beier, P. and R. F. Noss. 1998. Do habitat corridors provide connectivity? Conserv. Biol. 12:1241-1252. Beier, P. 1996. Metapopulation models, tenacious tracking and cougar conservation. *In*: Metapopulations and Wildlife Conservation, ed. D. R. McCullough. Island Press, Covelo, California, 429p.

[5] The SMM area is linked to larger natural inland areas to the north through two narrow corridors: 1) the Conejo Grade connection at the west end of the Mountains and 2) the Simi Hills connection in the central region of the SMM (from State Park Lands to the Santa Susanna Mountains).

[6] California Resources Agency. 2001. Missing Linkages: Restoring Connectivity to the California Landscape. California Wilderness Coalition, Calif. Dept of Parks & Recreation, USGS, San Diego Zoo and The Nature Conservancy. Available at: http://www.calwild.org/pubs/reports/linkages/index.htm

[7] Letters received and included in the September 2002 staff report for the Malibu LCP.

[8] Schoch, D. 2001. Survey lists 300 pathways as vital to state wildlife. Los Angeles Times. August 7, 2001.

[9] Martin, G. 2001. Linking habitat areas called vital for survival of state's wildlife Scientists map main migration corridors. San Francisco Chronicle, August 7, 2001.

[10] Noss, R. F., H. B. Quigley, M. G. Hornocker, T. Merrill and P. C. Paquet. 1996. Conservation biology and carnivore conservation in the Rocky Mountains. Conerv. Biol. 10: 949-963. Noss, R. F. 1995. Maintaining ecological integrity in representative reserve networks. World Wildlife Fund Canada.

[11] Sauvajot, R. M., E. C. York, T. K. Fuller, H. Sharon Kim, D. A. Kamradt and R. K. Wayne. 2000. Distribution and status of carnivores in the Santa Monica Mountains,

both inland and coastal areas of the Santa Monica Mountains[12] demonstrate their continued presence. Like the "canary in the mineshaft," an indicator species like this is good evidence that habitat connectivity and large scale ecological function remains in the Santa Monica Mountains ecosystem.

The habitat integrity and connectivity that is still evident within the Santa Monica Mountains is extremely important to maintain, because both theory and experiments over 75 years in ecology confirm that large spatially connected habitats tend to be more stable and have less frequent extinctions than habitats without extended spatial structure[13]. Beyond simply destabilizing the ecosystem, fragmentation and disturbance can even cause unexpected and irreversible changes to new and completely different kinds of ecosystems (habitat conversion)[14].

As a result of the pristine nature of large areas of the Santa Monica Mountains and the existence of large, unfragmented and interconnected blocks of habitat, this ecosystem continues to support an extremely diverse flora and fauna. The observed diversity is probably a function of the diversity of physical habitats. The Santa Monica Mountains have the greatest geological diversity of all major mountain ranges within the transverse range province. According to the National Park Service, the Santa Monica Mountains contain 40 separate watersheds and over 170 major streams with 49 coastal outlets[15]. These streams are somewhat unique along the California coast because of their

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California: Preliminary results from radio telemetry and remote camera surveys. p 113-123 in: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Beier, P. 1996. Metapopulation models, tenacious tracking and cougar conservation. In: Metapopulations and Wildlife Conservation, ed. D. R. McCullough. Island Press, Covelo, California, 429p.

[12] Recent sightings of mountain lions include: Temescal Canyon (pers. com., Peter Brown, Facilities Manager, Calvary Church), Topanga Canyon (pers. com., Marti Witter, NPS), Encinal and Trancas Canyons (pers. com., Pat Healy), Stump Ranch Research Center (pers. com., Dr. Robert Wayne, Dept. of Biology, UCLA). In May of 2002, the NPS *photographed* a mountain lion at a trip camera on the Back Bone Trail near Castro Crest – Seth Riley, Eric York and Dr. Ray Sauvajot, National Park Service, SMMNRA.

[13] Gause, G. F. 1934. The struggle for existence. Balitmore, William and Wilkins 163 p. (also reprinted by Hafner, N.Y. 1964). Gause, G. F., N. P. Smaragdova and A. A. Witt. 1936. Further studies of interaction between predators and their prey. J. Anim. Ecol. 5:1-18. Huffaker, C. B. 1958. Experimental studies on predation: dispersion factors and predator-prey oscillations. Hilgardia 27:343-383. Luckinbill, L. S. 1973. Coexistence in laboratory populations of *Paramecium aurelia* and its predator *Didinium nasutum*. Ecology 54:1320-1327. Allen, J. C., C. C. Brewster and D. H. Slone. 2001. Spatially explicit ecological models: A spatial convolution approach. Chaos, Solitons and Fractals. 12:333-347.

[14] Scheffer, M., S. Carpenter, J. A. Foley, C. Folke and B. Walker. 2001. Catastrophic shifts in ecosystems. Nature 413:591-596.

[15] NPS. 2000. op.cit.

topographic setting. As a "transverse" range, the Santa Monica Mountains are oriented in an east-west direction. As a result, the south-facing riparian habitats have more variable sun exposure than the east-west riparian corridors of other sections of the coast. This creates a more diverse moisture environment and contributes to the higher biodiversity of the region. The many different physical habitats of the Santa Monica Mountains support at least 17 native vegetation types[16] including the following habitats considered sensitive by the California Department of Fish and Game: native perennial grassland, coastal sage scrub, red-shank chaparral, valley oak woodland, walnut woodland, southern willow scrub, southern cottonwood-willow riparian forest, sycamore-alder woodland, oak riparian forest, coastal salt marsh, and freshwater marsh. Over 400 species of birds, 35 species of reptiles and amphibians, and more than 40 species of mammals have been documented in this diverse ecosystem. More than 80 sensitive species of plants and animals (listed, proposed for listing, or species of concern) are known to occur or have the potential to occur within the Santa Monica Mountains Mediterranean ecosystem.

The Santa Monica Mountains are also important in a larger regional context. Several recent studies have concluded that the area of southern California that includes the Santa Monica Mountains is among the most sensitive in the world in terms of the number of rare endemic species, endangered species and habitat loss. These studies have designated the area to be a local hot-spot of endangerment in need of special protection[17].

Therefore, the Commission finds that the Santa Monica Mountains ecosystem is itself rare and especially valuable because of its special nature as the largest, most pristine, physically complex, and biologically diverse example of a Mediterranean ecosystem in coastal southern California. The Commission further finds that because of the rare and special nature of the Santa Monica Mountains ecosystem, the ecosystem roles of substantially intact areas of the constituent plant communities discussed below are "especially valuable" under the Coastal Act.

Major Habitats within the Santa Monica Mountains

The most recent vegetation map that is available for the Santa Monica Mountains is the map that was produced for the National Park Service in the mid-1990s using 1993 satellite imagery supplemented with color and color infrared aerial imagery from 1984,

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[16] From the NPS report (2000 op. cit.) that is based on the older Holland system of subjective classification. The data-driven system of Sawyer and Keeler-Wolf results in a much larger number of distinct "alliances" or vegetation types.

[17] Myers, N. 1990. The biodiversity challenge: Expanded hot-spots analysis. Environmentalist 10:243-256. Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. A. B. da Fonseca and J. A. Kent. 2000. Biodiversity hot-spots for conservation priorities. Nature 403:853-858. Dobson, A. P., J. P. Rodriguez, W. M. Roberts and D. S. Wilcove. 1997. Geographic distribution of endangered species in the United States. Science 275:550-553.

1988, and 1994 and field review[18]. The minimum mapping unit was 5 acres. For that map, the vegetation was mapped in very broad categories, generally following a vegetation classification scheme developed by Holland[19]. Because of the mapping methods used the degree of plant community complexity in the landscape is not represented. For example, the various types of "ceanothus chaparral" that have been documented were lumped under one vegetation type referred to as "northern mixed chaparral." Dr. Todd Keeler-Wolf of the California Department of Fish and Game is currently conducting a more detailed, quantitative vegetation survey of the Santa Monica Mountains.

The National Park Service map can be used to characterize broadly the types of plant communities present. The main generic plant communities present in the Santa Monica Mountains[20] are: coastal sage scrub, chaparral, riparian woodland, coast live oak woodland, and grasslands.

Chaparral

Chaparral is a shrub community within the Santa Monica Mountain Mediterranean ecosystem. This is a generic category of vegetation. Chaparral species have deep roots (tens of feet) and hard waxy leaves, adaptations to drought that increase water supply and decrease water loss at the leaf surface. Some chaparral species cope more effectively with drought conditions than do desert plants[21]. Chaparral plants vary from about one to four meters tall and form dense, intertwining stands with nearly 100 percent ground cover. As a result, there are few herbaceous species present in mature stands. Chaparral is well adapted to fire. Many species regenerate mainly by crown sprouting; others rely on seeds which are stimulated to germinate by the heat and ash from fires. Over 100 evergreen shrubs may be found in chaparral[22]. On average, chaparral is found in wetter habitats than coastal sage scrub, being more common at higher elevations and on north facing slopes.

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[18] Franklin, J. 1997. Forest Service Southern California Mapping Project, Santa Monica Mountains National Recreation Area, Task 11 Description and Results, Final Report. June 13, 1997, Dept. of Geography, San Diego State University, USFS Contract No. 53-91S8-3-TM45.

[19] Holland R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, Dept. of Fish and Game, Natural Heritage Division, Sacramento, CA. 95814.

[20] National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000. (Fig. 11 in this document.)

[21] Dr. Stephen Davis, Pepperdine University. Presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.

[22] Keely, J.E. and S.C. Keeley. Chaparral. Pages 166-207 in M.G. Barbour and W.D. Billings, eds. North American Terrestrial Vegetation. New York, Cambridge University Press.

The broad category "northern mixed chaparral" is the major type of chaparral shown in the National Park Service map of the Santa Monica Mountains. However, northern mixed chaparral can be variously dominated by chamise, scrub oak or one of several species of manzanita or by ceanothus. In addition, it commonly contains woody vines and large shrubs such as mountain mahogany, toyon, hollyleaf redberry, and sugarbush[23]. The rare red shank chaparral plant community also occurs in the Santa Monica Mountains. Although included within the category "northern mixed chaparral" in the vegetation map, several types of "ceanothus chaparral" are reported in the Santa Monica Mountains. Ceanothus chaparral occurs on stable slopes and ridges, and may be dominated by bigpod ceanothus, buck brush ceanothus, hoaryleaf ceanothus, or greenbark ceanothus. In addition to ceanothus, other species that are usually present in varying amounts are chamise, black sage, holly-leaf redberry, sugarbush, and coast golden bush[24].

Several sensitive plant species that occur in the chaparral of the Santa Monica Mountains area are: Santa Susana tarplant, Lyon's pentachaeta, marcescent dudleya, Santa Monica Mountains dudleya, Braunton's milk vetch and salt spring checkerbloom[25]. Several occurring or potentially occurring sensitive animal species in chaparral from the area are: Santa Monica shieldback katydid, western spadefoot toad, silvery legless lizard, San Bernardino ring-neck snake, San Diego mountain kingsnake, coast patch-nosed snake, sharp-shinned hawk, southern California rufous-crowned sparrow, Bell's sparrow, yellow warbler, pallid bat, long-legged myotis bat, western mastiff bat, and San Diego desert woodrat.[26]

Coastal sage scrub and chaparral are the predominant generic community types of the Santa Monica Mountains and provide the living matrix within which rarer habitats like riparian woodlands exist. These two shrub communities share many important ecosystem roles. Like coastal sage scrub, chaparral within the Santa Monica Mountains provides critical linkages among riparian corridors, provides essential habitat for species that require several habitat types during the course of their life histories, provides essential habitat for sensitive species, and stabilizes steep slopes and reduces erosion, thereby protecting the water quality of coastal streams.

Many species of animals in Mediterranean habitats characteristically move among several plant communities during their daily activities, and many are reliant on different communities either seasonally or during different stages of their life cycle. The importance of an intact mosaic of coastal sage scrub, chaparral, and riparian community types is perhaps most critical for birds. However, the same principles apply to other taxonomic groups. For example, whereas coastal sage scrub supports a higher

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[23] Ibid.
[24] Ibid.
[25] Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.
[26] Ibid.

diversity of native ant species than chaparral, chaparral habitat is necessary for the coast horned lizard, an ant specialist[27]. Maintaining this interconnectedness of habitats is an extremely important ecosystem role of chaparral in the Santa Monica Mountains.

Chaparral is also remarkably adapted to control erosion, especially on steep slopes. The root systems of chaparral plants are very deep, extending far below the surface and penetrating the bedrock below[28], so chaparral literally holds the hillsides together and prevents slippage.[29] In addition, the direct soil erosion from precipitation is also greatly reduced by 1) water interception on the leaves and above ground foliage and plant structures, and 2) slowing the runoff of water across the soil surface and providing greater soil infiltration. Chaparral plants are extremely resistant to drought, which enables them to persist on steep slopes even during long periods of adverse conditions. Many other species die under such conditions, leaving the slopes unprotected when rains return. Since chaparral plants recover rapidly from fire, they quickly re-exert their ground stabilizing influence following burns. The effectiveness of chaparral for erosion control after fire increases rapidly with time[30]. Thus, the erosion from a 2-inch rain-day event drops from 5 yd^3/acre of soil one year after a fire to 1 yd^3/acre after 4 years.[31]

Therefore, because of its important roles in the functioning of the Santa Monica Mountains Mediterranean ecosystem, and its extreme vulnerability to development, chaparral within the Santa Monica Mountains meets the definition of ESHA under the Coastal Act.

Application of the Section 30240 ESHA Protection Policy

In this case, the proposed project includes removal and recompaction of 1,667 cubic yards of soil, 441 cubic yards of fill, and installation of a 225 foot long drainage pipe with a dissipating unit. The proposed project is partially located within a chaparral plant community. As discussed in greater detail above, the Commission finds that chaparral habitat, such as the native vegetation located on the subject site, provide important

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[27] A.V. Suarez. Ants and lizards in coastal sage scrub and chaparral. A presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.

[28] Helmers, H., J.S. Horton, G. Juhren and J. O'Keefe. 1955. Root systems of some chaparral plants in southern California. Ecology 36(4):667-678. Kummerow, J. and W. Jow. 1977. Root systems of chaparral shrubs. Oecologia 29:163-177.

[29] Radtke, K. 1983. *Living more safely in the chaparral-urban interface*. General Technical Report PSW-67. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Berkeley, California. 51 pp.

[30] Kittredge, J. 1973. Forest influences — the effects of woody vegetation on climate, water, and soil. Dover Publications, New York. 394 pp. Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. (Table 1). The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. Vicars, M. (ed.) 1999. FireSmart: protecting your community from wildfire. Partners in Protection, Edmonton, Alberta.

[31] Ibid.

habitat for wildlife. In past permit actions, the Commission has found that new development within chaparral habitat areas, such as the proposed project, results in potential adverse effects to chaparral habitat and downstream riparian habitat and ultimately marine resources from increased erosion, contaminated storm runoff, disturbance to wildlife, and loss of chaparral plant and animal habitat. The Coastal Act further requires that environmentally sensitive habitat areas, such as the subject site, be maintained, enhanced, and where feasible, restored to protect coastal water quality downstream.

Coastal Act Section 30240 requires that development in areas adjacent to environmentally sensitive habitat areas be sited and designed to prevent impacts which would significantly degrade such areas and shall be compatible with the continuance of such habitat areas. Given that the project addresses a slope failure in a fixed location, the siting of such development to avoid impacts to ESHA is necessarily constrained. In this case, the slope failure itself is located within ESHA. As a result, it is not possible to relocate the proposed development in a manner that would avoid or provide a buffer from the sensitive habitat areas. Therefore, it is essential to consider design options that would reduce impacts to ESHA, consistent with Coastal Act Section 30240. As discussed below, there are no other feasible alternatives (such as relocating or burying the drainage pipe) to the proposed project that would result in less adverse impacts than the proposed project.

To assist in the determination of whether a project is consistent with Sections 30230, 30231, and 30240 of the Coastal Act, the Commission has, in past coastal development permit actions for new development in the Santa Monica Mountains, looked to the certified Malibu/Santa Monica Mountains Land Use Plan (LUP) for guidance. The 1986 LUP has been found to be consistent with the Coastal Act and provides specific standards for development within the Santa Monica Mountains. In its findings regarding the certification of the Malibu/Santa Monica Mountains LUP, the Commission emphasized the importance placed by the Coastal Act on protection of sensitive environmental resources finding that:

> ***Environmentally sensitive habitat areas (ESHAs) shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Residential use shall not be considered a resource dependent use.***

Specifically, Policy 68 of the LUP, in concert with the Coastal Act, limits development within ESHA areas. In addition, Policy 82 of the LUP, in concert with the Coastal Act, provides that grading shall be minimized to ensure that the potential negative effects of runoff and erosion on watershed and streams is minimized. Further, Policies 84 and 94, in concert with the Coastal Act, provide that disturbed areas shall be revegetated with native plant species within environmentally sensitive habitat areas and significant watersheds. LUP Policy 94 states:

> ***Cut and fill slopes should be stabilized with planting at the completion of final grading. In Environmentally Sensitive Habitat Areas and Significant Watersheds, planting should be of native plant species using acceptable***

> ***planting procedures, consistent with fire safety requirements. Such planting should be adequate to provide 90% coverage within 90 days, and should be repeated if necessary to provide such coverage. This requirement should apply to all disturbed soils. Jute netting or other stabilization techniques may be utilized as temporary methods. …***

In addition, Section 30231 of the Coastal Act specifically provides that the quality of coastal waters and streams shall be maintained and restored whenever feasible. As noted above, the project site includes chaparral habitat that meets the first and second tests of ESHA as the habitat is rare and is especially valuable as an unfragmented expanse of ESHA. This ESHA also meets the third test as it is located in an area that could be easily disturbed or degraded by human activities and developments. Within the Santa Monica Mountains, as in most areas of southern California affected by urbanization, all natural habitats are in grave danger of direct loss or significant degradation as a result of many factors related to anthropogenic changes.

The applicant has submitted a geologic and geotechnical engineering report for the proposed project site by Robertson Geotechnical Inc., dated March 28, 2006, which describes alternatives for slope remediation and drainage at the site. The analysis indicates that a high risk of continued instability at the site exists and the slope could fail in future storm events. The geologic consultants have determined that it is necessary to repair the slope failure in order to protect the structural integrity of the existing residence which is immediately upslope of the failure area. The report explores several different options for drainage and slope stabilization, including contouring the hillside, regrading the hillside, and adding pile supported retaining walls. Hugh Robertson from Robertson Geotechnial, Inc. concluded that the slope repair and drainage plans proposed on the current plans for this project, including the side hill drain and the size and extent of the pipe on the slope is the best alternative for the site. (Personal Communication via e-mail to staff dated June 27, 2007.)

The proposed slope repair option and drainage pipe location would result in less adverse impacts to environmentally sensitive habitat areas than other alternatives. The option of stabilizing the slope by constructing a retaining wall would require substantially more earthwork. The option of burying the drainage pipe would also result in more disturbance of environmentally sensitive habitat area than placing the pipe on 10 foot interval footings four feet above the ground. The option of a reducing the length of the drainage pipe was also considered, but was not recommended by the geotechnical engineer because of the slope instability continuing down the hillside. Thus, the Commission finds that the proposed project has the least impact to ESHA, and there are no other feasible alternatives (such as reducing the length of the drainage pipe) to the proposed project that would protect the residence from slope failure while further reducing impacts to ESHA.

Although the proposed project is the environmentally preferred alternative, it would still result in some unavoidable adverse impacts to ESHA on site. In past permit actions, the Commission has found that in order to ensure that repair work is as consistent as

possible with the above referenced resource protection policies of both the Coastal Act and LUP, all chaparral habitat areas on site that will be disturbed as a result of proposed development should be revegetated and restored. Therefore, the Commission finds that **Special Condition Four (4)** is necessary to ensure that adverse effects to the chaparral habitat from increased erosion and sedimentation are minimized. Specifically, Special Condition Four (4) requires that, prior to issuance of the permit, the applicant shall submit, for the review and approval of the Executive Director, a detailed Revegetation Plan and Monitoring Program, prepared by a biologist or environmental resource specialist with qualifications acceptable to the Executive Director, for all disturbed areas and all areas of the project site temporarily disturbed by grading and construction activities.

Special Condition Four (4) requires the Revegetation Plan to identify the species, extent, and location of all plant materials to be removed or planted. Special Condition Four (4) further stipulates that all planted materials must be native plant species that are appropriate for chaparral. Additionally, all invasive and non-native plant species shall be removed from the project area, including the disturbed outboard slope. In addition, Special Condition Four (4) also requires the applicant implement a five year monitoring program to ensure the success of the replanting.

The Commission finds that the proposed project, only as conditioned, will serve to maintain and enhance the quality of coastal waters and to minimize impacts to environmentally sensitive habitat area, consistent with Sections 30230, 30231, and 30240 of the Coastal Act.

E. Local Coastal Program

Section 30604 of the Coastal Act states:

> ***a) Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a local program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).***

Section 30604(a) of the Coastal Act provides that the Commission shall issue a Coastal Development Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program, which conforms to Chapter 3 policies of the Coastal Act. The preceding sections provide findings that the proposed project will be in conformity with the provisions of Chapter 3 if certain conditions are incorporated into the projects and are accepted by the applicant. As conditioned, the proposed developments will not create adverse impacts and is found to be consistent with the applicable policies contained in Chapter 3. Therefore, the Commission finds that approval of the proposed developments, as conditioned, will not prejudice the County of Los Angeles' ability to prepare a Local Coastal Program for this area which is also consistent with the policies of Chapter 3 of the Coastal Act, as required by Section 30604(a).

F. California Environmental Quality Act

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed development, as conditioned, is consistent with the policies of the Coastal Act. Feasible mitigation measures which will minimize all adverse environmental effects have been required as special conditions. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.

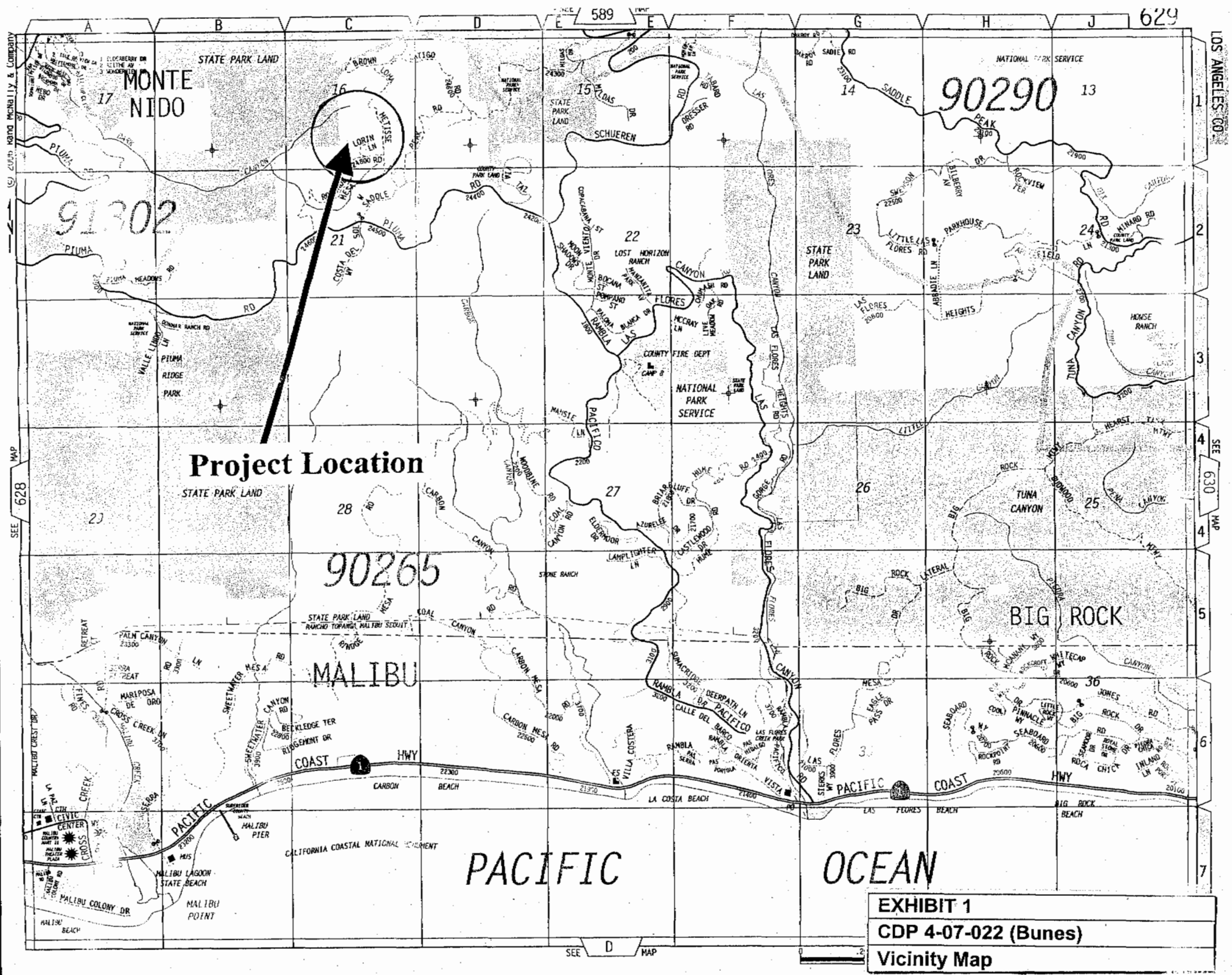
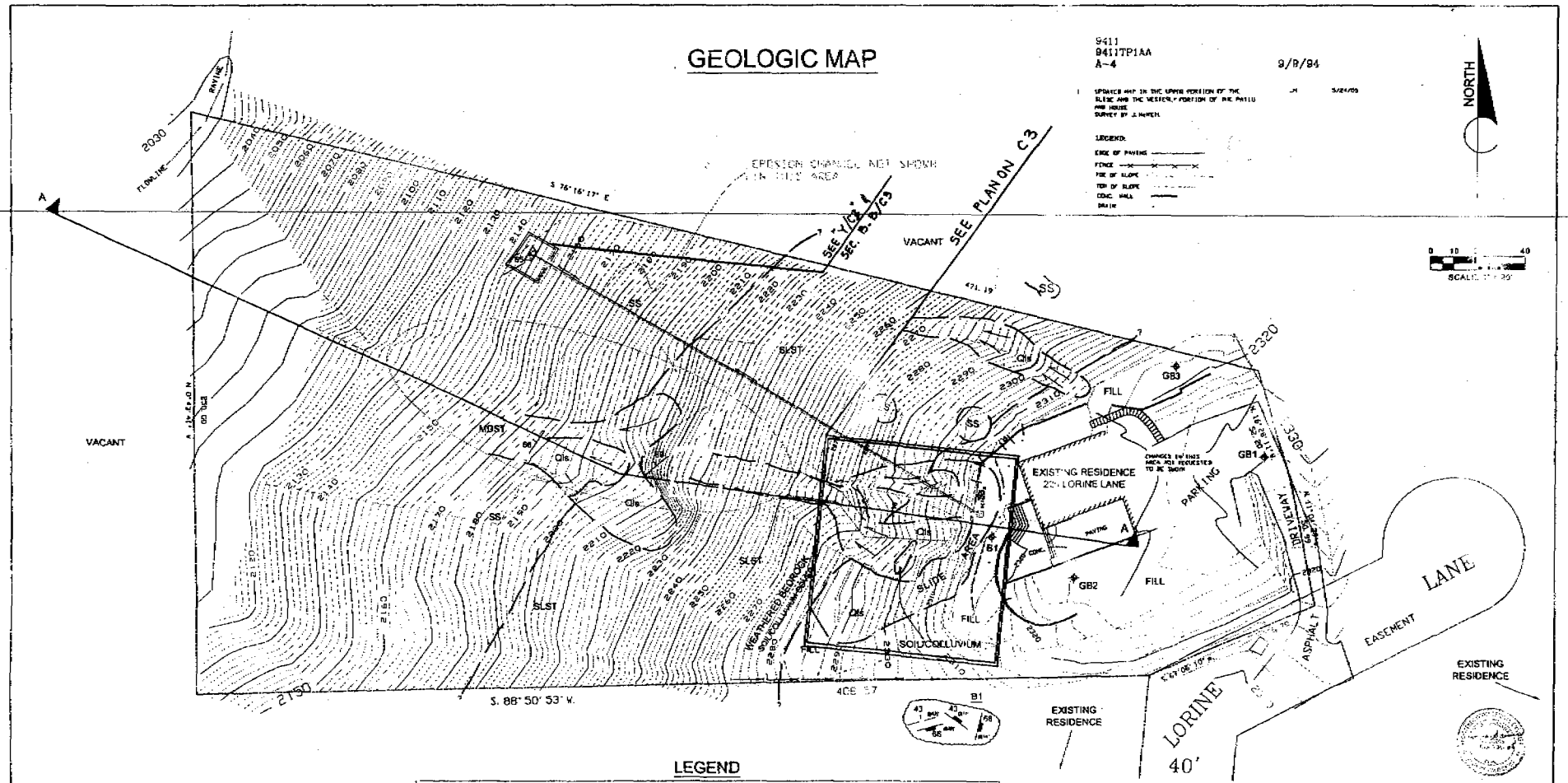


EXHIBIT 1
CDP 4-07-022 (Bunes)
Vicinity Map



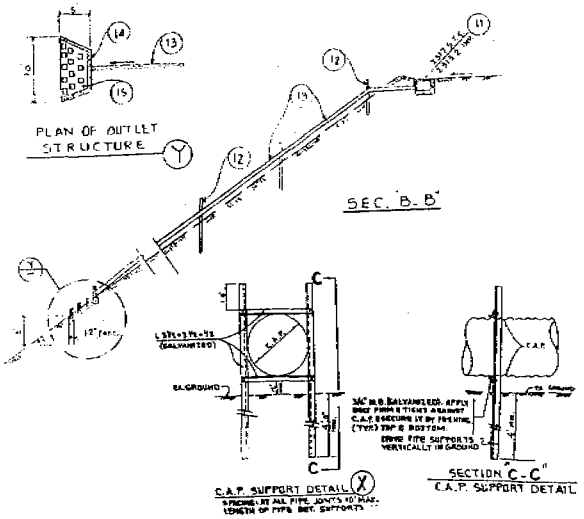
REMEDIAL SLOPE REPAIR
229 LORINE LANE- MALIBU, CA 90265

Robertson Geotechnical Inc.

GEOLOGIC MAP | C2

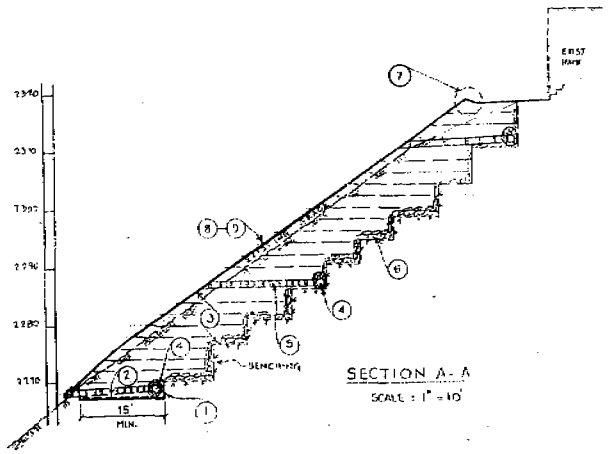
CIVIL ENGINEER
SAMARA ENGINEERING
9100 S. SEPULVEDA BLVD., SUITE #115
LOS ANGELES, CA 90045
TEL. (310)322-3535

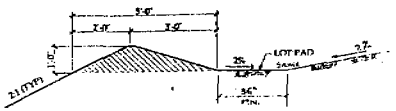
EXHIBIT 2
CDP 4-07-022 (Bunes)
Site Plan

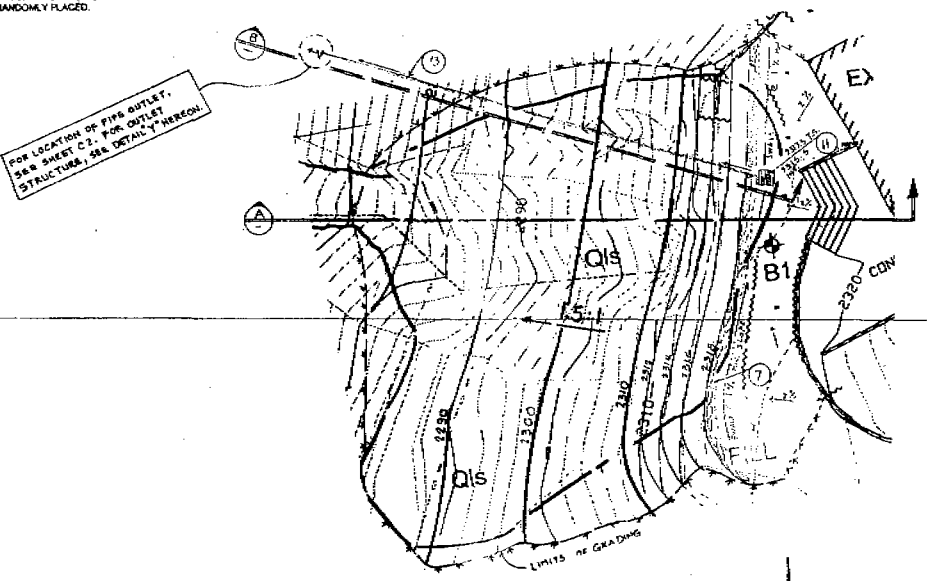


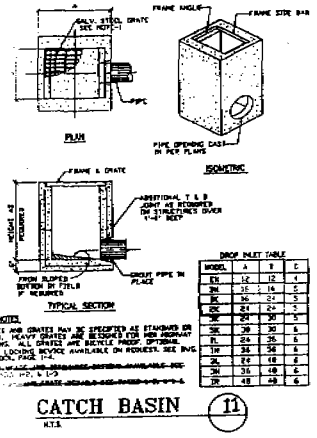
CONSTRUCTION NOTES:

1. 15' WIDE KEY x 3' DEEP KEYWAY
2. WOVEN GEOFABRIC ACROSS THE BASE OF THE KEYWAY
3. RECOMPACTED FILL WITH A MINIMUM THICKNESS OF 15' MEASURED HORIZONTALLY FROM FACE OF FINISHED SLOPE SURFACE
4. 4" DIAM., PERFORATED PVC, SCHEDULE 40 PIPE. INSTALL WIPERF FACING DOWN. ENVELOPE PIPE WITH 2 C.F. OF CLEAN, 3/4" CRUSHED ROCK OR PEA GRAVEL PER LINEAR FOOT. WRAP WITH ON-WOVEN FILTER FABRIC HAVING AN EQUIVALENT OPENING SIZE OF 40-70 & A MINIMUM OPENING AREA OF 15%
5. 4" DIM., SCHEDULE 40, SOLID WALL PIPE, THREE PIPES PER EACH BACK DRAIN, EQUALLY SPACED AND PLACED AT A MINIMUM GRADIENT OF 2% TO FACE OF SLOPE
6. 2' WIDE, CONTIN. CHIMNEY DRAIN BET. BACK DRAINS- 3 MIN.- EQUALLY SPACED OR AS DETERMINED IN FIELD BY GEOLOGIST. CHIMNEY DRAINS MAY CREATED BY STACKING GRAVEL-FILLED BURLAP BAGS, OR OF A CONTIN. GRAVEL COLUMN SURROUNDED BY NON-WOVEN FILTER FABRIC SUCH AS "MIRAFI 140 N"
7. DIRT BERM PER DETAIL HEREON
8. FINISH SLOPE SURFACE. TO BE OVERBUILT THEN TRIMMED BACK TO COMPACTED CORE
9. SLOPE PLANTING W/DEEP ROOTED GROUND COVER. ADDITIONAL SLOPE PROTECTION AGAINST SOIL EROSION PER RECOMMENDATIONS OF THE OF THE GEOTECHNICAL REPORT
10. HIGH STRENGTH POLYMER GEOGRID REINF. MATS, "TENSAR BX 1200, (SS-2)" AT 24" O.C. VERTICAL SPACING, OR APPROVED EQUAL
11. 24" SQ. x 24" DEEP CATCH BASIN W/ "AL HAMBRA" TG GRATE. (SEE DETAIL 11 HEREON)
12. PIPE ANCHORS PER DETAIL "X" AND SECTION C-C
13. APPROX. 112 L.F. OF 12" DIAM. CORRUGATED ALUMINUM PIPE (SEE SEC. B-B HEREON)
14. 8" CMU WALL W/#4 BARS @ 16" O.C., E.W., 3 COURSES HIGH
15. 8" CONC. SLAB W/ 8x16 BLOCKS STANDING ON ENDS AM EMBEDED 4" 4" INTO BASE SLAB- RANDOMLY PLACED.









GRADING PLAN

SCALE: 1" = 10'

ESTIMATE OF GRADING QUANTITIES
REMOVAL AND RECOMPACTION: 1,667 C.Y.

FILL : 1,441 C.Y.

PERSONAL SLOPE REPAIR
229 LORNE LANE- MALIBU, CA 90265

C3

EXHIBIT 3
CDP 4-07-022 (Bunes)
Grading Plan