

# RECORD PACKET COPY

STATE OF CALIFORNIA—THE RESOURCES AGENCY

PETE WILSON, Governor

## CALIFORNIA COASTAL COMMISSION

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Commission Action:



STAFF REPORT: PERMIT AMENDMENT

W 8a

APPLICATION NO.: 5-88-918-A2

APPLICANT: Charals Haagen

AGENT: William Crigger

PROJECT LOCATION: 33368 Pacific Coast Highway, City of Malibu; L.A. County

DESCRIPTION OF PROJECT PREVIOUSLY APPROVED: Demolish existing beach cabana, construct new 750 sq. ft. cabana, regrade access path, create beach level turn around, construct beach revetment on location of previous revetment; amended to relocate existing driveway on landward portion of property; add 600 sq. ft. above existing garage/gym on landward portion of property; reduce height and length of approved retaining wall to maximum of 5 feet at existing graded path; reduce height of approved 750 sq. ft. cabana from 20 feet to 10 feet; revise retaining wall along northern property line to a maximum height of six feet with a 42 inch high open fence above and 100 cubic yards of fill.

DESCRIPTION OF AMENDMENT: Restoration of unpermitted grading of bluff to return path to original contour; construct 60 linear feet of retaining wall with a maximum height of five feet along seaward side of path at top of bluff; restore contour of bluff at site of erosion with 15 cubic yards of fill; restore vegetation on bluff with native plants; place railroad ties along entire length of path on both sides for erosion control; changes to the height of the retaining wall at the base of the bluff by tapering each end to the 30 foot contour and reducing the height by up to five feet, raising the height of the center of the wall by one foot to a maximum height of eleven feet, reducing the length of the retaining wall by three feet to a total length of 79 feet, modifying the shape of the wall to eliminate cutting into the bluff, and backfilling of the slope with 40 cubic yards of fill; placement of irrigation below grade on bluff to be used for a one year period.

LOCAL APPROVALS RECEIVED: "Approval in Concept" from the City of Malibu.

SUBSTANTIVE FILE DOCUMENTS: Coastal Development Permits 5-84-108 (Haagen), 5-86-160 (Haagen), 5-86-160R (Haagen), 5-88-918 (Haagen), and 5-88-918A (Haagen).

PROCEDURAL NOTE: The Commission's regulations provide for referral of permit amendment requests to the Commission if:

- 1) The Executive Director determines that the proposed amendment is a material change,
- 2) Objection is made to the Executive Director's determination of immateriality, or

3) the proposed amendment affects conditions required for the purpose of protecting a coastal resource or coastal access.

If the applicant or objector so requests, the Commission shall make an independent determination as to whether the proposed amendment is material. 14 Cal. Admin. Code 13166.

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SUMMARY OF STAFF RECOMMENDATION:

This is an after-the-fact application for the restoration of grading on a bluff without the benefit of a coastal development permit. The project also includes changes to the height and length of the approved retaining wall at the base of the bluff and the construction of a new retaining wall at the top of the bluff. This project is highly visible from the beach, located on an environmentally sensitive habitat area, and subject to geologic instability. Staff recommends that the Commission approve the amendment to the coastal development permit subject to special conditions regarding the recordation of an assumption of risk deed restriction, revised drainage plans, condition compliance, compliance with irrigation plans, implementation of the revegetation plan, and a revegetation monitoring plan.

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STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions

The Commission hereby approves the amendment to the coastal development permit, on the grounds that as conditioned, the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, 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 of the Coastal Act, is located between the sea and first public road nearest the shoreline and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

NOTE: Unless specifically altered by the amendment, all standard and special conditions attached to the previously approved permit remain in effect.

II. Special Conditions

1. Assumption of Risk Deed Restriction

Prior to the issuance of the coastal development permit amendment, the applicant, as landowner, shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from erosion or slope failure and the applicant assumes

the liability from such hazards; and (b) that the applicant unconditionally waives any claim of liability on the part of the Commission and agrees to indemnify and hold harmless the Commission and its advisors relative to the Commission's approval of the project for any damage due to natural hazards. The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest.

2. Revised Drainage Plans and Installation of Drainage Devices

Prior to the issuance of the coastal development permit amendment, the applicant shall submit for the review and approval of the Executive Director, two sets of a revised plan, prepared by a licensed engineer, which include the installation of an energy dissipator at the base of the path which incorporates as much natural material (such as rock) as feasible. These plans shall incorporate all drainage devices recommended by RJR engineering Group, Inc. in their letter of December 10, 1996, including but limited to, velocity reducers and decomposed granite. No grading or other alterations to the bluff may occur for this drainage device.

The drainage device shall be installed on site within 60 days of the issuance of the coastal development permit.

3. Condition Compliance

The requirements specified in the foregoing special conditions that the applicant is required to satisfy as a prerequisite to the issuance of this permit must be fulfilled within 120 days of Commission action. Failure to comply with such additional time as may be granted by the Executive Director for good cause, will terminate this permit approval.

4. Compliance with Irrigation Plans

The applicant agrees to comply with and implement all of the irrigation notes and instructions listed on the revegetation plan with regards to the watering of the site. Watering shall occur no more than once a week and only during periods of no rainfall.

The irrigation system may only be used for one-year commencing with the implementation of the revegetation. No more than one year from the date of the approval of this permit amendment, all above grade portions of the system including the risers and heads shall be removed and the main line at the top of the bluff shall be capped. The irrigation period may be extended by the Executive Director, for good cause, pursuant to a recommendation by the consulting restoration specialist that additional watering is necessary for the long-term survival of the vegetation on the bluff face.

No long-term irrigation of the bluff face is permitted.

5. Implementation and Completion of Revegetation

The applicant agrees to complete the implementation of the restoration plan including the removal of exotic, invasive species from the bluff face within one year of the issuance of the permit, but no later than April 1, 1998.

Further weeding and plantings as indicated in the restoration report and/or the plans shall be conducted during the monitoring period as necessary.

#### 6. Revegetation Monitoring Program

The applicant agrees to monitor the restoration area for a period of three years, commencing with the implementation of the revegetation plan, to ensure the successful restoration of the site. The applicant shall submit to the Executive Director, annual reports on the status of the restoration program, prepared by a qualified restoration specialist or biologist with an expertise in restoration. These reports shall be submitted to the Executive Director no later than the first of May of each year. The first report shall be required at the end of 1996-1997 rainy season, but no later than May 1, 1997.

The annual reports shall outline the success or failure of the restoration project and include recommendations for additional restoration measures if necessary. If the consulting biologist determines that additional or different plantings are required, the applicant shall be required to do additional plantings by the beginning of the rainy season of that year (November 1). If at the completion of the third year of monitoring, the consulting specialist determines that the restoration project has in part, or in whole, been unsuccessful the applicant shall be required to submit a revised, supplemental program to compensate for those portions of the original program which were not successful. The revised or supplemental restoration program shall be processed as an amendment application to the original coastal development permit.

### III. FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

#### A. Project Description

This is an after-the-fact application for work on a coastal bluff which includes the following: restoration of the unpermitted grading of the path along the bluff to return the path to its original width and contours; construct 60 linear feet of retaining wall with a maximum height of five feet along seaward side of path at the top of the bluff; restore the contours of the bluff at the site of erosion with 15 cubic yards of fill; restore vegetation on bluff with native plants; place railroad ties along entire length of the path on both sides for erosion control; complete minor changes to the retaining wall at the base of the bluff by reducing the length from 82 feet to 79 feet and reducing the height of the wall from 10 feet to 5 feet at the east end of the wall and backfilling of the slope behind the wall with 40 cubic yards of fill; and place an irrigation system below grade on the bluff for temporary irrigation of new plants (See Exhibits 4-6). All this work has been completed.

The unpermitted developments include the original unpermitted grading of the path, construction of the retaining wall at the top of the bluff, and changes to the retaining wall design at the base of the bluff. The applicant's agent claimed that the grading on the bluff was done to allow for construction equipment to access the base of the bluff where construction of a wall and cabana were previously approved. The wall at the top of the bluff was constructed to support the access road which was damaged by erosion. The

changes to the retaining wall at the base of the bluff were done to minimize alteration of the toe of the bluff. The applicant continued to work on the site constructing the approved developments after enforcement staff notified the applicant and agent of the unpermitted development. Restoration of the path back to its original width and contour, the restoration of the erosion on the bluff, the revegetation of the bluff face with installation of below grade irrigation pipes, and the 30 inch high railroad ties along both sides of the bluff were done at the end of 1996. None of this restorative work was first approved or authorized by the Commission. Hence, the amendment application before the Commission is for work that has been completed.

The project is located on an approximately 1.2 acre site which extends from Pacific Coast Highway to the mean high tide line. Exhibit 3 is a survey of the site which shows the location of the residence and garage at the top of the bluff and the old cabana at the base of the bluff. The residence is located on the top of the bluff, and there is a cabana at the base of the bluff. The coastal bluffs along this section of the Malibu coast are recognized as environmentally sensitive habitat areas.

#### B. Project Background

The history of development on the site, including the permit history is extensive. The original single family residence at the top of the bluff was constructed circa 1945. There is also a cabana at the base of the bluff and a path leading down to this cabana along the bluff face; both these developments pre-date the passage of proposition 20 in 1972 and the January 1, 1977 effectiveness date of the Coastal Act.

The current property owner and applicant, Charals Haagen, purchased the property in 1982. During the storms of 1983, the applicant, without the benefit of a coastal development permit, constructed a seawall on the beach, seaward of the existing cabana. In response to notification from enforcement staff, the applicant submitted the first permit action on this site, coastal development permit 5-83-504 (Haagen), for the after-the-fact construction of the seawall. This permit was denied by the Commission. The applicant then resubmitted coastal development permit application 5-84-108 (Haagen) for the same development. During this application process, the applicant argued that there was an existing seawall on the beach and that the construction done in 1983 was repair and maintenance of that seawall. The project was recommended for approval with several special conditions. However, the permit was not acted on in a timely manner and expired.

Following this action, the applicant then submitted coastal development permit 5-86-160 (Haagen) which was also for the after-the-fact construction of the seawall and additional development including a request to demolish the existing cabana at the base of the bluff, construct a new cabana and seawall at the base of the bluff, and regrade and recontour the entire bluff face including changing the configuration of the existing path. Due to staff concerns, the applicant modified this project description removing the request to regrade the bluff face and change the path, and removing the request for a second seawall at the toe of the bluff. This application was approved with special conditions which eliminated the second seawall (already agreed to by the applicant), removed the plans to regrade and reconfigure the bluff face including the path (also already agreed to by the applicant), provide for small scale erosion control measures along the path, record a lateral access

deed restriction and an assumption of risk deed restriction. However, the conditions of the permit were not met and this permit also expired.

The applicant upon expiration of 5-86-160 (Haagen) submitted coastal development permit application 5-88-918. This application was for the same development proposed before: reconstruct the existing seawall, demolish the old cabana, construct a new cabana, and regrade the path along the bluff face with the construction of retaining walls. This permit was approved by the Commission with special conditions as shown in Exhibit 11. These conditions are the same as imposed in 5-86-160 (Haagen). It should be noted that the Commission did make the determination that the seawall subject to the permit application was the repair and maintenance of an existing seawall and thus exempt from permit requirements pursuant to Section 30610 of the Coastal Act. The coastal development permit 5-88-918 was extended five times and finally issued on July 12, 1995.

In addition, the applicant has received two amendments to this permit. The first amendment, 5-88-918A, submitted on January 25, 1991 requested to relocate the existing driveway on the landward portion of the property; add 600 sq. ft. above existing garage/gym on landward portion of property; reduce height and length of approved retaining wall to maximum of 5 feet at existing graded path; and reduce the height of the approved 750 sq. ft. cabana from 20 feet to 10 feet. This amendment was processed as an immaterial amendment and received no objections. It is important to note, however, that the project description incorrectly requests a reduction in the approved retaining wall at the graded path. However, no retaining walls were ever approved or authorized by the Commission under this permit. In fact, in a letter to the applicant's agent at the time of the application, Commission staff addressed the fact that no walls were allowed on the path as the construction of retaining walls requires grading (See Exhibit 12). As noted in both the special conditions and the findings, grading of the bluff was not permitted. The plans which were signed by Commission staff for the underlying permit and the amendment specifically state that no grading or retaining walls will be constructed on the bluff (See Exhibit 13). Thus, it can be concluded that the Commission's original intent and actual approval did not authorize any walls on the bluff face.

Finally, the third amendment on this site, [5-88-918-A3 (Haagen)], for changes to the retaining wall at Pacific Coast Highway, along the northern property line, allowing for a maximum six foot high wall with a 42 inch open fence above requiring a total of 100 cubic yards of fill was determined to be an immaterial amendment by the Executive Director. This immaterial amendment was reported to the Commission at the January 1997, Commission meeting.

### C. Geologic Hazards

Section 30253 of the Coastal Act states in 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, geologic 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.

Section 30235 of the Coastal Act states:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Coastal bluffs, such as this one, are unique geomorphic features that are characteristically unstable and have significant environmental and visual value. This coastal bluff is a designated environmentally sensitive habitat area. Any development on a coastal bluff will have adverse impacts to the environmental and visual qualities of the bluff and natural shoreline processes. As noted above, Section 30253 of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property and Section 30235 of the Coastal states that construction which alters natural shoreline processes shall be permitted only when required to protect existing structures from erosion, and only when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Therefore, it is necessary to review any proposed project first for the necessity of the project pursuant to Section 30235 of the Coastal Act and then for compliance with Section 30253 of the Coastal Act.

The developments on site which affect the geologic stability of the site and incorporate the placement of development on the bluff face include the construction of a retaining wall at the top of the bluff, railroad ties along the path, irrigation on the bluff face, and restorative grading and vegetation on the bluff face. The minor changes to the wall at the base of the bluff do not create any significant change with regards to geologic stability. The backfill behind this wall is necessary in order to recontour the bluff face to its original condition.

In the Commission's original approval of this project under the permit 5-88-918, the Commission emphasized that no regrading or recontouring the bluff could occur. Retaining walls, which would include grading and thus recontour the bluff were not allowed. A summary of the Commission's findings are noted in a letter from staff to the applicant's previous agent (see Exhibit 12). At the time of the original permit, there was no evidence that there was any geologic instability of the site. The consulting geologist for the original project noted that the site is a relatively stable bluff, likely to retreat no more than a few inches every year. The bluff was noted as being subject to surface sloughing and raveling. There was no indication in the previous reports that the stability of the residence at the top of the bluff was in any danger. Bluff erosion which has occurred on the site in two locations has caused a concern regarding the stability of the residence as evidenced in the geology report from the consulting geologist (Exhibit 9 includes the geologist's findings regarding slope stability and the potential danger to the residence).

The first element of development noted above is the construction of a 60 foot long retaining wall with a maximum exposed height of five feet (See Exhibits 4-5). The consulting geologist has stated that because of continuing erosion and bluff instability, the upper retaining wall and erosion control devices are now necessary to minimize bluff retreat and protect the subject property, residence, and backyard amenities from damage.

The wall constructed at the top of the bluff was constructed along a vertical portion of a headscarp of a surficial failure that occurred near the top of the bluff between 28 to 32 feet from the seawardmost portion of the residence. The consulting geologist found that the upslope portion of the failure was subject to creep which would put the stability of the residence at danger. Further erosion at the location of the failure will undermine the residence. Although the rate of erosion was previously measured at a few inches a year, the erosion occurred in one large failure resulting in a significant loss of the bluff. Erosion is expected to accelerate due to this failure and could result in another larger failure within the lifetime of the residence. Should another failure occur, the residence could be undermined. Thus, the geologist concluded that retarding the erosion was necessary to protect the residence.

The applicant's consulting geologist has submitted a geology report which addresses alternative designs for erosion control and remediation of the surficial failure at the top of the slope. After review of these alternatives, included in Exhibit 9, it was concluded that the proposed, and constructed, upper retaining wall design was the most favorable as it would create the least amount of adverse visual impacts and provide geologic stability. The proposed retaining wall will create the least amount of disturbance to the bluff while providing stability to the residence. Leaving the site as it existed with the erosion would create a hazard for the residence in the near future. Thus, the proposed project is necessary and the most feasible project. Therefore, the Commission finds that this portion of the development is consistent with both Section 30253 and 30235 of the Coastal Act.

The next element of development involves the placement of 30 inch high, partially buried below grade, railroad ties along both sides of the path for erosion control. The applicant's consulting geologist has stated that:

The [railroad tie] curb will serve many purposes including diverting drainage along the path rather than over the slope face, as well as, retarding flow from the slope as it reaches the path.

In addition, in the original geology report prepared by Robert Stone and Associates and dated May 13, 1986 for application 5-86-160, the consulting geologist noted that improved drainage control which reduces surface water concentration and flow will reduce the rate of erosion.

The consulting engineer has stated that the path acts as a natural swale, collecting storm runoff down the bluff. To reduce future erosion on the path, the applicant's consulting geologist recommends that the path be covered with decomposed granite and include velocity reducers every 20 linear feet. These



actions are necessary, according to the consulting geologist to help reduce the potential for future slope failures and mitigate erosion. These erosion control devices for the bluff face will mitigate further erosion on the slope in an unobtrusive manner and are therefore consistent with Section 30235 of the Coastal Act.

The railroad ties can also be found consistent with section 30253 of the Coastal Act as they will aid in the stability of the bluff face and will not create adverse impacts. Moreover, Special condition 1 of the underlying permit does allow for the placement of "unobtrusive, small scale erosion control devices along the path." The applicant has stated that these railroad ties will be screened by the vegetation once it matures. Thus the railroad ties can be considered as unobtrusive, small scale erosion control devices.

Finally, the letter from the consulting engineer stresses the need for a energy dispersion system at the end of the path at the base of the bluff to reduce the velocity of runoff and thereby reduce erosion. The plans submitted by the applicant do not incorporate such a drainage device. Therefore, the applicant shall submit revised plans which include a drainage device at the base of the bluff which is constructed with natural material, such as rock, to mitigate erosion and visual impacts (Exhibit 2). As conditioned, the railroad ties are consistent with sections 30253 and 30235 of the Coastal Act.

The next proposed element is the placement of irrigation pipes below grade on the bluff face. The irrigation plans, submitted for this project, indicate that the irrigation system will be used for two years and shall only be handled manually. No automated watering is recommended. However, the applicant has agreed to use the irrigation system for one year, as reflected in the project description. The plan further states that watering shall cease when runoff is apparent on the slope and shall be used no more than a maximum of once a week. These parameters are set forth because a major cause of instability on bluffs and bluff failure results from oversaturation of the soil. When soils are saturated they become heavy and are more likely to slip or create massive landslides. Thus, it is imperative to minimize the amount of water on a coastal bluff. Therefore, in order for this portion of the development to not create adverse geologic impacts, these irrigation instructions should be followed strictly, with the noted change of use from two years to one year, as outlined in special condition 4.

The use of irrigation for a two year period provides more time for saturation of the bluff face. As noted above, oversaturation of the bluff will increase the geologic instability of the bluff. As two years of watering is not necessary, or favorable, for the long-term survivability of the young plants, as noted in the next section, the applicant has agreed to limit the use of the irrigation on the bluff face to one year.

It is imperative to note that the Commission routinely only allows above grade irrigation systems for the temporary use while establishing young plants and seeds during a restoration project. Had the restoration efforts not occurred without the benefit of a coastal development permit, the Commission would have required revised plans for above ground irrigation. However, in this particular case, the removal of the below grade irrigation would require the uprooting of the newly planted species and the removal of the erosion control fencing on the bluff face. The unpermitted revegetation efforts include an extensive planting of young species and the placement of metal fence meshing

on the entire site for erosion control on a very steep slope. The removal of this fencing and plants would be more detrimental in this case as evidenced in the next section. Moreover, further disturbance of this bluff would cause adverse geologic impacts to the restoration efforts. Therefore, in this case, the Commission finds that the removal of all above grade portions of the irrigation system including the risers and heads, and the capping of the main line at the top of the bluff will serve the same purpose as removing the irrigation system. Special condition 4 requires that this action occur within one year of the issuance of the coastal development permit.

The last element of development involves the revegetation of the bluff with native endemic species and the removal of exotic, invasive plant species. This revegetation, along with the repair of the two slope failures, will return the bluff to its natural contours and revegetate the bluff with native vegetation. These developments will restore the geologic integrity of the bluff by repairing the bluff and mitigating surficial erosion through the placement of plant cover. Thus, these aspects of the development are consistent with Sections 30235 and 30253 of the Coastal Act.

Finally, the Coastal Act recognizes that development on a coastal bluff may involve the taking of some risk. The proposed measures can not completely eliminate the hazards associated with bluffs such as bluff erosion and failure. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to establish who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use his property.

The Commission finds that due to the unforeseen possibility of erosion, bluff retreat, and slope failure, the applicant shall assume these risks as a condition of approval, as outlined in special condition 1. Because this risk of harm cannot be completely eliminated, the Commission must require the applicant to waive any claim of liability on the part of the Commission for damage to life or property which may occur as a result of the permitted development. The applicant's assumption of risk, when executed and recorded on the property deed, will show that the applicant is aware of and appreciates the nature of hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

In conclusion, with special conditions to submit revised drainage plans, remove the below grade irrigation pipes, follow the recommendations of the restoration specialist with regards to watering, and record an assumption of risk deed restriction the project is consistent with Sections 30253 and 30235 of the Coastal Act.

D. Environmentally Sensitive Habitat Areas and Visual Resources

Section 30230 of the Coastal Act states:

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 30240 of the Coastal Act states:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those 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 those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Section 30250(a) of the Coastal Act states:

(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

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.

The proposed project is located on a coastal bluff which is a Commission designated environmentally sensitive habitat area (ESHA). Section 30230 of the Coastal Act mandates that marine resources be maintained, enhanced and when feasible restored. Areas, such as ESHAs, are to be given special protection to sustain their habitat. Likewise, Section 30240 of the Coastal Act mandates that only resource dependent uses be allowed in ESHAs. Such uses could include a fish ladder in a stream, a public trail in parkland, or restoration. These are uses which would enhance or restore an ESHA. Section 30251 of the Coastal Act suggests that development restore or enhance an area, and mandates the minimization of landform alteration and the protection of public views. Finally, Section 30250 of the Coastal Act calls for new development to not contribute, individually or cumulatively, to the degradation of coastal resources.

In past permit actions, the Commission has regularly denied development on coastal bluffs to protect the environmental resources from disturbance or degradation. For example, the Commission has denied several applications for new stairways on bluff faces [5-91-632 (Zal), 5-90-1080 (Golod), and 5-89-1045 (Campa)]. Permits have been approved for the restoration of bluff faces which include the maintenance, without enlargement or enhancement, of existing paths including 4-94-051 (S.A.M. Trust) and 4-96-30 (Golod). When new development is required to protect a structure, the Commission has, in past permit actions, required that development be minimized so as to protect the bluff resources. The Commission has, on occasion, approved shoreline protective devices at the base of bluffs, and has routinely approved repair and maintenance projects, and restoration and revegetation of bluff faces. In all cases, however, the Commission has conditioned these projects to ensure the restoration of the native vegetative cover for habitat protection purposes as well as for improving the visual quality and mitigating potential geologic instability.

In this case, the applicant is proposing the restoration of the bluff face with native vegetation and improvements to the path which include 60 linear feet of retaining wall at the top of the bluff, 30 inch high railroad ties along the path which are partially below grade, repair of a washout on the bluff to restore the contour of the bluff face, and minor changes to the retaining wall at the base of the bluff which includes 40 cubic yards of backfill to restore the bluff contours. The applicant is also proposing the installation of a below grade irrigation system along the face of the bluff to use on a temporary basis. The applicant's agent has stated that they will agree to remove the risers and heads and cap the main line at the top of the bluff once the plants have reestablished.

Prior to the original unpermitted disturbance of the bluff face and path and the subsequent unpermitted restoration of the bluff face including the improvements on the bluff, the bluff was heavily vegetated and was disturbed only by the existence of the path. Thus, prior to any disturbance of the bluff face, the bluff face was accessible for animals, such as invertebrates and marine birds, to use for nesting, feeding and shelter. The disturbance of this area through the change in vegetation or the removal of vegetation results in a change of and loss in the number and distribution of species. The species which utilize the bluffs are an important component in the ecology of marine life. The Commission recognizes the unique habitat of bluffs and their importance in providing areas for marine animals such as invertebrates and birds. The disruption of the habitat through the removal of endemic species and the introduction of exotic species reduces the value and availability of these areas for sensitive marine wildlife. The cumulative effect of increased development on coastal bluffs further degrades these habitat areas. Therefore, in determining the consistency of each element of the project, the Commission must consider the previously existing habitat and visual value of the site and the value of the site with regards to the habitat and visual quality after development.

The first element of this restoration includes the repair of the wash out on the bluff face. Clearly this action will return the bluff face to its natural contour and increase the area available to wildlife. In conjunction with this development is the revegetation of the bluff face with native vegetation and the removal of non-native invasive vegetation on the bluff face. The proposed revegetation will also have a positive impact on the habitat and visual value

of the bluff face. As stated previously, the revegetation of the bluff has been implemented. However, all non-native species on the site have not been removed. The consulting restoration specialist left some of the invasive plant species to aid in maintaining the integrity of the bluff and reduce surficial erosion and instability. Therefore a complete restoration of the vegetative cover will not be complete until all invasive plant species are removed and there is sufficient (90 percent) coverage of the bluff face with native plant species. The restoration report calls for three years of monitoring to insure that restoration is successful, as outlined in the report (Exhibit 8). To ensure the successful restoration of the bluff, the Commission finds it necessary to require the applicant, as indicated in special conditions 4 and 5 to remove the remaining invasive plant species within one year of the issuance of the permit and submit monitoring reports for a period of three years beginning with the first report in the spring of 1997. As conditioned, this portion of the development is consistent with Sections 30230, 30240, 30250, and 30251 of the Coastal Act.

The next elements of development include work on the path. Work to return the path to its original configuration involved restorative grading to reduce the width, placement of 30 inch high railroad ties for erosion control and the installation of 60 feet of retaining wall at the top of the bluff (See Exhibit 4). These actions were done to provide for path at its original shape and width. The unpermitted grading widened the road and removed vegetation, thereby decreasing the value of the area for wildlife and removing endemic bluff vegetation. The return of the path to its original contours increases the area available for wildlife; thus this work to restore the bluff is beneficial from a habitat value standpoint.

However, the placement of the wall and the railroad ties do present a visual impact of the bluff face. The Commission must consider that there is already a visual impact created by the path itself and the cabana and wall at the base of the bluff. Thus, the Commission must consider whether or not the wall and the railroad ties present an additional significant visual impact which would require the denial of such developments. The applicant has included in the revegetation plan, placement of shrubs in front of the wall at the top of the bluff to screen the view of the wall from the beach. Moreover, the wall is an earth tone color, instead of a color that stands out such as white. The use of an earth tone color reduces the visual impact created by the placement of the wall. Likewise, the applicant's agent has stated that the vegetative cover on the bluff face will grow over and conceal the railroad ties along the road. Thus, once the revegetation is completed and successful, as mandated in special condition 5, there should be no significant adverse visual impact from the wall and the railroad ties. Therefore, the developments described above with regards to the path are consistent with the Sections 30230, 30240, 30250, and 30251 of the Coastal Act.

On the bluff face, the applicant is proposing an irrigation system to aid in the success of the revegetation. The applicant has submitted evidence which indicates that a below grade system did exist on the bluff face. The contractor at the site has confirmed that the work which was done included replacing the main line under the path with a larger line and placing taller risers on the lateral lines on the bluff face. Thus, the only new development at this time with regards to the irrigation system on the bluff face, in the restoration area, is the above grade risers and heads. However, this evidence does not indicate whether or not the irrigation system existed prior to the

January 1, 1977 effectiveness date of the Coastal Act. There is no evidence to support the existence of irrigation pipes below grade on the bluff prior to the January 1, 1977 effectiveness date of the Coastal Act. Thus, the Commission can not reach the conclusion that the below grade irrigation system does not need a coastal development permit.

The applicant's agent has argued that below grade irrigation on the bluff face was approved in the permit 5-88-918 (Haagen). The applicant did submit an irrigation plan with the landscaping plan which was required under special condition 1 of the original permit. This irrigation plan shows above grade drip irrigation on the bluff face and below grade main lines in the path. There are no lateral, below grade, lines proposed on the bluff face in this older irrigation plan. The Commission concludes that no below grade irrigation pipes on the bluff face were previously approved.

It is important to note that in past permit actions, the Commission has not allowed the placement of new permanent below-grade irrigation for the restoration of an ESHA. When irrigation is required on a temporary basis to supply water to a restored area, above grade irrigation, which can later be removed, is utilized. The concern with the placement of permanent irrigation in an ESHA is that the site will contain man-made devices in an area which is designated as a habitat area. However, in this case, the removal of the irrigation pipes would cause a significant disturbance to the restoration that has already occurred. The removal of the irrigation would require the removal of the planted species as well as the erosion control mesh fencing. This activity will affect the percentage of plants which survive on the bluff face. The uprooting and replanting of young plants will decrease their chance for survival due to the increased stress from such activity. However, the Commission must ensure that no permanent irrigation remains on the bluff face. Therefore, the Commission finds that in this case, the dismantling of the system by removing the above ground risers and heads will remove any unnatural or man-made irrigation devices above grade and thus accomplish the Commission's goal of providing a natural bluff face. The capping of the main line at the top of the bluff will ensure that no additional watering of the site will occur. The below grade irrigation lines in the bluff face, which are not connected to any water source, will not contribute, or accelerate, the natural erosion of the bluff face

The use of permanent irrigation is also an unfavorable activity due to the increased possibility in oversaturation of the bluff. Oversaturation of the bluff with water will cause an increase in water and a decrease in air in the soil on the bluff face. This, in turn, leads to the acceleration of bluff failure because heavy, saturated, soil is more likely to slip and fail. Thus, oversaturation of a bluff will lead to a more rapid erosion of the bluff and thus increases the instability of the bluff face. As noted in the preceding section, the instability of the bluff face will create a hazardous situation for the residence at the top of the bluff.

The oversaturation of the bluff face will also negatively affect the long term success of the plants on the bluff face due to unnatural reliance on water. Plants which are placed for restoration must be able to survive the natural conditions of the mediterranean climate. Thus, they must be able to stand long periods without water. Over watering young plants in the early stages causes the plants to become dependent on water. When the irrigation is removed the plants will not be able to survive the natural weather cycle and

will die. Thus, to ensure that the plants do not become water dependent, the applicant shall conform to the recommendations of the restoration specialist as noted on the plans (See Exhibit 7) and modified by the applicant in the project description, as noted in special condition 3. These specifications mandate that the plants shall not be watered more than once a week and that monitoring shall occur to ensure the plants are not overwatered.

The length of time for the irrigation to be used has been changed from two years to one year. The watering of young plants for a period of two years is too long and increases the plants chances of becoming water reliant. Young plants do not need additional water for more than one season. By the second season, plants should be able to survive the normal conditions of the area. Thus these plants should not need additional watering in the second year. If they do receive additional water there is a greater chance of reducing their long term survivability rates. The applicant has agreed to dismantle the irrigation system on the bluff after one year as noted in special condition 4.

Finally, the last element of development includes the minor changes to the approved wall at the base of the bluff and the reconfiguration of the bluff face behind this wall. These changes include reducing the length of the wall by three feet, reducing the height of the wall at each end and raising the height of the wall at the center to eleven feet. As with the restorative grading efforts described above, the reconfiguration of the bluff behind the wall and subsequent revegetation is consistent with the Sections of the Coastal Act noted above as it will restore and enhance the ESHA. However, this area of the site shall also be subject to the monitoring and implementation schedule noted in special conditions 5 and 6. The changes to the wall are minor in nature and actually reduce the overall size of the wall. The height of the wall is tapered on the end to reduce the visual impacts. Thus, the changes to this wall are consistent with Section 30251 of the Coastal Act.

In conclusion, with conditions which require the removal of exotic plant species within one year, the removal of the below grade irrigation pipes within 60 days of commission action, compliance with the irrigation notes, removal of all irrigation after one year and monitoring of the site for long term success of the restoration, the Commission finds that the proposed project is consistent with Sections 30230, 30240, 30250, and 30251 of the Coastal Act.

#### E. Violation

Although development has taken place prior to submission of this permit application, consideration of the application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Approval of this permit does not constitute a waiver of any legal action with regard to any violation of the Coastal Act that may have occurred.

#### F. Local Coastal Program

Section 30604(a) 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 the division and that the permitted development will not prejudice the ability of the local government to prepare a local coastal 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 Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with 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 project and accepted by the applicant. As conditioned, the proposed development 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 development, as conditioned, will not prejudice the City's ability to prepare a Local Coastal Program for Malibu which is also consistent with the policies of Chapter 3 of the Coastal Act as required by Section 30604(a).

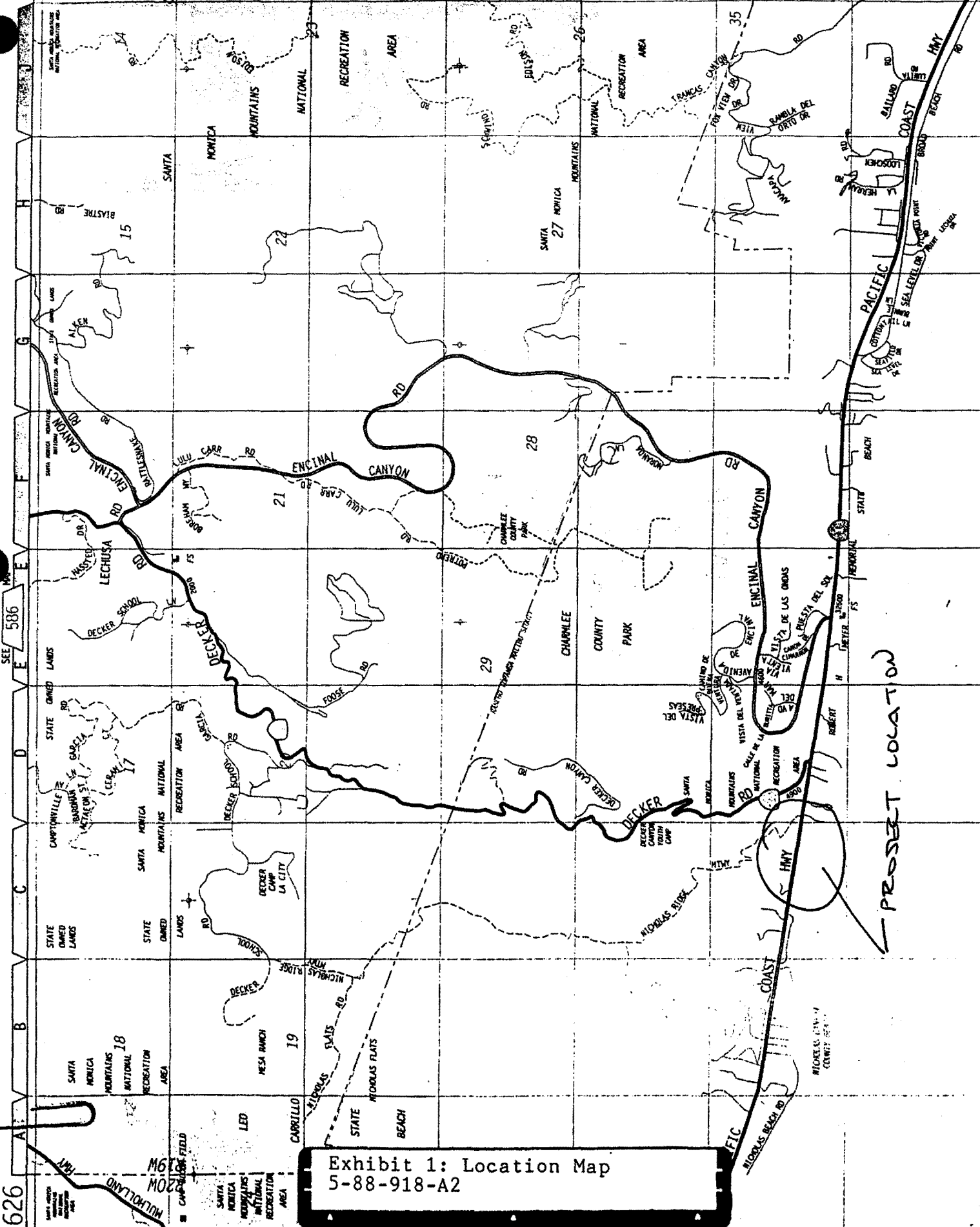
G. CEQA

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications 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)(i) 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 impact which the activity may have on the environment.

The proposed project, as conditioned, is consistent with the applicable policies of the Coastal Act. There are no feasible alternatives or mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the proposed permit, as conditioned, is found consistent with CEQA and the policies of the Coastal Act.

2214M

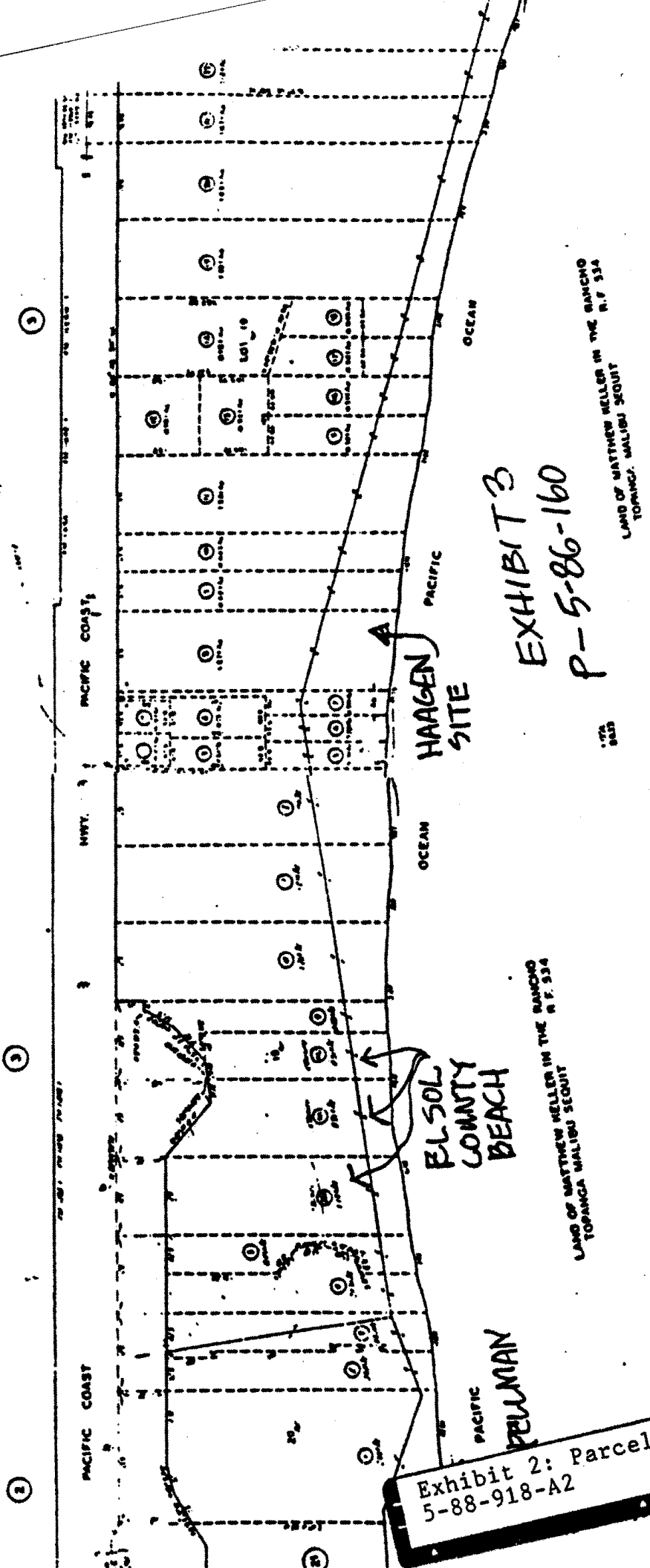




**Exhibit 1: Location Map**  
 5-88-918-A2

PROJECT LOCATION

626



LAND OF MATTHEW MELLER IN THE RANCHO  
TOPANCA MALIBU SECUIT  
R.F. 534

EXHIBIT 3  
P-5-86-160

LAND OF MATTHEW MELLER IN THE RANCHO  
TOPANCA MALIBU SECUIT  
R.F. 534

Exhibit 2: Parcel Map  
5-88-918-A2

3.80' 5.30' E  
Per 7705.02, P.D. A 7101-17,  
and C.S.B. 5318 and M.S.D.

7705.02 Msd. by this survey  
7702.63 Record per C.R. 152

3.72'

50  
40

52.89'

PACIFIC COAST

125.00'

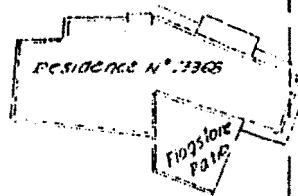
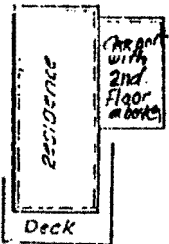
580°45'30"E

Scale Sheet 2  
of this Survey

Side easement for  
public utilities  
reserved by Marble-  
head Land Co. per  
C.R. 21961-209

A.M.B. 1473-19-1

A.M.B. 1473-19-2



A.M.B. 1473-19-3

A.M.B. 1473-19-4

N. 02° 11' 06" W

SUBJECT PROPERTY  
A. M. B. 1473-19-8

N. 06° 44' 66" S



SANDY BEACH

EXISTING ROCK REVETMENT  
APPROX. ELEV. 10'

TOE OF REVETMENT

MEAN HIGH TIDE LINE (Oct. 1928)

AS SCALED FROM FM 1124B-1 (APPROX. ELEV. 1.85')

89-1340949

EXHIBIT "C"

☐ = LATERAL  
ACCESS

Exhibit 3: Old Survey of Site  
5-88-918-A2

- ① 60 LBL. FT. OF SHIELD CONSISTS OF 12" STEEL PILES SET IN CONCRETE 66" O. D. C. 4" BY 1000 LIGGING - TO REMAIN.
- ② EROSION DUE TO RECENT STORM DAMAGE - TO BE TRAINED AND BACKFILLED TO ORIGINAL GRADES.
- ③ NEW RETAINING WALL CONSTRUCTED PER PERMIT DRAWING EXCEPT AS NOTED.
- ④ SLOPE CUT FOR CONSTRUCTION OF RETAINING WALL TO BE BACKFILLED UPON COMPLETION OF WALL.
- ⑤ EXISTING PATH WIDENED FOR CONSTRUCTION ACCESS - TO BE RESTORED TO ORIGINAL WIDTH.
- ⑥ CONFIGURATION OF WALL END REVISED TO REDUCE INTRUSIVE CUTS IN SLOPE - TO REMAIN AS-BUILT.

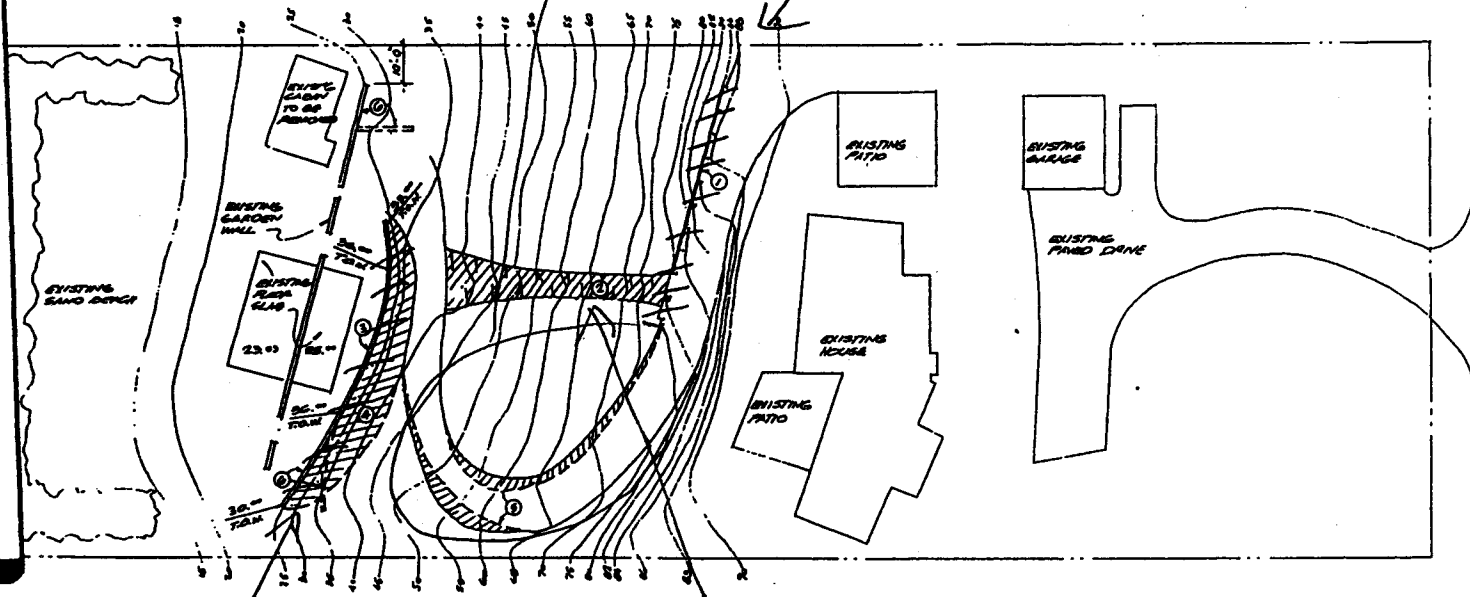
RESTORATIVE GRADING  
TO RETURN PATH TO  
ORIGINAL CONTOUR

WALL FOR SHORING  
BLUFF AT TOP  
OF BLUFF

APPROVED WALL  
AT BASE OF BLUFF

RESTORATIVE GRADING  
TO FIX BROOD AREA  
(WASHOUT)

Exhibit 4: Proposed Site Plan  
5-88-918-A2



CITY OF MALIBU	
PLANNING DEPARTMENT	
APPROPRIATION CONCEPT	
SIGNATURE	<i>[Signature]</i>
DATE	3-11-76
PLANNING REVIEW NO.	PPR 96-020
THIS IS NOT A PERMIT	
AND IS SUBJECT TO ANY	
CORRECTIVE ACTION REQUIRED	
THE APPROVAL IS VALID FOR 90 DAYS FROM DATE OF APPROVAL	

File and Construction Department and  
And show Retention when not to  
be used 6'-0" in height



SCALE: 1/8" = 1'-0"  
DATE: 2/11/76

BLUFF AS-BUILT /  
RESTORATION PLAN

3326B P.C.H., MALIBU

AMENDMENT TO CITY OF  
MALIBU PERMIT NOS.  
1351, 1352, 1353, & 1354  
AND COASTAL PERMIT NO.  
5-88-778

PPR 96-020

RECEIVED  
FEB 6 5 1976  
CITY OF MALIBU

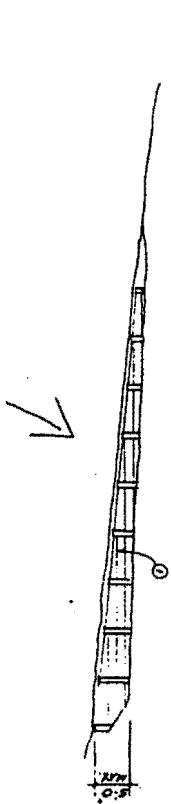
PACIFIC COAST HIGHWAY

CITY OF MALIBU	
PLANNING DEPARTMENT	
APPROPRIATION CONCEPT	
SIGNATURE	<i>[Signature]</i>
DATE	3-11-76
PLANNING REVIEW NO.	PPR 96-020
THIS IS NOT A PERMIT	
AND IS SUBJECT TO ANY	
CORRECTIVE ACTION REQUIRED	
THE APPROVAL IS VALID FOR 90 DAYS FROM DATE OF APPROVAL	

File and Construction Department and  
Retention when not to be used 6'-0" in height

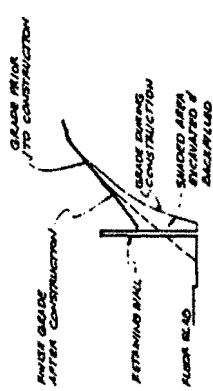
# CROWN SECTION OF WALLS AT TOP OF BLUFF

- 1) 60 linear feet of shoring consisting of 12" steel pipe set in concrete at 6'-0" on center with 3X wood lagging - to remain.
- 2) Shoring due to recent severe damage - to be repaired and backfilled to original grade. Approximate total earth volume disturbed = 15 cubic yards.
- 3) Existing retaining wall constructed per permit drawing except as noted.
- 4) Slope cut for construction of retaining wall - to be backfilled as shown. Approximate total earth volume disturbed = 60 cubic yards.
- 5) Portion of existing wall retained for construction access - to be removed to original width. Approximate total earth volume disturbed = 18 cubic yards.
- 6) Configuration of wall and retained to reduce impervious over to slope - to remain as-built.
- 7) All disturbed areas to be planted following completion of earthwork with the following endemic plants:
  - SILYBIUS CONDENSATUS - "CANYON PRICKER" - COAST WILD RYE, 4"
  - ⊗ OPUNTIA LITTORALIS - COASTAL PRICKLY PEAR, 3 GALLON
  - ⊗ ERIODONUM CRIBRUM - BUCKWHEAT, 1 GALLON

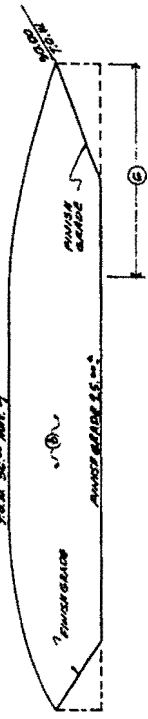


ELEVATION 1 - SHORING

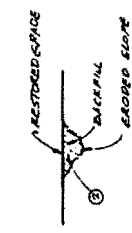
# AT BASE OF BLUFF



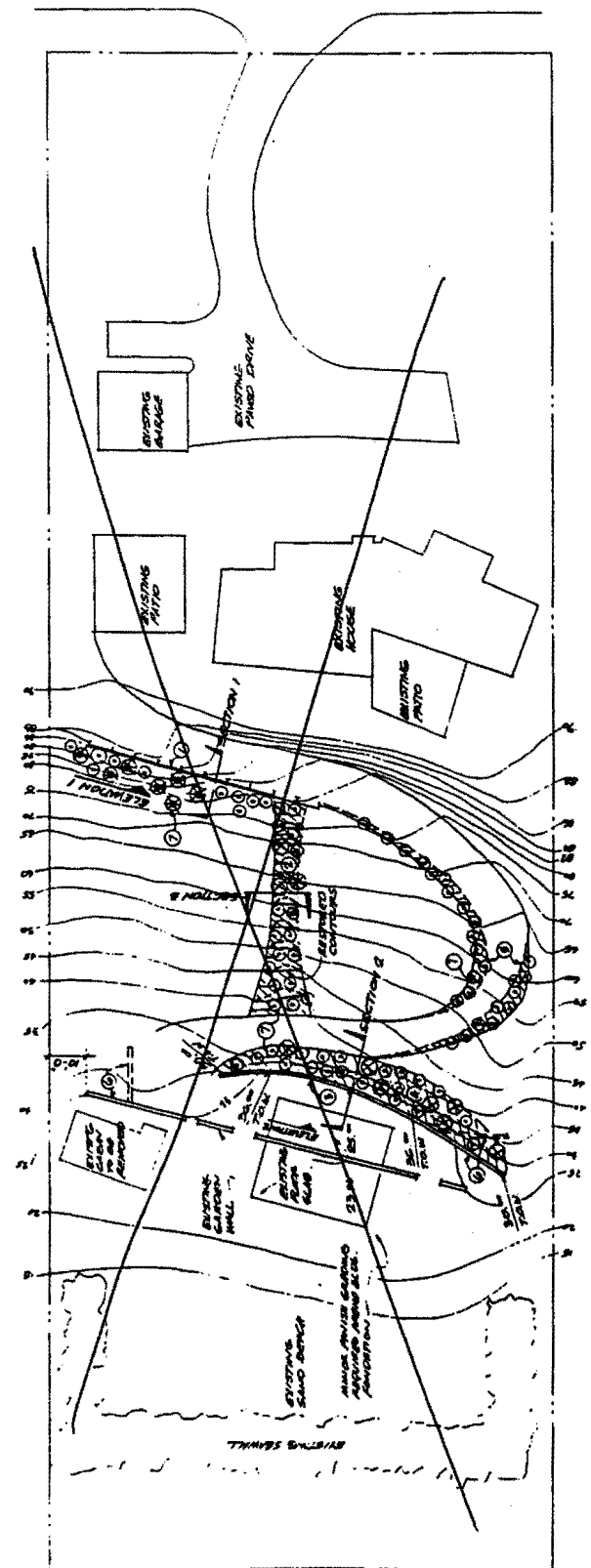
SECTION 1 - SHORING



ELEVATION 2 - RETAINING WALL



SECTION 3 - EROSION



BLUFF AS-BUILT/  
RESTORATION PLAN  
9-5-88 P.C.H. MAILBU  
AMENDMENT TO CITY OF  
MAILBU PERMIT NOS.  
1354, 1352, 1353, 1354  
AND COASTAL PERMIT NO.  
5-88-918

**Exhibit 6: Revegetation Plan**  
5-88-918-A2

**SEEDING**

BROADCAST OR CONTOUR SEEDING WITH PRE-GERMINATED BARLEY TO BE COMPLETED AT THE TIME OF CONTAINER PLANTING.

**EROSION CONTROL**

WIRE MESH TO BE INSTALLED ON THE SLOPES AT THE TIME OF CONTAINER PLANTING AND SEEDING PER THE RECOMMENDATIONS OF AN ENGINEERING CADRE.

**IRRIGATION**

EMERGENCY EROSION CONTROL OVERHEAD IRRIGATION SYSTEM TO BE INSTALLED PRIOR TO PLANTING AND SEEDING. SYSTEM TO BE MAINTAINED UNTIL SLOPE PLANTING IS ESTABLISHED (APPROXIMATELY TWO YEARS). IRRIGATION VALVES MUST BE OPERATED MANUALLY ONLY AND MUST BE TURNED OFF AS SOON AS VISIBLE IRRIGATION RUN-OFF APPEARS ON THE SLOPES. FROM NOVEMBER THROUGH APRIL, THE SYSTEM SHOULD BE USED ONLY TO PROVIDE IRRIGATION WATER TO THE PLANTS WHEN TWO WEEKS HAS PASSED SINCE 1/2" OR MORE OF RAINFALL HAS OCCURRED. FROM MAY THROUGH OCTOBER, THE IRRIGATION SYSTEM MAY BE USED A MAXIMUM OF ONCE A WEEK.

**REMOVAL OF EXOTIC PLANT SPECIES**

POTENTIALLY INVASIVE EXOTIC PLANT SPECIES ON THE SITE ARE:

EUCALYPTUS CITRINOORA,  
NICOTIANA GLAUCA,  
MYOPORUM LAETUM,  
LINDOLMUM PERZII,  
PENNISETUM SETACEUM,  
MESEMBRYANTHEMUM CRYSTALLINUM,  
RICHMUS COMMUNIS,  
AND, CARPOTOTUS EDULIS

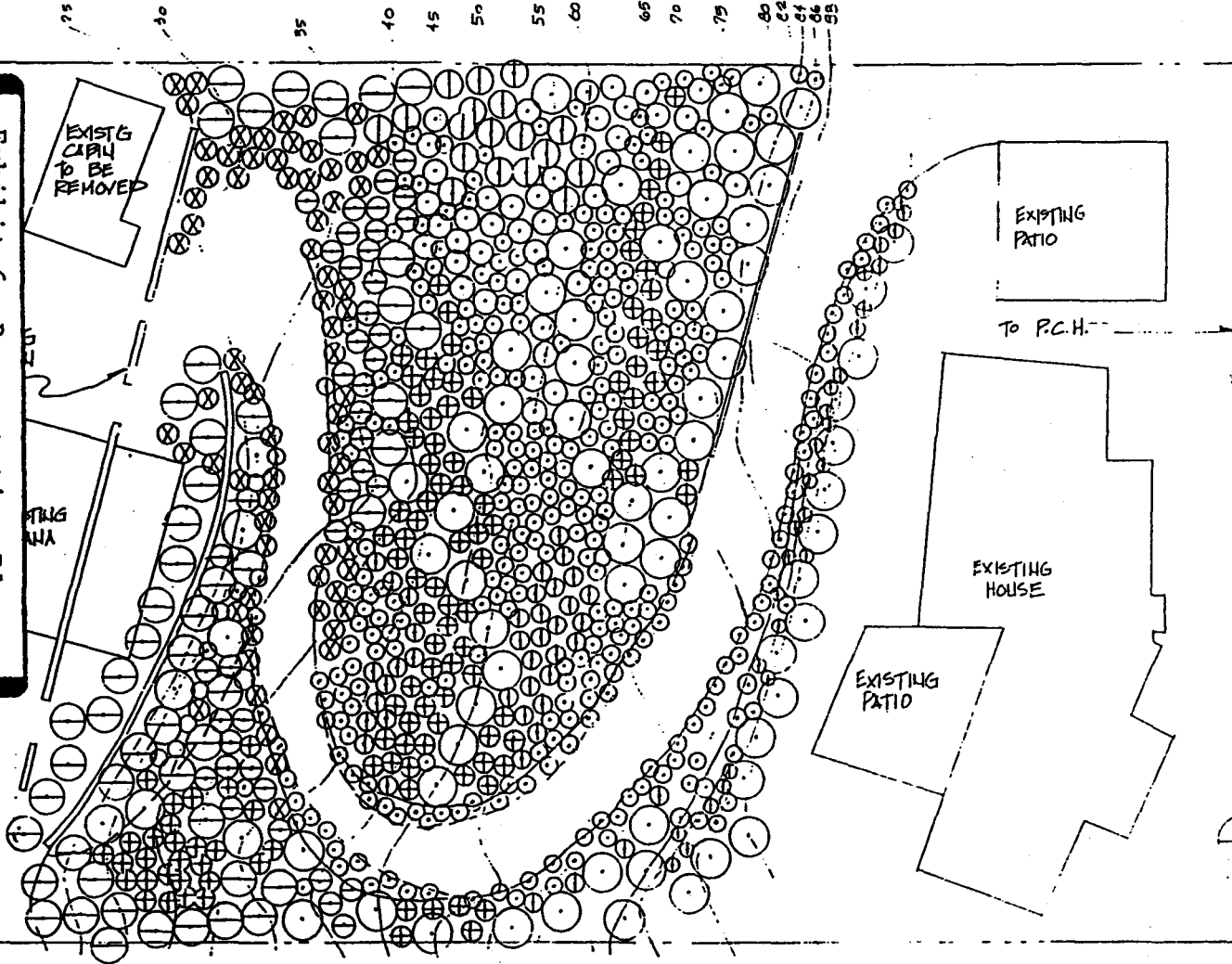
FLOWER AND SEED HEADS SHOULD BE REMOVED FROM THESE PLANTS AT THE TIME OF SLOPE PLANTING. THE EUCALYPTUS, MYOPORUM AND NICOTIANA MAY BE CUT AT THE GROUND ONCE THE NEW PLANTS ARE ESTABLISHED (APPROXIMATELY ONE YEAR FROM THE DATE OF PLANTING); THE ROOTS OF THESE PLANTS SHOULD BE LEFT IN THE GROUND AND TREATED WITH "ROUNDUP" HERBICIDE. THE RICHMUS COMMUNIS MAY BE REMOVED AT THE TIME OF THE SLOPE PLANTING. THE SEED HEADS MUST FIRST BE BAGGED, THE BAGS SEALED, AND THEN DISPOSED OF IN A LEGAL MANNER. THE PLANTS SHALL BE CUT AT THE GROUND LEVEL AND THE STUMPS TREATED WITH "ROUNDUP." THE GROUND COVERS AND GRASS MUST BE LEFT IN PLACE UNTIL THE PLANTS PLACED IN AND AMONG THEM ARE FULLY ESTABLISHED. DURING PLANTING, REMOVE ONLY ENOUGH OF THE EXISTING GROUND COVERS TO PLACE THE NEW PLANTS PER THE PLANTING LAYOUT.

**PLANTING NOTES**

1. PLANTING FITS SHOULD BE THE SAME DEPTH AS THE SOIL IN THE CONTAINER AND ONE AND ONE HALF TIMES AS WIDE AS THE CONTAINER.
2. USE NATIVE SOIL ONLY FOR BACK FILL MIX. DO NOT FERTILIZE PLANTS.
3. CREATE A BASIN AROUND THE EDGE OF THE ROOTBALL OF EACH PLANT, SLOPING THE SOIL AWAY FROM THE CROWN OF THE PLANT.
4. DO NOT DISTURB THE ROOTBALL DURING PLANTING.

**BLUFF RESTORATION PLANT MATERIALS LIST**

SYMBOL	QUAN.	SIZE	BOTANICAL/COMMON NAME
○	88	1G.	RHUS INTEGRIFOLIA/ LEMONADEBERRY
◐	33	1G.	ATRIPLEX LENTIFORMIS "BREWER'S" QUAIL BUSH
◑	30	CUTTINGS	OPUNTIA LITTORALEA/ COASTAL PRICKLY PEAR
○	45	1G.	ISOMERIS ARBOREA/BLADDERPOD
◐	45	1G.	CORCOPHIS CIGANTEA/TREE CORCOPHIS
⊗	100	DIVISIONS	ELYMUS COMPENSATUS/GIANT WILD RYE
⊕	100	1G.	ENCLETTA CALIFORNICA/ CALIFORNIA BUSH SUNFLOWER
⊖	88	1G.	HAPLOPAPPUS SQUAROSSUS/ GOLDEN BUSH
⊙	225	1G.	ERIGONUM PARVIFOLIUM/ SEA CLIFF BUCKWHEAT
⊚	100	1G.	ERIGONUM CINEREUM/ ASHLEAF BUCKWHEAT
⊛	30	4"	BOTHRIOCHLOA BARBINODIS/ PLUMED BEARD GRASS



REVISIONS	BY

RANDALL LANDSCAPE DESIGN  
909 EUCLID STREET, #6  
SANTA MONICA, CALIF. 90403  
310-395-2618

BLUFF RESTORATION  
PLANTING PLAN

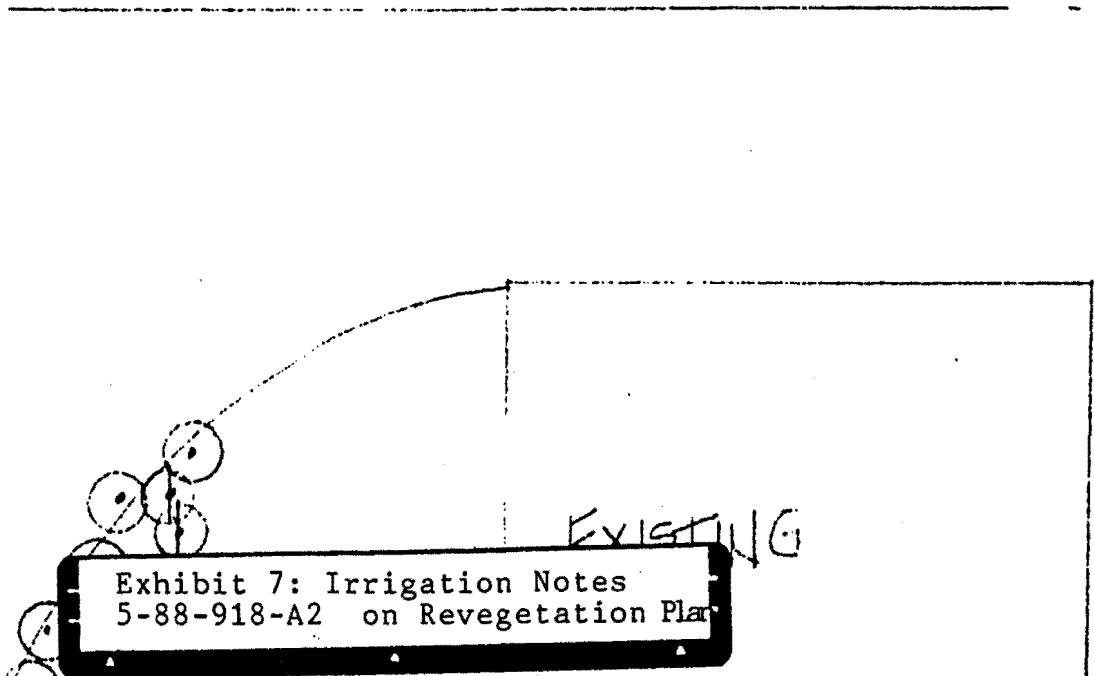
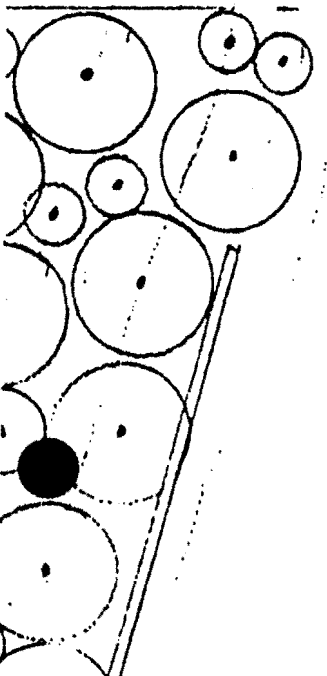
HACGEN BLUFF RESTORATION  
33368 PACIFIC COAST HIGHWAY  
MALIBU, CALIF. 90265

Date	11-1-88
Scale	1" = 1'-0"
Drawn	
Job	
Sheet	
Of	
Phase	

**IRRIGATION**

**EMERGENCY EROSION CONTROL OVERHEAD IRRIGATION SYSTEM TO BE INSTALLED PRIOR TO PLANTING AND SEEDING. SYSTEM TO BE MAINTAINED UNTIL SLOPE PLANTING IS ESTABLISHED (APPROXIMATELY TWO YEARS). IRRIGATION VALVES MUST BE OPERATED MANUALLY ONLY AND MUST BE TURNED OFF AS SOON AS VISIBLE IRRIGATION RUN-OFF APPEARS ON THE SLOPES. FROM NOVEMBER THROUGH APRIL, THE SYSTEM SHOULD BE USED ONLY TO PROVIDE IRRIGATION WATER TO THE PLANTS WHEN TWO WEEKS HAS PASSED SINCE 1/2" OR MORE OF RAINFALL HAS OCCURRED. FROM MAY THROUGH OCTOBER, THE IRRIGATION SYSTEM MAY BE USED A MAXIMUM OF ONCE A WEEK.**

80  
82  
84  
86  
88



**Exhibit 7: Irrigation Notes  
5-88-918-A2 on Revegetation Plan**

EXISTING

## Restoration Plan

by Klaus Radtke

(Violation File #V-4-MAL--95-044 (Haagen)  
33368 Pacific Coast Highway, Malibu 90265

### Description of Violation

Coastal Staff Enforcement Supervisor Jack Ainsworth and Enforcement Officer Susan Friend, in their letter of January 16, 1995, describe unauthorized development activities not covered by Coastal Development Permit 5-88-918 and amendment 5-88-918A and leading to the issuance of the violation as "grading, constructing retaining walls, and widening a path to the bluff face."

This restoration plan, along with an engineering report for the "as-is" built retaining wall and related necessary documentation, attempts to cure the violation and restore the slope. The plan provides recommendations that restore the slope to its pre-violation condition using, as far as feasible, native plant species endemic to the site. It also provides temporary erosion control for the coming winter rains and also increases long-term slope stability through the planting of deep-rooted native, drought-tolerant woody plant material endemic to southerly facing coastal bluff slopes.

The Restoration Site Plan (Map) prepared by Landscape Designer Marny Randall complements this plan and is referred to herewith.

### Site Description

A steep, highly erosive south-facing slope, extends from the rear of the existing residence at 33368 Pacific Coast Highway at a steep, approximately 25 degree angle to the beach below. The slope measures 125 feet in width (width of the lot) and approximately 80 feet in length and has been partially denuded by permitted and non-permitted construction activities. A path winds through the slope leading from the upper lot to the cabana and beach below.

To arrest accelerated erosion, a retaining wall was installed without a coastal permit about 30 feet south of the residence and downslope of the section of the path winding towards the beach. Additional work was also done on the path with railroad ties to arrest further surface erosion and contain runoff within the path area. "After the fact" permits are now being sought in conjunction with this slope restoration plan.

For immediate winter erosion control, barley contours shall be established at 3-foot centers using pregerminated annual barley (Hordeum vulgare).

Exhibit 8: Restoration Plan  
5-88-918-A2



### Biological Inventory

A combination of exotic landscape plants, weedy invasive woody species and remnants of endemic native plants presently provide a limited cover to the steep slope. These plants are listed in Table 1 and were identified during two site visits.

Since much of the erosion witnessed in the area is the result of human activities, adjacent parcels were also evaluated to gain a better understanding of the endemic native plant species that had historically stabilized the steep and highly erosive coastal bluff slopes in the area. Aside from woody plant remnants of the chaparral and coastal sage ecosystems that were readily identified on the Haagen slopes and adjacent parcels (Table 1), herbaceous subshrubs and fire-type successional species and their seed sources must have also been present on site prior to historic human disturbance. These have been almost totally eliminated which therefore leaves the slope exposed to accelerated erosion during human or nature-induced disturbance.

Table 2 provides an extended list of plants identified by this author and Ms. Randall on coastal (sage) bluff slopes in the western Santa Monica Mountains on both dry and more mesic sites.

Table 1 - Biological Inventory of On-Site Bluff Slope and Adjacent Areas

<u>Latin Name</u>	<u>Common Name</u>	<u>Description</u>
Baccharis pilularis spp. cons.	Coyote Brush	Native woody shrub
Brassica nigra	Black Mustard	Invasive non-native
Carpobrotus edulis	Hottentot Fig	Non-native succulent
Cereus peruvianus	Peruvian Cactus	Non-native cactus
Cleome (Isomeris) arborea	Bladderpod	Subshrub
Coreopsis gigantea	Giant Coreopsis	Native perennial herb
Crassula argentea	Jade Plant	Exotic succulent
Elymus condensatus	Giant Wild Rye	Grass
Eriogonum cinereum	Ashy-leaf Buckwheat	Native woody subshrub
Eriogonum fasciculatum	California Buckwheat	Native woody shrub
Eucalyptus citriodora	Lemon-scented Gum	Exotic tree
Helianthus annuus	Common Sunflower	Native annual
Helianthus gracilentus	Slender Sunflower	Native perennial herb
Limonium perezii	Sea Lavender	Perennial herb
Malosma (Rhus) laurina	Laurel Sumac	Native woody shrub
Mesembryanthemum crystallinum	Ice Plant	Succulent
Metrosideros excelcus	New Zealand Christmas Tree	Non-native tree
Myoporum spp.	Myoporum	Exotic tree/tall shrub
Nicotina glauca	Tree Tobacco	Invasive non-native
Opuntia littoralis	Coast Prickly Pear	Native cactus
Pennisetum setaceum	Fountain Grass	Non-native invasive grass
Rhus integrifolia	Lemonadeberry	Native woody shrub
Ricinus communis	Castor Bean	Invasive non-native
Statyca byzantina	Statics, Lamb's Ear	Exotic perennial subshr.

Additional plants not native to the area or the coastal bluffs included a variety of landscaped cacti, iceplants, Bermuda grass, and misc. woody landscape shrubs.

Table 2 - Additional Plants Endemic To Coastal Bluff Slopes

Artemisia californica	California Sagebrush	Woody shrub
Atriplex lentiformis	Quailbush	Woody shrub
Baccharis glutinosa	Mulefat	Woody shrub
Bothriochloa barbinotus	Plumed Beard Grass	
Calystegia macrostegia	Morning Glory	Climbing vine
Distichlis spicata	Salt Grass	Native grass
Encelia californica	Calif Bush Sunflower	Semi-woody subshrub
Eriogonum parvifolium	Coastal Buckwheat	Native woody shrub
Haplopappus ericoides	Goldenbush	Semi-woody subshrub
Haplopappus squarossus	Goldenbush	Semi-woody subshrub
Malacothrix saxatalis	Cliff Aster	Perennial
Mimilus brevipes	Yellow Monkey Flower	Annual
Toxicodendron (Rhus) diversiloba	Poison Oak	Climbing vine
Salvia apiana	White Sage	Woody perennial
Salvia leucophylla	Purple Sage	Woody perennial
Salvia mellifera	Black Sage	Woody perennial
Venegasia carpesioides	Canyon Sunflower	Semi-woody subshrub
Yucca whipplei	Our Lord's Candle	Native shrub

More species exist in the soil seed pool and could be identified after initial human or natural (fire, flood, slide) disturbance which triggers germination in conjunction with soil moisture.

#### Vegetative Restoration Based on Site Evaluation

Based on the field evaluation it is believed that Lemonadeberry accounted for up to 50 percent shoot-crown cover on the upper two-thirds of the on-site slope and Laurel Sumac for another 10-15 percent. Both species provide excellent surface erosion control and long-term slope stability. Buckwheat and Coyote Brush probably accounted for another 10-20 percent with sages, herbaceous subshrubs and annuals making up the remainder. Quail Bush and Giant Coreopsis may have been naturally present on the lower part of the slope above the coastal strand vegetation.

The Restoration Site Plan (Map) indicates that the appropriate endemic plant species (as listed in Table 1 and 2) are used as the dominant native vegetative cover for long-term restoration and erosion control.

### Removal Of Invasive Exotics

All invasive weedy species shown in Table 1 shall be removed from site with minimal soil or slope disturbance. This shall be done by cutting the stem of the plant at ground level and immediately spraying the stump with Roundup. Castor Bean seed pods on standing plants shall first be collected by hand prior to planting of the slope (so that they do not scatter on the slopes), shall be bagged and then legally disposed of. Myoporum and Eucalyptus trees shall not be cut until after the rainy season because their canopies will reduce the rainfall impact on surface erosion control.

### Monitoring

Restoration monitoring shall be for a period of three years following the spring after outplanting. An annual monitoring report shall be issued to the Coastal Commission by a person qualified in restoration ecology starting with the 1996/97 growing season but no later than May 15, 1997. Three additional reports shall be issued during May 1998, 1999, 2000.

The project is considered successful if, in the spring of 1997 the restored areas are covered (shoot-crown cover) with at least 35% native vegetation (endemic vegetation native to the bluff slopes), in the spring of 1998 at least 55%, in the spring of 1999 at least 75%, and in the spring of 2000, 90%. All non-native invasive woody and semi-woody species (i.e., Castor Bean) shall have been eliminated from site by the spring of 1997, and during the spring growing season of 2000 no more than 5% non/native weedy annuals/biannuals shall remain on site.

~~Response:~~

~~It is understood the plans will be modified by the project architect to reflect the as-built conditions. No additional response is necessary.~~

~~COMMENT #2~~

~~A reduced set of these plans~~

~~Response:~~

~~The plans will be provided by the Project Architect. No additional response is necessary.~~

COMMENT #3

*If you choose to apply to retain the wall at the top of the bluff, you will need to submit an engineering report which addresses the stability of the site in relation to the residence. The report must discuss the rate of bluff retreat and erosion and contributing factors to these rates, the affects these actions have on the stability of the residence, what measures should be taken, if any to stabilize the residence (including alternatives to the existing developments), and the effects from the current development. Please note that it is not sufficient to simply state that the bluff is unstable or eroding; this is a natural process and does not, in and of itself, warrant development on a bluff face.*

Response:

The proposed wall was constructed along the vertical portion of a headscarp of a surficial failure that occurred near the top of the bluff slope. The upslope portion of the surficial failure was susceptible to continued regression (erosion) towards the residence. In addition, the headscarp coupled with the path that was present allowed drainage from the upslope property areas to flow uncontrolled over the headscarp and into the debris of the failure. This erosion, in addition to drainage being conducted into the surficial failure, would have placed the residence in jeopardy had the wall not been constructed. The rate of erosion in the headscarp is anticipated to be fairly rapid due to the steepness of the scarp, type of slope materials, and the amount of drainage that flowed over the scarp had the wall not been constructed. The proposed wall was constructed utilizing steel I-beams set in concrete and wood timbers placed between the I-beams. The height of the exposed wall above the ground surface on the downhill side is on the order of 5 feet. On the upslope side, the top of the wall is flush with the railroad tie type curb that extends about 6 inches above the finished pathway surface. The railroad tie curb acts as a channel to control drainage within the pathway. The pathway surface will have about 6 inches of compacted decomposed granite (Dg) with velocity reducers spaced about every 20 lineal feet. The reducers will help to maintain low flow velocities within the pathway.

The wall and railroad type curb will serve many purposes including increasing the support of the upper bluff slope to protect the residence, providing a drainage system that precludes runoff from flowing over the surficial failure area, and increases the resistance to slope deformation from seismic events (ground shaking). The surficial failure area will also be revegetated and a metal mesh slope erosion fabric will be placed to control surficial erosion until the vegetation is re-established.

The stability of the site was addressed in our report, dated May 20, 1994. In summary, the analysis indicates that failure surfaces from the toe of the slope to the access road have factors of safety greater than 1.5 static and 1.1 pseudo-static (seismic). The results of the analysis indicates that the slope is considered to be grossly stable (i.e. relatively deep failure surfaces). However, as mapped by Robert Stone and Associates, Inc., and as observed, a surficial failure has occurred in the past on the slope surface. An analysis of the surficial failure was conducted. The analysis indicated that the slope under dry conditions has a factor of safety greater than 1.5 (static) and 1.1(pseudo-static). However, in modeling the stability of the bluff slope under wet (saturated conditions) the factor of safety was 0.99. In this regard, it is anticipated that the slope will continue to deteriorate as a result of surficial failures and erosion.

Insufficient information is presently available to determine the rate of bluff erosion, and long term rates may be significantly different than short term rates. Primary factors that generally contribute to an increase in the rate of erosion or bluff retreat are rainfall amounts, drainage, seismicity, and vegetation.

Alternatives for the stabilization of the residence and bluff slope include underpinning the residence, placing a row of piles along the top of the bluff slope to support the earth upslope of the piles (this is very similar to the presently constructed row of piles for the retaining wall); demolishing the residence; reconstruction of the bluff slope utilizing geosynthetic fabrics and controlled grading; placing steel reinforcement and gunite facing on the slope surface; and, construction of a series of concrete type retaining walls producing a step terrace finished slope.

Under the present conditions, a retaining wall constructed along the top of the bluff path will provide stability to the top of the bluff in several ways. First, the wall will control drainage from flowing over the slope face and improves the overall site drainage. Second, the wall supported by steel I-beams placed at depth and surrounded by concrete increases the local stability for surficial failures in the area of the wall and top of bluff. Third, the placement of the retaining wall provides an added degree of safety against slope deformation from seismicity (ground shaking) of the upper portion of the bluff.

At present, with the addition of the retaining wall and railroad tie curb, no measures are presently necessary to stabilize the residence and the proposed construction will greatly prolong the time period until the residence requires stabilization measures.

Underpinning the residence would serve to stabilize the ground directly beneath the residence, however, over time, a retaining wall would need to be placed between the piles to support the exposed soil. No stabilization of the bluff slope would be accomplished.

Placement of a row of piles along the top of the bluff slope would help to stabilize the slope surface and is a very similar alternative to the existing improvement. The difference is where the wall and the slope stabilization piles are placed. Stability of the bluff slope would be improved from the location of the piles northward (upslope). In the long term, the outside (downslope) side of the piles may become exposed and a concrete retaining wall would need to be constructed to support the soil between the piles.

Demolition of the residence is an alternative resulting from the economics of trying to stabilize the residence once the bluff has failed. Failure of the bluff slope would severely limit the access for construction equipment and depending on the failure, the residence may be severely impacted to be economically unsalvageable.

Reconstruction of the bluff slope utilizing geosynthetic fabrics and controlled grading is an alternative to the existing improvements, however the volume of material required, the areal extent of the disturbed ground surface, and the placement of the geogrid reinforcement may undermine the existing residence foundations.

The present slope surface could be lined with steel reinforcement and a gunite facing placed on the slope surface. This would reduce the surface erosion potential, however, would not improve the overall gross stability of the slope.

The construction of a series of concrete type retaining walls producing a step terrace finished slope would also improve the surface erosion potential, however, would not necessarily improve the gross stability.

Considering all of the potential alternatives, the method presently constructed seems a reasonable way to help improve the surficial, as well as, the gross stability of the slope. It is possible to vegetate the slope in such a manner to hide or blend the exposed upper portion of the wall with the remaining slope.

The effects that may result from the current development is primarily disturbed soil and vegetation associated with construction, and once completed and revegetated, the current construction of the retaining wall along the top of the bluff path results in similar conditions that existed prior to development from an aesthetics viewpoint.

~~COMMENT #4~~

~~A filing fee of \$100.00~~

JAN-09-1997 11:10 FROM NEW GROUP

2 10

3 3 P.01

January 8, 1997

Charals Haagen  
The New Group  
430 S. Grand Avenue  
El Segundo, Calif. 90245

RE: Bluff Irrigation/33368 Pacific Coast Highway, Malibu, Calif.

Dear Charals:

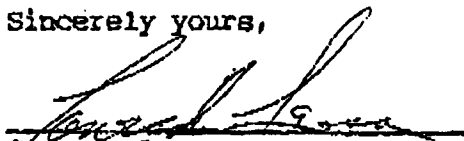
The irrigation system on the bluff at the above referenced address was constructed as follows:

The main line is in the path coming down the hill. This is a reconstruction of a formerly existing line and in conformance with the project Irrigation Plan dated 8/20/94, revised 9/13/94, prepared by Randall Landscape Design.

The lateral lines in the bluff were existing and the risers on those lines have been extended and the heads have been changed.

Please let me know if you have any questions.

Sincerely yours,



Conrado Lara  
Landscape and Tree Service  
310-673-2377

RECEIVED

JAN - 9 1997

CALIFORNIA  
COASTAL COMMISSION  
SOUTH CENTRAL COAST DISTRICT

Exhibit 10: Letter from contractor  
5-88-918-A2 regarding irrigation



### III. Special Conditions

#### 1. Revised Plans

Prior to transmittal of the permit the applicant shall submit revised plans and a construction schedule for the review and approval of the Executive Director:

- 1) eliminating the seawall at the toe of the bluff.
- 2) eliminating plans to fill, grade and recontour the bluff.
- 3) providing for visually unobtrusive and small scale erosion control devices on the bluff face to eliminate the erosion potential of the path.
- 4) providing for landscaping and revegetation of the bluff, where necessary, with appropriate low water-use, native vegetation of the coastal strand and coastal sage scrub communities. The plants chosen shall be plants found on the Nicholas and Encinal Beach bluffs. The landscaping shall be completed prior to occupancy of the structure.

#### 2. Lateral Access

Prior to the transmittal of the permit, the Executive Director shall certify in writing that the following condition has been satisfied. The applicant shall execute and record a document, in a form and content approved in writing by the Executive Director of the Commission irrevocably offering to dedicate to a public agency or a private association approved by the Executive Director an easement for public access and passive recreational use along the shoreline. The document shall provide that the offer of dedication shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use which may exist on the property.

The easement shall extend the entire width of the property from the mean high tide line to the toe of the revetment.

The easement shall be recorded free of prior liens except for tax liens and free of prior encumbrances which the Executive Director determines may affect the interest being conveyed.

The offer shall run with the land in favor of the People of the State of California, binding successors and assigns of the applicant or landowner. The offer of dedication shall be irrevocable for a period of 21 years, such period running from the date of recording.

3. ASSUMPTION OF RISK:

PRIOR to the transmittal of the PERMIT, the applicant as landowner shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from shoreline erosion, flood hazard, bluff failure and earth movement including landslide and the applicant assumes the liability from such hazards; (b) that the applicant unconditionally waives any claim of liability on the part of the Commission and agrees to indemnify and hold harmless the Commission and its advisors relative to the Commission's approval of the project for any damage due to natural hazards.

The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens and any other encumbrances which the Executive Director determines may affect the interest being conveyed.

4. Removal of Migrating Rock from the Approved Seawall.

Any rock or other detritus migrating from the approved seawall shall be the responsibility of the applicant. The applicant shall promptly remove and repair any such materials from the beach.

ACKNOWLEDGEMENT OF PERMIT RECEIPT/ACCEPTANCE OF CONTENTS:

I/We acknowledge that I/we have received a copy of this permit and have accepted its contents including all conditions.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date of Signing

EXECUTIVE DIRECTOR'S DETERMINATION (Continued):A. Project Description and History.

The Commission approves the regrading and widening of a path down the coastal bluff from an existing house to the toe of the bluff, and the construction of a 750 sq. ft. cabana notched into a coastal bluff at Elevation 20, above beach level. This cabana will replace an existing 210 sq. ft. cabana at beach level.

The Commission finds that the construction of the seawall in its present location was not new development but rather replacement of a previously existing seawall destroyed over the years by natural disaster.

Before the Commission's final action, the applicant removed two proposals that appeared on the plans. Prior to the hearing the applicant had agreed to remove the rock and other material that were used to rebuild the seawall on the middle of the beach. At the hearing the applicant presented evidence that

## CALIFORNIA COASTAL COMMISSION

SOUTH COAST AREA  
245 WEST BROADWAY, SUITE 380  
LONG BEACH, CA 90802  
(213) 590-5071



January 23, 1990

Andrew Wilk  
Alexander Haagen, Co Inc.  
P.Po. Box 10010  
Manhattan Beach, CA 90266-8010

Dear Mr. Wilk,

Thank you for sending us the plan materials for 5-88-918. We understand that our legal department will soon confirm that you have completed recording necessary documents. We have examined your grading and landscaping plans for conformance with condition one, which requires revised plans that show:

1) eliminating the seawall at the toe of the bluff, 2) eliminating plans to fill, grade and recontour the bluff, 3) providing for visually unobtrusive and small scale erosion control devices on the bluff face to eliminate the erosion potential of the path, 4) providing for landscaping and revegetation of the bluff where necessary with appropriate low water use, native vegetation of the coastal strand and coastal sage scrub communities. The plants chosen shall be plants found on the Nicholas and Encinal Beach bluffs. The landscaping shall be completed prior to occupancy of the structure.

The plans still need work to conform with these standards.

The grading plans require about 1300 cubic yards cut and fill. They do not eliminate plans to fill, grade and recontour the bluff. They employ retaining walls that will be seven and eight feet above the level of a road, which will be cut down the bluff. While early discussions included the use of low retaining walls to protect an existing road, the Commission's approval did not envision construction of walls of this height.

To evaluate the condition, we turned to the findings. The findings specifically state:

"The applicant originally proposed to reconfigure the bluff to allow construction of the new beach cabana and beach path. This reconfiguration would have required 1,033 cubic yards grading and

Exhibit 12: Letter from CCC staff  
5-88-918 regarding walls on bluff

Andrew Wilk  
page 2

resulted in a new slope. The new slope and the zig zag path will require stabilization devices, such as crib walls and relandscaping. ....The Commission will permit regrading and expanding the path....because most of the path was pre-existing. The commission, however, cannot permit extensive recontouring and relandscaping the bluff and have the project remain consistent with Section 30251 and 30253.

The plans you submitted require over 1000 cubic yards cut and fill on the site and over 300 cubic yards export. The grading plans include benching and reconstruction of the bluff face. The walls are obtrusive--comprising cumulatively almost half the height of the bluff (30 feet of 72 feet). Therefore we cannot sign and approve these plans as conforming to the conditions imposed on the approved project.

The condition requires the landscaping plan to use native plants of the coastal sage scrub and coastal strand communities, specifically, native plants found on the Nicholas Beach cliffs. The plans that were submitted included several introduced plants that do not conform to this condition. The introduced plants include Sea fig (Carpobrotus chilensis) as a ground cover, which is not native and which is invasive, "New Zealand Christmas Tree" (Metrosideros Excelsus) and Agave Americana, the Century plant, which is from the Mexican desert. Lemonade Berry Rhus Integrifolia does appear on lists of locally endemic natives of the coastal sage scrub communities. Atriplex breweri is a native of the coastal sage scrub, but not to the immediate area, and is not typical of the native communities of Nicholas Beach. If we can be of any assistance in finding lists of native plants, we will be glad to help.

The condition required removal of a retaining wall at the toe of the bluff. You have removed a retaining wall and substituted a wide staircase. This is not part of the permit and cannot be signed off on the approved plans.

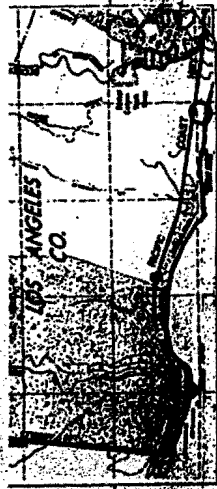
We have one set of plans in the file. This is the set of house plans that we will send to building and safety. If you have changed these plans you may need an amendment.

Thank you for giving us and opportunity to comment on your revised plans.

Very truly yours



Pam Emerson  
32550



1. A set of plans, prepared in accordance with the requirements of the Planning Department, shall be submitted to the Planning Department prior to the issuance of a development permit.
2. All archaeological requirements, including any Phase I Archaeological Survey or Phase II Archaeological Survey, shall be reviewed and approved by the Planning Department prior to the issuance of a development permit.
3. All conditions of the approved 'Investigation/Excavation and monitoring program' and the approved 'Landscaping plan' shall be satisfied prior to final occupancy of the proposed structure. 18/10/07

*Revised*  
5-88-918 & 5-88-918A  
CA. COASTAL COMM.  
PLANS APPROVED  
DATE: 12 July 88  
SIGNED: [Signature]

RECEIVED  
JUL 15 1988  
AUG 15 1984  
CITY OF MALIBU

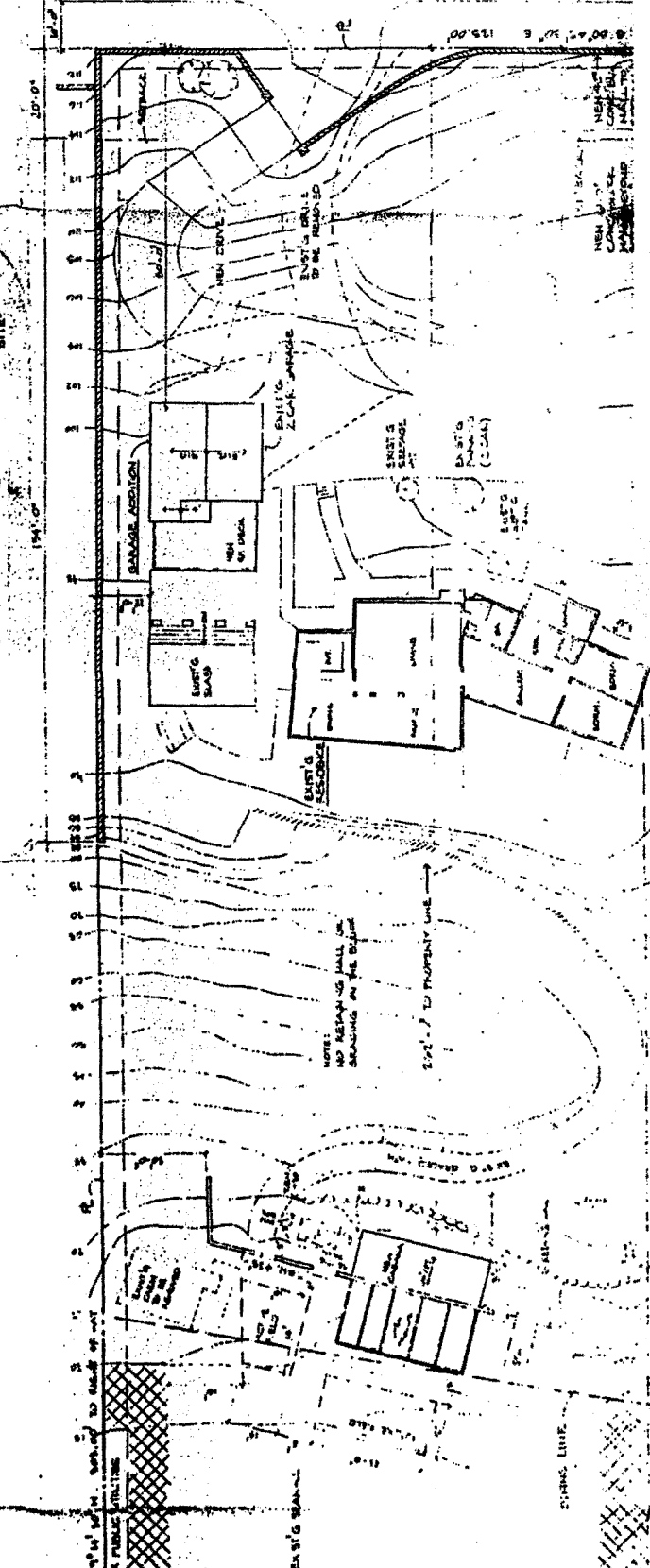
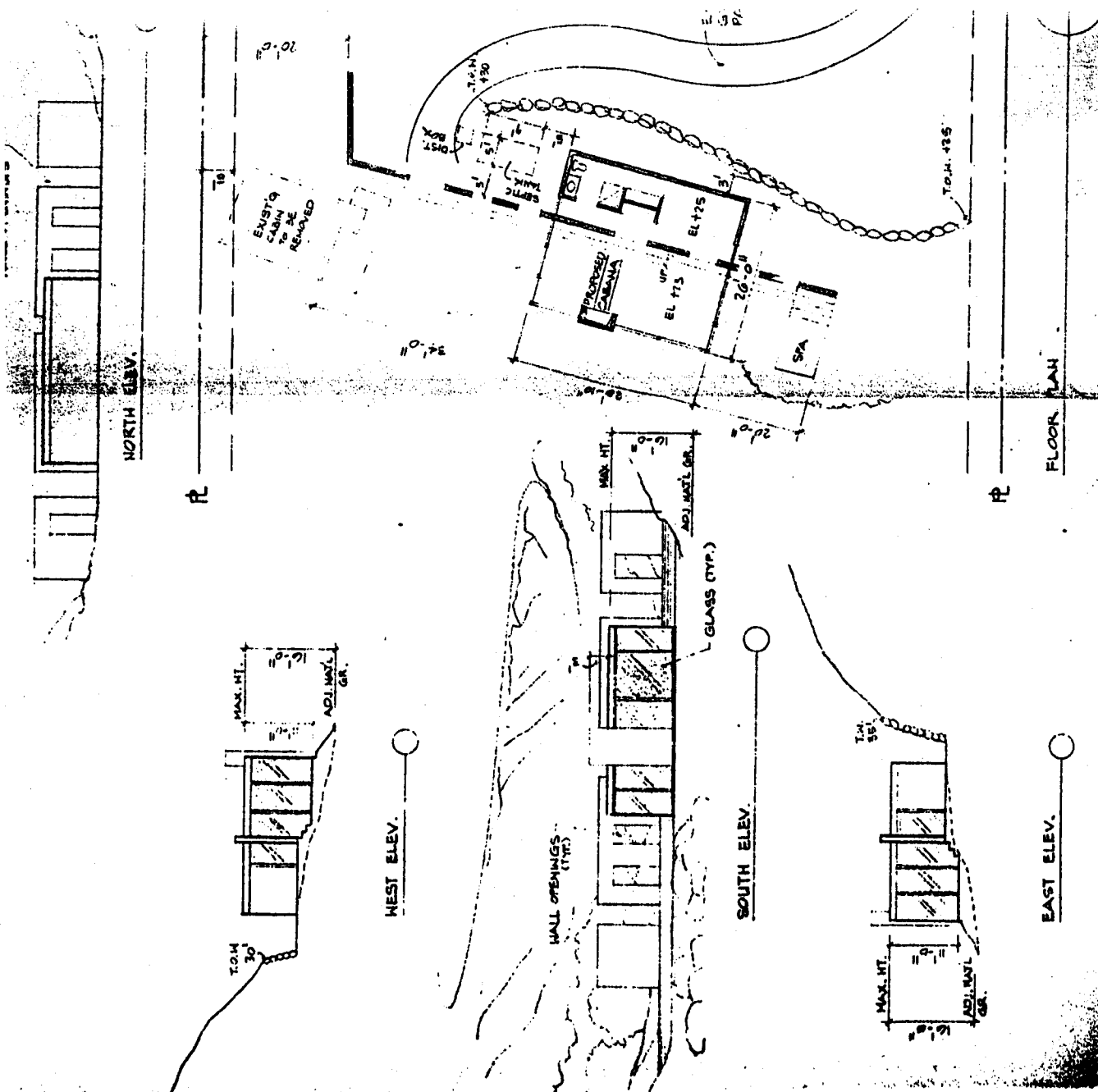


Exhibit 13: Approved Plan and 5-88-918 x-sections from CDP

CROSS SECTION OF WALL AT  
 BASE OF PUFF FOR  
 CABANA



NEW CABANA - 750 SF

DRAINED REG.  
 7.5 x 25 x 1.5 = 281 SF

110-11-0